



ISBNPA

Advancing Behavior Change Science

OMAHA

NEBRASKA USA

20-23 May 2024



Program and Abstract Book

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WELCOME MESSAGE FROM PRESIDENT

Dear ISBNPA colleagues,

I am delighted to welcome you all to our 2024 International Society of Behavioral Nutrition and Physical Activity conference in Omaha, Nebraska.

After two years, we are back to the USA and ready to continue ISBNPA's tradition of exciting, thought-provoking and fun conferences! Spearheaded by the annual meeting committee chaired by Amy Yaroch and Paul Estabrooks and supported by your excellent submissions (THANK YOU!), I am confident that this year's conference will meet your high expectations.

We have a rich and diverse programme with six pre-conference workshops, 16 symposia, three Dare2Share sessions, 168 orals, 89 short orals and 36 award orals and 101 posters. Among the unique aspects of this year's conference are two funders' symposia and meetings, a stronger presence of the nutrition arm of our society, and a climate action session. The latter is directly related to ISBNPA's newly expanded mission statement including human as well as planetary health as key outcomes. Being one of the biggest challenges of our times, climate change requires that we all seriously consider what we can do to mitigate it and adapt to it. I invite everyone to contribute to the discussion and ISBNPA's climate action plan, which is part of our strategic initiatives. By the way ... during the conference, you will also hear more about the progress we have made with ISBNPA's three other strategic initiatives: Growing the Next Generation, Research Impact and Inclusive Culture.

A special warm welcome to our keynote speakers Professor Heather McKay, Dr Kofi D. Essel, Distinguished Professor Lisa M. Powell and Professor Luke Wolfenden, who will share with us their extensive knowledge and experience on ways to improve nutrition and physical activity at a population level. A super-warm welcome also to our rising stars Drs Adewale Oyeyemi, Chelsea Singleton, Emily Tomayko, Jenna Hollis, Neha Rathi and Laura Balis who represent the future of our research fields and society.

I think that most of you would agree that one of the most important aspects of in-person conferences is networking. Omaha 2024 will provide plenty of formal and informal opportunities for you to network with old and new colleagues and friends. It is being held at the CHI Health Convention Centre, conveniently located in downtown Omaha, and making it easier to avoid motorised travel and engage in some healthy and sustainable physical activity (aka active travel!) with your colleagues and friends. Active travel is not the only physical activity we offer, of course. We have several yoga sessions that you can join to help you stretch your legs, lower your stress levels, make new friends, and boost your creativity so that you can come up with some brilliant research ideas to share with others.

This conference would not have happened without the incredible work of a large number of people, including the annual meeting committee, the scientific programme committee chaired by Scott Duncan and Meg Bruening, executive director Antonio Palmeira, our executive committee, session chairs, judges, volunteers, sponsors, exhibitors, Venue West Conference Services and all of you. I/we are deeply grateful to you all.

Enjoy the conference! I hope it will bring you many moments worth cherishing for a long time.



Kind Regards,

Ester Cerin
ISBNPA president

WELCOME TO OMAHA, NEBRASKA

Omaha is a city steeped in innovation – a world-class research hub for public health nutrition leaders and a vibrant destination for outdoor enthusiasts, foodies and culture makers. While in the heart of the Silicon Prairie, attendees can enjoy the safe, walkable arts and entertainment district, more than 85 miles of interconnected trails and accessible green spaces like River Front Park, one of only 40 sustainability projects worldwide to achieve Platinum Verification from the Institute for Sustainable Infrastructure (ISI).

For the quintessential food experience, Omaha's thriving farm-to-table and vegan scene honors the city's rich agricultural history and features fresh ingredients from local farmers and producers, placing it at the forefront of the fresh food movement. We are excited for attendees to learn, grow and build strong relationships with colleagues – all while exploring everything Omaha's diverse culture has to offer.



WELCOME MESSAGE FROM THE AMC

On behalf of the ISBNPA Scientific Program committee, we want to welcome everyone, first time attendees and seasoned ISBNPA'ers alike to enjoy this meeting in Omaha, Nebraska. We want to thank everyone for submitting stellar submissions across innovative topic areas spanning nutrition and physical activity. After each abstract was reviewed and scored by three independent, expert reviewers a core group of our committee met in Omaha to sort, arrange, and prepare a slate of poster, short oral, oral, and symposia sessions that crossed the spectrum of ISBNPA interest areas. Working together with the Local Organizing Committee and SIG leaders, we are grateful to share this outstanding scientific program of highly significant, innovative, and impactful research in behavioral nutrition and physical activity. We also want to extend our gratitude to the reviewers and volunteers for their time and efforts! We hope that you leave Omaha energized by the science and feeling a new or renewed sense of connection to ISBNPA!

Annual Meeting Committee Chairs
Amy Yaroch and Paul Estabrooks

Annual Meeting Committee Members
Meg Bruening, Eric Calloway, Leah Carpenter, Ester Cerin, Jayna Dave, Keyonna King, Rebecca Lindberg, Adewale Oyeyemi, Antonio Palmeira, Maria J. Romo-Palafox, Shreela Sharma, Andrea Varela

THE COMMITTEES

Annual Meeting Committee Chairs



Paul Estabrooks
University of Utah
USA



Amy Yaoch
Gretchen Swanson Center for Nutrition
USA

Committee Members



Meg Bruening
Penn State
USA



Rebecca Lindberg
Deakin University
Melbourne



Eric Calloway
Gretchen Swanson Center
for Nutrition
USA



Adewale Oyeyemi
Arizona State University
USA



Leah Carpenter
Gretchen Swanson Center
for Nutrition
USA



Antonio Palmeira
Universidade Lusófona
Portugal



Ester Cerin
Australian Catholic
University
Melbourne



Maria J. Romo-Palafox
St. Louis University
USA



Jayna Dave
USDA/ARS Children's
Nutrition Research Center
USA



Sheela Sharma
University of Texas
USA



Keyonna King
University of Nebraska
Medical Center
USA



Andrea Varela
The University of Texas
Health Science Center at
Houston, School of Public
Health and McGovern
Medical School,
Texas, USA

THE COMMITTEES

Executive Committee



Ester Cerin
Australian Catholic University
Melbourne



Meg Bruening
Penn State
USA



Moushumi Chaudhury
Auckland University of
Technology
New Zealand



Stephanie Chappel
CQUniversity Adelaide
Australia



Scott Duncan
Auckland University of
Technology
New Zealand



Jenna Hollis
University of Newcastle
Australia



Lisa Mackay
Auckland University of
Technology
New Zealand



Carol Marher
University of South Australia
Australia



Andre Muller
National University of
Singapore
Singapore



Teresia O'Connor
Baylor College of Medicine
USA



Adewale Oyeyemi
Arizona State University
USA



Antonio Palmeira
Universidade Lusófona
Portugal



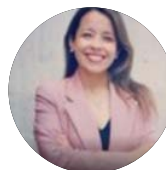
Sarah Shaw
University of Southampton
United Kingdom



Ines Santos
Universidade Lisboa
Portugal



Deborah Salvo
University of Texas, Austin
USA



Andrea Varela
The University of Texas Health
Science Center at Houston,
School of Public Health and
McGovern Medical School,
Texas, USA



Delfien Van Dyck
Ghent University
Belgium

THANK YOU TO OUR ABSTRACT REVIEWERS

THANK YOU!

The ISBNPA 2024 Scientific Committee wishes to acknowledge the abstract reviewers for the ISBNPA 2024 Annual Meeting. Their expertise is invaluable in ensuring the quality and diversity of the content of the Conference program.

Thank you for your invaluable contribution to the ISBNPA 2024 Annual Meeting.

- Antonio Palmeira, Amy Yaroach & Paul Estabrooks (Chairs of the AMC)

Marc Adams	Christophe Matthys
Mavra Ahmed	Josef Mitáš
Teatske Altenburg	Jorge Mota
Odysseas Androutsos	Taniya Nagpal
Maureen Ashe	Nicole Nathan
Tom Baranowski	Anthony Okely
Rebecca Beeken	Natalie Pearson
Stuart Biddle	John Reilly
Greet Cardon	Elizabeth Richards
Valerie Carson	Nicola Ridgers
Sofie Compennolle	Alisha Rovner
Marieke De Craemer	Shannon Sahlqvist
Tom Deliens	Maria Paula Santos
Kacie Dickinson	Jan Seghers
Craig Donnachie	Crystal Smit
Cindy Forbes	Albert Smith
Jayne Fulkerson	Amanda Staiano
Justin Guagliano	Taren Swindle
Genevieve Healy	Linda Trinh
Jenna Hollis	Jelle Van Cauwenberg
Russ Jago	Alexandra E. Van Den Berg
Charlotte Jolleyman	Delfien Van Dyck
Rachel Jones	Frank Van Lenthe
Carlijn Kamphuis	Maartje Vam Stralen
Tracy Kolbe-alexander	Maite Verloigne
Jeroen Lakerveld	Sonia Vladimira
Seidler Lene	Tanis Walch
Leah Lipsky	Eleanor Winpenny
Penny Love	Catherine B Woods
Ralph Maddison	
Anne Martin	

THANK YOU TO OUR SPONSORS

PLATINUM SPONSOR

CENTER FOR
**Nutrition &
Health Impact**



CENTER FOR NUTRITION AND HEALTH IMPACT

The Center for Nutrition and Health Impact (formerly the Gretchen Swanson Center for Nutrition) is a nonprofit research institute providing expertise in measurement and evaluation to help develop, enhance and expand programs focused on healthy eating and active living, improving food security and healthy food access, promoting local food systems and applying a health equity lens in all we do. With expertise in public health nutrition, we are dedicated to building measurement strategies to assess the impact of innovative health-related programs. We work nationally and internationally, partnering with other nonprofits, academia, government and private foundations to conduct research, evaluation and strategic planning.

GOLD SPONSOR



PAL TECHNOLOGIES LTD.

22 years ago we launched the activPAL™, the world's first singlesensor solution for free-living Posture and Activities Logging. Using a discrete thigh-worn sensor combined with innovative software tools, we give researchers objective measures of personcentered free-living physical activities providing the evidence to link physical behaviors with health outcomes. Our approach Back to Table of Contents is based on the three tenets of objective body-worn sensor measurement: sensor location, data fidelity and data processing. The thigh-segment location provides the ground-truth for our outcomes; a horizontal thigh is sitting (or lying) and vertical is upright. When repeatedly reciprocating, the wearer is either stepping or cycling. Free-Living Outcomes (FLO) are based on an analysis of the patterns of participation in the primary activities of Lying, Sitting, Standing and Stepping (and the travel choices of Cycling and Seated Transport). The activPAL is unique in this ability to quantify time cycling and in-car travel, providing the opportunity to measure commuting choices (active travel vs car). New for 2023, the software tools characterize the locus of activity providing a measure of the time spent in the primary household locus in contrast with the wider community loci. The latest generation of the activPAL, the activPAL4+, can quantify stair climbing and straight-line stepping.

SILVER SPONSORS



FHI 360

Launched in 2009, the National Collaborative on Childhood Obesity Research (NCCOR) brings together four of the nation's leading research funders — the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), the Robert Wood Johnson Foundation (RWJF), and the U.S. Department of Agriculture (USDA) — to accelerate progress in reducing childhood obesity in America. These leading national organizations work in tandem to manage projects and reach common goals, coordinate funding to make the most of available resources, and share insights and expertise to strengthen research. NCCOR focuses on efforts that have the potential to benefit children, teens, and their families, and the communities in which they live.

The Center for Nutrition and Health Impact (*formerly the Gretchen Swanson Center for Nutrition*) is a nonprofit research institute providing expertise in measurement and evaluation to help develop, enhance and expand programs focused on healthy eating and active living, improving food security and healthy food access, promoting local food systems and applying a health equity lens in all we do. With expertise in public health nutrition, we are dedicated to building measurement strategies to assess the impact of innovative health-related programs. We work nationally and internationally, partnering with other nonprofits, academia, government and private foundations to conduct research, evaluation and strategic planning.

Program Evaluation

We design and conduct program evaluation with a balance of feasibility and scientific rigor, while engaging authentically with all partners. We measure the impact of policy, systems and environmental approaches, provide evidence on the facilitators and barriers to behavior change and make recommendations to further strengthen our partners' work.

Program Development & Capacity Building

We aid funders by building and sharing strong metrics and processes to show investment impacts across initiatives, as well as building capacity among grantees to implement measurement strategies. These services may include but are not limited to:

- Development of RFPs, scoring criteria, review processes and final reporting strategies
- Shared measures development, implementation and training
- Grant portfolio analysis
- Evaluating technical assistance
- Program evaluation to inform grantee reauthorization and/or program replication

Strategic Planning

Foundations and other funders that are in the process of building infrastructure, developing or looking to improve a grant program, or need help in strategizing areas of focus, can benefit from our involvement in strategic planning. We provide evidence-based and practical actionable steps that will improve community impact and provide vital information on return on investment.

Our Mission

For the last 50 years, our focus has been clear: Conduct strong research and evaluation that impacts nutrition for all. We have worked to expand our focus over time to include other key areas of public health nutrition, such as healthy eating and active living, food and nutrition security, and food systems more broadly. Our expertise in measurement and evaluation has also become a large part of our identity in recent years and this evolution has allowed us to form solid partnerships with national organizations.

Our Team

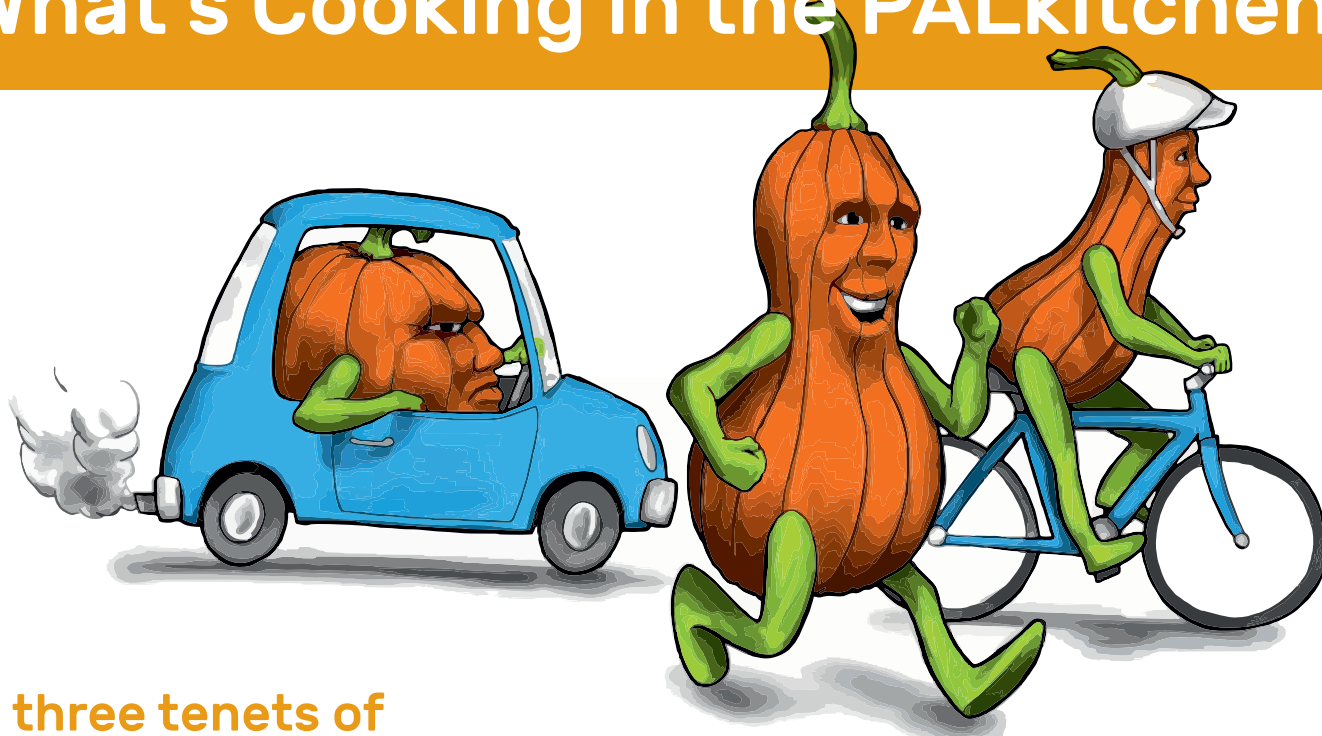
Incorporated in Omaha, Nebraska and geographically dispersed throughout the U.S., our nationwide all remote staff is comprised of nearly 60 scientists and other professionals who bring talent and dedication to support our mission. is led by Amy Yaroch, PhD.

Our team's skills are embedded in national research, measurement and evaluation, including development and implementation of mixed methods, primary and secondary data analysis and specialty topics, including dietary assessment and the evaluation of technical assistance and policy advocacy.

For questions and more information, please email Dr. Yaroch at ayaroch@centerfornutrition.org



What's Cooking in the PALkitchen?



The three tenets of wearable-derived digital health outcomes

sensor **LOCATION**

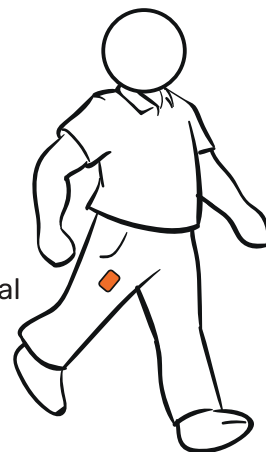
worn discretely on the thigh, the new **PALpatch™** offers up to 14 days of comfy wear

data **FIDELITY**

a raw data inclinometer and accelerometer, the latest **activPAL4+** utilizes magneto-interial sensing components to provide first-in-class wearable-derived digital health outcomes

activity **CATEGORIZATION**

the PALsoftware generates both **Behavioural & Biometric** outcomes, that is measures of of both **participation** and **ability** across the life-span, in sickness and in health



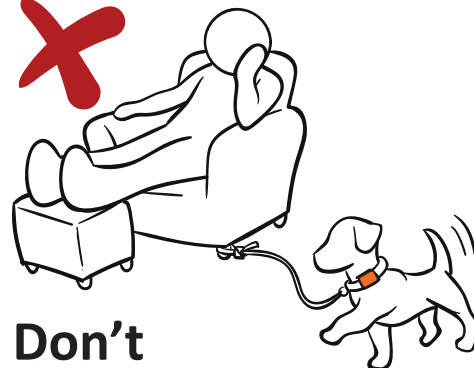
Don't

try and get extra steps



Don't

wear the activPAL in odd locations, it's a thigh-worn sensor



Don't



recent publications

activPAL™ | research bred, research led since 2001

THANK YOU TO OUR SPONSORS

SILVER SPONSORS



UNIVERSITY OF NEBRASKA MEDICAL CENTER

Founded in 1869 and chartered as the state's first medical college in 1881, they became part of the University of Nebraska in 1902. Today, UNMC education programs train more health professionals than any other institution in the state. Scientists and clinicians here are at the leading edge of discovering new medical breakthroughs, transforming lives across the state and around the world.

BRONZE SPONSOR

RIT

College of
Health Sciences
and Technology

**Wegmans
School of
Health and
Nutrition**

ROCHESTER INSTITUTE OF TECHNOLOGY

Wegmans School of Health & Nutrition at RIT has graduate programs in Health & Well-being Management and Dietetics and Nutrition and undergraduate programs in Exercise Science and in Nutrition Science. They let us achieve our vision that Scholars, Students, and Citizens will walk the talk to secure health for all.

ADDITIONAL SPONSORSHIPS



NESI NETWORKING SOCIAL SPONSOR - THE UNIVERSITY OF UTAH COMMUNITY ENGAGED SCHOLARSHIP WORKGROUP

The University of Utah Community Engaged Scholarship Workgroup promotes education, health, and quality of life. Through strong and consistent communication with community partners, we ensure our work aligns with community priorities and builds community capacity by reinforcing cultural wealth, trust and expectations of our partners.



PUBLISHER - BIOMEDCENTRAL

We are dedicated to publishing the best open access journals across our portfolio of over 250 titles and are always striving to drive progress in biology, health sciences and medicine. International Journal of Behavioral Nutrition and Physical Activity, the official journal of ISBNPA, is published by BMC.

THANK YOU TO OUR SPONSORS

EXHIBITOR

UNIVERSITY OF NEBRASKA MEDICAL CENTER COLLEGE OF PUBLIC HEALTH

Welcome to the UNMC College of Public Health, a community of students, faculty, staff, and partners dedicated to fostering innovative solutions to improve our nation's health. At the UNMC College of Public Health, we are putting knowledge into practice and implementing a new era of public health grounded in social justice, community engagement, innovative public health practices, and public health policies that support community health efforts.



Healthiest people & places worldwide.

Collaboratively and relentlessly, UNMC College of Public Health tackles health issues and works to prevent them from happening in the first place.

unmc.edu/publichealth/



GENERAL INFORMATION

Registration Desk and Name Badges

The registration desk is located on the second floor of the CHI Health Center and will be open during the following times:

Monday, June 20: 07:30- 18:30
Tuesday, June 21: 07:45 - 18:30
Wednesday, June 22: 07:45 - 18:00
Thursday, June 23: 07:45 - 14:30

Delegate badges must be worn at all times while at the conference facilities. Pre-conference workshop participants can pick up their badges after the workshops and prior to the Opening Ceremony.

Badges and lanyards can be returned at the registration desk after the conference to be recycled.

Please note that outstanding payments can only be settled by credit card (Visa, Mastercard). No badges will be handed out if registration has not been paid in full. No cash payments are accepted.

Exhibition Hours:

Exhibits are located in the Grand Ballroom Foyer on the second level.

Monday, June 20	15:20 - 15:40	18:30 - 20:00	
Tuesday, June 21	11:00 - 11:55	13:15 - 14:15	16:15 - 16:45
Wednesday, June 22	11:00 - 11:55	13:15 - 14:15	15:30 - 16:00
Thursday, June 23	11:05 - 11:20	13:10 - 14:10	

Speaker Ready Room

The Speaker Ready Room is located in room 207 (Level 2 - main Conference level).

Presenters are required to visit the Speaker Ready Room if they have not pre-loaded their presentation, would like to check their slides or need to make small edits, at least two hours prior to the start of their session. For sessions starting at 08 :25 AM, presenters must upload their presentations the day before wherever possible. A technician will be onsite should presenters have any questions or require assistance.

Monday, May 20: 11:00 – 17:30
Tuesday, May 21: 07:30 – 17:00
Wednesday, May 22: 07:30 – 17:00
Thursday, May 23: 07:30 – 12:30

GENERAL INFORMATION

Dietary Requirements

Any dietary requirement and/or food allergy indicated during registration will be printed on the back of your name badge.

Only previously advised allergies will be accommodated.

The back of your name badge will indicate whether your dietary needs are being met with the main buffet or not. If your name badge indicates that a special meal has been prepared for you, please locate the nearest catering staff, show them the back of your badge, and they will provide you with your specially curated meal.

If you have any questions or concerns, please reach out to any of the catering staff, or talk to someone at registration during registration hours.

Posters and Nesi Job Board

Posters are located in Ballroom C on the second floor of the CHI Conference Center. They are grouped by SIG.

Presenting authors are required to attend their posters during their session.

Poster Session 1 – Tuesday, May 21, 2024, from 11:00 am to 11:55am

Mounting: between 07:30 and 08:25 am

Take down: between 4:15 and 6:00 pm

Poster Session 2 – May 22, 2024, from 11:00am to 11:55am

Mounting: between 07:30 and 08:25 am

Take down: between 4:45 and 6:00 pm

Any posters not taken down at the end of each day will be removed by the organizers and can be picked up at the Registration Desk. Posters not collected by the end of the meeting will be recycled. We appreciate everyone's support in mounting and taking down posters on time.

The **NESI Job Board** will be located in the **NESI Zone**, in the Grand Ballroom Foyer near the window wall.

GENERAL INFORMATION

Conference Hotels

- Hilton Omaha, 1001 Cass Street, 2 mins walk via hotel link
- Omaha Marriott Downtown at the Capitol District, 222 N 10th Street, 2 mins walk
- Residence Inn by Marriott Omaha Downtown/Old Market, 106 S 15th Street, 10 mins walk.

If you need to make changes to your booking, please contact the hotel directly.
Booking confirmations have been sent by email.

Certificates of Attendance

Certificates will be sent out automatically by email within a few days of the conference.

If you require a certificate of presentation, please email program@isbnpa.org and allow for a few days for it to be issued and sent to you.

Internet Access

Wireless Network: ISBNPA24

Passcode: ISBNPA24

Emergency Procedures

NO DRILLS are scheduled, so if an alarm sounds, it is the real thing. If there is severe weather or facility emergency, an alarm will go off and instructions on how to proceed will be played over the intercom system. The MECA Event Coordinator/Crowd Managers (EC/CM) will act as guides and will help anyone with mobility issues.

If instructed to take shelter, inside the exhibit halls on the main level or inside the meeting rooms on the second level with all doors closed are the designated shelter locations inside the convention center. If time permits, the EC/CM will assist guests down the back emergency stairwell to the first level of the convention center to shelter inside the exhibit hall.

If instructed to evacuate the building, as in the event of a fire, active shooter, etc. the EC/ CM will assist guests to the nearest rally point location outside the facility. There is an evacuation map along with a rally point map provided for reference.

If you discover a Fire, inform the nearest Facility worker and they will send out a radio call to Building Security to activate the alarms. Fire extinguishers are located throughout the facility; inside the exhibit halls and in the service hallways in the back of each meeting room.

In case of a medical emergency, try to inform the EC first and the EC will call 9-1-1. If 9-1-1 is called prior to informing any one from the facility, please let the EC with MECA Omaha know right away so they can alert Building Security, so someone is greeting the EMTs to get them to the right location of the emergency. A first aid kit and a defibrillator are in the back service hallway next to the Kitchen on the second level behind meeting room 201 and a second one is located in our administration office reception area on the 1st level.

OMAHA: GETTING THERE AND AROUND

Good To Know Before You Go

Take a look at the [FAQ](#) and helpful information from Visit Omaha.

Travelling to Chi Health Center from Eppley Airfield (Omaha Airport Authority)

The Omaha Airport offers routes to more than 30 different national destinations. Its location in the middle of the US allows it to be a gateway to international hubs. It is an easily accessible airport for travelers from around the world.

At a distance of only 4.2 miles (6.8 km) from the CHI Health Center (the conference venue) and the conference hotels, it is easily accessible via city bus, hotel shuttle, ride app, bicycle or car. If you decide to take the bus to the conference center or the host hotels, you'll take Bus 16 from Eppley airport. For the most direct route, you will board at Farnam & 14th NE, and exit at Douglas Street & 8th NE. Then you'll walk approximately 10-14 minutes to the hotels or the conference center.

For the most current bus schedules, visit <https://myride.ometro.com/TripPlanner>.

The Omaha Airport is undergoing construction to better serve its customers. If you are taking a hotel shuttle, are requesting a ride or renting a car, you'll want to visit the Passenger Pickup/Drop-off website at the airport: <https://www.flyoma.com/ground-transportation/passenger-pickup-drop-off/> for the correct location.

Omaha City Map

Find your way around town with an [Omaha City Map](#)

Omaha's Gastronomy Scene

Omaha is best known for its steak, and dozens of authentic Omaha steakhouses throughout the city have helped shape the city's scrumptious reputation. But steaks are just the tip of the culinary iceberg, Omaha's dining experience ranges from innovated chef-created cuisine, sidewalk cafes, breweries, burger joints, delicious drive throughs, sweet shops, ethnic eateries and vegan farm-to-fork feasts.. Find a whole world of flavors, from Mexican, Italian and French to Indian, African, Greek and Asian - each with their own twist on the classics.

Omaha's gastronomy scene promises to be a delightful journey of flavours and culinary discoveries. With lots of Vegan and Gluten-Free dining options, Omaha is a must-visit destination for those seeking to savour the unique tastes of the Midwest while indulging in a world of global culinary delights.

For more information on all the culinary delights that Uppsala has to offer, visit our [website](#) to access the Foodie Guide.

Happy discovering!

OMAHA: GETTING THERE AND AROUND

Omaha's Local Attractions

Omaha is teeming with local attractions that captivate visitors from near and far. One cannot miss **Omaha's Henry Doorly Zoo & Aquarium** - consistently ranked one of the world's best zoos. Hop aboard historic train cars at **The Durham Museum**. Explore more than 100 acres of botanical beauty at Lauritzen Gardens and marvel at exquisite works of art inside the **Joslyn Art Museum**. Or visit the **Kiewit Luminarium**, a place for everyone to explore the astonishing phenomena that shape our world, our communities, and ourselves.

If you're hoping to stay active while attending the conference, there's no shortage of options. Walk across the **Bob Kerrey Pedestrian Bridge** or visit the **Gene Leahy Mall at the RiverFront** or the **Heartland of America Park at the RiverFront**. Walk along the Missouri River Promenade and make your way to the **Lewis & Clark Landing**. And it's all within 15 minutes of the conference hotels and conference center.

In addition to being the home to the **University of Nebraska at Omaha**, and **Creighton University**, Omaha is home to 7 additional higher educational campuses boasting a vibrant academic atmosphere that invites exploration.

Lastly, the **Missouri River**, the longest river in the United States, stretches approximately 2,565 miles (4,128 km) through 7 states and is walkable along the many walking paths and trails just behind the CHI Health Center.

Omaha's local attractions provide a delightful blend of culture, history, and natural beauty. For more information on things to see and do in Omaha, visit the [Visit Omaha](#) website.

Public Transportation, Train, and Taxi

- Amtrak (Train): <https://www.amtrak.com>
- Greyhound Bus: <https://www.greyhound.com/bus/omaha-ne/omaha-burlington-trailways>
- Public Transportation (City bus): <https://www.ometro.com>
- Taxi zTrip - +1 763 318 2900
- Taxi City: +1 402 933 8700
- Ride App Lyft: <https://www.lyft.com>
- Ride App Uber: <https://www.uber.com>

CONFERENCE WELLNESS BREAKS

ISBNPA offers rejuvenating yoga sessions during the conference dates for all attendees. Sign-up is available through the registration portal and onsite sign up will be available at the Conference registration desk.

The Yoga sessions are complimentary for all attendees and are designed to help you find balance amidst the Conference buzz. We suggest bringing a water bottle and towel to enhance your experience. Sessions are open to all levels, whether you're a seasoned yogi or trying it out for the first time!

May 21, 2024	11:00 - 11:15	Yoga No Sweat Flow
May 21, 2024	18:30 - 19:30	Yoga Evening Flow
May 22, 2024	11:00 - 11:15	Yoga Mini Break
May 22, 2024	17:00 - 17:30	Yoga 1/2 Hour Evening Flow



SOCIAL EVENTS

Gala Dinner

Date: Wednesday, May 22, June 16, 2023, 7:30 pm – 11:00 pm, CHI Health Center

Price:

Delegate: USD \$60

Guest: USD \$75

Dress Code: Smart/Casual

The Gala Dinner will be held in the CHI Health Center, in Ballroom AB.

Please note that the ISBNPA Dinner ticket is not included with registration and is available for purchase during the registration process. The evening will include a seated dinner and entertainment.



SIG MEETINGS

E-&Mhealth SIG

Date: Tuesday, May 21
Time: 12:00-13:15
Room: 210

Ageing SIG

Date: Tuesday, May 21
Time: 13:15 - 14:00
Room: 212

Socio Economy Inequality SIG

Date: Tuesday, May 21
Time: 13:15 - 14:00
Room: 213

Policies & Environments SIG

Date: Tuesday, May 21
Time: 13:15 - 14:00
Room: 214

Children & Families SIG

Date: Tuesday, May 22
Time: 14:15- 14:55
Room: 212

Cancer Prevention & Management SIG

Date: Tuesday, May 22
Time: 14:15-14:55
Room: 214

Implementation & Scalability SIG Meeting

Date: Tuesday, May 22
Time: 14:15- 14:55
Room: 215



KEYNOTE SPEAKERS



Kofi Essel, MD, MPH, FAAP

Kofi Essel is the inaugural Food as Medicine Program Director at Elevance Health. As a core member of the Health Outcomes Organization team, he works to coordinate with the broader social impact strategy, health equity, and medical policy initiatives throughout the enterprise. He leads efforts in designing innovative approaches to address diet related chronic diseases and social risk using novel food interventions.

Dr. Essel is a board-certified community pediatrician at Children’s National Hospital (CNH) and Clinical Associate Professor of Pediatrics at the George Washington University (GWU) School of Medicine & Health Sciences in Washington, D.C. Most recently serving as the Director of the GWU Culinary Medicine Program. Dr. Essel has dedicated his career to advocacy/research around healthcare and public health workforce training, health disparities, and community engagement, with expertise and national recognition in the areas of addressing diet related chronic disease and food insecurity with patients and families.

Dr. Essel sits on the National Academies of Sciences, Engineering, and Medicine’s Roundtable on Obesity Solutions’ Lived Experience Innovation Collaborative and was nationally recognized by the Alliance for a Healthier Generation for helping to create an innovative curriculum to enhance pediatric resident trainee skills on nutrition related disease management. Dr. Essel sits on the board of directors for the Food Research and Action Center (FRAC) and serves as physician advisor for the Partnership for a Healthier America’s “Veggies Early & Often” campaign. Dr. Essel is a member of the executive committee for the American Academy of Pediatrics Section on Obesity. He also co-authored a national toolkit for pediatric providers to address food insecurity in their clinical settings with the AAP and FRAC.

Dr. Essel earned a B.S. from Emory University with a focus on human biology/anthropology and earned his M.D. and M.P.H. in Epidemiology from GWU.

Food as Medicine for All: Novel Family Centered Strategies to Addressing Food & Nutrition Insecurity

Food as medicine interventions have garnered considerable attention over the last few years since the start of the COVID-19 Pandemic. These interventions have great promise and growing evidence indicating their role in addressing food/nutrition insecurity and diet related chronic disease. Unfortunately, the majority of efforts continue to focus solely on adults while missing the opportunity to be a transformative tool for the entire household. In this discussion, we will introduce the novel concept of Food as medicine, practical approaches for application, and strategies to ensure the entire family, from children to adults, are prioritized.

KEYNOTE SPEAKERS



Heather McKay, Ph.D

*Research in health aging
Professor McKay is passionate
about community-based
health research—working with
community partners to find ways
to scale-up effective health*

interventions to positively effect health at a population level. Her program of research encompasses: (i) effective interventions and myriad factors that influence the health of children, and the physical (e.g., mobility), social (e.g., social connectedness) and mental (e.g., loneliness) of older adults; (ii) the design, implementation and evaluation at scale of effective community-based health promoting interventions (implementation science), and (iii) knowledge mobilization. Professor McKay has published >260 peer reviewed papers and accrued >\$70M in competitive grant funding. At UBC, Professor McKay is Active Aging Research Team lead scientist. She has a >15-year collaboration with BC Min of Health and currently leads a multi-level partnership (researchers, government, health authorities and NGOs) to enact Active Aging BC (ABC). Professor McKay's research team is currently scaling up and evaluating ABC's signature program--Choose to Move--across British Columbia. Choose to Move engaged more than 95 community based organizations as delivery partners and 8000 older adults. Choose to Move effectively enhanced physical activity, mobility and decreased social isolation and loneliness in older adults who participated.

Building interdisciplinary teams

Professor McKay convenes highly effective, interdisciplinary research teams. She connects scholars with an array of cross-sectoral community and government stakeholders to “move research into action” to positively impact the health of children and older adults. Professor

McKay led eight CIHR and Peter Wall Institute of Advanced Studies teams that focused on aspects of older adult health (>\$10M grant funding) in different settings (e.g. community, built environment, assisted living). Professor McKay was inaugural Director (2006-16), Centre for Hip Health & Mobility, a multidisciplinary, \$40M CFI funded centre that aimed to enhance mobility and health across the life course. More recently she co-led UBC's Healthy Aging Research Excellence cluster that convened 200 researchers, 50 trainees and 50 community partners across 10 academic disciplines to ignite collaboration in healthy aging research.

Scaling up effective physical activity interventions: Is there a secret sauce?

It has become increasingly apparent that to manage escalating health care costs there must be investment in effective, scaleable, upstream health solutions. Why then are so few health promotion and prevention (e.g., physical activity and healthy eating) programs delivered at scale? Is there a secret sauce to doing so?

Professor McKay will introduce key concepts and essential elements of scaling up health promoting programs. She will animate these concepts with real life case studies from Canada. She will share lessons learned working with community and government partners, drawing on her more than 15 years of scale-up experience.

KEYNOTE SPEAKERS



Lisa Powell, Ph.D

Lisa M. Powell, Ph.D. is Distinguished Professor and Director in the Division Health Policy and Director of the Policy, Practice and Prevention Research Center in the School of

Public Health at the University of Illinois at Chicago. Dr. Powell's research assesses the importance of economic and contextual factors on food consumption, physical activity and obesity outcomes, including related disparities; and, in particular, it contributes to evidence on food policy, health taxes and child-directed marketing. Dr. Powell's research has been funded by Bloomberg Philanthropies, Laura and John Arnold Foundation, Robert Wood Johnson Foundation, CDC, NIH, and USDA, and she serves on national and international expert advisory committees.

Fiscal Policies for Health: Worldwide Evidence on the Impacts of Sugar-sweetened Beverage Taxes

Health taxes are used as a fiscal policy instrument aimed at reducing individuals' harmful consumption of products such as tobacco, alcohol and sugar-sweetened beverages (SSBs) with the ultimate goal of reducing consumption-related adverse health outcomes. Health taxes have multiple goals: to reduce demand for the taxed products in order to reduce consumption-related "externalities" (e.g., additional publicly funded healthcare costs, productivity costs) and "internalities" (e.g., inconsistent time preferences related to individual harm), and to generate revenue which can be used to fund complementary health promotion efforts. The key mechanism through which this occurs is that taxes generally result in higher prices for consumers, known as tax pass-through, which in turn reduces demand. However, to fully understand the underpinnings of the net impact on consumption and ultimately health outcomes,

it is also important to understand the extent to which taxes may induce substitution (e.g., to other non-taxed beverages, sweets or snacks) and the extent that consumers may undertake explicit tax avoidance behaviors such as cross-border shopping, which may offset improvements in diet from the taxes. Additionally, a concern frequently raised by industry when such taxes are being proposed is that they will lead to job losses or that they are regressive. Rigorous empirical evidence related to both intended and unintended consequences of SSB taxes is critical for policymakers in order for them to design evidence-based efficient policies to improve population health. This presentation will provide worldwide evidence on impacts of SSB taxes on prices, demand, and health; an overview of evidence related to counter-arguments to SSB taxes including concerns related to employment, regressivity/equity and tax avoidance; and, a discussion of opportunities for SSB tax policy development.

KEYNOTE SPEAKERS



Luke Wolfenden

Professor Wolfenden is a behavioural and implementation scientist. He leads an NHMRC Centre of Research Excellence ('National Centre of Implementation Science'); is the

Director of the WHO Evidence Informed Policy Network program at the University of Newcastle and past (until 2022) Co-Director of the WHO Collaborating Centre for Evidence-based Non-Communicable Disease Program Implementation. He is passionate about supporting the use of evidence in public policy and practice so that effective nutrition and physical activity policies and programs benefit those for whom they are intended. The focus of his work has been on the conduct of trials to identify effective nutrition and physical activity interventions in community settings and testing strategies to implement them. This work has been undertaken in a 'living implementation laboratory' he developed in the Hunter region of Australia. Prof Wolfenden has contributed to a number of innovations in systematic review methods to facilitate evidence use, and continues to do so as Director of the Cochrane Thematic Groups in Nutrition and Physical Activity. He is a frequent consultant to Australian governments and the WHO, and his work has informed prevention policy and practice in Australia and internationally.

Current processes to develop and test implementation strategies is insufficient to advance science, learning and provide timely guidance for action by government departments and services. As a result, many efforts to scale-up the implementation of behavioural nutrition and physical activity are likely to be ineffective and risk exacerbating inequities. 'Learning Health Systems' provide an opportunity to address some of these challenges. Learning Health Systems are organisations (e.g government departments or services) that routinely use data to develop, test and immediately apply knowledge to improve the impact of their services. This presentation will examine their potentially transformative role in generating and applying evidence to scale-up the implementation of nutrition and physical activity programs and improving the health and wellbeing of populations.

Innovation in implementation science to improve population nutrition and physical activity

Health systems and communities are experiencing a chronic disease induced crisis. Much of this burden could be reduced through the large-scale implementation of effective policies and programs to support healthy eating and physical activity. While many effective interventions exist, what is missing are evidence-based strategies to effectively implement them.

CLIMATE ACTION PANEL SPEAKERS



Karim Abu Omar

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Robert Hogg

Robert Hogg is an indigenous academic from Aotearoa New Zealand. His tribes (iwi) are Ngai Tūhoe, Ngāti Awa, and Tainui. At AUT University, Auckland, New Zealand, Robb is an Associate

Dean Māori Advancement for the Faculty of Health and Environmental Sciences and an Associate Head of School Māori Advancement for the School of Sport and Recreation. Robb takes an indigenous ecosystem approach to planetary health, which he will share these insights with the ISBNPA community as a member of the Climate Action Panel.

CLIMATE ACTION PANEL SPEAKERS



Sarah Frank, Ph.D

Dr Sarah M Frank is Lecturer in Nutrition and Health at the University of Edinburgh. She is a nutritional epidemiologist whose research uses large datasets to examine the health and

environmental impact of dietary patterns. Her research interests are broadly in policy solutions to support the transition to a healthier, more sustainable, and more equitable food system.



Brittany Jock

Dr. Jock is Bear Clan from the Akwesasne Kanien'kehá:ka (Mohawk) Territory. She obtained her Bachelor's degree from Syracuse University in chemistry. She holds a Master's degree in

epidemiology and a Doctorate in social and behavioral interventions from the Johns Hopkins School of Public Health. Her public health training centers on the design and application of mixed methods research and the development, implementation, and evaluation of health programs.

Dr. Jock's research combines epidemiology with social and behavioral science to respond to the obesity and chronic disease inequities experienced by Indigenous Nations and communities. Her research focuses on responding to the dietary shift from Indigenous traditional food systems to highly processed market food systems that resulted from the ongoing colonization of Turtle Island (North America). Dr. Jock's research is in the following streams: nutrition status and obesity prevention interventions; community participation in research; policy, systems, and environmental approaches for obesity prevention; and influence of social determinants and historical trauma in shaping Indigenous health. She employs qualitative methods to develop interventions, quantitative research methods to evaluate interventions, and community-based participatory research to guide the involvement of Indigenous Nations in her research. She is honored to work in the ancestral territory of her people.

CLIMATE ACTION PANEL SPEAKERS



Rodrigo Reis

Dr. Reis is a professor of public health and Director of the Office of Public Health at the Washington University in St Louis, where he has previously worked at several capacities, including chair of the urban design and public health MPH specialization, Associate Dean for Public Health, Interim-Codean, as well as led several strategic initiatives on environmental health, sustainability, and environmental justice. Dr. Reis previously worked as a professor at the Urban Management Graduate Program at the Pontifical Catholic University of Parana in Curitiba, Brazil. Dr. Reis has published extensively and his research focuses on physical activity and public health, with particular interest in community interventions for promoting physical activity, built environment and health, active transportation and health, and physical activity surveillance. He is also part of the Lancet Physical Activity Series Group who has developed a series of studies published in the summer of 2012, 2016 and 2021 at The Lancet, and a co-author of Urban Design, Transport and Public health series published in the summer of 2016 at The Lancet and in 2022 at The Lancet Public Health. Dr. Reis has been involved in international projects, such as Project GUIA (Guide for Community in Latin America), IPEN Network (International Physical Activity and Environment Network), the HULAP project, among other multi-country studies. His policy and practice experience includes working with the Brazilian Ministry of Health in the development and monitoring of the National Plan for Combating Non-Communicable Diseases in Brazil, the Pan American Health Organization, and the Ministry of Health in Brazil to implement evidence based public health and physical activity promotion courses for practitioners in Brazil, CDC physical activity courses in Latin America, the National Physical Activity Plan in United States,

and the PAHO/ASPPH epidemiology courses in Latin America. Dr. Reis has worked extensively to build physical activity research and practice capacity in Latin America. He is a founder member as former president of the Brazilian Society for Physical Activity and Health, and a founder member and current board member for the Latin American Congress of Physical Activity and Health Research.

'ONE TO WATCH' INVITED TALKS



Dr. Laura Bais
Research Scientist,
Gretchen Swanson Centre for
Nutrition

Dr. Balis is a Research Scientist at Gretchen Swanson Center for Nutrition. She earned her PhD at Virginia Tech in Human Nutrition, Foods, and Exercise with an emphasis on behavioral and implementation science. Her work focuses on implementation strategies to support the uptake of physical activity environment and policy interventions in community settings. She combines her scientific training with years of real-world public health experience. Her research philosophy is grounded in participatory methods, and her investigations seek solutions to simultaneously solve real-world problems and advance implementation science.

Improving the built environment and beyond: compiling and testing implementation strategies in community settings

Dr. Balis will discuss her recent work developing a new compilation of implementation strategies for community settings and testing strategies for built environment approaches to physical activity.

'ONE TO WATCH' INVITED TALKS



Dr. Jenna Hollis
Clinical and Health Services
Research Fellow
University of Newcastle

Dr. Jenna Hollis is a Research Fellow and Program Manager employed in a research-health service position with the University of Newcastle and Hunter New England Local Health District Population Health in Australia. She works in a team of researchers and practitioners to develop and test practice-change initiatives to improve the provision of guideline-recommended care for pregnancy weight gain, smoking and alcohol use. She leads a team that is implementing and evaluating an evidenced-based training initiative called 'Healthy Conversation Skills' (originally developed by a multidisciplinary team from the University of Southampton, UK) as a sustainable and scalable model to support antenatal care providers to have brief, effective person-centred behaviour change conversations.

Partnering with maternity services to increase guideline-recommended antenatal care for pregnancy weight gain, healthy eating, and physical activity.

Supporting pregnant women to eat healthily, be physically active and to gain weight within guideline ranges is recommended in many countries to reduce the risk of poor pregnancy, birth and chronic disease outcomes for mothers and their children. However, up to 70% of pregnant women gain weight outside of recommended ranges, up to 70% do not meet physical activity recommendations, and <1% meet all dietary recommendations.

Clinical practice guidelines from many countries recommend that health care providers routinely assess weight of pregnant women, discuss

recommended weight gain, nutrition, and physical activity, and offer referrals to support services if needed. In Australia, public maternity services (staffed by midwives, medical staff, and Aboriginal health workers) are a core provider of antenatal care and recognised as a key setting to provide preventive care for these health behaviours. Despite these guidelines, evidence suggests that the delivery of recommended care is less than optimal and inconsistently provided. Antenatal care providers face many barriers to providing such care, including lack of skills and confidence to have behaviour change conversations.

Over the last 7 years, our team of Population Health practitioners and researchers has partnered with public maternity services in the Hunter New England Local Health District in Australia (who deliver care to over 9000 pregnant women annually) to improve the provision of antenatal care for nutrition, physical activity, and pregnancy weight gain. I will present our work from project inception to now as we built this program of 'real world' implementation research. I will share our learnings from building relationships with partners, findings from surveys with pregnant women and clinicians to understand the local prevalence of care and barriers to care delivery, the development of localised care pathways and evidence-based implementation strategies, the results of pilot and feasibility studies, and an overview of current implementation-effect trials.

'ONE TO WATCH' INVITED TALKS



Dr. Adewale Oyeyemi
Associate Professor
Arizona State University

Dr. Adewale Oyeyemi is an Associate Professor of Population Health at the College of Health Solutions, Arizona State University, USA. He obtained his Ph.D. in Social Health Sciences in 2013 at Ghent University, Belgium. The goal of his research is to conduct studies on health-related behaviors, including physical activity and sedentary behavior, designed to lead to evidence-based interventions directed at populations. He has been working to address this through interdisciplinary collaborations with investigators in all regions of the world. He has published several peer-reviewed scientific papers and 3 book chapters. Dr. Oyeyemi is a Senior Associate Editor for the Journal of Physical Activity and Health and is on the scientific committees of the International Society for Behavioral Nutrition and Physical Activity, and the African Physical Activity Network. He is the African region representative on the steering committee of the Global Observatory for Physical Activity (GoPA!) – a Council of the International Society for Physical Activity and Health.

Neighborhood environment and physical activity research: Perspective and contributions from Africa

Africa is the second most populous continent and is a region of huge inequality, faced with an increasing double burden of infectious and non-communicable diseases. Mortality from non-communicable diseases across the continent continued to rise. This is an under-appreciated major challenge, but most of these deaths have the potential to be averted in part through improvement in physical activity. However, Africa

is where the least physical activity research has been conducted and where less evidence exists on upstream determinants (i.e., environmental, economic, and policy factors) of physical activity. Built environment and policy interventions are effective strategies for improving health behaviors and controlling the rising morbidities and mortalities from non-communicable diseases. Empirical evidence from my pioneering works suggests using data from other regions to inform interventions in Africa is ill-advised as the social patterns and contextual factors influencing physical activity behavior are different between and within regions. Interventions focusing on making the environments more aesthetically pleasing and hygienic, improving safety from crime and traffic, and locating facilities and destinations within walkable distance of homes could be more relevant as partial solutions to the growing epidemics of physical-inactivity-related non-communicable diseases in sub-Saharan African countries. Yet, more research is needed to develop this field in Africa. I will discuss my current thoughts on the scientific findings from my African-built environment studies and explore approaches to scalability and representation.

'ONE TO WATCH' INVITED TALKS



Dr. Neha Rathi
Malaviya Post Doctoral Fellow
Mahila Mahavidyalaya,
Banaras Hindu University

Dr. Neha Rathi received her PhD in Behavioral Nutrition from Deakin University, Australia in 2018, and MSc degree in Home Economics from SNDT Women's University, Mumbai, India. She received her undergraduate degree in Food and Nutrition from Jadavpur University, Kolkata, India. Dr. Rathi is an expert in the field of health behavior (especially exploring facilitators and barriers to food intake, assessing barriers and facilitators to physical activity participation through qualitative research i.e. semi-structured face-to-face interviews and focus group discussions), nutrition education, and the food environment (particularly in schools and home). She has built a strong publication record in a very short period of time and has published 23 first / corresponding author research articles in peer reviewed international journals. Based on her research track record, Deakin University awarded her with the Higher Degree Research Publication Award. She is also a recipient of the ISBNPA Pioneers Program Scholarship in 2022-2023 and 2023-2024.

From passion to profession...A nutrition enthusiast's global research endeavors

Neha Rathi will begin her talk by sharing her research odyssey and then discuss one of her current research endeavors: "The role of Indian fathers in young childcare and feeding". The role of parents in fostering children's healthy habits is a robust area of research. However, most of the existing literature predominantly focuses on mothers' parenting practices. Given the emergence of nuclear, dual earning families and the recent surge in maternal employment in

child rearing and feeding warrants attention. Neha Rathi conducted a qualitative research inquiry to document the views of Indian fathers about paternal parenting practices, with an emphasis on children's diet among other health behaviors. Thirty-three fathers of children aged 6-59 months from Kolkata, India took part in semi-structured interviews. Overall, these interviews revealed that Indian fathers played a significant role in child rearing through implementation of various food parenting practices, child vaccination, and joint play-time activities with children. However, they reported that they could not contribute enough to their child's upbringing because of time shortages and monetary constraints. They also exhibited some concern over their children's fussy eating practices and constant exposure to digital devices. This enhanced understanding of paternal parenting behavior supports the inclusion of fathers in future family-focused lifestyle interventions aimed at improving children's health outcomes, including their dietary habits.

'ONE TO WATCH' INVITED TALKS



**Dr. Chelsea R. Singleton,
Assistant Professor,
Department of Social,
Behavioral, and Population
Sciences, Tulane School
of Public Health & Tropical
Medicine**

Dr. Chelsea Singleton is a nutritional epidemiologist whose research examines the impact food access has on food purchasing, diet, and chronic disease risk. She is an Assistant Professor at Tulane School of Public Health & Tropical Medicine in New Orleans, LA. The overarching goal of her research is to document and dismantle nutritional inequities affecting low-income and racialized populations in the U.S. She primarily uses epidemiological, spatial, and community-based participatory research methods to accomplish her research goals. Her recent work has focused on exploring the nutritional consequences of violence in Black communities. This work is supported by a 5-year K01 award funded by the National Institute on Minority Health & Health Disparities (NIH/NIMHD).

The Nutritional Consequences of Community Violence in Historically Racialized Communities

Violence persists as a major public health issue in the United States. A large body of research has described the adverse health outcomes associated with exposure to community violence: substance abuse disorder, depression, stress, physical inactivity, obesity, etc. Unfortunately, there continues to be limited scientific evidence on the nutritional consequences of community violence. Given the disproportionate impact of violence on historically racialized communities, increasing understanding of the detrimental effects of community violence on nutrition is necessary to develop better equity-focused health initiatives. In this One to Watch presentation

Dr. Chelsea R. Singleton will present current evidence on the nutritional consequences of community violence, which includes highlights from her own NIH-funded research. She will discuss the connection between community violence and important nutritional factors such as dietary behavior, food insecurity, and geographic access to retail outlets that sell healthy foods. She will present recommendations to expand this important line of research and emphasize the importance of community violence to nutritional equity.

'ONE TO WATCH' INVITED TALKS



Dr. Emily Tomayko
Assistant Professor
Montana State University

Emily Tomayko, PhD, RD, is an Assistant Professor in the Department of Food Systems, Nutrition and Kinesiology at Montana State University and is affiliated with MSU's Center for American Indian and Rural Health Equity. She received her doctorate in Nutritional Sciences from the University of Illinois. Emily is also a registered dietitian and has completed several fellowships to better understand the intersection of research, policy, and health (American Society for Nutrition Science Policy Fellowship, Mirzayan Science and Technology Fellowship through the National Academies). Her current research at Montana State University addresses health equity across two main areas: 1) understanding the impacts of four-day school weeks on children, families, and rural communities and 2) developing and testing health promotion strategies in partnership with Native American communities.

Identifying Opportunities to Support Child Health and Wellbeing Across Intersecting Contexts

Child health is influenced by interconnected factors spanning individual, interpersonal, community, institutional, and policy levels. The goal of our research is to establish how these diverse contexts, including family homes, schools, and community settings, intersect to create opportunities for enhancing child health and wellbeing, particularly within rural and Native American communities. These communities are notable due to their unique assets, such as robust social networks, juxtaposed with well-documented disparities in health, economics, and education. This presentation will cover multiple

ongoing projects that are attuned to policies affecting child health and wellbeing across these intersecting levels.

First, I will describe our work to understand how the shift from a traditional five-day school week to a four-day week may precipitate shifts in supports provided across family, school, and community settings. This school schedule has been adopted with increasing frequency in the United States as a policy response to constrained budgets and ongoing teacher shortages; however, little attention has been given to changes in food access, physical activity opportunities, social support, family schedules, household finances, and other critical factors that impact child health and wellbeing.

Second, I will highlight work stemming from longstanding partnerships with multiple Native American communities to advance child health through the development, testing, and dissemination of the Turtle Island Tales family wellness program. I will focus on our current work to amplify the impact of this family-focused evidence-based intervention by strategically leveraging home, school, and community settings to increase reach and ensure equitable implementation.

PRE-CONFERENCE WORKSHOPS

The Organizing Committee of ISBNPA 2024 Annual Meeting is pleased to offer a wide selection of pre-workshops in conjunction with the Conference.

The workshops are not included in the conference registration; delegates need to register for them in addition to the conference.

Date: Monday, May 20, 2024

Time: 08:30am – 12:30pm (exact timing will be confirmed per workshop)

Workshop 2

Challenges and Opportunities to the Design, Implementation, Evaluation, and Scale-Up of Digital Interventions Targeting Children and Families: A Multiple Case Study Perspective

Facilitator: Dr. Nicole Nathan (The University of Newcastle), Mavra Ahmed (University of Toronto), Penny Love (Deakin University), Erin Hennessy (Tufts University), Rachel Sutherland (The University of Newcastle), Christopher Pfladderer (UT Health Houston), Taren Swindle (University of Arkansas for Medical Sciences)

Room: 212

Workshop Time: 9:00am - 12:00pm

Brief: Designing, implementing, and evaluating digital interventions targeted at children and families is a multifaceted process, holding the potential to improve the well-being and development of the younger generation. These interventions encompass a wide range of digital tools and platforms, spanning from educational apps and games to parenting support websites and virtual communities. Each phase of this journey presents unique challenges and opportunities, requiring thoughtful consideration of features to ensure effective interventions, robust technical details for content curation, and the continuous monitoring and evaluation needed for long-term implementation and sustainability.

Aim: The primary objective of this workshop is to equip participants with the foundational knowledge necessary for scaling up interventions in early care and education settings using digital methods.

Format: To achieve this goal, the workshop will feature a series of concise case studies that traverse

PRE-CONFERENCE WORKSHOPS

Workshop 3

Network of Early Career Researchers and Students of ISBNPA (NESI) Workshop

What works for whom under which circumstances and how: an introduction and practical guide to evaluate health behavior interventions using realist review

Facilitator: Stephen Barrett, Christine St Laurent, Mary Von Seggern, Priyanka Chaudhary

Room: 213

Workshop Time: 8:00am - 12:00pm

Brief: This workshop is for early career researchers (ECRs) and students who are interested in advancing their career development and enhancing their research networks. The workshop will be a half-day session.

Workshop 5

Apps, Portals, and Platforms: Leveraging Technology to Advance Behavioral and Community Health Research – the Good, the Bad and the Ugly in Developing and Rolling out Health Technologies

Facilitator: Maja Pedersen, Abby C King, Zakaria Doueiri

Room: 215

Workshop Time: 8:00am – 12:00pm

Brief: Discover the spectrum of technology used in furthering behavioral and community health research through an interactive, hands-on learning experience. Gain insights from case studies ranging from mobile apps to Big Data to Generative AI, advancing your understanding of the ever-evolving technology landscape.

Delve into one digitally integrated research method, Stanford University's Our Voice, to demonstrate the types of challenges faced by academic researchers attempting to integrate technology into their work, and solutions that can help. Examples from diverse global regions will be provided, along with discussion of the potential of digital tools to ethically engage communities in co-produced research. Engage in interactive breakout sessions focused on integrating technology to advance health equity in four key areas: Physical & Environmental Health; Social Environments; Service Environments; Economic & Work Environments. Breakout groups will be organized by thematic areas and facilitated by researchers in the Our Voice network across the globe. Sessions include a brief case study, reflections and lessons learned from firsthand experiences with a community-engaged digital citizen science tool and platform, and opportunities for attendees to spark collaborative ideas in their own research areas.

Join us to explore, engage, and evolve your tech-driven initiatives!

PRE-CONFERENCE WORKSHOPS

Workshop 6

Navigating Process Evaluation in Participatory Research

Facilitator: Maïté Verloigne

Room: 216

Workshop Time: 8:30am – 12:30pm

Brief: Using a participatory approach to develop and implement an intervention to promote healthy behavior, is receiving increased attention in our field. The participatory approach entails a strong and active collaboration between academic researchers and important stakeholders (including the target group of the intervention) and ensures the intervention is tailored to the needs and characteristics of the stakeholders and the context in which it is being implemented. However, researchers often struggle with evaluating participatory studies, and more specifically with conducting a process evaluation, as it can be conducted differently than in more traditional research studies. Examples are that there are different “processes” that may be evaluated (i.e., not only the participatory developed intervention itself) and that process evaluation may provide iterative opportunities to gather input during the development of the intervention and adjust accordingly. Therefore, this workshop will focus on increasing skills on how to design a process evaluation of a participatory study, focusing on the what, when and how.

ISBNPA 2024 AWARDS NOMINEES

Award Session – Ageing / Motivation and Behavior Change

Date: May 20, 2024

Time: 5:15pm - 6:30pm

Room: Ballroom B

Ageing

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Delfien Van Dyck	Ghent University	171	Why and in which contexts do older adults sit? An EMA study to identify the context- and time-dependent determinants of sedentary behavior in older adults.
2	Natalia Gomes Goncalves	Universidade De Sao Paulo	458	Association of physical activity measured by the International Activity Questionnaire and Accelerometer with cognitive performance in the ELSA-Brasil study
3	Sandy Ardiansyah	Ministry of Health (MOH), Indonesia	422	Identifying Dietary Patterns Associated with Cognitive Impairment among Indonesian Population

Motivation and Behaviour Change

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Yiqing “Skylar” Yu	Colorado State University	228	The impact of activity-permissive workstations on physical and psychological well-being
2	Astrid Zamora	Stanford University School of Medicine	83	IDENTIFYING PREDICTORS OF ACHIEVING 150 MINUTES OF WEEKLY WALKING AMONG OLDER LATINX ADULTS: INSIGHTS FROM SIGNAL DETECTION ANALYSIS
3	Laura Arrazat	Centre for Taste and Feeding Behaviour - IN-RAE - Dijon	192	Effects of doubling the availability of vegetarian meals on meal choices, meal offer satisfaction and liking in university cafeterias: a controlled trial in France.

ISBNPA 2024 AWARDS NOMINEES

Award Session – Cancer Prevention and Management/ E- & mHealth

Date: May 20, 2024

Time: 5:15pm - 6:30pm

Room: 212

Cancer Prevention and Management

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Laura Keaver	Atlantic Technological University Sligo	158	A Latent Profile Analysis of Health-related Quality of Life Domains in Cancer Survivors
2	Laura Keaver	Atlantic Technological University Sligo	159	A Latent Class Analysis of Nutrition Impact Symptoms in Cancer Survivors
3	Gaurav Kumar	University of Nebraska Medical Center	406	Perceived Barriers, Facilitators and Recommendations Related to Physical Activity in Cancer Care: A Qualitative Insights from Oncology Care Providers

E- & mHealth

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Robert Weaver	University Of South Carolina	194	Predicting physical activity energy expenditure from consumer wearable accelerometry and heart rate data in children.
2	Tyler Prochnow	Texas A&M University	268	Understanding ecological momentary assessment compliance in a 12- month multi-measurement burst sampling design in the TIME study
3	Lingyi Fu	University Of Utah	346	Which health-related behaviors are critical to mental health among college students: a machine learning approach

ISBNPA 2024 AWARDS NOMINEES

Award Session – Children and Families / Policies and Environments

Date: May 20, 2024

Time: 5:15pm - 6:30pm

Room: 214

Children and Families

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Alexis Woods Barr	University Of North Carolina	323	Effect of anticipatory guidance about infant behavior on breastfeeding outcomes: results from the Mothers & Others randomized controlled trial
2	Rebecca Byrne	Queensland University Of Technology	280	Impact of the 'Eat, Learn, Grow' program on the use of responsive feeding practices among Australian families experiencing economic hardship: a pilot randomised controlled trial
3	Chelsea Kracht	University of Kansas Medical Center	123	Association between home-based contextual factors with 24-hour movement behaviors in preschoolers with low guideline attainment: An ecological momentary assessment study

Policies and Environments

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Maria Munoz	Tulane University	344	Climate-Induced Disasters, Food Security, and Policy Effectiveness in the United States and Territories: A comparative examination of disaster preparedness plans
2	Eugen Resendiz	The University Of Texas at Austin	134	Harnessing major system disruptions to inform active travel policies in cities: the Fuel Shortage and COVID-19 natural experiments in Mexico City
3	Meg Bruening	Penn State University	309	The efficacy of school salad bars on objective fruit and vegetable consumption among middle and high school students

ISBNPA 2024 AWARDS NOMINEES

Award Session – Implementation and scalability / Early care and Education

Date: May 20, 2024

Time: 5:15pm - 6:30pm

Room: 213

Implementation and Scalability

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Christopher Pfladderer	University of Texas Health Science Center (Houston), School of Public Health (Austin)	7	Expert Perspectives on Pilot and Feasibility Studies: A Delphi Study and Consolidation of Considerations for Behavioral Interventions
2	Joshua Christensen	University Of Utah	210	Improving the reach of evidence-based health promotion, disease prevention, and disease self-management interventions: preliminary findings from a scoping review.
3	Erin Hennessy	Tufts University School Of Nutrition Science And Policy / Friedman School	364	Evaluating implementation change over time: insights from a multisite telehealth intervention trial to deliver nutrition education and breastfeeding support services

Early Care and Education

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Divya Patel	University Of Oklahoma Health Sciences Center	394	Effect of Happy Healthy Homes intervention on mealtime practices in Family Childcare Homes
2	Susan Sisson	University of Oklahoma Health Sciences Center	413	Impact of Virtual Intervention to Improve Family Child Care Home Providers Nutrition Practices, Confidence, and Nutrition Knowledge
3	Beatriz Carmona	Cornell University	482	StayWell ECE: Assessing the wellbeing of Early Childhood Educators across New York

ISBNPA 2024 AWARDS NOMINEES

Award Session – Participatory Research in Health Promotion and Indigenous Research

Date: May 20, 2024

Time: 5:15pm - 6:30pm

Room: 216

Participatory Research in Health Promotion

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Ambria Crusan	St. Catherine University	182	Determining the effects of culturally-appropriate, medically-tailored foods for DASH eating plan adherence on cardiometabolic markers in Hispanic/Latine individuals with hypertension
2	Priyanka Chaudhary	University Of Nebraska Omaha	374	A Doula Perspectives on Providing Physical Activity Education and Counseling Among Pregnant Women
3	Natalia Guerra Uccelli	The George Washington University	377	Addressing System-Level Barriers to Nutrition Security in Puerto Rico in the Face of Climate Change: A Community-Based System Dynamics Approach

Indigenous Research

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Kelli Begay	Maven Collective Consulting	44	Development and evaluation of a culturally-informed food insecurity screening protocol with American Indian adults: Evidence from Northern Navajo Medical Center
2	Brittany Jock	McGill University	400	An Initial Program Theory Explaining the Outcomes of Community Mobilization Training in Health Promotion in Indigenous Communities
3	Sunaina Chopra	Graduate Programs in Rehabilitation Sciences, University of British Columbia	225	Niwh Yizt'iyh Hilht'iz Nets'eelh'iyh – Strengthening our Bodies: A Qualitative Understanding of the Physical Activity Experience in Rural and Remote First Nations Communities in Northern British Columbia, Canada

ISBNPA 2024 AWARDS NOMINEES

Award Session – Socio-economic inequalities / Young Adults

Date: May 20, 2024

Time: 5:15pm - 6:30pm

Room: 215

Socio-Economic Inequalities

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Kathryn Janda-Thomte	Baylor University	75	Nutrition insecurity associated with lower odds of sports participation among United States adolescents: findings from a cross-sectional analysis of nationally representative data.
2	Jennifer Thomas	Swansea University	129	Implementation of an intervention combining physical activity with psychological therapy for socially disadvantaged young people: A mixed-methods process evaluation.
3	Edgar Doolan	San Diego State University	284	Differences between quantitative and qualitative responses to the U.S. Household Food Security Survey Module: Findings for U.S. Latine households with children

Young Adults

ORDER	NAME	ORGANIZATION	PAPER NUMBER	PAPER TITLE
1	Carah Porter	The University of Texas at San Antonio	153	Unlocking Academic Success: Exploring Associations Between 24-Hour Movement Compositions and Academic Performance in College Students
2	Lucile Marty	Centre for Taste and Feeding Behaviour	215	The “Eat Less Meat” one-month challenge: effects on short-term and long-term meat consumption, nutritional quality and environmental impact of diets among French young adults
3	Michaela Schenkelberg	University of Nebraska at Omaha	324	Perceived access to physical activity opportunities among young adults with intellectual and developmental disabilities

PROGRAM AT A GLANCE

Monday, May 20, 2024

	Ballroom A	Ballroom B	Ballroom C	Pre-function	207	209	210	211	212	213	214	215	216	
7:30				Registration										
8:00														
8:30														
9:00														
9:30														
10:00								Executive Committee Meeting 8:15 - 13:00			WS.1.02 Challenges and Opportunities to the Design, Implementation, Evaluation, and Scale-Up of Digital Interventions Targeting Children and Families: A Multiple Case Study Perspective			WS.1.05 Apps, Portals, and Platforms: Leveraging Technology to Advance Behavioral and Community Health Research – the Good, the Bad and the Ugly in Developing and Rolling out Health Technologies
10:30										WS.1.03 Network of Early Career Researchers and Students of ISBNPA (NESI) Workshop				
11:00														
11:30														
12:00														
12:30														
13:00														
13:30	Opening Ceremony 13:30-14:20													
14:00														
14:30	Keynote #1 Innovation in implementation science to improve population nutrition and physical activity. Luke Wolfenden 14:20-15:20					Speaker Ready Room 11:00 - 17:30								
15:00														
15:30	Climate Action Report 15:40													
15:30														
16:00	Climate Action Panel Behavioral nutrition and physical activity research in the Anthropocene. "How can the ISBNPA community contribute meaningful research to fighting the climate crisis and promote planetary health?" 15:45 - 17:00													
16:30														
17:00														
17:30	Awards Session: Ageing/ Motivation and Behavior Change 17:15 - 18:30			Registration										
18:00									Awards Session: Cancer Prevention and Management/ E & mHealth 17:15 - 18:30	Awards Session: Implementation and Scalability/ Early Care and Education 17:15 - 18:30	Awards Session: Children and Families/ Policies and Environments 17:15 - 18:30	Awards Session: Socio-economic inequalities/ Young Adults 17:15 - 18:30	Awards Session: Participatory Research in Health Promotion/ Indigenous Research 17:15 - 18:30	
18:30														
19:00	Welcome Reception 18:30 - 20:00			Welcome Reception Exhibits 18:30 - 20:00										
19:30														

PROGRAM AT A GLANCE

Tuesday, May 21, 2024

	Ballroom A	Ballroom B	Ballroom C	Pre-function	207	209	210	211	212	213	214	215	216
7:30													
8:00													
8:30	S.1.01 Do we need summer holiday interventions for high-risk populations? 8:25 - 9:40												
9:00													
9:30	Fellow and Growing the Next Generation Report 9:50 - 10:00			Registration					S.1.02 The missing piece of the puzzle: integrating cancer survivorship nutrition interventions into existing clinical care delivery models and community outreach programs 8:25 - 9:40	S.1.03 Designing and Evaluating "Food is Medicine" Nutrition Interventions to Inform Policy and Scale for Impact 8:25 - 9:40	S.1.04 Gardening Interventions for Individual and Community Health across the Life Course 8:25 - 9:40	S.1.05 Designs for Moving Research into Practice: Planting Seeds to Growing Programs 8:25 - 9:40	S.1.06 Comparison of Designs for Community-Engaged Systems for Child Population Health Physical Activity: The Wellscapes Randomized Rural Community Effectiveness-Implementation Trial 8:25 - 9:40
10:00	Keynote #2 Fiscal Policies for Health: Worldwide Evidence on the Impacts of Sugar-sweetened Beverage Taxes. Lisa Powell 10:00 - 11:00												
10:30													
11:00			Poster Sessions 11:00 - 11:55	Morning Coffee Break/ Exhibits 11:00 - 11:55 YOGA: 11 - 11:15									
11:30													
12:00	O.1.01 Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being G. Child & Fam 12:00 - 13:15			Registration									
12:30							e-&mhealth SIG 12:00 - 13:15	SOLB1 Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults 12:00 - 13:15	O.1.02 Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents G. Child & Fam 12:00 - 13:15	O.01.03 Closing the intention to behavior gap B. Motivate & Behave 12:00 - 13:15	O.01.04 Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond H. Policies & Environ 12:00 - 13:15	O.01.05 Examining context, barriers, and facilitators of intervention dissemination and implementation E. Implementation & scale 12:00 - 13:15	O.01.06 Addressing Multiple Behaviors in Early Care and Education Settings F. Early care & Edu 12:00 - 13:15
13:00	Lunch seating 1:15 - 2:15			Lunch & Exhibits 1:15 - 2:15	Speaker Ready Room 7:30 - 5:30	Mentoring Lunch 1:15 - 2:15							
13:30							IJBNA Business Meeting		Ageing SIG	Socio economy inequality	Policies & Environments		
14:00													
14:30	One to Watch invited Talk: The Nutritional Consequences of Community Violence in Historically Racialized Communities Chelsea Singleton 14:15 - 14:55								One to Watch invited Talk: Neighborhood environment and physical activity research: Perspective and contributions from Africa Adewale Oyeyemi 14:15 - 14:55	One to Watch invited Talk: Identifying Opportunities to Support Child Health and Wellbeing Across Intersecting Contexts Emily Tomayko 14:15 - 14:55	One to Watch invited Talk: Improving the built environment and beyond: compiling and testing implementation strategies in community settings Laura Balis 14:15 - 14:55	One to Watch invited Talk: From passion to profession...A nutrition enthusiast's global research endeavors Neha Rath 14:15 - 14:55	One to Watch invited Talk: Partnering with maternity services to increase guideline-recommended antenatal care for pregnancy weight gain, healthy eating, and physical activity Jenna Hollis 14:15 - 14:55
15:00	O.1.07 Rooted in Place Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors G. Child & Fam 15:00-16:15			Registration				D2S. 1.01 Food is Medicine interventions; pros and cons of different Food is Medicine interventions in different contexts 15:00 - 16:15	O.1.08 The feasibility and usability of digital health measurement and intervention tools. D. E & mHealth 15:00-16:15	O.1.09 Promoting Healthy Lifestyles: Interventions, Predictors, and Effects on Weight Loss and Physical Fitness B. Motivate & Behave 15:00-16:15	O.1.10 From Plate to Policy: Examining Food Insecurity in Relation to Access, Availability, Minimum Wage and WIC Policies, and a Framework for Climate Disaster H. Policies & Environ 15:00-16:15	O.1.11 Empowering Communities: Transformative Strategies in Health Education and Intervention K. Participatory Research 15:00-16:15	O.1.12 Characterizing and exploring socio-economic inequalities I. Socio-econ unequal 15:00-16:15
15:30													
16:00			Poster Session 16:15-16:45	Afternoon Coffee Break & Exhibits 16:15-16:45									
16:30													
17:00	Symposia S.1.07 Using Technology to Deliver Health Promotion Programming to Youth with Intellectual and Developmental Disabilities G. Children and families 16:45 - 18:00			Registration				SIG BUSINESS MEETING	Symposia S.1.08 Digital Food Choice Environments - Can the shift to shopping food online be used to promote healthy and sustainable choices? D. e-&mHealth 16:45 - 18:00	Symposia S.1.09 Indigenous Pathways to Wellness: Integrating Knowledge, Nourishment, and Cultural Immersion L. Indigenous Research 16:45 - 18:00	Symposia S.1.10 Global perspectives on environmental determinants of physical activity across the lifespan H. Policies and environments 16:45 - 18:00	D2S. 1.02 Co-Narrate & Co-Create: Exploring Co-Participatory Action Research for Food and Nutrition Transformation 16:45 - 18:00	Symposia S.1.11 Nutrition intervention and assessment approaches that support populations with socio-economic barriers to good health: Insights from the US and Australia I. Socio-economic inequalities 16:45 - 18:00
17:30													
18:00													
18:30				Yoga: 18:30 - 19:30									
19:00													
19:30						NESI Networking Social		ISBNPA Dinner					
20:00													
20:30													

PROGRAM AT A GLANCE

Wednesday, May 22, 2024

	Ballroom A	Ballroom B	Ballroom C	Pre-function	207	209	210	211	212	213	214	215	216	
7:00														
7:30														
8:00	Symposia S.2.12 Advancements and Future Directions in Conceptualization and Measurement I. Socio-economic inequalities 8:25 - 9:40			Registration	Speaker Ready Room 7:30 - 5:00				D2S. 2.03 How can we incorporate I+PSE framework for efficient and sustainable childhood obesity prevention interventions in early care and education (ECE) settings? 8:15 - 9:40	Symposia S.2.13 Leveraging evidence on the connection between environmental resources and health outcomes to inform policy internationally H. Policies and environments 8:25 - 9:40	Symposia S.2.14 Can We Re- Engineer Utilitarian Physical Activity Back into Our Lives? Challenges from Natural Experiments Evaluating the Effects of Urban Planning or Infrastructure Changes on Active Travel 8:25 - 9:40	Symposia S.2.15 Developing community capacity to address childhood obesity: Infrastructure, engagement, and community perspectives. E. Implementation and scalability 8:25 - 9:40	Symposia S.2.16 Lifestyle Strategies for the Early Treatment and Prevention of Adolescent PCOS J. Young Adults 8:25 - 9:40	
8:30														
9:00														
9:30	Awards and Inclusivity and Diversity Strategic Initiative Report 9:50 - 10:00													
10:00	Keynote #3 Food as Medicine for All: Novel Family Centered Strategies to Addressing Food & Nutrition Insecurity. Kofi Essel 10:00 - 11:00													
10:30														
11:00			Poster Sessions 11:00 - 11:55	Morning Coffee Break & Exhibits 11:00 - 11:55 YOGA: 11-11:15										
11:30														
12:00	Orals O.2.13 Engaging parents and families in behavioral nutrition and physical activity G. Child & Fam 12:00 - 13:15			Registration	Speaker Ready Room 7:30 - 5:00			SOLB2 Latest findings in behavior change science, part 1	Orals O.2.14 Nutrition and Lifestyle: Pathways to Health and Longevity Aging 12:00 - 13:15	Orals O.2.15 Behavior Change through the Collaboration of Families and Schools B. Motivate & Behave 12:00 - 13:15	Orals O.2.16 Community- Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living 12:00 - 13:15	Orals O.2.17 Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity. E. Implemen & scale 12:00 - 13:15	Orals O.2.18 Diet and Physical Activity Perceptions and Behaviors among Parents and Providers F. Early care & Edu 12:00 - 13:15	
12:30														
13:00	Lunch seating 13:15 - 14:15			Lunch & Exhibits 13:15 - 14:15										
13:30														
14:00	ADHOC Meetings								Children & Families SIG	Cancer Prevention and Management SIG	Implementation and Scalability SIG			
14:30														
15:00	Orals O.2.19 Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements G. Child & Fam 15:00 - 16:15			Registration	Speaker Ready Room 7:30 - 5:00			SOLB3 Latest findings in behavior change science 15:00 - 16:15	Orals O.2.20 Navigating Food Security and Food Access through experimental and observational studies G. Child & Fam 15:00 - 16:15	Orals O.2.21 Investigating the Impact of Theory- Based Interventions on Diet and Movement Behaviors B. Motivate & Behave 15:00 - 16:15	Orals O.2.22 Decoding Diets: Unraveling the Impact of Ultra- Processed Foods and Unhealthy Eating Habits H. Policies & environ 15:00 - 16:15	Orals O.2.23 Understanding the effectiveness and efficacy of digital health interventions. D. E & mHealth 15:00 - 16:15	Orals O.2.24 Measurement and Approaches to Address Socio-economic Inequalities I. Socio Econ inequal 15:00 - 16:15	
15:30														
16:00			Poster Sessions 16:15-16:45	Afternoon Coffee Break & Exhibits 15:30 - 16:00										
16:30														
17:00									CDC State of the Science – Added sugars intake in the U.S. and efforts to reduce high consumption for kids and adults through improving offerings in schools and charitable food venues. 16:45-18:00	Opportunities and Resources for Behavior, Food and Nutrition Security, and Physical Activity Research from USDA and NIH 16:45-18:00				
17:30				Yoga: 17:00 - 17:30										
18:00														
18:30														
19:00														
19:30	Gala Dinner 19:30 - 23:00													
20:00														
20:30														
21:00														
21:30														
22:00														
22:30														

PROGRAM AT A GLANCE

Thursday, May 23, 2024

	Ballroom A	Ballroom B	Ballroom C	Pre-function	207	209	210	211	212	213	214	215	216	
7:00														
7:30			Registration	Speaker Ready Room 7:30 - 12:00										
8:00														
8:30	O.3.25 Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA G. Child & Fam 8:25 - 9:40								SOLB4 Policies, systems, environments and implementation science	Orals O.3.26 Feeding and Eating in Early Care and Education Settings F. Early Care and Education 8:25 - 9:40	Orals O.3.27 Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors B. Motive & Behave 8:25 - 9:40	Orals O.3.28 Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity H. Policies & environ 8:25 - 9:40	Orals O.3.29 Implementation strategies in community settings. E. Implement & scale 8:25 - 9:40	Orals O.3.30 Health and Wellness in Diverse Populations: A Multidimensional Approach M. Other 8:25 - 9:40
9:00														
9:30	Short Orals SO.3.1 Identifying novel determinants of nutrition, physical activity, and sleep across the life course G.Child & Fam 9:50 - 11:05							SOLB5 Latest findings in behavioral nutrition and physical activity: From early care to young adults	Short Orals SO.3.2 Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management G. Children and Families 9:50 - 11:05	Short Orals SO.3.3 Latest findings in motivation and behavior change B. Motivate & Behave 9:50 - 11:05	Short Orals SO.3.4 Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity H. Policies & environ 9:50 - 11:05	Short Orals SO.3.5 Short oral presentations in implementation science and scalability E. Implement & scale 9:50 - 11:05	Short Orals SO.3.6 Latest research on participatory research designs in health promotion K. Participatory Research 9:50 - 11:05	
10:00														
10:30														
11:00	Research Impact: Journal report 11:20 - 11:30		Coffee Break & Exhibits 11:05 - 11:20											
11:30	Keynote #4 - Scaling up Effective Physical Activity Interventions: Is there a Secret Sauce?. Heather McKay 11:30 - 12:30		Registration											
12:00														
12:30	What's next @ISBNPA 12:30 - 1:10													
13:00														
13:30	Farewell Lunch 1:10-2:10		Farewell Lunch take aways 1:10 - 2:10											
19:00														

ISBNPA 2025 - SAVE THE DATE!

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Get ready to connect with new and returning colleagues in the field and explore the vibrant culture of this stunning city.

Sign up for the ISBNPA newsletter to receive updates about Abstract submissions, registrations, and program updates.

See you in Auckland!



KEYNOTES

Innovation in implementation science to improve population nutrition and physical activity

Prof. Luke Wolfenden

May 20, 2024, 2:20 PM - 3:20 PM

Health systems and communities are experiencing a chronic disease induced crisis. Much of this burden could be reduced through the large-scale implementation of effective policies and programs to support healthy eating and physical activity. While many effective interventions exist, what is missing are evidence-based strategies to effectively implement them. Current processes to develop and test implementation strategies is insufficient to advance science, learning and provide timely guidance for action by government departments and services. As a result, many efforts to scale-up the implementation of behavioural nutrition and physical activity are likely to be ineffective and risk exacerbating inequities. 'Learning Health Systems' provide an opportunity to address some of these challenges. Learning Health Systems are organisations (e.g government departments or services) that routinely use data to develop, test and immediately apply knowledge to improve the impact of their services. This presentation will examine their potentially transformative role in generating and applying evidence to scale-up the implementation of nutrition and physical activity programs and improving the health and wellbeing of populations.

Climate Action Panel: Behavioral nutrition and Physical Activity research in the Anthropocene. “How can the ISBNPA community contribute meaningful research to fighting the climate crisis and promote planetary health?”

Dr. Karim Abu Omar

Robert Hogg

Dr. Sarah Frank

Dr. Rodrigo S. Reis

Dr. Brittany Jock

May 20, 03:45 PM - 05:00 PM

Fiscal Policies for Health: Worldwide Evidence on the Impacts of Sugar-sweetened Beverage Taxes

Dr. Lisa Powell

May 21, 2024, 10:00 AM - 11:00 AM

Health taxes are used as a fiscal policy instrument aimed at reducing individuals' harmful consumption of products such as tobacco, alcohol and sugar-sweetened beverages (SSBs) with the ultimate goal of reducing consumption-related adverse health outcomes. Health taxes have multiple goals: to reduce demand for the taxed products in order to reduce consumption-related "externalities" (e.g., additional publicly funded healthcare costs, productivity costs) and "internalities" (e.g., inconsistent time preferences related to individual harm), and to generate revenue which can be used to fund complementary health promotion efforts. The key mechanism through which this occurs is that taxes generally result in higher prices for consumers, known as tax pass-through, which in turn reduces demand. However, to fully understand the underpinnings of the net impact on consumption and ultimately health outcomes, it is also important to understand the extent to which taxes may induce substitution (e.g., to other non-taxed beverages, sweets or snacks) and the extent that consumers may undertake explicit tax avoidance behaviors such as cross-border shopping, which may offset improvements in diet from the taxes. Additionally, a concern frequently raised by industry when such taxes are being proposed is that they will lead to job losses or that they are regressive. Rigorous empirical evidence related to both intended and unintended consequences of SSB taxes is critical for policymakers in order for them to design evidence-based efficient policies to improve population health. This presentation will provide worldwide evidence on impacts of SSB taxes on prices, demand, and health; an overview of evidence related to counter-arguments to SSB taxes including concerns related to employment, regressivity/equity and tax avoidance; and, a discussion of opportunities for SSB tax policy development.

Food as Medicine for All: Novel Family Centered Strategies to Addressing Food & Nutrition Insecurity

Dr. Kofi Essel

May 22, 2024, 10:00 AM - 11:00 AM

Food as medicine interventions have garnered considerable attention over the last few years since the start of the COVID-19 Pandemic. These interventions have great promise and growing evidence indicating their role in addressing food/nutrition insecurity and diet related chronic disease. Unfortunately, the majority of efforts continue to focus solely on adults while missing the opportunity to be a transformative tool for the entire household. In this discussion, we will introduce the novel concept of Food as medicine, practical approaches for application, and strategies to ensure the entire family, from children to adults, are prioritized.

Scaling up effective physical activity interventions: Is there a secret sauce?

Dr. Heather McKay

May 23, 2024, 11:30 AM - 12:30 PM

It has become increasingly apparent that to manage escalating health care costs there must be investment in effective, scalable, upstream health solutions. Why then are so few health promotion and prevention (e.g., physical activity and healthy eating) programs delivered at scale? Is there a secret sauce to doing so?

Professor McKay will introduce key concepts and essential elements of scaling up health promoting programs. She will animate these concepts with real life case studies from Canada. She will share lessons learned working with community and government partners, drawing on her more than 15 years of scale-up experience.

INVITED TALKS: 'ONE TO WATCH'

Improving the built environment and beyond: compiling and testing implementation strategies in community settings

Dr. Laura Balis

May 21, 02:15 PM - 02:55 PM

Dr. Balis will discuss her recent work developing a new compilation of implementation strategies for community settings and testing strategies for built environment approaches to physical activity.

Partnering with maternity services to increase guideline-recommended antenatal care for pregnancy weight gain, healthy eating, and physical activity.

Dr. Jenna Hollis

May 21, 02:15 PM - 02:55 PM

Supporting pregnant women to eat healthily, be physically active and to gain weight within guideline ranges is recommended in many countries to reduce the risk of poor pregnancy, birth and chronic disease outcomes for mothers and their children. However, up to 70% of pregnant women gain weight outside of recommended ranges, up to 70% do not meet physical activity recommendations, and <1% meet all dietary recommendations.

Clinical practice guidelines from many countries recommend that health care providers routinely assess weight of pregnant women, discuss recommended weight gain, nutrition, and physical activity, and offer referrals to support services if needed. In Australia, public maternity services (staffed by midwives, medical staff, and Aboriginal health workers) are a core provider of antenatal care and recognized as a key setting to provide preventive care for these health behaviors. Despite these guidelines, evidence suggests that the delivery of recommended care is less than optimal and inconsistently provided. Antenatal care providers face many barriers to providing such care, including lack of skills and confidence to have behavior change conversations.

Over the last 7 years, our team of Population Health practitioners and researchers has partnered with public maternity services in the Hunter New England Local Health District in Australia (who deliver care to over 9000 pregnant women annually) to improve the provision of antenatal care for nutrition, physical activity, and pregnancy weight gain. I will present our work from project inception to now as we built this program of 'real world' implementation research. I will share our learnings from building relationships with partners, findings from surveys with pregnant women and clinicians to understand the local prevalence of care and barriers to care delivery, the development of localized care pathways and evidence-based implementation strategies, the results of pilot and feasibility studies, and an overview of current implementation-effect trials.

Neighborhood environment and physical activity research: Perspective and contributions from Africa

Dr. Adewale Oyeyemi

May 21, 02:15 PM - 02:55 PM

Africa is the second most populous continent and is a region of huge inequality, faced with an increasing double burden of infectious and non-communicable diseases. Mortality from non-communicable diseases across the continent continued to rise. This is an under-appreciated major challenge, but most of these deaths have the potential to be averted in part through improvement in physical activity. However, Africa is where the least physical activity research has been conducted and where less evidence exists on upstream determinants (i.e., environmental, economic, and policy factors) of physical activity. Built environment and policy interventions are effective strategies for improving health behaviors and controlling the rising morbidities and mortalities from non-communicable diseases. Empirical evidence from my pioneering works suggests using data from other regions to inform interventions in Africa is ill-advised as the social patterns and contextual factors influencing physical activity behavior are different between and within regions. Interventions focusing on making the environments more aesthetically pleasing and hygienic, improving safety from crime and traffic, and locating facilities and destinations within walkable distance of homes could be more relevant as partial solutions to the growing epidemics of physical-inactivity-related non-communicable diseases in sub-Saharan African countries. Yet, more research is needed to develop this field in Africa. I will discuss my current thoughts on the scientific findings from my African-built environment studies and explore approaches to scalability and representation.

From passion to profession...A nutrition enthusiast's global research endeavors

Dr. Neha Rathi

May 21, 02:15 PM - 02:55 PM

Neha Rathi will begin her talk by sharing her research odyssey and then discuss one of her current research endeavors: “The role of Indian fathers in young childcare and feeding”. The role of parents in fostering children’s healthy habits is a robust area of research. However, most of the existing literature predominantly focuses on mothers’ parenting practices. Given the emergence of nuclear, dual earning families and the recent surge in maternal employment in urban India, fathers’ engagement in child rearing and feeding warrants attention. Neha Rathi conducted a qualitative research inquiry to document the views of Indian fathers about paternal parenting practices, with an emphasis on children’s diet among other health behaviors. Thirty-three fathers of children aged 6-59 months from Kolkata, India took part in semi-structured interviews. Overall, these interviews revealed that Indian fathers played a significant role in child rearing through implementation of various food parenting practices, child vaccination, and joint play-time activities with children. However, they reported that they could not contribute enough to their child’s upbringing because of time shortages and monetary constraints. They also exhibited some concern over their children’s fussy eating practices and constant exposure to digital devices. This enhanced understanding of paternal parenting behavior supports the inclusion of fathers in future family-focused lifestyle interventions aimed at improving children’s health outcomes, including their dietary habits.

The Nutritional Consequences of Community Violence in Historically Racialized Communities

Dr. Chelsea R. Singleton

May 21, 02:15 PM - 02:55 PM

Violence persists as a major public health issue in the United States. A large body of research has described the adverse health outcomes associated with exposure to community violence: substance abuse disorder, depression, stress, physical inactivity, obesity, etc. Unfortunately, there continues to be limited scientific evidence on the nutritional consequences of community violence. Given the disproportionate impact of violence on historically racialized communities, increasing understanding of the detrimental effects of community violence on nutrition is necessary to develop better equity-focused health initiatives. In this One to Watch presentation, Dr. Chelsea R. Singleton will present current evidence on the nutritional consequences of community violence, which includes highlights from her own NIH-funded research. She will discuss the connection between community violence and important nutritional factors such as dietary behavior, food insecurity, and geographic access to retail outlets that sell healthy foods. She will present recommendations to expand this important line of research and emphasize the importance of community violence to nutritional equity.

Identifying Opportunities to Support Child Health and Wellbeing Across Intersecting Contexts

Dr. Emily Tomayko

May 21, 02:15 PM - 02:55 PM

Child health is influenced by interconnected factors spanning individual, interpersonal, community, institutional, and policy levels. The goal of our research is to establish how these diverse contexts, including family homes, schools, and community settings, intersect to create opportunities for enhancing child health and wellbeing, particularly within rural and Native American communities. These communities are notable due to their unique assets, such as robust social networks, juxtaposed with well-documented disparities in health, economics, and education. This presentation will cover multiple ongoing projects that are attuned to policies affecting child health and wellbeing across these intersecting levels.

First, I will describe our work to understand how the shift from a traditional five-day school week to a four-day week may precipitate shifts in supports provided across family, school, and community settings. This school schedule has been adopted with increasing frequency in the United States as a policy response to constrained budgets and ongoing teacher shortages; however, little attention has been given to changes in food access, physical activity opportunities, social support, family schedules, household finances, and other critical factors that impact child health and wellbeing.

Second, I will highlight work stemming from longstanding partnerships with multiple Native American communities to advance child health through the development, testing, and dissemination of the Turtle Island Tales family wellness program. I will focus on our current work to amplify the impact of this family-focused evidence-based intervention by strategically leveraging home, school, and community settings to increase reach and ensure equitable implementation.

AWARD SESSION PRESENTATIONS

Why and in which contexts do older adults sit? An EMA study to identify the context- and time- depending determinants of sedentary behavior in older adults.

Prof. Delfien Van Dyck¹, Dra. Elien Lebuf¹, Dr. Sofie Compernelle¹, Dr. Femke De Backere¹,
Dr. Jelle Van Cauwenberg¹
1Ghent University, Ghent, Belgium

**Award Session- Ageing | Motivation and behavior change, Ballroom B, May 20, 2024, 5:15
PM - 6:30 PM**

SIG - Primary Choice: A. Ageing

Purpose: To use event-based Ecological Momentary Assessments (EMA) to identify the different contexts and determinants of sedentary behavior (SB) bouts in older adults.

Methods: 75 older adults (+65 years) participated in an event-based EMA study for seven consecutive days. After a 30 minute bout of sitting, an EMA questionnaire was triggered on a smartphone, assessing contextual information, interpersonal aspects, affect and receptiveness to change behavior. Furthermore, intention and self-efficacy to interrupt and/or limit SB were questioned every morning and an intake questionnaire assessing sociodemographic variables was completed at the start of the study. SB was objectively measured by an activPAL. Multi-level analysis were conducted, with data nested in participants.

Results: Preliminary results showed that participants had a mean sedentary time (ST) of 10 hours per day. Intention to interrupt and/or limit ST was significantly varying throughout the week ($F=4.29$, $p=0.003$), self-efficacy was not varying throughout the week. Receptivity to change was not varying through the day nor through the week. Intention, self-efficacy to interrupt and/or limit ST and receptivity to change were not significantly associated with ST. Older adults who lived alone, spent on average 66 minutes less in sedentary activities on days that they had physical contact with others ($\chi^2=5.319$, $p=0.021$). Older adults who lived alone were alone in 71.8% of their ST; older adults who lived together with their partner only spent 16% of their ST being alone. At the conference, more in-depth results regarding the contextual and time-varying determinants of SB will be presented.

Conclusions: Future EMA studies and personalized interventions could benefit from focusing more on the intentions to interrupt and/or limit ST, since this variable fluctuated more than self-efficacy and receptivity to change. Social contexts could be interesting to take into account for SB interventions in older adults who live alone, since spending time with other people reduced their time spent sedentary with more than one hour per day.

Association of physical activity measured by the International Activity Questionnaire and Accelerometer with cognitive performance in the ELSA-Brasil study

Dr. Natalia Gomes Goncalves¹, Dr. Natan Feter², Dr. Bruce Duncan², Dr. Maria Inês Schmidt², Dr. Paulo Lotufo³, Dr. Isabela Bensenor³, Dr. Claudia Suemoto¹

1Universidade De Sao Paulo, Sao Paulo, Brazil, 2Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 3Hospital Universitário, Universidade de Sao Paulo, Sao Paulo, Brazil

Award Session- Ageing | Motivation and behavior change, Ballroom B, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: A. Ageing

Purpose: Two percent of dementia cases worldwide could be prevented with increases in physical activity (PA). Although the International Physical Activity Questionnaire (IPAQ) has been validated for several countries, there are important discrepancies between self-reported and objectively measured data. This study aimed to analyze the association between PA and cognitive performance using the IPAQ and accelerometer measures and compare if differences in self-report and objectively measured PA were associated with cognitive performance in the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil).

Methods: We used data from the 2017-19 wave of the ELSA-Brasil. PA was self-reported with the IPAQ and evaluated objectively with a triaxial accelerometer. The discrepancy between self-reported and objectively measured PA was calculated as the difference between the two. Cognitive performance was evaluated using immediate and late recall, word recognition, semantic and phonemic verbal fluency, and the Trail-Making tests. A global composite z-score was derived from these tests. The associations of cognitive performance with self-reported, objectively measured, and the difference between these two measures were evaluated using linear regression adjusted for sociodemographic, lifestyle, and clinical variables.

Results: In 8,486 participants (58.8±8.5 years old, 56% women, 55% White, 58% college educated), the mean self-reported and objectively measured time engaged in PA was 2.7 hours/week and 5.6 hours/week, respectively. Eighty percent of participants underreported PA. There was no association of self-reported ($\beta=0.005$, 95% CI=-0.001; 0.012) or objectively measured ($\beta=0.004$, 95% CI=-0.002; 0.010) PA with cognitive performance. Less underestimation of PA was associated with better executive function performance ($\beta=0.006$, 95% CI=0.001; 0.011).

Conclusions: A high proportion of participants underestimated the time they engaged in PA. However, less underreporting of PA was associated with better executive function performance. These results may reflect the characteristics of the IPAQ questionnaire, which evaluated only leisure-time PA, while the accelerometer measures all types of PA. Future research on the differences between self-reported and objectively measured PA is needed to understand how to correct these discrepancies.

Identifying Dietary Patterns Associated with Cognitive Impairment among Indonesian Population

Mr. Sandy Ardiansyah¹

¹Ministry Of Health, Indonesia, South Jakarta, Indonesia

Award Session- Ageing | Motivation and behavior change, Ballroom B, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: A. Ageing

This study aims to identify the association between dietary patterns and cognitive impairment among Indonesian population. This was a cross-sectional study utilizing secondary data of the Indonesia Family Life Survey (IFLS)-5. This study utilized 1532 participants. Cognitive impairment was measured with the questionnaire derived from the instrument of a telephone interview for cognitive status (TICS). A 15-item food frequency questionnaire was used to estimate food consumption score (FCS) and dietary pattern. The clustering dietary patterns were derived using principal component analysis (PCA). Analysis of covariance was used to examine the differences and multivariate with binary logistic regression analysis of the odds of cognitive impairment. The result of this study was the prevalence of cognitive impairment significantly increased with an increase in the high calorie and high- sugar pattern ($p < 0.005$ by logistic regression). Furthermore, the prevalence of cognitive impairment significantly decreased with an increase in fruits and vegetable pattern, from the lowest tertile (85.9%) to the highest tertile (78.3%). Moreover, the high calorie and high sugar pattern was significantly associated with cognitive impairment in the tertile 2 and tertile 3 groups. People with high calorie and high sugar patterns in tertile 3 more likely to have cognitive impairment (OR 2.86, 95% CI 2.01-4.07, $p = < 0.001$) after adjusting with age, sex, and education level. In our study, people with fruits and vegetables patterns were significantly associated with cognitive impairment (OR 0.66, 95% CI 0.47-0.92, $p = 0.015$). high level dietary of fruit and vegetables in tertile 1 less likely to have cognitive impairment. Our conclusion can serve as a recommendation to the Indonesian population of whom may be in a higher risk for cognitive impairment and reemphasize the importance of early detection in the middle-aged group to manage dietary patterns as the risk factors.

Effects of doubling the availability of vegetarian meals on meal choices, meal offer satisfaction and liking in university cafeterias: a controlled trial in France.

Ms. Laura Arrazat¹, Ms. Claire Cambriels¹, Ms. Christine Le Noan², Dr. Sophie Nicklaus¹, Dr. Lucile Marty¹

1Centre des Sciences du Goût et de l'Alimentation, CNRS, INRAE, Institut Agro, Université de Bourgogne, Dijon, France, 2Crous Bourgogne Franche-Comté, France

Award Session- Ageing | Motivation and behavior change, Ballroom B, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Modifying the availability of vegetarian meals in collective catering has substantial impact on food choices and could contribute to mitigate the effect of our food systems on the environment. However, whether such an intervention is acceptable and thus sustainable has never been investigated. This study aimed to analyze the effects of an increase in the availability of vegetarian meals served in a French university cafeteria on students' meal choices, meal offer satisfaction, and liking.

Methods: A four-week controlled trial was conducted in a university cafeteria in Dijon, France. During the two-week control period, 24% of the main meals served were vegetarian (without meat and fish). In the subsequent two-week intervention period, this proportion was increased to 48% while keeping the sides offer identical. The students were not informed about the changes in the food offer during the intervention period. Students' meal choices were recorded using sales data and daily paper questionnaires were used to assess students' meal offer satisfaction and liking for the main meal they ate (scores range [1;5]). Mixed-effects linear models were used to compare food choices, satisfaction and liking between the control and intervention periods considering day matching between the two periods. An end-of-study questionnaire collected students' feedback.

Results: Doubling the availability of vegetarian main meals significantly increased the likelihood of choosing vegetarian main meals (OR=2.57, 95%CI = [2.41; 2.74], N=37,299). Responses from the paper questionnaires (N=18,342) indicated a slight improvement in meal offer satisfaction from 4.05±0.92 to 4.07±0.93 between the control and the intervention period (p=0.028), as well as in liking from 4.09±0.90 to 4.13±0.92 (p<0.001). The end-of-study questionnaire (N=510) revealed that only 6% of students noticed the increase in the availability of vegetarian meals.

Conclusions: Doubling the proportion of vegetarian meals in a French university cafeteria from 24% to 48% resulted in a two-fold increase in their selection and was acceptable for university students as both satisfaction with the meal offer and liking for the meals they ate increased during the intervention period. Consequently, French university catering could aim to serve half vegetarian meals and half non-vegetarian meals to mitigate its environmental impact.....

The impact of activity-permissive workstations on physical and psychological well-being

Ms. Yiqing "Skylar" Yu¹, Dr. Dan Graham¹
1Colorado State University, Fort Collins, USA

Award Session- Ageing | Motivation and behavior change, Ballroom B, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Sedentary behavior is associated with an increased risk of physical and mental health issues, particularly when individuals remain seated for prolonged periods. Activity-permissive workstations (APWs) have emerged as effective tools for reducing sedentary behaviors and promoting light physical activity. Previous studies have shown that APWs do not compromise productivity while effectively decreasing sedentary time. This is the first study comparing sitting, standing, and walking workstations and investigating both individuals' cognitive performance and psychological states, furthering our understanding of the benefits and potential barriers of APWs.

Methods: A total of 242 participants were randomly assigned to one of three workstation conditions: seated at a height-adjustable desk, standing at a height-adjustable desk, or walking on a treadmill desk in a laboratory environment. To get comfortable at their assigned workstation, participants played Tetris for 5 minutes and completed a demographic and health survey. Subsequently, participants performed a series of reading and creativity tasks. Post-workstation assessments included measures of pleasure, arousal, calmness, and enjoyment. Heart rate was monitored throughout the workstation period.

Results: Participants spent 31.92 minutes on the workstation on average. Mean heart rate varied significantly across three workstation conditions ($F = 29.37$, $p < .001$), with the highest heart rates for walking participants ($M = 96.6$), intermediate for standing ($M = 90.7$), and the lowest for seated ($M = 79.6$). There were no significant differences in subjectively-rated focus scores, or in objectively-assessed reading comprehension and creativity tasks across different workstation conditions. ANOVA and post-hoc tests indicated that individuals using the treadmill desk reported greater pleasure ($p < .05$), higher arousal ($p < .01$), and lower boredom ($p < .001$) compared to seated participants, greater enjoyment compared to both seated ($p < .01$) and standing ($p < .001$) participants, and lower perceived stress than standing participants ($p < .05$).

Conclusions: Our results showed that APWs hold promise in improving both psychological and physical well-being. APWs effectively reduce sedentary time, elevate heart rate and mood, and increase arousal without compromising focus, reading comprehension, and creativity. Longer-term randomized controlled trials are needed to assess the sustainability of the psychological benefits of using APWs.

Perceived Barriers, Facilitators and Recommendations Related to Physical Activity in Cancer Care: A Qualitative Insights from Oncology Care Providers

Dr. Gaurav Kumar¹, Priyanka Chaudhary², Jungyoon Kim¹, Lynette Smith¹, Apar Ganti¹, Dejun Su¹

¹University Of Nebraska Medical Center, Omaha, USA, ²University of Nebraska Omaha, Omaha, United States

Award Session- Cancer prevention and management | E- & mHealth, Room 212, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Physical activity (PA) is associated with a reduction in mortality and recurrence risks in patients with cancer. Although there is increasing evidence that PA benefits the health of cancer patients before, during, and after treatment, the inclusion of PA recommendations is not currently a regular component of standard care. Therefore, the current study seeks to identify perceived knowledge, barriers, and facilitators of oncology care providers' prescription of PA among cancer patients as described by the 5A (Assess, Advise, Agree, Assist, and Arrange) framework.

Methods: A qualitative research design with a phenomenological approach was used. A purposive sample of eleven oncology care providers representing diverse specialties (4 medical oncologists, 3 surgical oncologists, 3 oncology nurses, and 1 oncology nutritionist) was conducted via Zoom or phone calls. Participants were involved in cancer care across Nebraska, a midwestern region in the United States. Data were audio recorded, transcribed verbatim, and imported into qualitative software NVivo version 12. The responses were mapped using the 5A framework, where theory-driven deductive content analysis was used for data analysis.

Results/findings: The data revealed several themes and subthemes on the perceived knowledge, barriers, facilitators, and recommendations of PA among oncology care providers. The most identified PA barriers include a lack of awareness of PA promotion (limited knowledge about PA guidelines, limited training, and less priority to PA promotion); cancer-related symptoms (e.g., fatigue and pain); and logistic barriers (lack of community resources, time constraints, and cost). Further, the reported facilitators mentioned by oncology care providers were perceived health benefits (improve physical, mental, sleep, and survival and reduce recurrence), interdisciplinary support, and available resources in the community. Recommendations included education or training related to PA promotion, resources for patient education, and PA experts in the clinical team.

Conclusions: Oncology care providers acknowledged various barriers and facilitators highlighting the complex character of influencing advice and counseling on PA promotion. Having a thorough grasp of this will help healthcare providers and researchers identify specific

characteristics that can be modified and targeted in future interventions. This will help improve the success of programs that attempt to promote PA in various settings.

A Latent Class Analysis of Nutrition Impact Symptoms in Cancer Survivors

Ms. Laura Keaver^{1,2}, Dr Chris McLaughlin²

1Atlantic Technological University Sligo, Sligo, Ireland, 2Ulster University, Belfast, Northern Ireland

Award Session- Cancer prevention and management | E- & mHealth, Room 212, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Those with a cancer diagnosis report experiencing a wide range of nutrition impact symptoms with prevalence varying by study, group and cancer type. We aimed to identify groups of cancer survivors with specific patterns of nutrition impact symptoms.

Methods: 229 individuals attending oncology day ward and outpatient clinics completed a series of questionnaires and physical measurements. A latent class analysis was performed to identify subgroups based on 13 nutrition impact symptoms taken from the Patient Generated Subjective Global Assessment Short Form. The identified classes were subsequently compared using analysis of variance and chi-square tests, by sociodemographic, clinical and nutritional variables as well as by Global health status (GHS) and five functioning scales determined using the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30).

Results: Three latent subtypes were identified: (1) Fatigue (n=58, 28%); (2) Low Symptom Burden (n=146, 64%) and (3) High Symptom Burden (n=25, 11%). Those in the High Symptom Burden group were more likely to be female, currently receiving any form of treatment and have consumed less food than usual in the last month compared to those in the Low Symptom Burden group. Those in the Fatigue group were more likely to have reported consuming less food in the previous month and less likely to have reported their food intake to be unchanged than those in the Low Symptom Burden group. Those who received their diagnosis two years+ ago were most likely to be classed in the Fatigue group. The EORTC-QLQ-C30 functioning and GHS scores were all significantly different between the three nutrition impact symptoms classes ($p < 0.001$)

Conclusion: This is the first study to examine heterogeneity of nutrition impact symptoms in Irish Cancer Survivors. The findings of this work will inform and allow for more individualised nutrition care.

A Latent Profile Analysis of Health-related Quality of Life Domains in Cancer Survivors

Ms. Laura Keaver^{1,2}, Dr Chris McLaughlin²

1Atlantic Technological University Sligo, Sligo, Ireland, 2Ulster University, Belfast, Northern Ireland

Award Session- Cancer prevention and management | E- & mHealth, Room 212, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: The aim of this research was to examine heterogeneity of Health-related Quality of Life (HrQOL) in Cancer Survivors (both undergoing and completed treatment) using latent profile analysis and to determine whether these groups differed by demographic and health characteristics.

Methods: Participants(n=229) recruited through an oncology day ward and outpatient department in a local hospital, completed height, weight and handgrip measures as well as the validated patient generated subjective global assessment and EORTC-QLQ-C30 questionnaires. A latent profile analysis was performed to identify subgroups based on HrQOL domain scores. Multinomial Logistic Regression was conducted to determine the relationship between these subgroups and demographic and health characteristics.

Results: Three latent subtypes were identified: (1)high quality of life(n=122, 52.8%); (2)compromised quality of life(n=79, 34.2%) and (3)low quality of life(n=30, 12.99%). All subtypes scored lower for functioning scales (with the exception of the higher quality of life group for physical, role and emotional functioning) and higher for symptom scales than the reference norm population. There were large clinically meaningful differences between the high quality of life group and the low quality of life group for all HrQOL scales. Those in the low quality of life group were slightly younger than those in the high quality of life group(OR = 0.956, $p < .05$, CI = 0.917– 0.998). Workers were >7 times more likely to be in low quality of life than the high quality of life group. Compared to the high quality of life group, the odds of belonging to the compromised quality of life group decreased significantly by having higher handgrip strength (OR = .955, $p < .05$, CI = .924 - .988). The odds of belonging to the low quality of life group increased significantly for those with higher number of nutrition impact symptoms (NIS) (OR = 1.375, $p < .05$, CI = 1.004 – 1.883).

Conclusions: This is the first study to examine heterogeneity of HrQOL using latent profile analysis in Irish Cancer Survivors. In clinical practice understanding how aspects of HrQOL group together may allow clinicians to better understand and treat cancer survivors, informing more individualised nutrition care.

Understanding ecological momentary assessment compliance in a 12-month multi-measurement burst sampling design in the TIME study

Dr. Tyler Prochnow¹, Wei-Lin Wang², Shirlene Wang², Jixin Li³, Stephen Intille³, Donald Hedeker⁴, Genevieve Dunton²
1Texas A&M University, Bryan, United States, 2University of Southern California, Los Angeles, United States, 3Northeastern University, Boston, United States, 4University of Chicago, Chicago, United States

Award Session- Cancer prevention and management | E- & mHealth, Room 212, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: Understanding and optimizing compliance is critical in intensive longitudinal designs using ecological momentary assessment (EMA) where systematically missed prompts can severely threaten validity. This study leveraged hourly EMA data collected through multi-day bursts spaced every two weeks across 12 months from young adults in the U.S. This presentation will aim to: 1) elucidate time-variant contextual and behavioral predictors of EMA prompt compliance to identify refinements for future protocols and help interpret results; and 2) model decay in EMA prompt compliance across the year-long study to inform effective engagement and retention strategies for ambitious intensive longitudinal research crucial for advancing micro-temporal and idiographic analyses of behavior.

Methods: Young adults (n=246; ages 18-29; 55.1% female; 30.3% Hispanic) completed EMA measurement bursts every two weeks over 12 months. Each burst spanned four days with EMA surveys prompted approximately once per hour during wake time. At the same time, they participated in activity monitoring via smartwatch and completed end-of-day diaries. EMA surveys assessed health behaviors, contextual factors (e.g., location, social context), and psychological states. Prompt compliance, the primary outcome, was defined as responding within 10 minutes of the initial prompt. Multilevel logistic regression identified predictors of prompt compliance, including time-variant contextual factors (e.g., season, phone screen status, location, travel status) and behavioral factors (e.g., routine, prior 10-minute physical activity, affect, stress).

Results: Prompt compliance declined over time within participants. Prompts occurring while the phone screen was on (vs. off) were more likely to be completed. Compliance was lower during spring, fall, and winter (vs. summer); when at work/school (vs. home); when the individual was more physically active in the hour before prompt; and when the individual was not following their regular daily routine. Stress and positive affect did not significantly alter the odds of compliance in this study.

Conclusions: Results elucidate participation factors for interpreting findings and guiding effective retention strategies in year-long EMA research. These results also help to inform what

situations may be underrepresented in the data. Adjustments to statistical analyses can be made and data imputations can help address these external validity issues.

Which health-related behaviors are critical to mental health among college students: a machine learning approach

Miss Lingyi Fu¹, Assistant Prof. Shandian Zhe², Assistant Prof. Yang Bai¹

¹Department of Health and Kinesiology, University Of Utah, Salt Lake City, USA, ²Kahlert School of Computing, University of Utah, Salt Lake City, USA

Award Session- Cancer prevention and management | E- & mHealth, Room 212, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: D. E- & mHealth

Background: While established connections exist between health-related behaviors and mental health, there is a notable gap in the literature regarding comprehensive examinations of the importance of multiple health-related behaviors associated with mental health among college students longitudinally.

Purpose: This study aims to examine the essential health-related behaviors (e.g., social interaction, diet, sleep, exercise, and substance use), both past and present, impacting overall mental health (i.e., well-being, mood, anxiety, and focus).

Methods: The participants reported their behaviors and mental health on a 16-item daily survey through a smartphone app. Ecological momentary assessment data were collected from 205 college students over 215 days from October 2020 to May 2021, resulting in 32,997 person-day observations. Machine learning approaches (i.e., Random forest, Gradient boosting, AdaBoost, Support vector machines, and KNeighbors) with SHAP (SHapley Additive exPlanations) value-based feature importance were utilized to examine and rank the importance of past and present behaviors on mental health.

Results: Most participants were freshmen (89.1%), female (74.3%), and Caucasian (90.3%). Random forest ($F1 = 0.539\text{--}0.936$) and Gradient boosting ($F1 = 0.822\text{--}0.928$) outperformed other approaches in predicting mental health. The top eight critical behaviors of each mental health were identified and compared. Quality of social interactions emerged as a paramount determinant of overall mental health (SAHP = 0.029—0.163), particularly influencing well-being and mood. The importance of sleep and meal quality (SAHP = 0.011—0.112) was underscored in shaping overall mental health than quantity (SAHP = 0.006—0.047). Moreover, the current engagement in gratitude moments held more significant sway over overall mental health (SAHP = 0.010—0.056), while previous engagement only held importance to anxiety (SAHP = 0.059) and focus (SHAP = 0.064). Water consumption, exercise participation, and screen time emerged on the important list for some mental health outcomes but not all (SAHP = 0.005—0.044). Furthermore, the frequency of marijuana and liquor used in previous days emerged as a noteworthy factor affecting well-being (SAHP = 0.005) and focus status (SAHP = 0.042), respectively.

Conclusion: This study provides a comprehensive understanding of the critical previous and current health-related behaviors associated with mental health.

Predicting physical activity energy expenditure from consumer wearable accelerometry and heart rate data in children.

Dr. R Glenn Weaver¹, Dr. Rahul Ghosal¹, Dr. Aliye Cepni¹, Olivia Finnegan¹, James White III¹, Hannah Parker¹, Dr. Sarah Burkart¹, Dr. Michael Beets¹, Dr. David Brown III¹, Dr. Russell Pate¹, Dr. Massimiliano de Zambotti², Dr. Gregory Welk³, Dr. Srihari Nelakuditi¹, Dr. Yuan Wang¹, Dr. Bridget Armstrong¹, Dr. Elizabeth Adams¹, Xuanxuan Zhu¹, Meghan Savidge¹, Nicholas Niako¹

¹University Of South Carolina, Columbia, USA, ²SRI International, MENLO PARK, USA, ³Iowa State University, Ames, USA

Award Session- Cancer prevention and management | E- & mHealth, Room 212, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: Consumer wearables often incorporate accelerometry to assess movement and photoplethysmography to capture heart rate (HR), which are both important markers of physical activity energy expenditure (PAEE). Given the widespread adoption of consumer wearables offering accessible high-granular accelerometry and HR data opens the possibility for developing a large-scale, reproducible, and device agnostic method for estimating PAEE. This study examined the performance of PAEE estimates based on the raw accelerometry and HR from research grade and consumer wearables compared to indirect calorimetry.

Methods: One hundred and ninety-six children (5-12yrs, 57% male, 71% White) participated in a 60-minute protocol consisting of 5-minute activities completed at varying intensities (e.g., seated, watching a video, walking, and playing tag). Children wore two of three consumer wearables (Apple Watch Series 7, Garmin Vivoactive 4S, Fitbit Sense) and a research-grade accelerometer (ActiGraph GT9X) on their non-dominant wrist, and a chest-placed, research-grade HR monitor (Actiheart 5, ECG), concurrently. Children also wore a COSMED K5 as a criterion measure of PAEE (i.e., V02/kg in ml/minute). Cross-sectional time series regression models with random intercepts were used to estimate minute-by-minute PAEE from features extracted from raw accelerometry and HR data. Child age, sex, weight, and height were also included in the models. R2 for the cross-sectional time series regression models, mean absolute error (MAE), and Lin's Concordance Correlation Coefficient (CCC) were calculated to assess agreement between indirect calorimetry, consumer wearables, and research-grade indicators of PAEE.

Results/findings: For the research grade devices (i.e., ActiGraph accelerometry combined with Actiheart HR) MAE values were 4.7 (95CI=4.6, 4.9), while CCC was 0.83, and R2 was 0.78. Apple PAEE estimates had a MAE of 4.2 (95CI=4.1,4.3), CCC of 0.87, and R2 of 0.86. Garmin MAE was 4.4 (95CI=4.3,4.5), CCC of 0.85, and R2 of 0.82 Finally, Fitbit produced a MAE of 4.2 (95CI=4.1, 4.4), CCC of 0.84, and R2 of 0.80.

Conclusions: The raw accelerometry and HR data collected from consumer wearable devices predicted PAEE comparably to research grade accelerometry and HR. These outcomes support

the possibility of deploying a device-agnostic approach to PAEE estimation using consumer grade sensor data in children.

Association between home-based contextual factors with 24-hour movement behaviors in preschoolers with low guideline attainment: An ecological momentary assessment study

Dr. Chelsea Kracht^{1,2}, Dr. Jerica M. Berge³, Dr. Robert L. Newton Jr.², Dr. Ryan E. Rhodes⁴, Dr. Monique LeBlanc⁵, Dr. Leanne M. Redman²

¹University of Kansas Medical Center, Kansas City, USA, ²Pennington Biomedical Research Center, Baton Rouge, USA, ³University of Minnesota Medical School, Minneapolis, USA, ⁴University of Victoria, Victoria, Canada, ⁵Southeastern Louisiana University, Hammond, USA

Award Session- Children and families | Policies and environments, Room 214, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: G. Children and families

Parents and the home environment play a critical role in promoting movement behaviors (physical activity [PA], screen-time, and sleep) in preschoolers. However, parental stress and disruptions may negatively impact behaviors. Ecological momentary assessment (EMA) can help identify home-based contextual factors in real-time to inform promotion of appropriate amounts of behaviors.

Purpose: This study aimed to examine the relationship between home-based contextual factors on preschooler PA, screen-time, and sleep amongst those who met few 24-hour Movement Behavior Guidelines.

Methods: Parents (n=43) of preschoolers (ages 3-4 years, 51% female, 58% White) who met 0 or 1 of the 24-hour Movement Behavior Guidelines (PA: ≥ 180 minutes/day of Total PA, including ≥ 60 min/day of moderate-to-vigorous PA, sedentary screen-time: ≤ 1 hour/day, and sleep: 10-13 hours/day) participated in an EMA study. For at least 7-days, parents completed one morning survey, and four signal-contingent surveys during fixed 3-hour windows daily via a smartphone application. In the morning survey, parents reported screen-time 2-hours before bed, performed child bed-time ritual, overnight awakenings, and child sleep time from the previous night. During the signal-contingent surveys, parents reported their current stress, child alone status, child screen-time, and child PA intensity (sedentary, light, moderate, vigorous). Logit link and mixed effects models were used to examine the relationship between home-based contextual factors with child PA, screen-time, and overnight sleep. Models were adjusted for time of day and repeated subjects.

Results: Parents completed 1179 signal-contingent, and 613 morning surveys. Most preschoolers met one guideline (PA: 11%, screen-time: 9%, sleep: 48%), and some met 0 guidelines (30%). Bed-time rituals (78%) and screen-time before bed was common (65.7%), with some night awakenings reported (22%). Preschoolers were less likely to engage in sedentary behavior (-0.70 ± 0.24 , $p < 0.01$) and screen-time (-0.80 ± 0.19 , $p < 0.01$) when they were with others compared to being alone. Night awakenings were related to less sleep (-20.8 ± 7.8 minutes, $p < 0.01$), but not child bed-time rituals or screen-time before bed ($p > 0.05$)

Conclusions: Alone status and overnight experiences were important for movement behaviors. Opportunities to promote PA while alone and prevent night awakenings may help support an adequate balance of movement behaviors in preschoolers who meet few guidelines.

Effect of anticipatory guidance about infant behavior on breastfeeding outcomes: results from the Mothers & Others randomized controlled trial

Dr. Alexis Woods Barr¹, Dr. Amanda Thompson¹, Ms. Allison Brinson¹, Dr. Eric Hodges¹, Dr. Melissa Kay², Ms Julia Mackessy¹, Dr. Candice Alick¹, Dr. Michelle Graf¹, Dr. Taylor Richardson¹, Dr. Harlyn Skinner¹, Dr. Meredith Heinig³, Dr. Heather Wasser¹

¹University Of North Carolina At Chapel Hill, Chapel Hill, USA, ²Duke University, Durham, USA, ³University of California At Davis, Davis, USA

Award Session- Children and families | Policies and environments, Room 214, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: G. Children and families

Purpose: Report breastfeeding outcomes for the “Mothers & Others” study, a two-group randomized controlled trial conducted among 430 non-Hispanic Black women living in central North Carolina.

Methods: The two intervention arms were a multicomponent Obesity Prevention Group (OPG) (treatment) versus an attention-control, Injury Prevention Group (IPG). Baseline was at 28 weeks pregnancy, followed by 2 prenatal home visits and 4 postpartum visits/assessments at 3, 6, 9, and 12 months. Trained peer educators delivered an anticipatory guidance curriculum, adapted from the ‘Baby Behavior’ program, on infant behavioral cues, common reasons for crying, distinguishing hunger-related crying, and typical sleep patterns. The prenatal curriculum also focused on mobilizing social support for the birth transition and infant behavioral cues unique to the first 72 hours, e.g. cluster-feeding. Logistic and linear regression models were run to test between-group differences in breastfeeding initiation rates; any breastfeeding at 3, 6, and 12 months; exclusive breastfeeding at 3 and 6 months; breastfeeding duration; and whether women met their personal breastfeeding goal.

Results/findings: Participants were 25.7±5.2 years, 50.5% completed some college, 92.0% planned to return to work postpartum (82.6% before 12 weeks), and 22.7% delivered at a ‘Baby Friendly’ certified facility. There were no significant differences in breastfeeding outcomes, but the directionality of measures favored OPG. Nearly 90% of women in both groups initiated breastfeeding (OPG 88.1%, IPG 88.4%; OR=1.05, P=.91) with higher rates in OPG of any breastfeeding at 3- (OPG 45.2%, IPG 35.7%, P=.12), 6- (OPG 31.6%, IPG 31.0%, P=.59), and 12-months (OPG 17.0%, IPG 14.9%, P=.68). Overall duration was longer in OPG (3.6±4.2 months vs 2.9±4.0 months IPG, B=0.45, P=.22), with more women in OPG stopping breastfeeding at ‘3 through 5 months’ (17.4% vs 9.6% IPG) rather than ‘0 to 7 days’ (9.6% vs 16.5% IPG). More women in OPG reported meeting their personal breastfeeding goal (41.7% vs 35.9% IPG; OR=1.27, P=.41).

Conclusion: The adapted ‘Baby Behavior’ curriculum may decrease early breastfeeding cessation and warrants further research. In the United States, lower breastfeeding rates among Black women have been attributed to larger spheres of influence, including shorter maternity leave, which will require policy-level intervention.

Impact of the 'Eat, Learn, Grow' program on the use of responsive feeding practices among Australian families experiencing economic hardship: a pilot randomised controlled trial

Associate Prof. Rebecca Byrne¹, Dr Smita Nambiar¹, Dr Robyn Penny^{1,2}, Associate Professor Rachel Laws³, Professor Danielle Gallegos¹, Dr Kimberley Baxter¹

¹Queensland University of Technology, Kelvin Grove, Australia, ²Children's Health Queensland, South Brisbane, Australia, ³Deakin University, Burwood, Australia

Award Session- Children and families | Policies and environments, Room 214, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: G. Children and families

Purpose: Families facing economic hardship find themselves in a cycle of food insecurity and face challenges with child feeding. The 'Eat, Learn, Grow' program was developed with families using a collaborative design thinking approach and delivers short, interactive, and engaging content about infant and young child feeding to Australian parents, using an educational strategy called digital microlearning. This abstract presents findings from a pilot randomised controlled trial that evaluated the impact of the program on the use of responsive feeding practices among families experiencing economic hardship.

Methods: Parents of children aged 6-24 months who self-identified as experiencing economic hardship participated in a 6-week pilot RCT (N=150) during May-October 2023 (ACTRN 12623000513617). Feeding practices and household food security were assessed using validated questionnaires, at baseline prior to randomisation, and again in both groups at the end of the 6-week period. During this time the intervention group (n=75) received 12 microlessons sent to their mobile phone via SMS which covered topics such as recognising hunger and fullness cues, role modelling and the 'division of responsibility' in feeding. Learning strategies included reflection, knowledge testing, shared learning and peer modelling. Mann Whitney U tests were used to compare difference in factor scores from baseline to 6-week follow-up across intervention and control groups, for five feeding practices, use of food to calm, persuasive feeding, parent led feeding, family meal environment and reward for eating.

Results: At baseline, parents were a mean age of 33.3 years (sd=.40, 98% mothers) and 54% reported low or very low household food security. One hundred and thirty-two parents completed the trial per protocol (n=65 intervention, n=67 control). Intention to treat analysis indicated that parents in the intervention group had significantly greater reduction in use of food to calm $z = [-2.05]$, $p = [.040]$ and persuasive feeding $z = [-2.05]$, $p = [.040]$ compared with parents in the control group.

Conclusions: Collaborative design thinking has produced a brief digital intervention that can reduce non-responsive feeding practices in families experiencing economic hardship. Measures are being repeated at 6 months post intervention commencement to assess longer term effectiveness.

Harnessing major system disruptions to inform active travel policies in cities: the Fuel Shortage and COVID-19 natural experiments in Mexico City

Dr. Eugen Resendiz Bontrud¹, Dr. Alejandra Jauregui², Dr. Ross C. Brownson³, Dr. Diana Parra³, Dr. Rodrigo Reis³, Dr. Deborah Salvo¹

¹The University Of Texas at Austin, Austin, USA, ²Department of Physical Activity and Healthy Lifestyles, Center for Nutrition and Health Research, National Institute of Public Health of Mexico, Cuernavaca, Mexico, ³Washington University in St. Louis, St. Louis, USA

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SIG - Primary Choice: H. Policies and environments

Purpose: Cycling for transport promotes health and sustainable lifestyles. Conducting studies assessing the impact of top-down regulatory policy decisions (e.g., eliminating gasoline subsidies and creating low-emission zones) on active travel is challenging. System disruptions can provide a “glimpse” of the possible effects of regulatory policies and large-scale built environment changes on active travel. This study examined the immediate and sustained effects of two system disruptions on public bicycle-share program (EcoBici) in Mexico City.

Methods: This study used a natural experiment design to assess if the acute gasoline shortage in 2019 and the stay-at-home recommendations due to the COVID-19 pandemic affected the Ecobici ridership patterns between 2018 and 2021. An interrupted time series analysis was used to estimate the impact of these system shocks on the number of daily Ecobici trips and their mean duration.

Results: Daily ridership increased by 3,322 trips during the acute gasoline shortage, with a decreasing trend of 206 daily rides during this disruption period. Daily ridership increased by 51% on average after the gasoline crisis, with a post-system disruption slope suggesting a comparable decline in daily ridership as what was occurring prior to the start of the gasoline crisis. The COVID-19 stay-at-home recommendations initially reduced daily trips by 13,145. None of the system disruptions had significant effects over time. Changes in mean trip duration were also observed during the two system disruptions. The gasoline shortage period had an immediate effect, causing a drop in mean trip duration by 3.22 minutes, while during COVID-19, the mean trip duration decreased by 1.04 minutes after adopting stay-at-home recommendations; both system disruptions had marginal effects over time. Finally, differences were found across gender and type of day in both daily ridership and mean trip duration.

Conclusion: These two natural experiments provided important insights that can help inform regulatory policies and built environment modifications to promote active travel and disincentivize car dependency. The temporary increase in bicycle-share program utilization following the gasoline shortage supports the notion that policies to increase the cost of driving in cities may lead to reductions in driving and increases in active travel.

Climate-Induced Disasters, Food Security, and Policy Effectiveness in the United States and Territories: A comparative examination of disaster preparedness plans

Mrs. Maria Munoz¹, Danielle Gartner, Associate Prof. Melissa Fuster¹, Dr. Saria Hassan²
¹Tulane University, New Orleans, USA, ²Emory University, Atlanta, USA

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SIG - Primary Choice: H. Policies and environments

Purpose: Climate-induced disasters have profound implications for public health, exacerbating existing diet-related inequities by disrupting supply chains and the means to access, prepare, and consume healthy foods. Preparedness and response plans are important to mitigate these consequences, yet research is sparse on the role of food in these plans. This study examined existing plans in five distinct US locations (states and territories) against the Disaster Food Security Framework (DFSF) to assess how existing policies address food-related issues, with a focus on hurricanes.

Methods: We employed purposeful sampling, selecting plans in locations that experienced the costliest hurricanes since 2017, namely: Texas, Florida, Puerto Rico, U.S. Virgin Islands, and Louisiana. We coded current preparedness plans utilizing a deductive, content analysis approach guided by the DFSF, structuring our examination around four domains: availability, accessibility, agency, and acceptability. Our analysis entailed a comparative assessment of the implementation of the US National Response Framework (NRF) and state/territory-mandated procedures, complemented by a document review encompassing gray literature and media sources to unravel insights into food security planning and post-hurricane aftermaths.

Results/findings: When compared against the DFSF, localities' disaster plans addressed availability and accessibility through safety net programs, complemented by localized NGO efforts facilitating donation assistance procedures in food availability. Other DFSF dimensions were less salient in plans, notably, considerations related to acceptability, encompassing nutritional aspects of emergency foods, and agency, involving infrastructure and self-efficacy. The analysis found noteworthy disparities between state and territory plans, where NGO roles, distribution challenges, and limited access to safety net programs are discernible and not well addressed across territories (Puerto Rico and US Virgin Islands).

Conclusions: Our analysis underscored the importance of structural elements within U.S. policy frameworks and the differences between state and territory plans as crucial factors influencing policy-level approaches to mitigate the effect of climate-induced disasters, with important repercussions to addressing transitory or episodic food security outcomes post-disaster.

The efficacy of school salad bars on objective fruit and vegetable consumption among middle and high school students

Dr. Meg Bruening¹, Dr. Michael E. Todd³, Dr. Mindy McEntee², Dr. Punam Ohri-Vachaspati², Dr. Timothy Richards⁴, Dr. Fei Qin⁴, Dr. Marc Adams²

¹Department of Nutritional Sciences, Penn State University, University Park, United States,

²College of Health Solutions, Arizona State University, Phoenix, United States, ³Edson College of Nursing and Health Innovations, Arizona State University, Phoenix, United States, ⁴W. P.

Carey School of Business, Arizona State University, Mesa, United States

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SIG - Primary Choice: H. Policies and environments

Purpose: Adolescents consume fewer fruits and vegetables (FVs) as they age. However, most school nutrition interventions target elementary-age students. Though school salad bars may be effective at improving adolescents' FV consumption during lunch, few studies have examined this among middle schools and none in high schools. This cluster randomized controlled trial evaluated how implementing school salad bars impacts low-income adolescents' FV consumption.

Methods: Middle and high schools (n=24) without existing salad bars were block-randomized to receive a salad bar (6 middle and 6 high schools, respectively) or wait-list control. Using photographic plate waste methods, aggregate grams of FV consumption from observations (n=3504, 76% from students receiving free/reduced-price lunch; 60% from Hispanic/Latino students), measured to the nearest 2 grams, were collected from students randomly selected to participate. Schools provided students' grade, sex, race/ethnicity, and free/reduced priced lunch status. Zero-inflated negative binomial models examined salad bar effects on any vs. no intake and grams of aggregate FV intake, controlling for sociodemographics (grade, sex, race/ethnicity, free/reduced-priced lunch status) and school-level clustering.

Results/findings: Adjusted mean FV intake for the control condition at baseline was 75.9g and 61.1g at follow-up. In the Salad Bar condition, adjusted mean FV intake was 80.7g at baseline and 89.4g at follow-up. Among adolescents who consumed any FV, the control condition showed a significant decrease in FV consumption (IRR=0.81; 95% CI: 0.66, 0.99), and despite a non-significant increase (IRR=1.11; 95% CI: 0.91, 1.36) in the Salad Bar condition, change in FV consumption did differ significantly between conditions (IRR = 1.38; 95% CI: 1.03, 1.83). The predicted probability of any FV consumption showed almost no change in either condition (in the control condition, baseline and follow-up probabilities were 0.87 and 0.86, respectively; and 0.90 and 0.89, respectively in the Salad Bar condition).

Conclusions: Adolescents in schools with salad bars had a higher FV consumption relative to control schools. School salad bars may be an effective strategy in attenuating the decrease of FV consumption across the school year for middle and high school students in the US. More work is needed to promote greater FV consumption once FVs are on the tray.

Expert Perspectives on Pilot and Feasibility Studies: A Delphi Study and Consolidation of Considerations for Behavioral Interventions

Dr. Christopher D. Pfledderer¹, Dr Lauren von Klinggraeff², Dr Sarah Burkart³, Dr Alexandra da Silva Bandeira³, Dr David R. Lubans⁶, Dr Russ Jago⁴, Dr Anthony D. Okely⁵, Dr Esther M.F. van Sluijs⁷, Dr John P.A. Ioannidis⁸, Dr James F. Thrasher³, Dr Xiaoming Li³, Dr Michael W. Beets³

¹University of Texas Health Science Center (Houston), School of Public Health (Austin), Austin, USA, ²Augusta University, Augusta, USA, ³University of South Carolina, Arnold School of Public Health, Columbia, USA, ⁴Bristol Medical School, Population Health Sciences, University of Bristol, Bristol, UK, ⁵Faculty of Arts, Social Sciences and Humanities, School of Health and Society, University of Wollongong, Wollongong, Australia, ⁶College of Human and Social Futures, The University of Newcastle Australia, Callaghan, Australia, ⁷MRC Epidemiology Unit, University of Cambridge, Cambridge, UK, ⁸Departments of Medicine, of Epidemiology and Population Health, of Biomedical Data Science, and of Statistics, and Meta-Research Innovation Center at Stanford (METRICS), Stanford University, Stanford, USA

Award Session- Implementation and scalability | Early care and education, Room 213, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: In the behavioral sciences, conducting pilot and/or feasibility studies (PFS) is a key step that provides essential information used to inform the design, conduct, and implementation of larger-scale trials. There are more than 160 published guidelines, reporting checklists, frameworks, and recommendations related to PFS. All offer some form of guidance on PFS, but many focus on one or few topics. The purpose of this study was to develop a consolidated set of considerations for the design, conduct, implementation, and reporting of PFS for interventions conducted in the behavioral sciences.

Methods: To develop this consolidation, we undertook a review of the published guidance on PFS in combination with expert consensus (via a Delphi study) from the authors who wrote such guidance to inform the identified considerations. A total of 161 PFS-related guidelines, checklists, frameworks, and recommendations were identified via a review of recently published behavioral intervention PFS. Authors of all 161 PFS publications were invited to complete a three-round Delphi survey, which was used to guide the creation of a consolidated list of considerations to guide the design, conduct, and reporting of PFS conducted by researchers in the behavioral sciences.

Results: A total of 496 authors were invited to take part in the Delphi survey, 50 (10.1%) of which completed all three rounds, representing 60 (37.3%) of the 161 identified PFS-related guidelines, checklists, frameworks, and recommendations. A set of 20 considerations, categorized into six themes (Intervention Design, Study Design, Conduct of Trial, Implementation of Intervention, Statistical Analysis and Reporting) were generated from a review of the 161 PFS-related publications as well as data synthesis from the three-round Delphi process. These 20 considerations are presented alongside a supporting narrative for

each consideration as well as a crosswalk of all 161 publications aligned with each consideration for further reading.

Conclusion: We leveraged expert opinion from researchers who have published PFS-related guidelines, checklists, frameworks, and recommendations on a wide range of topics and distilled this knowledge into a valuable resource for researchers conducting PFS. Researchers may use these considerations alongside the previously published literature to guide decisions about all aspects of PFS.

Improving the reach of evidence-based health promotion, disease prevention, and disease self-management interventions: preliminary findings from a scoping review.

Dr. Joshua Christensen¹, Megan Miller, Linnea Horvath, Dr. Jennie Hill, Dr. Sara Simonson, Dr. Bryan Gibson, Dr. Emiliane Pererira, Ellen Maxfield, Mary MacFarland, Dr. Amy Locke, Dr. Paul Estabrooks

¹University Of Utah, Salt Lake City, USA

Award Session- Implementation and scalability | Early care and education, Room 213, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Improving the reach of existing lifestyle interventions focused on health promotion, disease prevention, and self-management delivered in community or clinical settings has the potential to increase the public health impact of these interventions. However, little is known about the overall success of recruitment strategies or the specification of strategy components including how, through which channel and by who the recruitment strategies are enacted.

Methods: We conducted a scoping review with guidance from the latest version of the Joanna Briggs Institute Manual for Evidence Synthesis to address this issue. For transparency and reproducibility, we adhered to the PRISMA reporting guidelines for scoping reviews and searches. Primary inclusion criteria were intervention content focus aligning with the review purpose, provided information to calculate a participation rate, and a description of the recruitment strategy used. Covidence, an online systematic reviewing platform, was used to screen and select studies.

Results: A total of 5,446 articles were initially identified by using combinations of keywords and database subject headings from 18 databases, with Medline serving as the primary database. Ninety-nine of those articles were identified as duplicates and subsequently removed, leaving 5,347 to be screened, of which 5,139 studies were excluded. Full text screenings, conducted by two independent reviewers, resulted in the inclusion of 104 (of 208) eligible studies. Preliminary findings, indicated that the average reach, operationalized as participation rate, was approximately 8% of those exposed to recruitment activities (174,279 enrolled/2,478,465 potential participants). There was a wide variety of recruitment strategies used, with 34% of the studies utilizing more than one recruitment strategy. Recruitment strategy specification based on who delivered the strategy content (74%), the setting (95%), and delivery channel were provided in a large majority of the studies. However, only 57% of studies reported on the temporality of their strategy, 49% specified delivery dosage, and 14% reported on cost.

Conclusions: More transparency is needed when reporting on specific recruitment strategies used in lifestyle interventions. Particularly when it comes to the temporality, dosage, and cost of the recruitment strategies. This increased transparency will greatly aid in the reproducibility and implementation of lifestyle interventions in other populations.

Evaluating implementation change over time: insights from a multisite telehealth intervention trial to deliver nutrition education and breastfeeding support services

Dr. Erin Hennessy¹, Naina Qayyum¹, Dr. Pascasie Adedze², Dr. Karen Castellanos-Brown², Daniel Schultz¹

¹Tufts University School of Nutrition Science And Policy, Boston, USA, ²Food and Nutrition Service, United States Department of Agriculture, Alexandria, United States of America

Award Session- Implementation and scalability | Early care and education, Room 213, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Understanding facilitators and barriers to implementing a novel technology is an important area of study that can help close the research to practice gap. However, little research has explored implementation change over time.

Methods: Three quasi-experimental trials were conducted as part of the USDA/Tufts Telehealth Intervention Strategies for WIC project. WIC refers to the Special Supplemental Nutrition Program for Women, Infants, and Children program, one of the largest federal nutrition programs in the U.S. Between April-June 2022 ('early phase implementation') and April-May 2023 ('late phase implementation'), semi-structured Zoom interviews were conducted with WIC staff (n=57) involved with implementing telehealth innovations to deliver nutrition education and breastfeeding support services. Interviews were recorded, transcribed and imported into NVivo 12 for coding and analysis. The Consolidated Framework for Implementation Science Research guided the early and late phase interview guides and the deductive analytical approach.

Results: Early phase interviews indicated several key facilitators for innovation implementation, including 'teaming' through additional training for innovation deliverers (WIC staff), effective communication within and across local agencies, supportive work infrastructure (e.g., workplace flexibility for staff), and prioritization (i.e., relative priority) of the telehealth solution by local agencies. In contrast, barriers were the relative advantage of the innovation (e.g., increased time required for appointments), innovation design challenges (e.g., lack of integration with WIC data systems, no chat feature, etc), limitations in information technology (IT) infrastructure (e.g., difficulty integrating telehealth translation services), and critical incidents (e.g., infant formula recall). In the late phase, continued 'teaming' across innovation deliverers, support from high-level leadership, and tailored strategies (e.g., streamlining the scheduling process) emerged as facilitators. Persistent barriers included ongoing innovation design challenges, IT infrastructure limitations, and issues related to innovation recipients (e.g., multitasking by WIC participants).

Conclusion: Preliminary findings suggest that some facilitators and barriers to implementation change over time while others did not. Consistent telehealth innovation facilitators include teaming between staff and strategic high-level leadership support while critical incidents, innovation design challenges, and infrastructure gaps act as barriers. These findings emphasize

the need to track implementation change over time, which can be used to adapt interventions accordingly.

Effect of Happy Healthy Homes intervention on mealtime practices in Family Childcare Homes

Ms. Divya Patel¹, Dr. Dipti Dev², Mr. Steven Pan¹, Dr. Bethany Williams³, Dr. Alicia Salvatore⁴, Dr. Susan Sisson¹

¹University Of Oklahoma Health Sciences Center, Oklahoma City, USA, ²University of Nebraska- Lincoln, Lincoln, USA, ³Center for Science in the Public Interest, Washington D.C, USA, ⁴University of Delaware, Newark, USA

Award Session- Implementation and scalability | Early care and education, Room 213, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: F. Early care and education

Background: Although family childcare homes (FCCH) present an ideal opportunity to improve children's healthy dietary intake, their use of mealtime responsive feeding practices is sub-optimal. This study's purpose was to determine the intervention effectiveness to increase the mealtime practices in Oklahoma FCCHs.

Methods: Happy Healthy Homes, a virtual intervention study included 36 FCCH providers (15=intervention, 21=control) who completed 6 hours of individual and group classes on a variety of topics, including one 20-minute module on responsive mealtime practices. One lunch per participant was recorded and coded using the Mealtime Observation in Child Care (MOCC) tool. Sub-scores for nine mealtime constructs and total scores (0-188.1 points) were assessed at baseline, at 3-months, and at 12-months to evaluate intervention effectiveness.

Results: Compared to baseline (93.8 ± 15.7), overall mealtime environment quality score (intervention group) improved at 3-months (99.0 ± 15.5 ; Not Significant (NS)) and significantly at 12-months (104 ± 10.8 ; $p=0.035$). Compared to baseline (3.3 ± 1.5 out of 20 points), providers scored significantly higher on serving meals family-style at 3-months (5.5 ± 4.3 ; $p=0.048$) and remained similar but not significant at 12-months (5.6 ± 2.7 ; NS). Compared to baseline (6.7 ± 5.2 out of 16.7 points), providers scored higher for sitting with children during mealtimes at 3-months (8.9 ± 4.7 ; NS), and significantly higher at 12-months (10.3 ± 2.8 ; $p=0.007$). Although the scores did not significantly differ between the intervention and the control group at 3-months, at 12 months, the intervention group scored significantly higher than the control group on serving meals family-style (5.6 ± 2.7 vs 3.1 ± 2.1 ; $p=0.013$), sitting together (10.3 ± 2.8 vs 6.7 ± 4.8 ; $p=0.042$), and allowing children's self-regulation (8.5 ± 1.4 vs 9.6 ± 0.8 ; $p=0.019$).

Conclusion: The virtual intervention was effective in improving aspects of mealtime practices in FCCHs with some changes sustained even at 12 months. Higher intervention dose may be needed to improve other aspects of mealtimes including encouraging verbal communication, sensory exploration, and using less restrictive mealtime practices.

Impact of Virtual Intervention to Improve Family Child Care Home Providers Nutrition Practices, Confidence, and Nutrition Knowledge

Dr. Susan Sisson¹, Divya Patel, Dr Bethany Williams, Jean Leidner, Spencer Hall, Dr Sara Vesley, Dr Deana Hildebrand, Dr Dianne Ward, Dr Alicia Salvatore

¹University Of Oklahoma Health Sciences Center, OKC, United States

Award Session- Implementation and scalability | Early care and education, Room 213, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: F. Early care and education

Purpose: The purpose of this study is to describe the impact of the virtually delivered Happy Healthy Homes randomized controlled intervention on Family Child Care Home provider's (FCCH) nutrition practices, confidence, and knowledge.

Methods: Oklahoma Cooperative Extension Educators delivered a 6-hour zoom intervention over three months, consisting of two, individual 90-minute education sessions and a 3-hour small group cooking class with immediate (3-month) and long-term (12-month) outcomes. Analyses used a mixed model, intent-to-treat paradigm (Nutrition (NUT) n=15; Control (CON) n=21). Clinical trials registration (NCT03560050).

Results: FCCH providers were 100% women, mean age 43.6 ± 9.8 years. In the nutrition intervention group, average nutrition practices score (max 4) increased from 3.15 ± 0.27 to 3.20 ± 0.28 at 3 months ($p=0.05$). Nutrition practice sub-scores (max 4) for beverages provided (3.30 ± 0.28 , 3.47 ± 0.38 , 3.39 ± 0.42) and feeding environment (2.70 ± 0.38 , 3.02 ± 0.41 , 2.84 ± 0.43) improved in the NUT group at 3 months ($p \leq 0.05$), but not at 12. The number of foods-provided best practices (max 13) increased in the NUT group from baseline (6.9 ± 1.5) to 12 months (8.67 ± 1.6 , $p=0.02$). Nutrition confidence was relatively high at baseline for both NUT (14.3 ± 2.8 out of 18) and CON (16.0 ± 2.0), but higher for CON ($p=0.04$). By 3 months, this difference had diminished however by 12 months it had returned indicating short-term intervention impact. Nutrition barriers were relatively low (range 20-60 where lower=fewer barriers) at baseline for both NUT (35.3 ± 6.3) and CON (34.6 ± 7.3). There was no change by group or over time. The general nutrition knowledge score indicated 67% accuracy with no change at 3 or 12 months. Food program knowledge was low (55% accuracy). By 12 months, the NUT group demonstrated improved knowledge on serving more whole grains and less fried foods.

Conclusions: The virtual intervention delivery yielded modest short-term improvements in nutrition practices, specifically beverages and foods provided and the feeding environment, and in nutrition confidence, and CACFP knowledge. Some changes were maintained at 12 months while others indicated the likely need for follow-up content exposure.

StayWell ECE: Assessing the wellbeing of Early Childhood Educators across New York

Ms. Beatriz Carmona¹, Dr. Laura Bellows¹

¹Cornell University, Ithaca, USA

Award Session- Implementation and scalability | Early care and education, Room 213, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: F. Early care and education

Purpose: To examine the physical (i.e., diet, physical activity, health status), mental (i.e., stress), and professional (i.e., burnout, retention) wellbeing of Early Care and Education (ECE) educators.

Methods: The StayWell ECE Survey (110 items) was distributed electronically via REDCap to New York licensed ECE educators in spring 2023. Physical wellbeing included diet (Rapid Eating Assessment for Participants), physical activity (Behavioral Risk Factor Surveillance System), and health status (e.g., Body Mass Index (BMI)). Mental wellbeing included a stress measure (Perceived Stress Scale). Professional wellbeing included the Maslach Burnout Inventory (emotional exhaustion, depersonalization, and personal accomplishment) and plans for retention (assessing likelihood to leave). Multiple linear regressions tested associations between physical, mental, and professional wellbeing, controlling for income, age, and ECE setting. Analyses were performed using R (v4.3.2, 2023); $\alpha < 0.05$.

Results: Respondents (n=1,423) worked in a variety of ECE settings- Head Start (21%), large centers/public schools (17%), or small centers/ after school programs (17%); 44% were low-income, 36% were food insecure, and 74% had moderate/high levels of stress. A majority (71%) were overweight/obese; 74% consumed <2 daily servings of whole grains, vegetables, and/or fruit; and 28% did not exercise. For burnout, 54% had medium/high emotional exhaustion, 38% had medium/high depersonalization, and 79% experienced low/medium levels of personal accomplishment. Within the next year, 22% planned to leave their position, center, or the ECE profession. Lower personal accomplishment (high burnout) was positively associated with higher BMI ($\beta=0.08$, $p=0.02$), stress ($\beta=0.53$, $p=0.00$), and likelihood to leave ($\beta=0.07$, $p=0.00$). Higher depersonalization (D) and emotional exhaustion (EE; high burnout) were both positively associated with BMI (D: $\beta=0.06$, $p=0.00$; EE: $\beta=0.18$, $p=0.00$), stress (D: $\beta=0.32$, $p=0.00$; EE: $\beta=1.09$, $p=0.00$), and likelihood to leave (D: $\beta=0.17$, $p=0.00$; EE: $\beta=0.08$, $p=0.00$). Stress was also positively associated with likelihood to leave ($\beta=0.10$, $p=0.00$).

Conclusion: ECE educators experienced high levels of stress and burnout, had poor health behaviors and overall health. Higher burnout related to lower professional retention plans, and higher stress and BMI. Different dimensions of wellbeing were closely linked; these findings have implications towards the development of wellbeing interventions for ECE educators.

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Determining the effects of culturally-appropriate, medically-tailored foods for DASH eating plan adherence on cardiometabolic markers in Hispanic/Latine individuals with hypertension

Dr. Ambria Crusan¹, Angela Cuccio¹, Kerrie Roozen², Clara Godoy-Henderson²
¹St. Catherine University, St. Paul, USA, ²University of Minnesota, Minneapolis, USA

Award Session- Participatory Research in Health Promotion | Indigenous Research, Room 216, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Nutrition interventions for hypertension (HTN), such as the Dietary Approaches to Stop Hypertension (DASH) eating plan, fail to consider barriers to obtaining and utilizing fruits and vegetables (F/V). A paucity in the literature exists regarding acceptability of nutrition interventions for Hispanic/Latine communities. This project aims to determine the effect improved access to a culturally-appropriate, medically-tailored foods has on Hispanic/Latine individuals with HTN via an iterative process: 1) conceptualization of culturally-appropriate F/V for a "DASH box" using a patient/provider survey, 2) formative DASH box development utilizing individual interviews seeking box content feedback, and 3) free living pilot trial including DASH box intervention to determine effects on cardiometabolic markers.

Methods: Using community-based participatory research methods, F/V preferences indicated in 50 surveys supported the conceptualization of six boxes, including F/V, herbs, and staple foods to support DASH eating plan adherence. Boxes were displayed during 15 interviews gathering feedback on acceptability. Themes were assessed using the Framework Method and finalized via consensus building. A 28-day open trial enrolling 21 participants (12 females, 9 males) collected pre- and post- measurements of blood pressure (BP), weight, waist circumference, and skin carotenoid levels while receiving weekly DASH boxes and diet education.

Results: Thematic analysis determined participants prefer fresh F/V, use staple items to compliment F/V, and experience barriers (time, money, transportation) to accessing or using F/V. After the 28-day intervention, there was a significant improvement in systolic BP (mean difference of -4.1 ± 7.8 mmHg, $p=0.01$), diastolic BP (-3.7 ± 6.4 mmHg, $p=0.004$), and waist circumference (-0.8 ± 1.1 inches, $p=0.003$). While mean difference in weight (-1.2 ± 4.8 lbs, $p=0.26$) and skin carotenoid levels (26.7 ± 74.1 , $p=0.06$) changed, results were not significant.

Conclusions: Attention should be paid to the voices of communities to develop culturally-appropriate nutrition interventions for chronic disease management and supporting populations with high food insecurity. This research provides formative contributions regarding culturally-appropriate interventions for chronic disease management, suggesting tailored DASH boxes may be effective in lowering BP for Hispanic/Latine individuals with HTN.

A Doula Perspectives on Providing Physical Activity Education and Counseling Among Pregnant Women

Ms. Priyanka Chaudhary¹, Dr. Kailey Snyder², Dr. John Rech³, Dr. Gaurav Kumar², Dr. Danae Dinkel¹

¹University Of Nebraska Omaha, Omaha, USA, ²University of Nebraska Medical Center, Omaha, USA, ³University of Nebraska Kearney

Award Session- Participatory Research in Health Promotion | Indigenous Research, Room 216, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Despite the well-documented benefits of lifelong physical activity (PA) and its benefits during pregnancy, a majority of women do not meet the recommended PA guidelines. Doulas, despite being recognized for improving birthing experiences, little is known about their perspective on PA promotion. Therefore, the purpose of this research is to better understand doulas' perspectives on providing PA education and counseling during pregnancy.

Methods: This was a qualitative phenomenological study. A purposive sampling method was used to recruit doulas across Nebraska. A semi-structured interview guide was developed based on the Theory of Planned Behavior. Data were analyzed using a directed content analysis approach. Member checking and audit trail were performed to ensure the validity and reliability of the data.

Results/Findings: A total of 12 doulas with a mean age of 34.40 ± 5.79 years participated in the study. The sample included labor and birth doulas (75%), postpartum doulas (16.6%), and miscarriage doulas (8.3%). While almost all doulas knew about the benefits of PA, they rarely offered PA education and counseling to women. Participants mentioned that there were barriers to providing PA education and counseling for both doulas and pregnant women. For doulas, barriers included a lack of knowledge of PA guidelines and the COVID-19 pandemic. For pregnant women, barriers included pregnancy-related symptoms, cultural barriers, lack of knowledge related to PA, and environmental barriers. Doulas felt there was a need for education and training on PA for doulas to improve their knowledge and promotion of PA with women during consultations. They also advocated for tailored PA programs for pregnant women depending on their physiological and psychological needs.

Conclusions: Doulas lacked knowledge of PA guidelines during pregnancy and were not often provided with such education and counseling. The study emphasizes the need to improve doulas' knowledge of PA guidelines, provide resources, and foster a supportive environment for promoting PA during pregnancy. Future efforts should focus on interventions and training programs to empower doulas in effectively supporting pregnant women's PA.

Addressing System-Level Barriers to Nutrition Security in Puerto Rico in the Face of Climate Change: A Community-Based System Dynamics Approach

Ms. Natalia Guerra Uccelli¹, Ms. Mia Grossman¹, Dr. Michael Long¹, Dr. Joel Gittelsohn², Ms. Crystal Diaz³, Mr. Cesar Ostolaza⁴, Ms. Carla Rosas⁴, Dr. Ana Maria García Blanco⁴, Dr. Uriyoan Colon-Ramos¹

¹The George Washington University, Washington, USA, ²Johns Hopkins University, Baltimore, USA, ³PRoduce, Carolina, USA, ⁴Instituto Nueva Escuela (INE), San Juan, USA

Award Session- Participatory Research in Health Promotion | Indigenous Research, Room 216, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: In Puerto Rico (PR), more than 85% of food is imported. PR's food system has been continuously impacted by natural disasters, most notably by Hurricane María in 2017. We used Community-Based System Dynamics (CBSD) to develop a shared understanding of the systemic barriers to local food production and understand how to promote a more resilient and robust agricultural economy.

Methods: We conducted a Group Model Building (GMB) Workshop in San Juan, PR bringing together diverse stakeholders to develop a shared understanding of how local food consumption has dropped over time. We recruited 26 stakeholders from the private sector, civil society, food production, academia, local communities, and local government and agencies to participate in the workshop. CBSD framed the GMB and its subsequent causal loop diagram (CLD). We synthesized the information from the workshop, data collected from in-depth interviews, and two 2.5-hour member-checking meetings to generate a comprehensive CLD.

Results: The stakeholders identified 6 subsystems: (1) demographic change and rural disinvestment, (2) climate change and farm sector adaptive capacity, (3) agricultural economy, (4) food culture, (5) nutrition security and health, and (6) governance and public policy. Four reinforcing and four balancing loops were identified across the system. For each balancing loop, we identified potential lever points that could be effective in intervening within the system. One example was based on the balancing loop: the rising rate of ecological degradation in agricultural areas increases ecological consciousness which, in turn, emphasizes the importance of implementing regenerative agricultural practices. Due to barriers preventing farmers from transitioning to regenerative agriculture, to strengthen this balancing loop, we propose investing in regenerative practice capacity by providing technological assistance and financing to farmers.

Conclusion: The complex nature of the challenges facing local food production and consumption in Puerto Rico, underlines the necessity for action. The scope of factors and areas of expertise demonstrate the need for cross-sectoral collaboration and community involvement to effectively intervene in the system. Our work has revealed a willingness to address this issue and demonstrated that the cohesion and integration of efforts is the key to viable solutions.

An Initial Program Theory Explaining the Outcomes of Community Mobilization Training in Health Promotion in Indigenous Communities

Dr. Dave Bergeron¹, Ms. Miriam Muirhead², Mr. Cameron Jedemann², **Prof. Brittany Jock**³, Dr. Lucie Lévesque²

¹Université du Québec à Rimouski, Rimouski, Canada, ²Queen's University, Kingston, Canada,

³McGill University, Montreal, Canada

Award Session- Participatory Research in Health Promotion | Indigenous Research, Room 216, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: L. Indigenous Research

Purpose: Indigenous Nations are regaining control over their health and well-being to reduce health inequities. Training programs that guide Indigenous community stakeholders to mobilize for collective health promotion action are promising approaches for addressing health inequities. The Community Mobilization Training (CMT) developed by the Kahnawake Schools Diabetes Prevention Program is an example of a training program that guides Indigenous stakeholders in the mobilization of their community towards health promotion. Because it is essential to develop health promotion programs that support mobilization of Indigenous communities, understanding ways to account for context and trigger the essential mechanisms are needed to optimize community mobilization. It is therefore essential to understand how, why, for whom and under which circumstances CMT produces its outcomes. The aim is to present an initial program theory explaining CMT outcomes in Indigenous communities that have received this training.

Methods: A realist-informed evaluation was carried out. To uncover tacit theories specific to the CMT program, individual semi-structured interviews were conducted with research team members who were involved in the CMT in the six communities where it was deployed. A group interview was also conducted with the investigators involved in CMT implementation. An iterative analysis process was used to generate Context-Mechanism-Outcome configurations for developing the CMT initial program theory.

Results/findings: Participating community members were aware of the burden of type 2 diabetes faced by their communities and motivated to make the necessary changes to promote health. In some communities, however, it was difficult to balance long-term health promotion activities with urgent and time-sensitive community needs. Considering that the CMT program integrates traditional knowledges and is sensitive to the culture of each community, it generated a great interest among participants in improving the collective mobilization of their community in health promotion. The CMT also enabled relationships and discussions between organizations within communities for health promotion. In addition, the presence of a community champion helps to maintain CMT outcomes after the program has been delivered.

Conclusion: By being rooted in traditional knowledges, the CMT program facilitates community mobilization for health promotion in Indigenous communities.

Niwh Yizt'iyh Hilht'iz Nets'eelh'iyh – Strengthening our Bodies: A Qualitative Understanding of the Physical Activity Experience in Rural and Remote First Nations Communities in Northern British Columbia, Canada

Miss Sunaina Chopra^{1,2}, Dr. Travis Holyk³, Dr. Suzanne Huot⁴, Dr. Pat Camp^{2,5}

¹Graduate Programs in Rehabilitation Sciences, University of British Columbia, Vancouver, Canada, ²Centre for Heart Lung Innovation, University of British Columbia, Vancouver, Canada, ³Carrier Sekani Family Services, Prince George, Canada, ⁴Department of Occupational Science & Occupational Therapy, University of British Columbia, Vancouver, Canada, ⁵Department of Physical Therapy, University of British Columbia, Vancouver, Canada

**Award Session- Participatory Research in Health Promotion | Indigenous Research,
Room 216, May 20, 2024, 5:15 PM - 6:30 PM**

SIG - Primary Choice: L. Indigenous Research

Purpose: First Nations communities regularly engage in various sports, cultural and land-based activities. However, due to various intrinsic, systemic and structural barriers, individuals noted through the Health Evaluation conducted by Carrier Sekani Family Services (CSFS), a First Nations-led healthcare society, the need for improved physical activity. As such, this project supports increased emphasis in communities and the calls to action made at all governmental levels. While initiatives have been made, there is still little access to programs appropriate for those with chronic conditions. To understand the current experience to being active in the community, this project determined the values of, and barriers and facilitators to, physical activity in rural and remote northern British Columbia First Nations communities, specifically among individuals with chronic conditions. This project is a partnership between the University of British Columbia and CSFS.

Methods: This qualitative study is a subset of a larger mixed-methods, community-based participatory action project. Semi-structured interviews with an optional Photovoice component were conducted with a subset of participants who previously completed a survey in the first phase of this project. Eligible participants included those 12+ years old, experiencing at least one chronic condition, and a member of a First Nation receiving services from CSFS. Using NVivo, verbatim transcripts were analyzed using reflexive thematic analysis.

Results: Out of the 215 survey responses, 28 interviews were conducted with participants across two communities. Preliminary findings suggest that physical activity aligns with cultural values, specifically the benefits to health and well-being through land-based activity. Restoring historical ways of life may reduce barriers to physical activity, including barriers arising from physical and mental health concerns. Tailoring future programming to the community's needs, such as changes to infrastructure, may help facilitate physical activity.

Conclusion: To improve programming, service providers must ensure that their offerings reflect the values of community members, minimize barriers they experience and support factors that they have identified as facilitators. These results will enable CSFS to create specific strategies on physical activity programming that will be appropriate for those with chronic conditions.

Financial Support: This research is supported by the Canadian Institutes of Health Research.

Development and evaluation of a culturally-informed food insecurity screening protocol with American Indian adults: Evidence from Northern Navajo Medical Center

Ms. Tia Benally¹, Mrs. Kelli Wilson Begay², Dr. Lydia Kim³, Dr. Preyanka Makadia⁴, Dr. Amanda Fretts¹, Dr. Cassandra Nguyen⁵

¹University of Washington, Seattle, USA, ²Maven Collective Consulting, Albuquerque, USA,

³Los Angeles County Department of Health Services, Los Angeles, USA, ⁴Northern Navajo Medical Center, Shiprock, USA, ⁵University of California, Davis, Davis, USA

Award Session- Participatory Research in Health Promotion | Indigenous Research, Room 216, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: L. Indigenous Research

Purpose: Food insecurity, defined as insufficient access to enough nutritious food, is disproportionately prevalent among American Indian and Alaska Native individuals in the US. Some Indian Health Services (IHS) facilities screen patients for food insecurity by asking if their food did not last or if they had worries about food. However, screening may be stigmatizing. The purpose of this project was to develop and evaluate alternative culturally informed questions among IHS patients.

Methods: The mixed methods sequential exploratory study included a qualitative phase and a quantitative phase. During the first phase, participants were interviewed about their impressions of the existing food insecurity screener and alternative culturally informed questions. After analyzing interviews, culturally informed questions were refined, and a second sample was recruited for the quantitative phase. During this phase, respondents completed a survey that included the existing food insecurity screener and the culturally informed questions to assess equivalent-form reliability. This project was reviewed by the Navajo Nation Human Research Review Board and the University of Washington IRB.

Results/findings: Interview participants (n=25) reported high risk of food insecurity (60%) based on existing screening questions. Interviewees felt screening was important, but the existing food security screener might be confusing and produce shame. Interviewees provided insights that were used to update the alternative culturally informed questions. Survey participants (n=97) reported high risk of food insecurity (70%) based on existing screening questions. Responses to culturally informed questions were similar for respondents considered food insecure or food secure, with a few exceptions. When responses to the culturally informed questions were classified as potentially food insecure, the Pearson correlation between potential food insecurity and food insecurity based on the existing screener was of weak to moderate strength (0.3).

Conclusions: The equivalent-form reliability analyses indicated the existing and alternate screeners were not strongly associated, suggesting the questions may be gathering data related to two unique underlying concepts. The qualitative data and consistent high quantitative prevalence of food insecurity in both phases of the study provide evidence of rampant food

insecurity issues, highlighting the importance that actions be taken to ensure food security among Navajo Nation residents.

Implementation of an intervention combining physical activity with psychological therapy for socially disadvantaged young people: A mixed-methods process evaluation.

Dr. Jennifer Thomas¹, Prof Diane Crone², Prof Nic Bowes², Prof Kelly Mackintosh¹

¹Swansea University, Swansea, United Kingdom, ²Cardiff Metropolitan University, Wales, UK.

Award Session- Socio-economic inequalities | Young Adults, Room 215, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: There is a growing body of evidence to suggest that interventions combining physical activity (PA) with psychological therapy can improve engagement, retention, and psychological outcomes of young people experiencing homelessness (YPEH). However, the challenges associated with implementing such interventions remain poorly understood. The aim of this study was therefore to evaluate the implementation, mechanisms of effect, and contextual influences of a community-based intervention comprising PA and psychotherapy for YPEH.

Methods: A retrospective mixed-methods process evaluation was undertaken to assess recruitment and retention, fidelity, dose delivered, dose received, mechanisms of effect, and contextual barriers and facilitators to the intervention. Data sources included attendance registers which were analysed using descriptive statistics, whereas interviews with implementers and focus groups with participants were qualitatively analysed using a combined inductive/deductive thematic approach. This data was subsequently triangulated with intervention fidelity monitoring forms and non-participant observations to support interpretation of the findings.

Results: Six participants initially enrolled into the study, with three achieving >75% attendance. Challenges to recruitment and retention were multi-factorial, however a lack of organisational resources (staff support and transportation) appeared to have the greatest influence. Fidelity and dose delivered of both intervention components (PA and psychotherapy) were good. Moreover, triangulated data suggested that adaptations did not adversely impact on effectiveness. Dose received by participants was indicative of their engagement with sessions rather than attendance, and dose-response was related to both the quantity and perceived quality of the intervention received. Contextual barriers and facilitators to implementation outcomes were identified across individual, organisational, and intervention-level domains.

Conclusions: Implementation-related factors contributed to challenges encountered, rather than a lack of feasibility or acceptability of a combined PA and psychotherapy intervention. Positive effects reported across outcomes indicate that overcoming identified barriers could facilitate scale-up of the intervention, and translation from research into routine practice.

Nutrition insecurity associated with lower odds of sports participation among United States adolescents: findings from a cross-sectional analysis of nationally representative data.

Dr. Kathryn Janda-Thomte¹, Sophia Garza-Hatcher¹, Brittany Needham¹, Dr. Ashleigh Johnson²

¹Baylor University, Waco, United States, ²San Diego State University, San Diego, United States

Award Session- Socio-economic inequalities | Young Adults, Room 215, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: There has been little exploration of the relationship between food/nutrition insecurity status (FNIS) and sports participation (SP) among adolescents. We addressed this gap by examining the association between FNIS and various sociodemographic covariates with SP among United States (US) adolescents using nationally representative National Survey of Child Health (NSCH) data.

Methods: This cross-sectional study utilized data from the 2020-2021 NSCH for adolescents aged 12-17 years. The outcome of interest was self-reported adolescent SP in the past year (Yes/No). The exposure of interest was FNIS in the past year (1-item: food and nutrition secure, nutrition insecure [NI], food insecure [FI]). Additional covariates included: adolescent sex, race, and ethnicity; parental employment status and education level; household income, utilization of federal assistance programs, and presence of a neighborhood recreation center. Unadjusted and adjusted logistic regression models (95% confidence intervals [CI], $\alpha=0.05$) were used to assess associations between adolescent SP with FNIS and covariates using survey sampling weights.

Results/Findings: Adolescents in the analytic sample ($n=33,705$; Weighted $N = 24,396,854$) were predominantly male (51%, CI:0.50-0.52), White (66.0%, CI:0.65-0.67), non-Hispanic (72.5%, CI:-.71-0.74), and had a parent employed full-time (63.8%, CI: .63-0.65). Over 25% (CI:0.25-0.27) were NI, approximately 5% (CI:0.04-0.06) were FI, and 51% (CI:0.50-0.53) participated in sports in the last year. In the adjusted model, those who were NI (aOR:0.71, CI:0.62-0.81), female (aOR:0.82, CI:0.72-0.91), Asian (aOR:0.68, CI:0.55-0.85), had an unemployed parent not looking for work (aOR:0.76, CI:0.64-0.91) and lacked access to a local recreation center (aOR:0.83, CI:0.75-0.93) were significantly associated with decreased odds of SP compared to respective referent groups (all $p<0.01$). However, having a household income $>400\%$ of the federal poverty level (aOR:1.31, CI:1.07-1.60), not receiving cash assistance (aOR:1.38, CI:1.03-1.75), and having a parent with a college degree (aOR:1.74, CI:1.29-2.34) were associated with greater odds of SP compared to their respective referent groups (all $p<0.05$).

Conclusions: This study identified significant sociodemographic differences among a nationally representative sample, with NI adolescents being 30% less likely to participate in sports. These findings highlight stark disparities in SP that are possibly rooted in structural and economic barriers. Addressing these barriers is imperative to enhancing adolescent sports participation.

Differences between quantitative and qualitative responses to the U.S. Household Food Security Survey Module: Findings for U.S. Latine households with children

Mr. Edgar Doolan¹, Prof Cassandra M. Johnson², Prof. Katherine L. Dickin³, Prof. Amanda C. McClain¹

¹San Diego State University, San Diego, USA, ²Texas State University, San Marcos, USA,

³Cornell University, Ithaca, USA

Award Session- Socio-economic inequalities | Young Adults, Room 215, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: The U.S. Household Food Security Survey Module (HFSSM) measures household food insecurity (FI). Latine households experience a high prevalence of FI, and recent research indicated the HFSSM may underestimate FI among Latine households with children. We explored patterns in qualitative descriptions compared to quantitative HFSSM responses among U.S. Latine caregivers of children using convergent mixed methods.

Methods: We used data from a qualitative study of low-income, heritage diverse Latine caregivers (n = 62) of children (<18 years) in three U.S. states (California, New York, and Texas). Trained researchers conducted in-depth cognitive interviews using the HFSSM. We calculated HFSSM scores per USDA procedures to determine household FI status. Then, we made item-by-item adjustments to HFSSM scores, and household FI status, based on iteratively identified rules for adjustment derived from participant qualitative explanations. Using a Bland–Altman plot, we calculated mean bias, indicating the level of agreement between original and adjusted scores. We identified patterns in qualitative descriptions for participants below the bias (indicating higher household FI), compared to participants above the bias or without score adjustments.

Results: Overall, 11.4% of 1,1178 HFSSM responses merited adjustment with the majority (94.8%) being adjusted to affirmative (higher FI). Most adjustments reflected general incongruency between HFSSM responses and qualitative descriptions, participant reliance on food banks/pantries, and sensitivity to child-referenced items. Child-referenced items accounted for half of all adjustments. The Bland–Altman plot bias demonstrated that the HFSSM, compared to adjusted scores, had a 1.85-point score bias toward greater food security. Participants below this bias appeared to be currently or more chronically experiencing FI. Participants with scores above the bias, or whose scores did not change, predominately spoke about their situations more generally or indicated a specific or short-lived FI period in the past 12 months.

Conclusions: Among U.S. Latine parents/caregivers of children, greater underestimation of FI appeared to be more common among households experiencing more persistent FI, with child-referenced items being the most affected. Future research to improve FI measurement among

Latine households should explore the adequacy of the reference period and ways to account for food assistance reliance and sensitivity of child-referenced items.

Unlocking Academic Success: Exploring Associations Between 24-Hour Movement Compositions and Academic Performance in College Students

Miss Carah Porter¹, Jennifer Sanders¹, Dr. Thomas Coyle¹, Dr. Denver Brown¹

¹The University of Texas at San Antonio, San Antonio, USA

Award Session- Socio-economic inequalities | Young Adults, Room 215, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: J. Young Adults

Purpose: Research has established beneficial associations between 24-hour movement behaviors (i.e., sleep, physical activity, sedentary behavior) and academic performance, but these studies have primarily examined each behavior in isolation. This siloed approach neglects that movement behaviors are co-dependent over a whole day, whereby time spent in one behavior cannot be spent engaging in another behavior. This study examined the relationship between 24-hour movement compositions and academic performance among college students.

Methods: A total of 150 college students (Mean age = 19.2 ± 1.42 years; 69.3% female; 42.7% Hispanic) enrolled at a large Hispanic-Serving Institution in Texas wore an ActiGraph wGT3x-BT accelerometer on their non-dominant wrist for seven full days to measure 24-hour movement behaviors and consented to have their GPA and standardized test scores (e.g., SAT/ACT) collected from university records. Descriptive statistics and a series of compositional linear regression models were computed, with adjustment for gender and standardized test scores.

Results: On average, participants' 24-hour movement composition was comprised of 10.6 hours sleeping, 10.2 hours of sedentary behavior, 2.2 hours of light physical activity (LPA), and 1.0 hours of moderate-to-vigorous physical activity (MVPA). Findings revealed a significant association between the overall movement composition and GPA ($F(3,143) = 5.67, p < .01$). Relative to other behaviors, positive associations were observed between sedentary behavior ($B = 0.68 \pm 0.30$ SE, $p = .03$) and MVPA ($B = 0.27 \pm 0.12$ SE, $p = .03$) with GPA, whereas a negative association was observed for LPA ($B = -0.56 \pm 0.16$ SE, $p < .001$). Replacing up to 20 minutes of LPA with sedentary behavior, sleep, or MVPA ($B = 0.02$ to $0.15, p$'s $< .05$) was associated with higher GPA. Substituting up to 20 minutes of sleep with MVPA was also associated with higher GPA ($B = 0.02$ to $0.77, p$'s $< .05$).

Conclusions: Findings suggest that college students' movement compositions may be related to their academic performance when adopting an integrative 24-hr approach. Longitudinal work is needed to pinpoint specific periods within the semester, such as midterms or finals, to better understand when each behavior is most important for academic performance.

Perceived access to physical activity opportunities among young adults with intellectual and developmental disabilities

Dr. Michaela Schenkelberg¹, Cynthia Lujan¹, Marissa Schulke², Dr. Elizabeth Leader Janssen¹, Dr. Danae Dinkel¹, Dr. Michael Messerole¹

¹University of Nebraska at Omaha, Omaha, USA, ²Arizona State University, Tempe, USA

Award Session- Socio-economic inequalities | Young Adults, Room 215, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: J. Young Adults

Purpose: Individuals with intellectual and developmental disabilities (IDD) demonstrate significantly lower engagement in sports and other recreational physical activities (PA) compared to typically developing peers (TD). The primary purpose of this study was to identify the factors that promote or inhibit participation in PA from the perspectives of young adults with IDD and their parents.

Methods: This qualitative study used a multiple-case study research design. Young adults with IDD between the ages of 21-39 years and parents of a young adult with IDD were recruited from an urban midwestern community. A total of 13 young adults with IDD and 15 parents participated in this study. Separate focus groups (young adult groups, n = 3; parent groups, n = 5) were conducted for young adult and parent participants and took place in-person or over Zoom. A graduate student conducted the focus groups using an interview guide based on the Social Ecological Model. Data were analyzed using a directed qualitative content analysis approach and a peer debriefing validation approach.

Results: Shared subthemes from the young adult and parent focus groups included: 1) available, but limited PA opportunities, 2) disability inclusion, 3) parents' role in transportation, 4) PA opportunities for those with IDD are low-priority, 5) cost barriers, and 6) need for qualified staff. Data from the young adult focus groups revealed unique subthemes including that young adults with IDD were knowledgeable about PA and viewed PA positively. Additional subthemes included: lack of social support, concern for safety, and perceived lack of adaptations in existing PA opportunities. Unique subthemes from the parent focus group included vulnerability of young adults with IDD, young adults' reluctance to participate in PA, PA for socialization, and the need for more PA opportunities.

Conclusions: Though participating young adults with IDD viewed PA favorably, there are significant barriers that inhibit access to PA opportunities. Improving the quality (e.g., requiring staff who are trained in adapting programs for those with IDD) and quantity of PA opportunities across multiple sectors can aid in increasing participation in PA for young adults with IDD

The “Eat Less Meat” one-month challenge: effects on short-term and long-term meat consumption, nutritional quality and environmental impact of diets among French young adults

Dr. Lucile Marty¹, Miss Manon Biehlmann¹, Pr Eric Robinson

¹Centre for Taste and Feeding Behaviour, INRAE, Dijon, France, ²Institute of Population Health Sciences, University of Liverpool, Liverpool, UK

Award Session- Socio-economic inequalities | Young Adults, Room 215, May 20, 2024, 5:15 PM - 6:30 PM

SIG - Primary Choice: J. Young Adults

Purpose: Encouraging a shift towards a more plant-based diet in new generations is one of the major behavioural challenge to preserve population and planet health. As motivation is central to shape long-term behaviour change, we aimed to test the effect of a “Eat Less Meat” one-month challenge on immediate and long-term meat consumption of young adults.

Methods: In January 2023, 366 university students (21±3.2 years old) consented to participate in the “Eat Less Meat” challenge and were randomized to February challenge (n=187, intervention group) or June challenge (n=179, control group). Participants chose between three meat-reduction objectives: 0, 3 or 6 servings of meat per week. They received a meat-free recipes book and followed an Instagram account where publications were posted every day. Publications contents were developed based on preliminary focus groups. All the participants were asked to complete a food frequency questionnaire in January (T0, before), February (T1, during) and May 2023 (T2, 3 months after the challenge). Differences in meat consumption (g/day), nutritional quality (adherence to French dietary guidelines), greenhouse gas emissions (kg CO₂eq/day) between T1 and T0 and between T2 and T0 were compared between the intervention and the control groups using linear mixed models.

Results: We observed a significant decrease in meat consumption between T1 and T0 in both the intervention (T0: 119±17 g/day, T1: 51±17, p<0.001) and the control group (T0: 116±17 g/day, T1: 83±17, p<0.001) and this decrease was greater in the intervention group (-35±11, p=0.002). We observed a significant decrease in meat consumption between T2 and T0 in both the intervention (T2: 70±18, p<0.001) and the control group (T2: 69±18, p<0.001), with no difference between the two groups (-2.6±14, p=0.847). The nutritional quality increased and the environmental impact of diets decreased in both groups between T0 and T1 and between T0 and T2 without any significant difference in differences (all p>0.05).

Conclusions: Participants in the “Eat Less Meat” challenge reduced their meat consumption, increased the nutritional quality and decreased the environmental impact of their diets during and 3 months after the challenge, however similar long-term effects were also observed in the control group

ORAL PRESENTATIONS

Jerks are useful: Extracting pulse rate from wrist-placed accelerometry jerk during sleep in children.

Dr. R Glenn Weaver¹, James White¹, Olivia Finnegan¹, Dr. Sarah Burkart¹, Dr. Michael Beets¹, Dr Srihari Nelakuditi¹, Dr. Rahul Ghosal¹, Dr. Bridget Armstrong¹, Dr. Elizabeth Adams¹, Dr. MVS Chandrashekhar¹

¹University Of South Carolina, Columbia, USA

O.1.01: Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being, Ballroom B, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: This study estimated children's pulse-rate via wrist placed accelerometry and compare these estimates to electrocardiogram (ECG) as a gold standard.

Methods: Children (N=82, M=8.4yrs SD=2.2yrs, 51% male) wore a consumer wearable (Apple Watch Series 7) and a wrist-placed research grade accelerometer (ActiGraph GT9X) while undergoing an overnight laboratory-based polysomnography, including a 3-lead ECG. Raw accelerometry data from Apple was extracted using SensorLog, a freely available user-written application that uses the devices' application programming interface. ActiGraph raw accelerometry data was extracted via Actilife Software. All subsequent processing was performed in MATLAB. Pulse-rate estimates from the raw accelerometry data were calculated from peak magnitude frequency in short time Fourier Transforms of Hilbert transformed jerk computed from acceleration magnitude. Heartrates from the criterion ECG were estimated from R-R spacings using R-pulse detection in normalized ECG traces. Agreement of accelerometer derived pulse rate with ECG was assessed via Pearson Correlation (r), Lin's Concordance Correlation Coefficient (LCCC), Mean absolute error (MAE), and mean absolute percent error (MAPE) overall and within each sleep stage.

Results/findings: For ActiGraph, r and LCCC were weak at -0.12 and -0.11, respectively, while MAE and MAPE were high at 16.8 (SD=14.2) beats/minute and 20.4% (SD=18.5%). For Apple r, and LCCC were moderate at 0.65 and 0.61, respectively, while MAE and MAPE were 6.4 (SD=9.9) beats/minute and 7.3% (SD=10.3%). For Apple, there was stronger agreement between accelerometer estimate pulse-rate and ECG estimated heartrate in stage N2 (r=0.78, LCCC=0.77, MAE=4.5 SD=6.8, MAPE=5.7% SD=8.4%), N3 (r=0.81, LCCC=0.80, MAE=4.0 SD=6.7, MAPE=4.8% SD=7.8%), and REM (r=0.78, LCCC=0.76, MAE=5.0 SD=6.6, MAPE=5.8% SD=7.2%) than during sleep stage N1 (r=0.47, LCCC=0.38, MAE=13.4 SD=13.9, MAPE=15.4% SD=20.4%) or time awake (r=0.33, LCCC=0.22, MAE=14.6 SD=14.1, MAPE=15.0% SD=12.7%) when children were likely moving more. AcitGraph's performance was equally poor across sleep stages.

Conclusions: Raw accelerometry data extracted from Apple but not ActiGraph could be used to estimate pulse-rate in children while they sleep. Additional work is needed to explore the sources (i.e., hardware, software, etc.) of discrepancy for ActiGraph, as accelerometer estimated pulse-rate could be used as a physiological signal in sleep detection and to determine wear-time vs. non-wear time.

From cybersecurity to screentime: A scoping review on motion sensor authentication and the potential in screentime measurement

Ms. OLIVIA FINNEGAN¹, Mr. James W. White¹, Dr. Bridget Armstrong¹, Dr. Elizabeth L. Adams¹, Dr. Sarah Burkart¹, Dr. Michael W. Beets¹, Dr. Srihari Nelakuditi¹, Dr. Erik A. Willis², Dr. Lauren von Klinggraeff¹, Ms. Hannah Parker¹, Mrs. Meghan Savidge¹, Ms. Xuanxuan Zhu¹, Mr. Zifei Zhong¹, Dr. Rahul Ghosal¹, Dr. Aliye Cepni¹, Dr. Robert Glenn Weaver¹

¹University Of South Carolina, Columbia, USA, ²University of North Carolina Chapel Hill, Chapel Hill, USA

O.1.01: Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being, Ballroom B, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Background: Current objective measures of screentime (e.g., passive sensing applications) are unable to identify the user of a mobile device, a critical limitation in children's screentime research where devices are often shared across a family. The field of behavioral biometrics has harnessed motion sensors embedded on mobile devices (e.g., accelerometer, gyroscope) to continuously authenticate users, yet this approach has not been applied to public health. The purpose of this scoping review was to summarize the literature on motion sensor authentication to inform the possibility of using this technology to objectively measure children's screentime.

Methods: We systematically searched five databases (Web of Science Core Collection, Inspec in Engineering Village, Applied Science & Technology Source, IEEE Xplore, PubMed), with the last search in September of 2022. Eligible studies were published between 2007 and 2022 and included authentication of the user or the detection of demographic characteristics (age, gender) using built-in motion sensors (e.g., accelerometer, gyroscope) on mobile devices (e.g., smartphone, tablet). We extracted study characteristics (sample size, age, gender), data collection methods, data stream, and model evaluation metrics, and additionally performed a study quality assessment. Summary characteristics were tabulated and compiled in Excel. We synthesized the extracted information using a narrative approach.

Results: Of the 14,176 articles screened, 60 were included in this scoping review. The most frequently used motion sensors were accelerometer (n=59 studies) and gyroscope (n=40 studies). Most studies used an Android operating system (n=43) and were conducted in a laboratory (n=46), with specific device interaction tasks (n=49). Most studies detected a single unique user of the device (n=57). Of the studies that did report age (n=22), the majority were performed exclusively in adult populations (n=16). Study quality was low in many of the included studies, with an average score of 5.4/14.

Conclusions: Motion sensors have previously been used for user authentication in behavioral biometrics, but the existing literature is limited by low overall study quality, largely driven by lack of reporting. Freely accessible sensors, like accelerometers and gyroscopes, can potentially be used to identify children's device use, but more rigorous research must be conducted, especially among children.

FLASH-TV 3.0: Validation of FLASH-TV methods for estimating TV-viewing among children

Dr. Teresia O'Connor¹, Mr. Anil Kumar Vanathya², Ms. Tatyana Garza¹, Mr. Uzair Alam¹, Ms. Alicia Beltran¹, Mr. Alex Ho², Dr. Salma Musaad¹, Dr. Sheryl Hughes¹, Dr. Jason Mendoza³, Dr. Jennette Moreno¹, Dr. Tom Baranowski¹, Dr. Ashok Veeraraghavan²

¹Baylor College of Medicine, Department of Pediatrics, USDA/ARS Children's Nutrition Research Center, Houston, USA, ²Rice University, Department of Electrical & Computer Engineering, Houston, USA,

³University of Washington School of Medicine, Seattle, USA

O.1.01: Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being, Ballroom B, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: TV-viewing is a sedentary behavior that may have health risks. Existing tools to measure children's TV viewing are insufficient. Our goal was to validate a system for passively measuring the time children spend watching TV: FLASH-TV 3.0.

Methods: A task-based study (n=30) was conducted with family-triads (parent and 2 siblings) stratified by child race and ethnicity. Family-triads participated in screen use protocols for about 90-minutes in an observation lab. FLASH-TV collects video data and process it with machine learning algorithms to estimate a child's TV viewing time by sequentially detecting faces in the video, verifying whether faces were the target child, and assessing TV-watching (gaze) of the target child. The video-data were assessed at 5-second epochs. Only the processed TV-viewing output was saved by FLASH-TV. Video data collected by a separate identical camera in close proximity to FLASH-TV, was coded by staff using duration coding for whether the target child's gaze was on the TV = gold-standard (10% double coded, mean Kappa 0.89 (SD 0.07)). The FLASH-TV output was compared to the gold standard for sensitivity, specificity, overall TV viewing (min:sec) calculated using intra-class correlation (ICC) in a generalized linear mixed model, and epoch by epoch correlations via Kappas.

Results: The sample was comprised of 30% black, 27% Hispanic white, 27% non-Hispanic white, and 17% other target children and the mean age was 8.3 years. Epoch-by-epoch correspondence of FLASH-TV with gold standard had a mean Kappa of 0.70 (SD 0.16), sensitivity of 77.8% (SD 17.3%), and specificity of 88.4% (SD 6.5%). The ICC was 0.83 when comparing the child's gold standard TV viewing time (minutes) to FLASH-TV's estimated time. The ICC varied by children's race and ethnicity, with the lowest ICC among black youth (ICC=0.62) and the highest among other youth (ICC 0.99).

Conclusion: FLASH-TV 3.0 is a valid tool to accurately measure children's TV viewing, however there is variability according to children's race and ethnicity. Future studies should assess if bias is introduced by the machine learning algorithms or is due to behavioral differences in watching TV among children. Further validation in children's homes is underway.

Evaluating the performance of open-source processing of actigraphy sleep estimation in children with sleep disruptions: A comparison with polysomnography

Dr. Aliye Cepni¹, Xuanxuan Zhu¹, Olivia Finnegan¹, James White¹, Dr. Bridget Armstrong¹, Dr. Sarah Burkart¹, Dr. Michael Beets¹, Dr. Elizabeth Adams¹, Hannah Parker¹, Meghan Savidge¹, Nicholas Niako¹, Dr. R. Glenn Weaver¹

¹University Of South Carolina, Columbia, USA

O.1.01: Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being, Ballroom B, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Accelerometry is widely used for measuring children's free-living sleep. The GENEActiv and GENE data in R (GGIR) is an open-source validated method for processing 24-hour accelerometry data among adults, including sleep. However, no studies have evaluated GGIR's performance to classify children's sleep. This study aims to evaluate the performance of GGIR's HDCZA sleep algorithm (van Hees et al., 2018) applied to wrist-worn accelerometry (ActiGraph GT9X Link) against polysomnography in children.

Methods: Accelerometry and polysomnography were concurrently measured in 64 children (8.6±2.3yrs, 53% female, 47% Black, 81% diagnosed sleep disorder) over a single-night lab visit. Actigraph devices were initialized to collect data at 50 Hz with idle sleep mode off. The HDCZA algorithm was applied in the GGIR (2.10.3) to code 30-second epochs as sleep and wake. The GGIR's basic sleep log function with time in and out of bed noted by the sleep techs was used. Standard scoring was applied for polysomnography data. Epoch-by-epoch and discrepancy analyses for sleep metrics [wake after sleep onset (WASO), total sleep time (TST), sleep efficiency (SE), and sleep onset latency (SOL)] determined the level of agreement between accelerometry and polysomnography.

Results: Sleep-wake estimation accuracy using accelerometry compared to polysomnography was 72.3%±10.2, with sensitivity for sleep detection at 73.9%±10.7 and wake detection specificity at 55.2%±28.2. Mean bias values were for WASO (56.6 min), TST (-78.0 min), SE (-17.7%), and SOL (21.4 min). Positive values indicate overestimation, negatives suggest underestimation compared to polysomnography. Mean absolute errors were 58.4 minutes (WASO), 79.6 minutes (TST), 18.1% (SE), and 35.2 minutes (SOL). All sleep measures, except WASO, showed a negative proportional bias. Accelerometry consistently underestimated SE as polysomnography-derived SE increased. Accelerometry overestimated TST and SOL for participants with lower polysomnography-derived values and underestimated those with higher polysomnography-derived TST and SOL.

Conclusions: Like other common algorithms (Sadeh and Cole-Kripke) on Actigraph data of children, the HDCZA sleep algorithm was more sensitive to detecting sleep but less specific to detecting wake. The algorithm performed poorly in estimating sleep metrics. These findings may be limited to children with diagnosed sleep disorders. The algorithm needs further testing in children without sleep disorders.

Enhancing Effective Dialogue with Community Decision-makers around Caregiver Health in Bogotá, Colombia Using Virtual Reality

Mr. Zakaria Doueiri¹, Ms. Paula Guevara-Aladino², Dr. Olga Lucia Sarmiento², Ms. María Alejandra Rubio², Ms. Lina María Gómez-García², Mr. Diego Martínez³, Dr. Abby King¹, Dr. Adriana Hurtado⁴, Ms. Ann Banchoff¹, Dr. Luis Guzmán⁴, Dr. María José Álvarez⁵, Dr. Leonardo Palencia²

¹Stanford University School of Medicine, Stanford, USA, ²School of Medicine, Universidad de los Andes, Bogotá, Colombia, ³School of Engineering, Universidad de Los Andes, Bogotá, Colombia,

⁴Interdisciplinary Center for Development Studies, Universidad de Los Andes, Bogotá, Colombia,

⁵Sociology, Faculty of Social Sciences, Universidad de los Andes, Bogotá, Colombia

O.1.01: Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being, Ballroom B, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Introduction: Nearly 90% of women engage in unpaid care work in Bogotá, Colombia. Unpaid caregivers experience increased rates of physical inactivity and sedentary behavior, which put them at heightened risk for stress-related health conditions, including increased depression and reduced quality of life. The Manzanas del Cuidado (Care Block) program provides health-enhancing opportunities to address health inequities among caregivers. Study aims were to i) characterize the experiences of unpaid caregivers regarding physical activity (PA) and well-being; ii) identify caregivers' perceived built and social environment facilitators and barriers to access and use of the Care Block facility; and iii) document a community-led data generation and advocacy process using virtual reality to further advance support for the Care Block program.

Methods: The Our Voice method fosters resident participation and intersectoral collaboration for change using the Discovery Tool (DT) mobile application. Participants used the DT to identify facilitators and barriers when traveling to the Care Block. Based on data "hotspots" from caregivers' walk audits, a virtual reality (VR) experience was developed for local policymakers and other stakeholders to visualize the caregivers' experiences. Four community meetings were then held where participants collaboratively categorized their photos into key themes, prioritized solutions, and presented them to decision-makers.

Results: Participants (N=21) collected 257 photographs+audio comments addressing what makes it easy or hard to visit the Care Block program. Of these photos+narratives, 67% (N=172) identified negative features, 28% (N=73) positive features, and 5% (N=12) neutral features. Caregivers highlighted the presence of Care Block PA services/facilities (N=37; 39%) and transportation (N=15; 19%) as the main facilitators of PA and well-being. Poor quality/lack of sidewalks and roads (N=64; 36%), insecurity (N=41; 24%), and high risk of pedestrian-vehicle collisions (N=17; 10%) were identified as the main barriers to PA. VR-collected information was rated as easy to use (67% agreed), helped to promote compelling dialogue (71% agreed) and advanced innovative solution-building (81% agreed) among participants and decision makers.

Conclusion: VR+Our Voice enhanced positive interactions and understanding among unpaid caregivers and community stakeholders, fostering collective reflection about an urban initiative that facilitates the equitable distribution and support of care work.

A methodology for assessing the validity and reliability of a national Food and Physical Activity Questionnaire for Adolescents from low-income communities

Mr. Tomisin Mayaki¹, Dr. Graham Bastian¹

¹South Dakota State University, Brookings, USA

O.1.01: Charting New Territories: Cutting-Edge Methods and Measurement Advances for Enhancing Child and Family Well-being, Ballroom B, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: To further assess the validity and reliability of a 13-item Food and Physical Activity Questionnaire for Adolescents from low-income communities (FPAQ-A) used to evaluate the U.S. Expanded Food and Nutrition Education Program.

Methods: Two convenience samples of 200 low-income adolescents (grades 6-12), one for each study phase, will be recruited from four U.S. geographical regions by leveraging partnerships with Cooperative Extension. Phase One will be a reliability assessment utilizing a test-retest administration of the FPAQ-A taken 7-10 days apart. Spearman correlations will be used to assess temporal reliability and goodness of fit tests will be used to confirm the exploratory factor analysis previously conducted on the FPAQ-A (Bastian dissertation, 2022). Phase Two will assess the criterion validity of the FPAQ-A's dietary and physical activity scales against "gold standard" measurements, i.e., dietary recall and accelerometry. The Automated Self-Administered 24-hour dietary assessment tool (ASA-24) will be used to collect diet recalls from two weekdays and one weekend day. A tri-axial accelerometer (ActiGraph GT3X-BTr) will be worn on the participants' right hips for seven consecutive days while they maintain their normal activities. Correlation and regression analyses will be used to establish relationships between mean nutrient intake, Healthy Eating Index 2020 scores, and dietary intake questions on the FPAQ-A. Additionally, the relationship between participants' moderate-to-vigorous physical activity scores and the Physical activity questions on the FPAQ-A will be determined.

Results/findings: This methodology will be used to obtain the FPAQ-A's temporal reliability and criterion validity estimates and confirm the previously identified factor structure. Moreover, this study will improve the external validity of the FPAQ-A, which was initially tested only with low-income adolescents in one state. Findings will be used to inform changes to the survey items if necessary.

Conclusions: This research will help improve the rigor of a nationally implemented dietary and physical activity behavior instrument that is used by other community-based nutrition education interventions across the world.

Diet quality related to calorie intake but not weight in adolescents with intellectual disabilities and overweight/obesity

Dr. Amy Bodde¹, Dr. Brian Helsel¹, Dr. Debra Sullivan¹, Dr. Joseph Donnelly¹, Dr. Lauren Ptomey¹

¹University of Kansas Medical Center, Kansas City, USA

O.1.02: Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents, Room 212, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Adolescents with intellectual disabilities (ID) have 1.8 times the risk of overweight/obesity (OW/OB) compared to those without disabilities due to a myriad of social, behavioral, and health-related risk factors. This study reports the associations between diet quality, energy intake, and weight in this population.

Methods: This is a secondary analysis of baseline data from a clinical weight loss trial conducted in adolescents and young adults with ID and OW/OB. Dietary intake was assessed with 3-day image assisted food records which were used to calculate energy intake (kcal/day) and diet quality scores using the Healthy Eating Index 2015 (HEI-2015), which measures adherence to USDA dietary guidelines with max score 100 indicating perfect adherence. Overweight and obesity were determined using CDC guidelines for BMI z-score for those age ≤ 19 . Associations between HEI-2015 scores, energy intake, and BMI z-scores were examined with Spearman and Pearson analyses. Subgroup analyses by diagnosis (Down syndrome (DS), autism, and other) were conducted with ANOVA and Kruskal-Wallis tests.

Results/findings: Participants were 13-19 years of age ($n=88$) with average BMI z-score of 1.93 ± 0.54 . Average energy intake was 1965.4 ± 584 kcal/day and average HEI-2015 was 50.8 ± 9.4 . Total energy intake was inversely associated with HEI-2015 (-0.26 , $p=0.016$) but BMI z-score was not associated with energy intake or HEI-2015 ($r=0.13$, $p=0.24$ and $r=-0.007$, $p=.95$, respectively). Diet quality of those with autism (49.2 ± 9.5) had a significant inverse association with energy intake (-0.35 ; $p=0.03$) and was lower than diet quality of those with DS (53.1 ± 8.7 , $p=0.09$).

Conclusions: In conclusion, neither the diet quality nor energy intake was associated with OW/OB. However, energy intake was inversely associated with diet quality scores, indicating that higher energy intake is related to worse diet quality; the strongest association was among those with autism. Future studies should include those with normal weight to better elucidate the relationship of diet quality and energy intake with BMI in this population. Other factors including lack of physical activity, weight inducing medications, sedentary behavior and screen time may contribute to weight outcomes in this population and deserve further exploration.

The Effects of Interventions to Reduce Leisure Screen Time on Depressive and Anxiety Symptoms among Children and Adolescents: A Systematic Review of Randomized Trials

Dr. Jennifer Zink¹, Ms. Tiffany M. Chapman², Dr. Katherine Thompson³, Ms. Alicia A. Livinski⁴, Dr. Britni R. Belcher², Dr. Thomas N. Robinson⁵, Dr. David Berrigan¹

¹National Cancer Institute, Rockville, USA, ²University of Southern California, Los Angeles, USA, ³Uniformed Services University of the Health Sciences, Bethesda, USA, ⁴National Institutes of Health, Bethesda, USA, ⁵Stanford University, Stanford, USA

O.1.02: Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents, Room 212, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Most children and adolescents do not meet leisure screen time recommendations. Observational studies suggest excessive screen time may be related to increased risk of depressive and anxiety symptoms. This systematic review synthesizes experimental evidence on the effects of behavioral interventions to reduce leisure screen time on depressive and anxiety symptoms in youth.

Methods: Four bibliographic databases (PubMed/MEDLINE, PsycINFO, Embase, Web of Science: Core Collection) were searched for peer-reviewed manuscripts published between 1981 and November 2023. Two reviewers screened titles/abstracts and full text records using Covidence. Randomized intervention trials that (1) addressed leisure screen time as either a primary or secondary behavioral target, (2) reported on depressive and/or anxiety symptoms as a primary or secondary outcome, and (3) included participants aged 3 to <18 years were included. A narrative synthesis of eligible studies was conducted.

Results/findings: 15,529 titles/abstracts and 243 full text records were screened. Thirteen intervention studies from eight countries met eligibility criteria. One included participants in early childhood, four during mid/late childhood, and eight during adolescence. Most (n=11) interventions targeted multiple health behaviors in addition to leisure screen time, including physical activity, dietary intake, and substance use. Seven interventions reported total leisure screen time, while six interventions reported specific types of screen time (television, videogames, computer/internet use, and social media use). Seven studies reported depressive symptoms only, one reported anxiety symptoms only, and five reported both. Six of the interventions resulted in reductions in screen time; five in specific types of screen time (one during early childhood, four during adolescence). Only three studies reported reductions in depressive and/or anxiety symptoms along with reduced leisure screen time. Of the seven interventions that did not significantly reduce leisure screen time, two reported reductions in depressive and/or anxiety symptoms, possibly due to other intervention components.

Conclusions: About half of the interventions reviewed reduced leisure screen time, but only a quarter also reduced depressive and/or anxiety symptoms. While interventions to reduce leisure screen time may have promise for also reducing depressive and/or anxiety symptoms, additional research into the active intervention components and mediating processes are needed to improve emotional health in youth.

Longitudinal Relationships Between Adolescent Executive Control and Eating Behaviors in the Midwestern United States

Ms. Hope Thilges¹, Mr. Eric M. Phillips¹, Ms. Emily Goldberg¹, Dr. Katherine M. Kidwell², Dr. Amy Lazarus Yaroch³, Dr. Jennie L. Hill⁴, Dr. Kimberly Andrews Espy⁵, Dr. Timothy D. Nelson¹

¹Department of Psychology, University of Nebraska - Lincoln, Lincoln, USA, ²Department of Psychology, Syracuse University, Syracuse, USA, ³Gretchen Swanson Center for Nutrition, Omaha, USA, ⁴Department of Population Health Sciences, University of Utah, Salt Lake City, USA, ⁵Department of Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, USA

O.1.02: Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents, Room 212, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Adolescence is a vulnerable period when, amid increased reward sensitivity and continued maturation of self-regulatory processes, adolescents gain more opportunities for decision-making around eating. Adolescent eating behaviors can have consequences for later diet and associated health risks, emphasizing the importance of evaluating contributing and potentially modifiable factors. Executive control (EC), a set of brain-based abilities for directing attention and behavior, may impact adolescent eating, but research examining these associations has been mixed with notable methodological limitations. The current study examines longitudinal associations between adolescent EC, as measured by neuropsychological tasks, and adolescent eating behaviors a year later, as assessed through 24-hour dietary recall.

Methods: 190 adolescents (ages 14-18, M = 15.37) residing in a small Midwestern city in Nebraska, USA, completed EC tasks and dietary measures. At Time 1 (T1), EC was assessed with performance-based tasks, including the Nebraska Barnyard task, an adaptation of the Noisy Book task (Hughes et al., 1998), the Go/No-Go task as adapted from Bezdjian and colleagues (2009), and the Shape School-Switching Condition (Espy, 1997; Espy et al., 2006). At T1, diet was assessed by three daily dietary recalls using the Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24-2016; Subar et al., 2012). EC and dietary recalls were repeated approximately a year later at Time 2 (T2). Structural equation modeling was used with ASA data. EC was modeled as a latent variable with performance-based tasks as indicators. Maximum likelihood with robust standard errors (MLR) was utilized. Model fit indices suggested good fit to the data, CFI = 1.00, RMSEA = .000.

Results: Better EC performance at T1 predicted greater fruit and vegetable intake (F/V) at T2 ($\beta = .324$, S.E. = .121, $p = .008$) with small-to-medium effects, controlling for T1 F/V consumption, maternal education, income-to-needs, age, and sex. T1 EC performance was a stronger predictor of F/V consumption at T2 than T1 F/V intake ($\beta = .309$, S.E. = .087, $p < .001$).

Conclusions: ASA findings suggest EC may be an important intervention target to improve adolescent dietary quality, including F/V intake.

The acute cognitive effect of HIIT exercise involving moderate and high cognitive demand in early adolescents: A cross-over trial

Dr. Erin Howie¹, Ms. Kristin Garner¹, Dr. Bryce Daniels², Dr. Angus Leahy³, Professor David Lubans³, Dr. Jonathan Hakun⁴

¹University Of Arkansas, Fayetteville, USA, ²Rush University Medical University, Chicago, United States, ³University of Newcastle, Newcastle, Australia, ⁴Pennsylvania State University, State College, United States

O.1.02: Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents, Room 212, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: To determine the feasibility of high intensity interval training (HIIT) activities and a brief cognitive assessment in adolescents and determine the preliminary efficacy of HIIT activities, with moderate or high cognitive demand, on adolescents' acute cognitive performance.

Methods: This was a within-subject, crossover design with conditions completed between 7 to 14 days apart. We recruited 7th/8th graders (ages 11-14) from two physical education classes at one middle school. HIIT activities were from the Burn2Learn intervention and were 4 minutes in duration, The moderate cognitive demand HIIT session used simple exercises (e.g. push-ups, sprints) and the high cognitive demand HIIT session used exercises with greater cognitive demand (e.g., following commands to spring in compass directions). For fidelity, students wore accelerometers during the sessions. Before and after each condition, students completed four brief cognitive tests from the Mobile Monitoring of Cognitive Change app to assess processing speed (Color Speed), spatial working memory (Dot Memory), and response inhibition (Go/No-Go).

Results: A total of 25 adolescents were included in the analyses. The mean age was 13.0 years (SD 0.8), 39% female, and 39% classified as overweight or obese. There were no differences in hip-worn accelerometer-measured activity between genders, obesity status, or between HIIT conditions. The re-test reliabilities of the cognitive assessment ranged from .69 to .88. There were significant time-by-condition interaction effects for spatial working memory (Dot Memory) ($p=.015$) and processing speed (Color Speed) ($p=.026$). Spatial working memory (Dot Memory) worsened following the high cognitive demand HIIT (sum error distance of 18.2 pre to 28.5 post), while it improved following the moderate cognitive demand HIIT (20.6 to 18.1). Processing speed (Color Speed) reaction time improved more following the moderate cognitive demand HIIT (765.7 ms to 555.6 ms) compared to the high cognitive demand HIIT (716.9 ms to 703.8 ms).

Conclusions: We found greater improvements in spatial working memory and processing speed following a moderate cognitive demand HIIT compared to high cognitive demand HIIT in adolescents. The HIIT exercises were feasible for delivery during middle school physical education lessons in 7th and 8th-grade students of varying physical activity participation and obesity status.

Longitudinal Associations Between Physical Activity, Sedentary Behavior, and Psychopathology in the Midwestern United States.

Ms. Emily L. Goldberg¹, Mr. Eric M. Phillips¹, Ms. Hope Thilges¹, Dr. Katherine M. Kidwell², Dr. Jennie L. Hill³, Dr. Amy Lazarus Yaroch⁴, Dr. Kimberly Andrews Espy⁵, Dr. Timothy D. Nelson¹
¹Department of Psychology, University of Nebraska-Lincoln, Lincoln, USA, ²Department of Psychology, Syracuse University, Syracuse, USA, ³Department of Population Health Sciences, University of Utah, Salt Lake City, USA, ⁴Gretchen Swanson Center for Nutrition, Omaha, USA, ⁵Department of Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, USA

O.1.02: Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents, Room 212, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Associations between physical activity (PA), sedentary behavior (SB), and psychopathology among adolescents are documented; however, literature has been limited by methodological and measurement issues. The current study examines bidirectional associations within a longitudinal study between objectively measured PA, SB, and adolescent reported internalizing and externalizing psychopathology symptoms.

Methods: 215 adolescents (ages 14-18) wore ActiGraph devices to measure PA and SB continuously for two weeks at each annual timepoint for four years. At each collection, participants completed the Youth Self Report (YSR) to measure internalizing and externalizing symptoms. Random intercept cross-lagged panel models (RI-CLPMs) were run for average moderate to vigorous physical activity (MVPA), MVPA variability, and average SB (i.e., three RI-CLPMs with internalizing problems, externalizing problems, and the respective activity level variable). Maternal education, income-to-needs ratio, age, and sex were included as control variables and were estimated as predictors of the random intercepts of activity level (i.e. MVPA variability, MVPA average, SB average), internalizing problems, and externalizing problems.

Results: Within the average MVPA model, average MVPA was not associated with subsequent decreases in externalizing and internalizing problems. Additionally, externalizing and internalizing problems were not associated with subsequent decreases in average MVPA. Within the MVPA variability model, higher MVPA variability at each timepoint was associated with subsequent increases in internalizing problems ($\beta=0.070$, $SE=0.028$, $p = .011$). However, MVPA variability was not associated with subsequent increases in externalizing problems. Furthermore, externalizing and internalizing problems were not associated with subsequent increases in MVPA variability. Within the average SB model, internalizing problems at each time point were associated with subsequent increases in SB ($\beta=3.223$, $S.E.= 1.638$, $p=.049$). However, externalizing problems was not associated with subsequent increases in SB. Moreover, average SB was not associated with subsequent increases in internalizing and externalizing problems.

Conclusions: Results suggest that consistent engagement in MVPA (less day-to-day MVPA variability) is potentially more important than daily MVPA amount (average MVPA) in reducing internalizing problems. Given the relationships between internalizing problems, MVPA variability, and average SB, findings should inform prevention and intervention programs for adolescents to improve concurrent and long-term activity level, activity consistency, and psychopathology.

Green2Gold: Piloting 'Team GB Family Activity Trails' as a green exercise project for improving wellbeing and outdoor physical activity engagement in the East Riding of Yorkshire, England.

Miss Esther Carter¹, Professor John Saxton¹, Dr Caroline Douglas¹

¹University Of Hull, Hull, United Kingdom

O.1.02: Brain matters: Mental well-being and cognition in nutritional and physical activity for children and adolescents, Room 212, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Overall, 24.7% of adults and 33.2% of children in the East Riding of Yorkshire are classified as 'inactive' by engaging in less than 30 minutes of physical activity (PA) per day (Sport England, 2023). Systematic reviews into green exercise (GE) highlight the positive impact on health and wellbeing for both adults (Coventry et al., 2021) and children (Mnich et al., 2019). The aim of the 'Green2Gold' project was to create and pilot a new GE intervention in the East Riding of Yorkshire and gain preliminary insights into the benefits of engagement for local families.

Methods: The researchers worked in partnership with The British Olympic Association to create 'Team GB Family Activity Trails' in two locations based on an ongoing systematic review into outdoor community-based PA interventions. Walking formed the basis of the project, as an accessible mode of PA displaying various physical and mental wellbeing benefits (Hanson & Jones, 2015). Signposts were installed along the routes containing co-designed activities linked to Olympic sports and other PA challenges. Each signpost contained a unique QR code to take users to further PA and education opportunities on the project's website. Various community guided walks were delivered to engage local families with the trails and obtain survey feedback regarding activity enjoyment, mood, and motivators and barriers to participation. IBM SPSS v29 was used to analyse quantitative feedback via response frequencies and cross-tabulations. Thematic analysis was used to assess qualitative feedback (Braun & Clarke, 2006).

Results: Over 200 trail users were sampled. Feedback indicates a high level of enjoyment and potential intention to re-engage in trails from both adults (<90%) and children (<80%). Each element of the trail was rated highly by adults and children (<4.3/5). Short-term improvements in mood were also reported by participants of all ages. Cross-tabulations highlighted differences in the types of activities enjoyed, and motivators and barriers to participation, by gender and trail location.

Conclusions: The study provides preliminary evidence to support 'Activity Trails', endorsed by an Olympic Association, as a free and simple self-directed activity for creating positive effects on mental wellbeing and PA intention at a community level

Impact of Three Non-Invasive Interventions on Online Food Purchases: A Randomized Controlled Trial of Nutri-Score Presence, Default Product Order and the Option to Filter or Order

Miss Elke Godden¹

¹*Universiteit Antwerpen, Antwerpen, Belgium*

O.1.03: Closing the intention to behavior gap, Room 213, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: The continuous growth in online grocery shopping presents a unique opportunity to introduce novel healthy eating interventions. By strategically modifying the design of digital shopping environments, we can influence consumer decision-making towards healthier choices. This study used a virtual online grocery store (VOS) to examine the extent to which three Nutri-Score related interventions influence consumers' food choices.

Methods: Following a fractional factorial design, 1184 Flemish participants were randomly assigned to combinations of three interventions (in total 7 conditions): Nutri-Score label presence (no/yes), default product order (alphabetically/by Nutri-Score) and options to filter and order products by healthiness (unavailable/available). Outcome measures were Food Standards Agency (FSA) score, proportion of products bought within each Nutri-Score category (A, B, C, D, and E), and expenditure within each category. Linear regressions and t-tests were employed for interval scaled outcomes and mixture models were used for composite data.

Results/findings: Nutri-Score presence increased the purchases of Nutri-Score A and B and decreased the purchases of Nutri-Score D and E, but did not affect the mean FSA. Changing the default order from alphabetically to healthiness reduced the mean FSA with 1.29 points (2.92 in combination with the other interventions), thus improving the nutritional quality of the shopping basket. It also increased the money spent on products with the healthier Nutri-Score categories A (€6.62) and B (€0.36), and reduced the money spent on products with less healthy Nutri-Score categories D (-€5.56) and E (-€1.26). In contrast, the options to filter and order the product assortment by healthiness were barely used (<10%) by the participants, and this intervention did not lead to large changes in mean FSA or food purchases.

Conclusions: The results suggest that the Nutri-Score FOP label holds promise for online grocery shopping, despite its original design for brick-and-mortar stores. More precisely the Nutri-score was found to affect the distribution of the purchases and expenditure over the five Nutri-Score categories, but not the mean FSA. When products were ordered by default to display healthier Nutri-Scores first, the healthiness of the shopping basket also increased. Validation of the results on real-life purchase data is warranted.

Nutrition and physical activity behaviors and relapse triggers in women with substance use

Ms. Macy Helm¹, Dr. Anne Lindsay¹

¹University Of Nevada, Reno Extension, Las Vegas, USA

O.1.03: Closing the intention to behavior gap, Room 213, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Women in the justice-involved system and in recovery for substance use disorders (SUD) are rapidly outpacing men. Since many applied programs are “gender-neutral”, meaning designed with men in mind, they seldom address why women use drugs and alcohol, how they manifest differently in their bodies, and how to reduce female recidivism. Gender-responsive education and treatment calls for an emphasis on the treatment needs of women based on these differences. The purpose of this study was to determine the effectiveness of a 10-week, gender-responsive health and nutrition education program, Healthy Steps to Freedom (HSF), on improving physical activity (PA) and nutrition-related behaviors and associations between weight concerns and drug reoccurrence for women in recovery.

Methods: HSF was implemented in minimum- and maximum-security prison(s), as well as inpatient and outpatient treatment centers serving women with substance use. The Eating Attitudes Test (EAT-26), Binge Eating Scale (BES), Body Shape Questionnaire (BSQ), International Physical Activity Questionnaire (IPAQ), and a 12-item health behavior and thoughts survey (HBT) were used to assess eating pathology, body dissatisfaction, PA participation, and nutrition habits, respectively. Participants were also surveyed to assess concerns related to weight gain and relapse. Data were collected from 2014-2022. A paired t-test was used to identify significant differences in outcomes before- and after- the program.

Results: All participants (n = 1986) had a history of substance use and 72% of them reported use of stimulants. The mean age of participants was 35 (\pm 9) years old, 78% were non-Hispanic White, and 5% were pregnant. After the program, there were significant improvements in eating attitudes (EAT-26) ($t=4.623$, $p < .001$, $d=.157$), binge eating behavior (BES) ($t=3.821$, $p < .001$, $d=.128$), body shape concerns (BSQ) ($t=-12.566$, $p < .001$, $d=.396$), nutrition behaviors (HBT) ($t=-23.580$, $p < .001$, $d=.762$) and PA MET minutes (IPAQ) ($t=-8.345$, $p < .001$, $d=.280$). Participants also indicated significantly less concern that weight gain could be a trigger for reoccurrence ($t=-4.301$, $p < .001$, $d=.129$).

Conclusion: The HSF program improved nutrition-related behaviors, PA habits, and outcomes related to body dissatisfaction and eating pathology. SUD behavioral treatment programs for women should prioritize these health-related and psychosocial topics to improve health and reduce risk of relapse.

Greater attention to healthy versus unhealthy nutrients during food selection is associated with healthier food choice

Dr. Christopher Gustafson¹, Dr. Henriette Gitungwa¹, Dr. Devin Rose¹
¹University Of Nebraska-Lincoln, Lincoln, USA

O.1.03: Closing the intention to behavior gap, Room 213, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Given the rise in diet-related diseases, nutritional guidance often prioritizes avoiding certain “negative” nutrients (e.g., fat, sugar, sodium) over seeking out foods high in “positive” nutrients, (e.g., fiber, potassium, iron). The objective of this study was to evaluate associations between attention to positive/negative nutrients and nutritional quality of food choices.

Methods: An online survey was completed by 1002 adult US residents to examine the relationship between the use of nutritional information and the healthfulness of ready-to-eat cereal choice. Respondents chose from 33 cereals displayed with nutritional information and price. Healthfulness was categorized by the guiding stars (GS) system, which ranges from zero (least healthy) to three (most healthy) stars based on the nutritional profile. After making a cereal choice, respondents answered survey questions about the use of nutritional and other information. The numbers of positive and negative nutrients each respondent considered during their food choice were calculated. Respondents were categorized into considering no nutrients (reference), more positive nutrients, more negative nutrients, or equal numbers of positive and negative nutrients (balanced). These categories were evaluated for their effects on GS rating of chosen cereals by ordinal logistic regression.

Results: In total, 386 respondents (39%) considered nutritional information during food choice. On average, 1.7 (95%CI=1.6-1.8) nutrients were considered per respondent, with 211 respondents considering more negative nutrients than positive; 87 considering more positive nutrients; and 88 considering balanced nutrients. Greater attention to positive or balanced nutrients increased the odds ratio of selecting a cereal with a higher GS rating 6.73 (CI=4.15-11.1) and 6.58 (CI=4.07-10.8) times, respectively, while respondents that considered mostly negative nutrients had a much lower odds ratio of selecting a cereal with a higher GS rating (2.92; CI=2.10-4.06) (linear hypothesis test of positive=negative, $p=0.001$; balanced=negative, $p=0.002$).

Conclusions: Although focusing on any nutritional information during cereal choice increased the healthiness of cereal choices (compared with none), focusing on positive or balanced nutrients increased the healthfulness of cereal choices much more than focusing on negative nutrients. This study suggests that focusing nutritional recommendations on positive nutrients, rather than focusing on nutrients to avoid, may be more effective at increasing nutritional quality.

Dose Response of Attendance to a Behavioral Intervention on Physical and Mental Health Outcomes in Recipe4Health

Dr. Marcela Radtke¹, Dr. June Tester², Dr. Lan Xiao¹, Dr. Ben Emmert-Aronson³, Dr. Elizabeth Markle³, Dr. Steven Chen⁴, Dr. Lisa Goldman Rosas¹

¹Stanford University School of Medicine, Palo Alto, USA, ²University of California, San Francisco School of Medicine, San Francisco, USA, ³Open Source Wellness, Oakland, USA, ⁴Community Health Center Network, San Leandro, USA

O.1.03: Closing the intention to behavior gap, Room 213, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Behavior change is an essential component to Food as Medicine programming to ensure health improvements are sustained following an acute dietary intervention. The objective of this secondary analysis was to determine whether the frequency of attendance to a behavioral intervention in Recipe4Health, a multicomponent Food as Medicine program, results in a dose response in patient physical and mental health outcomes.

Methods: A subset of patients experiencing a chronic disease and/or food insecurity were referred to a 16-week combined food and behavioral intervention. Along with weekly deliveries of vegetables and fruits (V/F), patients attended 16 sessions of an intensive behavioral lifestyle program that emphasized nutritious eating, physical activity, social connection, and stress reduction. Attendance was recorded on a per session basis and categorized into tertiles (<50%, 50–75%, 75%<). Outcome measures included V/F intake, physical activity, loneliness, depression, anxiety, and quality of life. Pre-post changes in health outcomes by attendance frequency were assessed using repeated measures linear mixed effects models with adjusting for the baseline value of outcome.

Results: A total of 199 participants completed the behavioral intervention, with low (n=72), moderate (n=60), and high (n=67) attendance. When comparing outcomes by attendance, participants with high attendance had significant improvements in daily cups of V/F (0.26 cups/day 95%CI: [0.02, 0.5]; p=0.03), physical activity (24.4 minutes/week [8.5, 40.4]; p<0.01), and depressive symptoms (PHQ9 score: -1.1 [-1.8, -0.4]; p<0.01) compared to participants with low attendance. When comparing high attendance to moderate, participants who attended >75% of sessions had significant improvements in the number of physically unhealthy days experienced (-2.4 [-4.2, -0.6]; p<0.01). When comparing moderate attendance to low, only the duration of physical activity was higher in the participants who attended 50–75% of sessions (15.1 minutes/week [1.1, 29.1]; p=0.03).

Conclusions: Participants who attended a majority of the behavioral intervention sessions had significant improvements in dietary intake, physical activity, and mental wellness compared to participants who attended more infrequently. Strategies to improve attendance, such as limiting barriers to participation and including culturally inclusive content, should be prioritized in Food as Medicine programming to maintain health outcomes in diverse populations across the lifespan.

Integrating applied nature-based physical activity and counseling education for future healthcare providers

Dr. Gina Besenyi¹, Mr. Andrew Argie¹, Mr. Justin Montney¹, Dr. Emily Mailey¹
¹Kansas State University, Manhattan, USA

O.1.03: Closing the intention to behavior gap, Room 213, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: The health benefits of nature-based physical activity (PA) are well-established, including mental, physical, and social well-being. Recommended by health experts, programs such as Park Prescriptions and NatureRx encourage healthcare providers to prescribe nature-based PA for chronic disease prevention and treatment. Despite the effectiveness of these programs, patient PA counseling is underutilized. One reason is lack of healthcare provider education and training, particularly as part of their school curricula. The purpose of this study was to pilot and evaluate an applied nature-based experience and nature-based PA prescription counseling activity as part of educational curricula for future healthcare providers.

Methods: In summer 2023, two waves of high school students attended a week-long university health professions exploration program. They participated in a 2-hour long applied session that included a 2-mile nature-based obstacle course, a discussion about the health benefits of nature-based PA, and a practical park prescription counseling activity. Activities were held outdoors at an adventure park. Students completed surveys before and after the session. Measures included demographics, Godin Leisure Time PA, exercise-induced feeling scale, stress, PA enjoyment, and interest in completing future outdoor PA. Students also rated session enjoyment (1-5 stars) and provided qualitative feedback.

Results: Students (n=30) were mostly female (90%), 16.5±0.52 years old, physically active (96.7%), and typically spend at least 30+ minutes outside daily (86.7%). Example career interests included physician, physician assistant, nurse practitioner, RN, cardiologist, surgeon, and physical therapist. Students indicated significant increases in revitalization ($p < 0.001$) and interest in outdoor PA ($p = 0.046$). Paired samples t-tests showed significant improvements in feeling good ($p = 0.024$), positive engagement ($p = 0.012$), revitalization ($p = 0.002$) and decreased physical exhaustion ($p = 0.033$). Average session rating was 4.5/5. Students commented, "I really enjoyed this activity"; "Not a big fan of activity, especially outside, but I do feel good about myself"; and "the course was so fun to do and made me feel good at the end".

Conclusions: Positive nature experiences may enhance future healthcare providers' enthusiasm for recommending nature-based PA. Nature experiences and practicing park prescription counseling offer promising approaches to train the next generation of healthcare providers on the importance of nature-based PA for improved health.

Utilizing the Our Voice Citizen Science Method to Improve Walkability and Other Healthy Living Practices in Communities Participating in CalFresh Healthy Living, University of California Cooperative Extension Programs

Mrs. Maria Campero¹, Dr. Astrid Zamora¹, Mrs. Kelley Brian², Mr. Christopher Wong³, Mrs. Beatriz Rojas³, Mrs. Cailin McLaughlin³, Mrs. Cristina Luquin³, Miss Shirley Le¹, Mrs. Dulce Garcia¹, Mr. Zakaria Doueiri¹, Mrs. Ann Banchoff¹, Mrs. Barbara MKNelly², Dr. Abby King¹
¹School of Medicine, Stanford University, Stanford, USA, ²CalFresh Healthy Living, University of California, Davis, USA, ³CalFresh Healthy Living, University of California Cooperative Extension, Davies, USA

O.1.04: Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond, Room 214, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: This project aims to examine the implementation of the Our Voice method across diverse communities engaged in the State of California's CalFresh Healthy Living (CFHL) programs under the University of California's Cooperative Extension initiative (UCCE). Community members are equipped with citizen science tools, enabling them to: 1) document facilitators and barriers hindering adoption of healthy living habits (physical activity, healthy eating); 2) identify viable solutions to address barriers; and 3) advocate for meaningful local changes that contribute to overall enhancements in healthy living practices.

Methods: Using the multilingual Discovery Tool App, local community members recorded geotagged photos and comments that addressed the question, "What makes it easy or hard to walk around your community?" Upon reviewing the gathered data, community members actively participated in categorizing their photos into key themes, generating solutions and strategies, identifying local allies, and leveraging their findings to activate positive changes in support of a healthier community.

Results/findings: Across three California counties, five projects engaged diverse groups of high schoolers, parent groups, older adults, and adults with disabilities. Groups documented facilitators and barriers impacting walkability in their communities through 36-370 photos+comments per project and identified at least one idea for change they wanted to advocate for to improve the area's walkability (e.g., fixing pathways, adding shade trees). Citizen scientists from each group met with local decision-makers to discuss and propose specific improvements. Thus far, six+ environmental changes have been initiated by the community members, including adding speed controls & pedestrian-friendly street signage, and introducing a high school edible/native tree planting project.

Conclusion: Diverse UCCE citizen science teams prioritized individuals most profoundly affected by community factors that impact their ability to walk in their neighborhoods. Embracing inclusivity, the approach entails strategic planning for change and cultivating community members as leaders to advance healthy living through a health equity lens. Notably, partnering with such state- or region-wide organizations can provide an effective means for scale-up of this type of participatory action research method through sharing of insights and actions across this type of network.

Towards healthy populations and vital cities: How do decision-makers justify the implementation of 30km/h speed limits? An analysis of 105 Dutch policy documents.

Dr. Carel-peter Van Erpecum¹, **dr. Nicolette den Braver**², dr. Anna Bornioli³, prof. Pilar Garcia-Gomez¹, dr. Famke Mölenberg⁴

¹Erasmus School Of Economics, Rotterdam, the Netherlands, ²Amsterdam University Medical Center, Amsterdam, the Netherlands, ³University of Surrey, Surrey, England, ⁴Erasmus Medical Center, Rotterdam, the Netherlands

O.1.04: Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond, Room 214, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Transport interventions are key to promoting physical activity and reducing obesity. Despite road safety and health benefits, lowering speed limits from 50 to 30km/h remains a challenge. We examine how local decision-makers justify and implement 30 km/h policies, and whether or not health benefits were considered. We also studied urban-rural and neighbourhood socio-economic differences herein.

Methods: Two researchers independently searched legal traffic decision documents from the Official Gazette of the Kingdom of the Netherlands to obtain all annual speed limit implementations in Amsterdam and Rotterdam and six rural municipalities between 2016-2022. One researcher extracted data using a customized form, including justifications, and additional physical measures included, which was checked by the second researcher. Descriptive statistics were provided on justifications and implementation aspects for the whole sample and separately for urban and rural areas and (in planned analysis) neighbourhood socio-economic status. Chi-square tests will be conducted to test for urban-rural differences and neighbourhood socio-economic status differences.

Results/findings: We identified 105 traffic documents. The most common justifications for 30km/h limits were traffic safety (N=50), liveability (N=13), lower speed limits in nearby areas (N=13), and children and school environments (N=10). Only two documents explicitly described potential health benefits as justification for 30km/h limits. Regarding implementation, a minority of implementations included additional physical measures, with the most common ones being speed bumps (N=13), pedestrian crossings (N=7), and equal crossings (N=6). In rural municipalities, lower nearby speed limits (e.g., 15km/h) were more often mentioned as a justification to implement 30km/h than in urban municipalities (50% vs. 8%).

Conclusions: Traffic safety is proposed as main benefit of 30km/h, while wider health impacts are rarely put forward, even though based on scientific evidence this might be possible. Considering these wider health impacts can also increase acceptance among the general population for 30km/h limits and improve willingness among decision makers. Research therefore should further highlight these wider health impacts and inform future policymaking.

Associations between neighbourhood walkability and greenness with muscular strength and body composition.

Mr. Levi Frehlich¹, Dr. Tanvir Turin¹, Dr. Patricia Doyle-Baker¹, Dr. Gavin McCormack¹
¹University of Calgary, Calgary, Canada

O.1.04: Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond, Room 214, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: The main purpose of this study was to investigate the relationships between neighbourhood built characteristics (i.e., neighbourhood walkability and greenness) and health-related fitness (i.e., grip strength and body fat percent). A secondary aim was to assess how movement behaviour (i.e., physical activity and sitting time) influences our main aim.

Methods: This study was a cross-sectional secondary analysis using a Canadian provincial (Alberta) longitudinal cohort study (Alberta's Tomorrow Project; ATP). ATP participant data were linked via their 6-digit residential postal codes to built environment data, including the Canadian Active Living Index (Can-ALE; walkability) and Normalized Difference Vegetation Index (NDVI; greenness). ATP measured muscular strength via hand grip dynamometry and body composition was measured via bioelectrical impedance. Four sex-stratified covariate-adjusted linear regressions were undertaken estimating unstandardized beta coefficients (β) and 95% confidence intervals (CI). Model 1 adjusted for sociodemographic and select health variables; Model 2 adjusted for variables in Model 1 plus weekly physical activity; Model 3 adjusted for variables in Model 1 plus total weekly hours of sitting; and Model 4 adjusted for variables in Model 1 plus weekly MET-hours of physical activity and total weekly hours of sitting.

Results/findings: For males and females neighbourhood walkability was negatively associated with both grip strength (males $\beta = -0.21$; 95%CI: -0.31 to -0.11, females $\beta = -0.06$; 95%CI: -0.10 to -0.01) and body fat percent (males $\beta = -0.08$; 95%CI: -0.15 to -0.02, females $\beta = -0.08$; 95%CI: -0.14 to -0.02). Moreover, the inclusion of physical activity and sitting did not influence the results. For males and females neighbourhood greenness was positively associated with grip strength (males $\beta = 6.99$; 95%CI: 3.62 to 10.36, females $\beta = 2.72$; 95%CI: 1.22 to 4.22) and not associated with body fat percent (males $\beta = -0.30$; 95%CI: -2.61 to 2.00, females $\beta = 0.30$; 95%CI: -1.60 to 2.21). Moreover, the inclusion of physical activity and sitting did not influence the results.

Conclusions: Neighbourhood walkability and greenness may support body composition and muscular strength, respectively. Moreover, notably, such support may not be influenced by movement behaviour.

Impact of COVID-19 pandemic on physical activity, screen time and BMI among Canadian and Quebec adults

Mrs. Julie Riopel-Meunier^{1,2,3}, Mrs Laurence Desbois-Bédard¹, Dr Paul Poirier^{2,3}, Dr Marie-Eve Piché^{2,4}

¹Institut National De Santé Publique Du Québec, Quebec, Canada, ²Institut Universitaire de Cardiologie et de Pneumologie de Québec, Quebec, Canada, ³Faculty of Medicine - Université Laval, Quebec, Canada, ⁴Faculty of Pharmacy - Université Laval, Quebec, Canada

O.1.04: Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond, Room 214, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: The COVID-19 pandemic and the public health measures related to COVID-19 may have had an impact on lifestyle behaviours. Greater physical activity (PA) is favorable for lower screen time and the prevention of obesity. This study aims to document the evolution of PA between 2015 and 2021 in Quebec and in Canada and to examine associations between PA, screen time and body mass index (BMI) during the COVID-19 pandemic period.

Methods: This analysis is based on adults (≥ 18 years) from the Canadian Community Health Survey. Screen time and global physical activity (recreation, transportation, household or occupation) were self-reported. Being physically active was defined as moderate to vigorous physical activity (MVPA) ≥ 150 minutes weekly. We compare PA levels from 4 cross-sectional samples collected during 2015-2016 ($n=98,041$), 2017-2018 ($n=102,071$), 2020 ($n=39,594$) and 2021 ($n=44,688$). Effect of COVID-19 pandemic on self-reported BMI, PA, and screen time were tested using logistic regression analyses.

Results: In 2021, the proportion of physically active adults (≥ 150 min/week) was 54.9% in Quebec and in Canada. In Quebec, there was a significant decrease of active adults between 2015 and 2020 (57.9 vs. 53.8%, $p=0.01$). This trend was observed at the Canadian level (57.8 vs. 53.2%, $p=0.03$). An increase in the proportion of light PA level (< 150 minutes, but more than 0-minute weekly of MVPA) was observed for the same period in Quebec (32.3 vs. 35.4%, $p=0.001$) as in Canada (30.7 vs. 34.0%, $p=0.001$). During the COVID-19 pandemic period, in 2021, the proportion of Quebec adults spending ≤ 2 hours daily using screen media was higher among physical active than inactive adults (50.3 vs. 11.5%, $p<0.0001$). Moreover, the proportion of active adults was higher among those with a BMI within normal than in adults with obesity (58.6 vs. 44.2%, $p<0.001$).

Conclusions: This study shows that the COVID-19 pandemic had an impact on the PA levels of Quebec adults in 2020, with a trend of 2021. The same observations were found in the relationship between PA levels and BMI, but screen time seems to be higher among people reaching recommendations. Public health actors should explore strategy for reducing sedentary behaviours, not only increasing PA.

Outcomes of a Statewide Walking Program: Does Location Matter?

Dr. Elizabeth Richards¹, Ms. Stephanie Woodcox¹

¹Purdue University, West Lafayette, USA

O.1.04: Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond, Room 214, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Despite clear benefits of an active lifestyle, most fail to meet physical activity (PA) guidelines. Because of its safety and ease, walking is a population-level strategy to increase and maintain PA. Get WalkIN', a statewide 12-week email-based walking program was developed to address inactivity. While Get WalkIN' has demonstrated effectiveness, a further understanding of how location, such as urban vs. rural settings, impact outcomes to tailor the program if needed.

Methods: Four years of data were analyzed across three timepoints (baseline, post-program, and maintenance) (n=800 with complete data). Participant-reported County of residence was matched with USDA rural-urban continuum codes to categorize location as urban, suburban, or rural. Self-reported PA was assessed using the International Physical Activity Questionnaire Short-Form. Participant PA was categorized as high active (achieving at least 1500 MET minutes/week), moderately active (achieving 600-1499 MET minutes/week), or low active (achieving less than 600 MET minutes/week). To examine potential differences in program outcomes between locations, activity level across the three timepoints was compared using Friedman's chi-square tests.

Results: Approximately half of participants (52.9; n=416) lived in urban areas; 24% in suburban areas, and 23% in rural areas. On average, participants were white (96%), middle age (53±17 years old) females (91%). At baseline there was no significant difference in activity status by location: 15% classified as low PA, 15% as moderate PA, and 70% as high PA. On average participants significantly increased their activity immediately after the program (85% high active) with no significant differences based on location. Significant differences in activity levels by location did not emerge until the maintenance period, 3 months after the program ended. Urban participants were significantly less likely to be low active (10.5% vs 26% of suburban and 24% of rural) and more likely to be high active (82% vs 68% of suburban and 67% of rural participants) at maintenance.

Conclusions: Findings highlight the importance of understanding how location may influence PA maintenance. Future research will examine how reported barriers and motivators may differ by location. Tailoring community-based programs to address location-specific barriers and motivators may enable more participants to effectively change and maintain PA.

Association between Physical Activity and Sleep Duration among Elementary School Children in After-School Programs

Mr. Umar Hassan¹, Dr. Adewale Oyeyemi¹, Kylie Wilson¹, Professor Pamela Kulinna², Assistant Professor Allison Poulos¹

¹College of Health Solutions, Arizona State University, Phoenix, USA, ²Mary Lou Fulton Teacher College, Arizona State University, Tempe, USA

O.1.04: Exploring the Spectrum of Physical Activity – From Walkability to Sleep, Screen Time, and Beyond, Room 214, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Previous studies indicate higher levels of physical activity (PA) are correlated with longer sleep duration, with inconsistency between girls and boys. There are fewer studies investigating the relationship between PA and sleep among children in after-school programs. We aimed to (1) determine the proportion of school children meeting the PA (60 minutes of moderate-to-vigorous daily) and sleep duration (9-12 hours) guidelines, and (2) compare if PA and sleep duration are different by gender (male and female), age, as well as school-level income.

Methods: This cross-sectional study included 153 children (40% participation rate) aged 8-12 years, in grades 3-6, who attended after-school programs at 14 elementary schools in a school district outside of Phoenix, Arizona, U.S.A. The children wore ActiGraph GT3X+ accelerometers for a complete week to measure PA and sleep duration. Levels of moderate-to-vigorous PA were averaged across all daily waking hours using Chandler 2016 wrist-worn cutpoints processed with ActiLife. Sleep duration was averaged across all days measured from the evening through the subsequent morning with start/end times determined by hand and processed through ActiLife. Age was categorized to <10 and ≥10 years and percent eligible for free or reduced-priced meals was used to categorize school income-level. Bivariate analysis using Fisher's exact test was conducted using SPSS software.

Results: A total of 79 children met the wear time criteria of three weekdays and one weekend day of at least 10 hours. Of those, 98% of the children met the PA guideline (55% low-income, 51% male, 72% <10 years), while only 25% met the sleep guideline (55% high-income, 58% female, 67% <10 years). Only 26% of children met both PA and sleep guidelines. All associations were statistically not significant at a p-value of < 0.05.

Conclusion: This preliminary study reveals a larger proportion of children in after-school programs fail to meet the sleep guidelines, despite meeting the PA guidelines. Future studies with sufficient power should examine the role of these variables as moderators and/or mediators of the relationships between PA and sleep in children.

Sustaining a Multi-level, Multi-Site Intervention: A Case-Study from the Children's Healthy Living Program

Dr. Jean Butel¹, Dr. Ashley Yamanaka¹, Dr. Kathryn Braun¹, Dr. Marie Revilla¹, Dr. Monica Esquivel¹, Travis Fleming², Patricia Coleman⁴, Leslie Shallcross⁵, Dr. Tanisha Aflague³, Dr Rachel Novotny¹

¹University Of Hawaii, Honolulu , USA, ²American Samoa Community College, Pago Pago, USA, ³University of Guam, Mangilao, USA, ⁴Northern Marianas College, Saipan, USA,

⁵University of Alaska Fairbanks, Fairbanks, USA

O.1.05: Examining context, barriers, and facilitators of intervention dissemination and implementation, Room 215, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: This study investigates components of the Children's Healthy Living program (CHL) that have been sustained and retained, 9 years post-intervention. CHL was established In 2011 to build networks across Alaska, Hawai'i, and the US Affiliated Pacific Islands, to develop a multi-level intervention to reduce childhood overweight and obesity, and to test it in intervention sites in 9 jurisdictions. Data collected 2 years and 5 years post-intervention suggest that CHL reduced the prevalence of overweight and obesity in intervention communities. Subsequent funding has allowed CHL to continue its networking and measuring programs, but no research had explored the activities and community factors that contributed to the long-term existence and success of CHL. This research addresses this gap.

Methods: We retrospectively examined surveys, interviews and program documentations to capture CHL-site activities and community factors between 2015 and 2020 using the Process Tracing method. To validate and further explore the initial findings, we developed a chronological timeline of events; identified key events; established causal links; and explored the broader context to ascertain which activities were associated with maintenance 9-years post intervention.

Results/findings: Key components identified in sustaining CHL included: 1) activities dedicated to maintaining a strong network, e.g., monthly calls and annual meetings; 2) embedding of CHL site activities within Land-Grant institutions; 3) training of the next generation through financial support of college courses and degrees; 4) use of Pacific-tailored behavior analysis tools to measure CHL target behaviors; 5) mandated co-authorship of all partner sites on publications and presentations; 6) incorporation of intervention activities in community programs, 7) provision of leadership advancement opportunities, and 8) secured funding to support these activities. Collaboration and trust among partners; established network and vision, strategy and work plan; sustained training programs; and attainment of additional funding and grants was the identified causal pathway for the sustainment of CHL.

Conclusions: By understanding the components and causal pathway that contributed to the sustained change in the CHL program, this study informs multi-site interventions by highlighting enduring components and causal pathway of a successful intervention, ultimately contributing to the promotion of healthier lifestyles among children and communities.

What stops weight loss program participation? A pilot qualitative investigation

Dr. Tzeyu Michaud¹, Dr Thais Alves¹, Mrs Jessica Ern¹, Mr Aiden Quinn², Dr Su-Hsin Chang³, Mr Todd McGuire⁴, Dr Paul Estabrooks⁵

¹University of Nebraska Medical Center, Omaha, United States, ²University of Nebraska-Lincoln, Lincoln, USA, ³Washington University School of Medicine, St Louis, USA,

⁴incentaHEALTH, LLC, Denver, USA, ⁵University of Utah, Salt Lake City, Salt Lake City, USA

O.1.05: Examining context, barriers, and facilitators of intervention dissemination and implementation, Room 215, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Despite the presence of evidence-based weight loss programs, achieving broad participation and sustaining engagement remains a challenge during implementation. This study aims to pinpoint the hindering continued involvement in a 12-month, technology-supported weight loss program among participants who discontinued within six months within the community context.

Methods: Applying a qualitative study design, we conducted semi-structured interviews to identify contextual factors influencing program participation and retention. Our framework drew upon the Practical Robust Implementation and Sustainability Model (PRISM), encompassing program characteristics (complexity, trialability, observability, relative advantage, compatibility, and cost), recipient characteristic, implementation and sustainability infrastructure, and external environment. Eligible individuals, who dropped out of the weight loss program within a six-month period in 2021 were recruited. Interviews were conducted between May and August, 2022, deliberately oversampling racial/ethnic minority participants (42% under-represented minorities out of n=12). Each interview lasted approximately 20-30 minutes, and participants received a \$30 gift card as compensation. Deductive content analysis was utilized to code the transcripts and identify themes aligned with PRISM constructs.

Results/findings: A total of 12 disenrolled participants engaged in the interview. The most prominent factors affecting retention were program compatibility, followed by program complexity, accounting for 50% and 36% of negative retention-associated meaning units, respectively. Commonly identified themes included time constraints, psychological capability, inadequate social support, and absence of personalized features (such as tailored email message, meal plans, and exercise programs), and technical glitches (such as app malfunction or difficulties connecting scales to the app). The majority (8 out of 12) of participants enrolled in the program through their health insurance (pertaining to external environment and cost). Having a coach or community support emerged as incentives for sustained participation, while monetary incentives played a modest role. Recommendations for program enhancement included human coach check-in (as opposed to AI/robot-powered interactions), diverse/cultural meal planning options, meal tracking, and customizable calorie counting tools.

Conclusions: These findings are pivotal in developing and implementing viable and effective strategies aimed at bolstering sustained participant engagement and retention.

Implementation barriers and facilitators of physical activity interventions in primary health care settings using the TICD framework: a systematic review

Dr. Catarina Silva^{1,2}, Professor Cristina Godinho^{2,3}, Dr. Jorge Encantado¹, Dr. Bruno Rodrigues⁴, Professor Eliana Carraça⁵, Professor Pedro Teixeira¹, Professor Marlene Silva^{2,5}
¹CIPER, Faculdade de Motricidade Humana, Universidade de Lisboa, Lisbon, Portugal, ²Programa Nacional para a Promoção da Atividade Física, Direção-Geral da Saúde, Lisbon, Portugal, ³NOVA National School of Public Health, Public Health Research Centre, Comprehensive Health Research Center, CHRC, NOVA University Lisbon, Lisbon, Portugal, ⁴CIAFEL, Faculdade de Desporto da Universidade do Porto, Porto, Portugal, ⁵CIDEFES, Centro de Investigação em Desporto, Educação Física, Exercício e Saúde, Universidade Lusófona, Lisbon, Portugal

O.1.05: Examining context, barriers, and facilitators of intervention dissemination and implementation, Room 215, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Translation into practice of effective physical activity interventions in primary care is difficult, due to a complex interaction of implementation determinants. This study sought to identify implementation determinants (barriers and facilitators) of four primary care interventions: physical activity assessment, counselling, prescription, and referral.

Methods: A systematic review of qualitative, quantitative and mixed-methods studies published since 2016 was conducted. The “Tailored Implementation for Chronic Diseases” (TICD) framework was adapted to extract and synthesize barriers and facilitators.

Results/findings: Sixty-two studies met the inclusion criteria. Barriers (n = 56) and facilitators (n = 55) were identified across seven domains, related to characteristics of the intervention, individual factors of the implementers and receivers, organizational factors, and political and social determinants. The top five determinants (most frequently reported) were: professionals’ knowledge and skills; intervention feasibility/compatibility with primary health care routine; interventions’ cost and financial incentives; tools and materials; and professionals’ cognitions and attitudes. “Social, political and legal factors” domain was the least reported. Physical activity counselling, prescription, and referral were influenced by determinants belonging to all the seven domains.

Conclusions: The implementation of physical activity interventions in primary care is influenced by a broader range of determinants. The triad of health professionals, intervention characteristics, and available resources is particularly relevant, as it encompasses the most frequently reported barriers and facilitators. A deep understanding of the local context, with particularly emphasis on these determinants, should be considered when preparing interventions’ implementation, to contribute for designing tailored implementation strategies and optimize the interventions’ effectiveness.

Unpacking the role of Relational Connections in wellness policy implementation in under-resourced schools

Dr. Hannah Lane¹, Ms Rachel Deitch², Ms Michaela Lowe³, Ms Belen de la Berrera¹, Dr Erin Hager²

¹Duke University School Of Medicine, Durham, USA, ²Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, ³Boise State University, Boise, USA

O.1.05: Examining context, barriers, and facilitators of intervention dissemination and implementation, Room 215, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Local Wellness Policies (LWPs) establish healthy eating and physical activity practices in U.S. schools. When well-implemented, LWPs improve child health; however, LWPs implementation is complex and requires many individuals within a school. This study explores the role of Relational Connections, a Consolidated Framework for Implementation Research (CFIR) construct defined as “formal and informal relationships, networks and teams within schools”, during planning and execution of a school-level LWP implementation strategy.

Methods: Data were drawn from a cluster randomized trial in low/middle-income elementary and middle schools. The trial tested implementation and effectiveness of Wellness Champions for Change (WCC), a school-level implementation strategy whereby a teacher Wellness Champion was recruited to build a wellness team and carry out LWP initiatives. The Wellness Champion received support from a trained health educator over one schoolyear. We conducted CFIR-guided semi-structured interviews with Wellness Champions from 14 of 21 schools receiving WCC and all 4 health educators after study completion to understand factors that influenced WCC implementation. We conducted axial coding with “Roles and Characteristics” codes and Inner Setting codes of “Relational Connections” and “High Level Leaders.” We utilized data visualization techniques to describe dynamic relationships between school-level implementation personnel.

Results: Personnel holding key roles in WCC included administrators, Wellness Champion, and school staff-at-large. In all schools, WCC success was influenced by both characteristics of and relationships between these personnel. Using data visualization, we described how relationships varied across schools and influenced WCC success. As examples: when a Wellness Champion was new to the school, a more “hands-on” administrator was needed to build staff buy-in; however, when a Wellness Champion was more “seasoned” with existing staff ties, administrator involvement was less necessary and could even slow progress. When Wellness Champion had to “shoulder the load” without support from staff-at-large, initiatives were limited in scope and impact. “Fractured” relationships negatively influenced implementation, and often required modification of implementation goals.

Conclusions: Characteristics of and relationships between administrators, Wellness Champions, and staff-at large influenced WCC success across all schools, yet the mechanism of influence varied. Findings underscore the importance of understanding school-specific Relational Connections when tailoring LWP implementation strategies.

Use of the Stanford Lightning Report to facilitate implementation of a family healthy weight program among community implementation teams

Dr. Gwendolyn Porter¹, Dr. Jennie Hill³, Dr. Caitlin Golden³, Ali Malmkar², Dr. Kate Heelan², Dr. Paul Estabrooks³

¹University Of Nebraska Medical Center, Omaha, USA, ²University of Nebraska Kearney, Kearney, USA, ³University of Utah, Salt Lake City, USA

O.1.05: Examining context, barriers, and facilitators of intervention dissemination and implementation, Room 215, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: The Stanford Lightning Report (SLR) protocol provides a methodology for rapid qualitative data collection and feedback that can be used to support goal setting related to evidence-based intervention delivery. The purpose of this presentation is to describe the application of the SLR within the context of a learning collaborative implementation strategy to support the delivery of Building Healthy Families (BHF), a family healthy weight EBI, in rural areas and small towns. Specifically, we will present barriers and facilitators during the pre-implementation or implementation phase of BHF, using the iPARIHS framework.

Methods: Seven rural community implementation teams in a pilot type 3 hybrid effectiveness implementation study received a BHF Online Training Resource and Program Package with (n=4) or without (n=3) participation in a learning collaborative (LC). The LC strategy included quarterly meetings (N=8) followed by an action period (AP) to follow up on implementation goals. Between meetings, community implementation teams participated in a one hour, video conference SLR to discuss progress on implementation goals, barriers encountered, facilitators, and planning to overcome barriers and leverage facilitators.

Results: During the pre-implementation phase, communities cited barriers regarding context at the local, organizational, and external health system levels (n=12), recipients (n=8), facilitation (n=4), and implementation outcomes (n=2). Sixteen of the 26 pre-implementation barriers were related to the COVID-19 pandemic—with community implementation team time as a consistent pre-implementation barrier. Pre-implementation facilitators (n=44) were primarily related to the recipient (n=16), context (n=13), and innovation (n=12). During the implementation phase, reported barriers were related to context (n=4), the innovation (n=2), implementation outcomes (n=3), and recipients (n=6; only 3 COVID-19 related) and facilitators were similar to those identified during pre-implementation. Community implementation team motivation, collaboration and teamwork, and existing networks were recorded as both barriers and facilitators. The BHF Online Training Resource and Program Package usability and content was a consistent pre-implementation and implementation facilitator. Finally, barriers decreased from the pre-implementation to the implementation phase, suggesting the use of a learning collaborative and the SLR is beneficial to BHF implementation.

Conclusion: The use of a SLR protocol was feasible and reduced implementation barriers over time.

Portfolio Analysis of NIH-supported Implementation Science and Nutrition Research

Mrs. Susan Vorkoper¹, Dr Ariella Korn, Dr. Padma Maruvada, Dr Holly Nicastro, Dr. Scarlet Shi
¹NIH/ Fogarty International Center, Bethesda, USA

O.1.05: Examining context, barriers, and facilitators of intervention dissemination and implementation, Room 215, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: To describe the scope of NIH-funded extramural research grants using implementation science (IS) methods in nutrition research and offer insights into future research opportunities relevant to the Strategic Plan for NIH Nutrition Research 2020-2030.

Methods: A portfolio analysis of funded grants using an NIH internal reporting system, Query View Report, was conducted to identify nutrition research and IS awarded between fiscal years 2011 and 2022. The authors screened the titles and abstracts for inclusion criteria: research and career development awards involved a nutrition and/or dietary intervention and measured a stated implementation outcome or used an IS theory, model, or framework.

Results: The analysis identified 33 NIH-funded awards. Investigator-initiated research projects accounted for about half of the awards (48.5%) compared to research career awards (27.3%) and cooperative agreements (9.1%). Only five studies were conducted in Africa, Latin America, and Asia (15.2%) none of which were long-term research projects. Identified studies frequently examined obesity and nutrition in tandem developing novel approaches, evaluating the implementation of nutrition/dietary guidelines, and adapting culturally-tailored interventions in collaboration with community partners from schools, hospitals, and religious settings. Feasibility, costs, adoption, and acceptability were the most cited implementation outcomes. Only 16 awards (48.5%) used an IS theory, model, or framework to guide their work. Studies that addressed health disparities and health equity (54.5%) most often included a culturally-tailored nutrition or dietary intervention. A few limitations: the analysis was restricted to publicly-available abstracts and IS outcomes had to be specifically named.

Conclusions: While the identified studies account for a small portion of the NIH portfolio, there is a large breadth of NIH-funded nutrition and implementation research. The findings support the opportunities to stimulate IS in nutrition research in alignment with the NIH strategic plan for nutrition research outlined in a recent commentary. This called for including implementation and dissemination early in the intervention design, developing and testing strategies for equitable implementation of nutrition and diet evidence-based, and building and strengthening capacity and expertise needed to increase the use of IS in nutrition research. 1 Note, this abstract is based on data previously published in Oct. 2023.

Cross-sectional examination of 3- and 4- year-old children who meet the WHO Global Physical Activity Guidelines in the Early Years and how they differ by gender, urban/rural location and/or socioeconomic status, executive functions, motor skills and adiposity as potential correlates of 24-hour movement behaviors- The Nigeria Sunrise Pilot Study.

Mr. Oluwayomi Aoko¹, Mr Ekundayo Ajiborisade¹, Prof Grace Otinwa¹, Prof. Anthony Okely²
¹University Of Lagos, Akoka, Nigeria, ²University of Wollongong, Wollongong, Australia

O.1.06: Addressing Multiple Behaviors in Early Care and Education Settings, Room 216, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: C. Cancer prevention and management

Background: The Early Years (defined as ages from birth to -5) are the most critical life stage for developing important physical, motor, social and cognitive skills. Knowledge about how children's movement behaviours - physical activity (PA), sedentary behaviour (SB), and sleep (S) influence one another and relate to healthy growth and development are not well known. In 2019, the WHO released the first global guidelines for movement behaviours for children birth to 5 years after identifying prevention of obesity in young children as one of its key priorities for the 21st Century and the key roles movement behaviours play in this. Nigeria lacks nationally representative data to formulate its own guidelines.

Objective: The primary aim of the SUNRISE study is to determine the proportion of 3- and 4- year- old children sampled in participating countries, who meet the WHO Global guidelines for PA, SB and S and to determine if these proportions differ by gender, parental education level, urban/rural location and country income level.

Methods: In Nigeria, preschool children and their parents (n = 150) were equally recruited from urban and rural settings. Height and weight were measured to assess adiposity. PA, SB and S were assessed using accelerometers and parent questionnaire. Fine and gross motor skills were measured using the NIH Toolbox, and executive functions (EF) assessed using the Early Years Toolbox.

Results: The proportion of children meeting the WHO guideline of 60 minutes/day, MVPA was 93.1%, 77.5% met the 180 minutes of total PA/day guideline, 77.5% children met the MVPA and TPA guidelines. 26% of children met the screen time guideline <1 hour/day, 54% of children met the sleep guideline (10-13 hours/day), 99% met the restrained time guideline, and 10% met all the 3 guidelines. Low-income setting children had higher inhibition scores than their high-income counterparts but no difference between the groups for working memory scores (cognition flexibility).

Conclusion: The study shows directions for policy actions to promote more walking, cycling, sport, and active recreation in Nigerian children contributing to achieving 13 of the 2030 Sustainable Development Goals and formulation of the country's own movement behaviour guidelines.

Teacher Insight into the Development of a Combined School- and Home-Based Sleep Promotion Program during the Kindergarten Transition

Dr. Sarah Burkart¹, Dr. Elizabeth L. Adams¹, Dr. Michael Beets¹, Ms. Olivia Plenzler¹, Ms. Madeline Mikes¹, Ms. Carmen White¹, Ms. Meghan Savidge¹, Ms. Lauren von Klinggraeff¹, Ms. Hannah Parker¹, Ms. Olivia Finnegan¹, Mr. James White, III¹, Dr. Aliye Cepni¹, Dr. Bridget Armstrong¹, Dr. R. Glenn Weaver¹

¹University of South Carolina, Columbia, USA

O.1.06: Addressing Multiple Behaviors in Early Care and Education Settings, Room 216, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Purpose: Developing healthy sleep habits is especially important when children transition from variable preschool environments to a more structured elementary school setting. However, few studies have harnessed the unique partnerships between teachers and parents in preventing suboptimal child sleep. The primary aim of this study was to engage key community partners (i.e., 4K & 5K teachers) in developing a combined school- and home-based sleep promotion program for young children (4-6 years old).

Methods: Teachers (n=34, 100% female, 82% White, 12.4±9.0 years' experience) from two school districts participated in semi-structured focus groups or phone interviews (n=26 teachers in 3 focus groups; n=8 interviews) to inform the development of a sleep promotion program. Prompts addressed the influence of children's sleep on school-day activities, barriers to optimal sleep, strategies to engage with parents, and preferences for future delivery of school-based intervention components. Transcripts were independently coded by two trained staff members using an inductive approach in NVivo (v14). Consensus coding was used with a third coder to resolve discrepancies. Themes were generated using constant-comparison methods.

Results: Teachers reported suboptimal child sleep manifested in two primary domains during the school day: classroom participation and learning (e.g., inability to focus, sleeping during classroom activities), and social-emotional influence (e.g., self-regulation, prosocial behavior). Teachers perceived parents' lack of knowledge about appropriate bedtime routines, excessive screen time, family activity schedules, and sleep-inhibiting home environments were barriers to children's healthy sleep. Teachers expressed interest in helping children sleep better by incorporating classroom activities about sleep, and noted leveraging the parent-teacher relationship may increase parent buy-in. To best engage parents, teachers recommended program information targeted towards the end of 4K leading up to the start of 5K that is accessible on parents' smartphones, short and engaging, and consists of videos and infographic-style messages. In-person seminars, one-time events, and print materials were discouraged.

Conclusions: Teachers are concerned about suboptimal child sleep and are invested in working with parents to support healthy sleep habits. Findings will inform content, engagement strategies, and mode of delivery for a sleep promotion program targeting young children during the kindergarten transition.

Differences in Parent and Early Care and Education Provider Nutrition and Physical Activity Knowledge and Confidence

Ms. Divya Patel¹, Dr. Sara Vesely¹, Dr. Dipti Dev², Dr. Norman Hord³, Dr. Kathrin Eliot¹, Dr. Susan Sisson¹

¹University Of Oklahoma Health Sciences Center, Oklahoma City, USA, ²University of Nebraska- Lincoln, Lincoln, USA, ³Oklahoma State University, Stillwater, USA

O.1.06: Addressing Multiple Behaviors in Early Care and Education Settings, Room 216, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Background: The purpose of this study was to compare nutrition and physical activity (PA) knowledge and confidence scores between parents and Early Care and Education (ECE) providers.

Methods: Three- to five-year-old children's (n=72) parent-ECE provider dyads completed The Confidence in Activity and Nutrition-Teach questionnaire to measure nutrition and PA knowledge related to preschool children and confidence in implementing optimal nutrition and PA activities. Knowledge items were multiple-choice with one correct answer (1 point per question) and confidence items used a 7-point Likert scale (1=no confidence, 4=moderate confidence, and 7=high confidence) to measure three constructs (best practices, nutrition and PA curriculum, and daily activities). Independent t-tests were used to compare differences in mean scores between parents and providers and alpha was set at 0.05.

Results: Parents scored significantly lower than providers on total nutrition and PA knowledge score (12.9 ± 2.6 out of 19 vs 14.3 ± 2.9 ; $p=0.003$), nutrition knowledge (8.8 ± 1.8 out of 13 vs 9.7 ± 2.0 ; $p=0.004$) and PA knowledge (4.1 ± 1.3 out of 6 vs 4.6 ± 1.3 ; $p=0.04$). Parents felt significantly higher confidence than providers in implementing nutrition and PA best practices at home (6.0 ± 1.1 vs 5.2 ± 1.1 ; $p=0.03$) and significantly lower confidence than providers in conducting daily activities like encouraging social interactions, healthy mealtimes, modeling, and creating a healthy PA environment (5.8 ± 1.0 vs 6.2 ± 0.8 ; $p=0.003$).

Conclusion: ECE providers consistently had higher scores on nutrition and PA knowledge than parents and this may be due to the policy regulations and guidelines available to them as opposed to parents who do not receive mandatory trainings related to child nutrition and PA. Interestingly, parents felt more confident than providers in implementing optimal nutrition and PA practices at home despite having lower knowledge. This indicates that with optimal training and education, parents become positive influences in establishing their children's nutrition and PA practices. Further, parents can benefit from collaborating with their ECE providers to work together to ensure a thriving environment for children at their households and ECE.

Development of step-based physical activity guidelines for preschoolers using a data driven approach

Dr. Cody Neshteruk¹, Dr. Chelsea Kracht², Dr. Erik Willis³, Dr. Derek Hales³

¹Duke University School Of Medicine, Durham, USA, ²University of Kansas Medical School, Kansas City, USA, ³University of North Carolina at Chapel Hill, Chapel Hill, USA

O.1.06: Addressing Multiple Behaviors in Early Care and Education Settings, Room 216, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Purpose: Step-based physical activity (PA) recommendations for preschool children vary widely. The purpose of this study was to use a data-driven approach to 1) identify the optimal number of steps/day to meet the current PA guideline and 2) examine if differences exist based on age and sex.

Methods: Baseline and follow-up data from preschoolers (n=881; 3-5 years) who participated in a childcare-based healthy eating and PA intervention were used for analysis. PA data was collected in 5-second epochs using ActiGraph GT3x+ accelerometers worn on the right hip for 7-days. Age-appropriate cut-points were applied to calculate minutes of total physical activity (TPA) (i.e., sum of non-sedentary time) and moderate to vigorous physical activity (MVPA). Meeting the PA guideline was defined as ≥ 180 minutes/day of TPA of which ≥ 60 minutes/day were MVPA. To identify the optimal number of steps/day, a SAS macro was used to compare steps/days with meeting the guideline in one step increments. Three criteria, percent agreement, maximizing sensitivity and specificity, and balanced false positive/negative rates were estimated to identify optimal step/day cut-offs. Subgroup analysis were conducted based on age (3, 4, 5 years) and sex (boys/girls).

Findings: Preschoolers (50% boys, 40% White, 31% Black) contributed 7113 days of valid wear, averaging 720 ± 125 minutes/day. Preschoolers met the PA guideline on 55% of days. In the total sample, an optimal cutoff of 6970 steps/day (CI: 6775-7145) was identified based on agreement (82%), sensitivity (0.84), specificity (0.80), and balanced false positive/negative rate (9%). Boys had a slightly higher step/day cutoffs compared to girls (7045 vs 6685 steps/day). Minimal differences in step/day cutoffs were observed based on age: 3y olds (6830 steps/day), 4y olds (6945 steps/day), and 5y olds (6945 steps/day). When combined and weighted by sample size, estimates were similar for boys and girls (6865 steps/day; CI: 6745-6975) and age groups (6930 steps/day; CI: 6765-7110) as the total sample step/day cutoff value.

Conclusions: Step cutoffs were similar among the total sample and in subgroup analyses, indicating that a cutoff between 6800-7000 steps/day shows high agreement with meeting the PA guideline. **Future studies should explore the**

Increasing water availability and accessibility in family childcare homes to improve young children's water intake: Results from the “Drink Well/Bebe Bien” Study

Dr. Kim Gans^{1,2}, Ms. Vanessa Esquivel¹, Ms. Sarah Wen Warykas¹, Dr. Patricia Risica², Ms. Madeline Baird¹, Mr. Peter McCauley¹, Ms. Michelle Miller¹, Ms. Viviana Zambrano¹, Ms. Suge Zhang¹, Dr. Alison Tovar²

¹University of Connecticut, Storrs, USA, ²Brown University School of Public Health, Providence, USA

O.1.06: Addressing Multiple Behaviors in Early Care and Education Settings, Room 216, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Purpose: To report the results of the Drink Well study, which aimed to increase water availability, accessibility and children's water consumption in family childcare homes (FCCH), which care for over two million U.S. children.

Methods: 67 FCCH providers (FCCPs) from under-resourced communities in RI, MA and CT (63% Latina) completed baseline surveys that determined practices and barriers/strategies to improving water availability/accessibility. Then an intervention package was delivered to FCCH, including water filters, self-serve stations, pitchers, water bottles and educational materials. Post-surveys were conducted 2-3 months later. Pre-post changes in FCCPs' attitudes, barriers and practices re. water access/availability, and use/acceptability of intervention strategies were assessed. FCCPs also completed post-intervention qualitative interviews.

Results: 61 FCCP completed the post survey (91%). The intervention package was well utilized and liked. The percentage of FCCHs with self-serve water easily available indoors increased from 41.5% to 71.7%, and outdoors from 44.6% to 75%. Always providing water at snack-time increased from 62.0% to 76.7%; always providing water at meals increased from 83.3% to 88.3%. Prompting children to drink water at least 5 times daily increased from 29.2% to 58.3%. At posttest, 60% of FCCPs reported that children's access to water increased a lot; 61.7% reported that child water intake increased a lot; and 43% reported their own water consumption increased a lot because of the intervention. Only 25% of FCCPs reported that having parental support for child water intake increased a lot. When asked how much the intervention helped them to serve more water to children, and get children to drink more water, 88.3% and 85% of FCCPs, respectively reported “very much”. Qualitative interview data supported the quantitative results. Final statistical analyses/testing will be completed before May 2024.

Conclusions: Drink Well/Bebe Bien was feasible and acceptable to FCCP and shows promise in increasing water accessibility and children's intake in FCCHs. These results indicate the importance of training and support to promote drinking water for FCCPs and the need to involve parents in order to also influence children's intake in the home setting. A larger scale RCT that will measure children's actual pre-post water consumption is warranted.

Comparing Effectiveness of Nebraska Go NAP SACC Intervention in Home vs. Center-based Childcare Settings.

Dr. Saima Hasnin¹, Ms Carly Hillburn², Dr. Dipti Dev²

¹University of Illinois Urbana Champaign, Urbana, USA, ²University of Nebraska Lincoln, Lincoln, USA

O.1.06: Addressing Multiple Behaviors in Early Care and Education Settings, Room 216, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Purpose: The Go Nutrition and Physical Activity Self-Assessment in Child Care (Go NAP SACC) intervention aims to improve the health of young children through policy, system, and environmental changes in childcare settings. Several studies reported the effectiveness of this intervention; however, few studies have examined the differential effectiveness. This study compares the Go NAP SACC intervention outcomes between family childcare homes (FCCH) and center-based childcare settings (CCC) in Nebraska.

Methods: The current study used pre- and post-intervention evaluation data collected between 2014 and 2023 in the Nebraska Go NAP SACC program. The analysis included 604 (n) licensed childcare settings (336 FCCH and 268 CCC) that had completed the program and were included in the analysis. Nebraska Go NAP SACC utilizes five instruments from the Go NAP SACC self-assessment: Child Nutrition, Breastfeeding and Infant Feeding, Infant and Child Physical Activity, Outdoor Play and Learning, and Screen Time.

Data Analysis: Using SPSS v.29.0.1.0, multiple linear regression analyses were conducted to determine the association between childcare providers' total improvement at post-intervention with the type of childcare settings while controlling for the pre-intervention score, geographical location (rural vs. urban), and CACFP-participation. Six separate models were run for the Breastfeeding, Infant Feeding, Child Nutrition, Outdoor Playtime, Indoor Physical Activity, and Screen Time outcomes. Benjamini Hochberg (B-H) correction was done with a 5% false discovery rate for conducting multiple analyses.

Results: The CACFP participation rate was 71% for FCCH and 90.5% for CCC. About 18.6% of FCCH and 36.9% of CCC were in rural Nebraska. All six regression models were significant at $p < .001$. FCCH setting type was negatively associated with the total improvement at the post-intervention for each of the six Go NAP SACC intervention components.

Discussion: FCCH providers have complete authority over the childcare policy and environment, but they may lack resources to bring more changes to the setting. Differential effectiveness in this study emphasizes future research on implementation strategies for increasing Go NAP SACC intervention effectiveness across different settings.

Rural Families' Experience with Four-Day School Week Policies: Methodology and Preliminary Results

Mrs. Colleen Jones¹, Mr Michael Bennett², Dr. John Schuna², Dr. Paul Thompson³, Dr. Kathy Gunter², Dr. Emily Tomayko¹

¹Montana State University, Department of Food Systems, Nutrition and Kinesiology, Bozeman, USA, ²Oregon State University, College of Health, Corvallis, USA, ³Oregon State University, College of Liberal Arts, Corvallis, USA

O.1.07: Rooted in Place: Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors, Ballroom B, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Four-day school weeks are being employed with greater frequency across the United States, primarily in rural areas. Schools provide broad support for both learning and overall child wellbeing (e.g., school meals, physical activity opportunities). By reducing exposure to the school environment, four-day school weeks may impact the allocation of household time and money, leading to changes in food security, health behaviors, family time and routines, employment, work-family balance, and childcare strategies compared to traditional five-day school weeks. Our objective is to provide novel evidence about the impacts of four-day school weeks on children and families.

Methods: Focus groups were conducted in rural four-day school week districts in Oregon and Montana, two of the states with highest four-day school week use. In partnership with local Cooperative Extension and school personnel, parents and guardians of elementary-aged children were recruited to participate. Each focus group was moderated for 1.5 hours by research team members utilizing a pre-developed discussion guide. Completed focus group transcripts were analyzed independently by two research team members using a grounded theory approach to identify themes related to the impact of the four-day school week on child and family health and wellbeing.

Results/Findings: Four focus groups across three different four-day schools have been conducted with a total of 23 participants. Consistently mentioned themes included, (1) childcare access, (2) community supports (e.g., access to food banks, and recreation opportunities), (3) family time, (4) financial impacts, and (5) appointments and errands. A main finding was that all participants would choose the four-day school week over the traditional five-day schedule.

Conclusions: Initial results suggest both benefits and challenges to this school schedule, with most participants indicating overall satisfaction with the four-day school week schedule. However, the current sample may only represent some experiences and perspectives, and efforts are needed to recruit more diverse participants in additional focus groups. After study completion, results will be communicated to inform decision-making related to four-day school week implementation.

Impact of community characteristics on inequality in physical activity among children

Dr. Ann Rogers¹, Dr. Christopher Wichman¹, Dr. Michaela Schenkelberg², Dr. David Dziewaltowski¹

¹University of Nebraska Medical Center, Omaha, USA, ²University of Nebraska Omaha, Omaha, USA

O.1.07: Rooted in Place: Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors, Ballroom B, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Community characteristics (e.g., rurality) have been shown to impact population health physical activity (PA) outcomes, such as average PA levels, among children. Little is known about the level of inequality in the distribution of PA among children at a community level, that is, whether all or only a subset of children in a community accrue PA. This study examined the impact of community geographic, sociodemographic, and community program and policy (CPP) characteristics on inequality in PA in a large sample of American communities using data from the Healthy Communities Study.

Methods: CPPs promoting children's PA were assessed in a sample of communities (n=130) by key informant interviews. Each community was assigned an intensity score based on reach, duration, and behavioral intervention strategies used in existing CPPs. Moderate-to-vigorous PA (MVPA) volume, operationalized as the frequency and duration of participation in MVPA activities, of children (n=4688) in each community was measured by self-/caregiver-report. A Gini coefficient for each community was calculated to quantify inequality in MVPA volume. Gini ranges from 0 to 1, where 0 indicates perfect equality and 1 indicates complete inequality. Generalized estimating equations examined the impact of community geographic (e.g., rurality), sociodemographic (e.g., income), and CPP intensity on MVPA volume inequality.

Results: Mean CPP intensity across communities was 24.0 (range = 8.5–53.5). Mean inequality in MVPA volume across communities was 0.62 (range=0.39–0.86). The effects of CPP intensity (P=0.99) and community income (P=0.28), region (P=0.31), and urbanicity (P=0.64) on inequality at the community level were not significant. The effect of community minority classification on MVPA volume inequality was significant (P=0.01), such that communities classified as African American (Gini=0.67) had greater PA inequality than communities classified as "other" (Gini=0.60).

Conclusions: MVPA volume inequality varied across communities, but further research is needed to understand drivers of this variability. Additional measures of community social structure may aid in understanding variability in PA inequality. Indicators such as the Gini coefficient can illuminate inequalities in PA among children and may inform community efforts to increase the level and equality of population PA.

Latino children's physical fitness varies by place of birth and sex: Findings from New York City public school students 2009-2019

Dr. Emily D'Agostino¹, Dr. Karen Florez⁴, Dr. Sophia Day³, Dr. Kevin Konty³, Ms. Kira Argenio³, Ms. Caroline Nguyen², Dr. Terry Huang⁴, Dr. Cody Neshteruk¹, Dr. Brooke Wagner¹, Dr. Hannah Thompson²

¹Duke University School of Medicine, Durham, United States, ²UC Berkeley School of Public Health, Berkeley, United States, ³NYC Department of Health and Mental Hygiene, Durham, United States, ⁴CUNY School of Public Health, New York, United States

O.1.07: Rooted in Place: Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors, Ballroom B, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: United States (US) minoritized and recent immigrant youth disproportionately experience health disparities in fitness, an established proxy of present and future health. Fitness differences by place of birth (POB) could exacerbate inequities in adulthood chronic disease development. This study examined fitness differences among Latino youth by POB and sex.

Methods: This longitudinal observational study drew data from the NYC FITNESSGRAM (2009-2019) for public school Latino youth (grades 4-12) with objectively-measured fitness (n=577,639 students; 2,236,590 observations). POB was categorized: NYC (n=1,686,504 observations); continental US [non-NYC] (n=98,583); South America (n=77,768), Central America (n=41,833), Dominican Republic (n=235,764), Puerto Rico (n=33,898), Mexico (n=48,837), and other [non-North/South America] (n=13,403). Sex-/age-specific performance by POB was assessed using healthy fitness zones (HFZ) defined by The Cooper Institute as individual fitness sufficient for good overall health. HFZ were examined for aerobic capacity, muscular strength, and muscular endurance tests. Repeated measures multilevel models were fit to the data, clustering observations by students, adjusting for sex, age, grade, English-language learner, primary language spoken at home, school, neighborhood linguistic isolation, and neighborhood poverty.

Results: The sample included 49% females (39.9% and 68.9% living in high or very high neighborhood poverty and linguistic isolation areas, respectively, 25.6% English Language Learners, mean age=13.0±2.6 years) with 18.9% overall prevalence of achieving HFZ for all three tests. After controlling for individual/neighborhood factors, NYC-born students had an increased likelihood of not achieving HFZ for all three tests (RR=1.1; 95%CI 1.06,1.03) versus US-born (non-NYC) students. South America-born (RR=0.86; 95%CI 0.82,0.90) and Central America-born (RR=0.83; 95%CI 0.79,0.88) students had the lowest likelihood of not achieving HFZ for all three tests versus US-born (non-NYC) students. Among male students, likelihood of not achieving HFZ for all three tests for male South America-born students was 0.83 (95%CI 0.79,0.87), whereas among female South American-born students the likelihood was 0.93 (95%CI 0.87,1.00) versus US-born (non-NYC) for male and female students, respectively.

Conclusions: Heterogeneity in fitness for Latino children highlights the need for tailored physical fitness programs and policies to reduce fitness disparities, especially in urban settings. Future research should examine fitness differences across other racial/ethnic youth subgroups to support future healthier generations.

Formative research to develop “DC-SIPS,” a multi-level intervention to reduce sugary drink intake and promote water intake among Black youth in Washington, D.C.

Miss Natalie Vallone¹, Dr. Nia I. Bodrick², Miss Jasmine H. Kaidbey¹, Miss Mariana F. Grilo¹, Miss Mariana F. Grilo⁴, Miss Shaleen Arora³, Mr. Adam Dawer¹, Miss Natasha Kumar¹, Miss Jaiden Bluth, Mrs. Natalie Lueders⁵, Dr. Jennifer M. Scheck¹, Dr. William H. Dietz⁴, Dr. Karen A. McDonnell¹, Dr. William D. Evans¹, Dr. Allison C. Sylvetsky¹

¹Department of Exercise and Nutrition Sciences, Milken Institute School of Public Health, The George Washington University, Washington, USA, ²Children's National Medical Center, Washington, USA, ³School of Medicine and Health Sciences, The George Washington University, Washington, USA, ⁴Sumner M. Redstone Global Center for Prevention and Wellness, The George Washington University, Washington, USA, ⁵Natalie Lueders Marketing and Graphic Design, Los Angeles Metropolitan Area, USA

O.1.07: Rooted in Place: Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors, Ballroom B, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Children’s consumption of sugary drinks (SD) considerably exceeds public health recommendations, particularly among Black adolescents from low-income households. However, few interventions have specifically focused on reducing SD intake in this population. The purpose of this study was to conduct formative research to develop DC-SIPS (Decreasing Children’s Sugar Intake Through Pediatricians and Social Marketing), a multi-level intervention to reduce SD consumption and increase water intake among low-income, Black adolescents seen at a pediatric primary care clinic in Washington, D.C.

Methods: In-depth, qualitative interviews with pediatricians (n=6), children ages 11-14 years old (n=17), and their parents (n=13) were conducted to obtain feedback on the intervention concept and prototype DC-SIPS branding and messaging. Components of the social ecological model, social cognitive theory, and message effects theory were utilized to develop preliminary materials and semi-structured interview guides. Interviews were recorded and transcribed, and data were analyzed using thematic analysis.

Results: Pediatricians, children, and parents expressed enthusiasm for DC-SIPS and provided suggestions to refine the intervention concept and improve branding. Pediatricians described key facilitators of the concept including feasibility of SD reduction counseling and the popularity of social media. Children and parents emphasized the need to enhance visual aspects of the social media content through the addition of more vibrant colors, playful fonts, and consistent branding. The use of incentive-based challenges as a strategy to promote engagement with the program was also suggested by pediatricians, children, and parents.

Conclusions: Findings of this formative research informed refinement of prototype DC-SIPS content and development of additional messaging content. The feasibility and acceptability of the refined and newly developed content consistent with participant feedback will be tested in a six-week pilot intervention. Additional factors, such as the perceived effectiveness of the content in promoting behavior change, will be evaluated to inform further refinements to DC-SIPS with the long-term goal of investigating the efficacy of DC-SIPS in a larger-scale randomized controlled trial.

Conceptualizing rural local youth sport systems: Two cases from the All Sports for All Kids project

Ms. Ni Ketut Wilmayani¹, Dr. Ann Rogers², Ms. Carly Hillburn¹, Dr. Marisa Rosen², Ms. Mary Von Seggern², Dr. Dipti Dev¹, Dr. David Dzewaltowski²

¹University of Nebraska–Lincoln, Lincoln, United States, ²University of Nebraska Medical Center, Omaha, United States

O.1.07: Rooted in Place: Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors, Ballroom B, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Youth sport is an important community system for physical activity (PA) promotion and chronic disease prevention. However, inequalities in exposure and access to youth sport opportunities (YSO) exist based on geography, ethnic minority status, and economic disadvantage. These inequalities in YSO may be due to local social structural disadvantages that create preventable health inequities in PA. This study aims to identify social system structures for the provision of YSO in early childhood in rural Nebraska, USA communities.

Methods: Semi-structured interviews were conducted virtually with 11 stakeholders purposefully recruited from two rural communities to examine local youth sport systems for three- to eight-year-old children. Stakeholders were Extension Educators (n=2), childcare providers (n=2) and organization (e.g., YMCA) leaders (n=7). Independent coders (n=2) analyzed results following thematic analysis.

Results: Four main themes emerged from the data. Theme 1. Youth Sport Production Process. Stakeholders reported that YSO were offered by a primary community organization or parent entrepreneurs rather than a community-wide coordinating body. Decisions about youth sports were driven by community members' perceived needs and the physical infrastructure available to offer YSO. Theme 2. Community Structure. Under this theme, both communities acted as a regional hub for youth sport, with community members from nearby towns travelling to the central hub for opportunities. Within each community, multiple opportunities for youth sports were offered seasonally, however, these opportunities often excluded children under age five. Theme 3. Consumer Demand Process. Parents and community members viewed YSO as an avenue for youth to become competitive athletes as they grew up, with a focus on participating in local high school sport teams. Challenges to youth sport participation included travel distance, time commitments, and cost at the household level. Theme 4. Information Flow. Information about YSO flowed from the organization to community members through schools, social media, physical advertisements, and word-of-mouth.

Conclusions: Rural communities did not have a recognized coordinating system for YSO. A system for the coordination of community YSO, consisting of a coalition, community process, and data monitoring and feedback to inform decision-making, may aid in improving equitable access to youth sport for all children.

The Impact of a Family Healthy Weight Program on Parent Participants' Health Outcomes

Mrs. Carleigh Searle¹, Dr Kate Heelan¹, Dr Bryce Abbey¹, Dr Roderick Bartee¹

¹University Of Nebraska at Kearney, Kearney , USA

O.1.07: Rooted in Place: Leveraging Environmental Contexts for Optimizing Nutrition and Physical Activity Behaviors, Ballroom B, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: In the United States, obesity is 6.2 times higher in rural areas than in urban areas (Okobi et al., 2021). Rural areas have limited access to built environmental features, healthy food outlets, and commercial weight control programs (Befort et al., 2016). Building Healthy Families (BHF) is a rural Family Healthy Weight Program (FHWP) for 6–12-year-old children, with parent/guardian (parent) participation. The purpose of this study is to evaluate the effectiveness of BHF, an evidence-based, 12-week program on reducing body composition and clinical health indicators in parent participants.

Methods: Families with at least one child with a BMI ≥ 95 th percentile for age and gender enrolled in BHF and attended 12 weekly group-based sessions covering nutrition education, physical activity, and lifestyle modification education. Parents' age, weight, height, blood pressure, and body composition (DXA) were assessed at baseline, 12 weeks, and 6 months. Blood lipid profiles and liver enzymes were assessed at baseline and 6 months for parents with a BMI ≥ 30 .

Results: 84 families initiated participation (n=137 parents: 55 males (BMI=33.74 \pm 7.47 kg·m⁻²), 82 females (BMI=33.18 \pm 7.86 kg·m⁻²)). 108 parents completed 12-week assessments and 68 parents completed 6-month assessments. Parents had significant improvements in body mass (-6.65 \pm 4.72 kg), BMI (-2.15 \pm 1.78 kg·m⁻²), body fat (-3.43 \pm 2.90 %), fat mass (-5.24 \pm 3.46 kg), systolic blood pressure (-4.01 \pm 9.43 mm/Hg), and diastolic blood pressure (-2.61 \pm 8.12 mm/Hg) from baseline to 12 weeks (p<0.05). Continual improvements were found at 6 months in body mass, BMI, body fat, fat mass, systolic blood pressure, in addition to improved ALT, and total cholesterol (p<0.05).

Conclusion: This study demonstrated that BHF can produce significant improvements in body composition and clinical health indicators in 6 months among the parent participants of the program. Similarly, other community-based rural FHWP's have found parents' short-term decreases in BMI to be -0.94 \pm 1.6 kg·m⁻² and long-term decreases to be -0.57 \pm 2.4 kg·m⁻² (Janicke et al., 2016). Hence, FHWP's can be beneficial for parent/guardian weight management. Results also indicate BHF may be as or more effective than other FHWP's in improving body composition and clinical health indicators in 6 months.

The Nutri cRCT: Feasibility of a User-Centered Software for Collaborative Diet Goal Setting in Safety-Net Primary Care Clinics

Dr. Marissa Burgermaster¹, Ms. Madalyn Rosenthal¹, Dr. Lola Okunade², Dr. Brandon Altillo¹, Dr. William M. Tierney¹, Dr. Steven Andrews³, Grant Daniels¹, Mariana Rendon Flores¹
¹University of Texas at Austin, Austin, USA, ²Lone Star Circle of Care, Georgetown, USA, ³University of Colorado Anschutz Medical Campus, Aurora, USA

O.1.08: The feasibility and usability of digital health measurement and intervention tools., Room 212, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: We engaged 23 primary care providers (PCPs) and 9 patients in an iterative user-centered design and usability testing process to develop a software platform that overcomes the challenges PCPs face in addressing diet during primary care encounters, namely limited time, diet data, and behavioral nutrition training. The resulting software, Nutri©, enables brief, data-driven, diet goal setting by collecting diet data with ASA24, automatically computing suggested goals based on an expert-driven rules engine, and guiding PCPs through a 3-minute collaborative goal setting workflow. In a subsequent clinic-based pilot trial, we assessed if Nutri enabled personalized goal setting while ensuring that PCPs found Nutri satisfying, usable, and integrated into the clinical workflow.

Methods: In a cluster-randomized controlled trial in a non-academic safety-net clinic network, we assessed Nutri's feasibility with PCPs and adult patients on the network's diabetes registry. We measured usage with software logs, PCP satisfaction with one in-app question at each use, and usability with the validated System Usability Scale (SUS) at trial completion. Patient diet data collection with ASA24 was assessed with logs and field notes. We calculated descriptive statistics and compared behavioral intention between Nutri and control with a logistic-normal random effects regression model.

Results/findings: PCPs used Nutri 100% of times it was presented and selected a Nutri-recommended goal with 93% of patients. PCP satisfaction was 3.8 ± 0.7 (of 5) and SUS was 75 ± 17 (good usability). Among 60 patients who consented into the trial, 88% completed ASA24 (28% of those with assistance, 72% without). Among 30 patients who attended an appointment during the trial period (25% of whom completed the intervention in Spanish), those with PCPs in the Nutri group ($n=17$) had 2 times greater odds of reporting they set a diet goal with their PCP during the appointment (95% CI=0.4, 11.8) than patients with control PCPs ($n=13$).

Conclusions: In our pilot trial, Nutri was a feasible tool for personalized diet goal setting between PCPs and patients during regular primary care appointments in safety-net clinics. Nutri's effect on patient diet and clinical outcomes and its generalizability to other clinic networks and contexts should be evaluated in larger trials.

Physical behavior and affective well-being in real-life situations: A systematic literature review

Ms. Irina Timm¹, Dr Marco Giurgiu^{1,3}, Prof Ulrich W Ebner-Priemer^{1,3}, Prof Markus Reichert^{1,2,3}

¹Mental Mhealth Lab, Institute of Sports and Sports Science, Karlsruhe Institute of Technology, Karlsruhe, Germany, ²Department of eHealth and Sports Analytics, Faculty of Sport Science, Ruhr University Bochum, Bochum, Germany, ³Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim/Heidelberg University, Mannheim, Germany

O.1.08: The feasibility and usability of digital health measurement and intervention tools., Room 212, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

The interplay of physical activity (PA) with affective well-being (AWB) is highly critical to both health behaviors and health outcomes. Current prominent theories presume AWB to be crucial for PA maintenance, and PA is evidenced to foster mental health. The number of studies using device-based methods to research the within-subject association of physical activity and affective well-being (PA-AWB) under ecological valid conditions increased rapidly, but a recent comprehensive systematic review of evidence across populations, age groups and distinct AWB components remained elusive. Therefore, we aimed to first review daily life studies that assessed intensive longitudinal device-based (e.g., electronic smartphone diaries and accelerometry) and real-time PA-AWB data.

Methods: Literature was searched in three databases (Web of Science, PubMed, Scopus) until November 2022. The systematic review followed the PRISMA guidelines and had been pre-registered (PROSPERO id: CRD42021277327). A modified quality assessment tool was developed to illustrate the risk of bias of included studies.

Results: The review of findings showed that in general, already short PA bouts in everyday life are positively associated with AWB. Especially feelings of energy relate to incidental activity, and PA-AWB associations depend on population characteristics. The quality assessment revealed overall moderate study quality, however, the methods applied were largely heterogeneous between investigations. Overall, the reviewed evidence on PA-AWB associations in everyday life is ambiguous, e.g., no clear patterns of directions and strengths of PA-AWB relationships depending on PA and AWB components (such as intensity; emotions, affect, and mood) emerged.

Conclusions: However, the review highlights the need to advance and harmonize methodological approaches for more fine-grained investigations on which specific PA/AWB characteristics, contextual factors, and biological determinants underly PA-AWB associations in everyday life. This will enable the field to tackle pressing challenges such as the issue of causality of PA-AWB associations, which will help to shape and refine existing theories to ultimately predict and improve health behavior thereby feeding into precision medicine approaches.

Advancing health equity using an implementation science lens: Insights from a telehealth intervention trial to deliver nutrition education and breastfeeding support services.

Dr. Erin Hennessy¹, Annabella Opoku¹, Daniel Schultz¹, Dr. Pascasie Adedze², Dr. Karen Castellanos-Brown², Angelica Valdes-Valderrama¹

¹Tufts University School Of Nutrition Science And Policy, Boston, USA, ²Food and Nutrition Service, United States Department of Agriculture , Alexandria, USA

O.1.08: The feasibility and usability of digital health measurement and intervention tools., Room 212, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: Telehealth interventions may help to support health equity by addressing barriers to receiving health services such as transportation availability or flexibility in work schedules. However, without careful planning these interventions may potentially hinder health equity by leaving out populations who lack access to affordable, reliable internet connectivity.

Methods: This qualitative study examines data from n=3 quasi-experimental trials conducted as part of the USDA/Tufts Telehealth Intervention Strategies for WIC (THIS-WIC) project. WIC refers to the Special Supplemental Nutrition Program for Women, Infants, and Children program, which serves to safeguard the health of low-income pregnant and postpartum women, infants, and children <5 years who are at nutritional risk. Between April-June 2022 ('early phase implementation'), semi-structured Zoom interviews were conducted with WIC staff members (n=27) involved with implementing telehealth solutions to deliver nutrition education and breastfeeding support to WIC clients. Interviews were recorded, transcribed, and imported into NVivo 12 for coding and inductive analysis.

Results: Telehealth may help facilitate health equity through its 'flexible interaction and convenience' (e.g., WIC clients can receive information on their own time; telehealth reduces transportation barriers and overcomes childcare difficulties, etc); 'inclusivity' (e.g., telehealth reaches more clients or is able to represent diverse cultures through the platform/websites); 'enhanced client engagement' (e.g., clients feel more comfortable and open to asking questions via telehealth); and 'access to confidential information' (e.g., telehealth provides reliable, confidential access to information that clients can access any time). Telehealth may also introduce barriers to health equity through 'inequalities and differential treatment' (e.g., WIC clients not offered telehealth possibly based on provider judgments related to WIC client technology use), 'digital divide and technology accessibility' (e.g., limited smartphone usage, unreliable internet connections, etc), 'cultural considerations' (e.g., telehealth may exacerbate language barriers and interpretation limitations between provider and client), and perceived burden (e.g., telehealth being perceived as an additional burden).

Conclusion: Preliminary findings suggest a complex interplay of technological, cultural, and logistical factors in shaping the impact of telehealth on health equity within WIC. Efforts to address language diversity, technology access, and cultural sensitivity are crucial for maximizing the benefits of telehealth while minimizing disparities.

Exploring Perinatal Women's Preferences and Recommendations for Physical Activity Features in a Digital Health App

Dr. Danae Dinkel¹, Ms. Priyanka Chaudhary, Dr. Kevin Kupzyk, Dr. Carli Zegers, Dr. David Johnson, Dr. Margaret Emerson

¹University of Nebraska at Omaha, Omaha, USA

O.1.08: The feasibility and usability of digital health measurement and intervention tools., Room 212, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: Perinatal depression is a major risk to a mother's health. One health behavior that can positively affect women's mental health is physical activity (PA). Studies show that PA during the perinatal period is linked to significant benefits for maternal mental and physical health and infant health outcomes. However, efforts are needed to develop easily accessible information for mothers during this busy time of life to promote PA. Therefore, the purpose of study was to explore perinatal women's interest in and desired PA features in an app for perinatal women.

Methods: This explanatory sequential mixed methods study utilized an online cross-sectional survey (n=159) and semi-structured interviews (n=29) with perinatal women. This study was part of a larger study examining multiple aspects of a perinatal mental health mobile app. Descriptive statistics were calculated on all demographic and survey variables. Interview data were analyzed using a directed content analysis approach and validated using member checking.

Results/findings: In the survey, on a scale of 1 to 5 (most to least desired features) participants reported that the ability to track PA and integrate with devices like Fitbit or Apple Watch (1.97 ± 1.01) as well as education about safe physical activity ($1.82 \pm .92$) were desired features. In the interviews; the PA features they most preferred were - having activity ideas (75.9%), the ability to track PA (27.6%), and general PA information (20.7%). Almost all participants (96.6%) had previously downloaded some type of PA app; yet, only a little over half (55.2%) were aware of the PA guidelines. Most participants (79.3%) felt the benefit of having a perinatal PA app was that it was tailored to this population during a unique time of life. However, a few participants (31.0%) expressed concerns about a perinatal PA app, the primary concern being that it included safe and credible information.

Conclusions: This study provides evidence that perinatal women are interested in and desire a mobile app specific to this population. Future efforts are needed to ensure information is credible and informative while working in collaboration with healthcare providers to consider specific health concerns.

Using Wireframes to Guide a User-Centered Approach in Digital Health Intervention Design for Parents of Preschoolers

Ms. Shariwa Oke¹, Dr. Susan Johnson², Mx. Sondra Eby Eisenstat³, Dr. Laura Bellows¹
¹Cornell University, Ithaca, USA, ²University of Colorado Anschutz Medical Campus, Aurora, USA, ³BrightBean Labs Software, Denver, USA

O.1.08: The feasibility and usability of digital health measurement and intervention tools., Room 212, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: To test constructs of user-centered design in the development of a mobile app as part of a digital parenting intervention aimed at promoting healthy eating and activity behaviors of preschoolers.

Methods: A multi-phase, iterative approach was used to test mobile app schematics (wireframes) with parents of preschoolers using user-centered design constructs of functionality (navigation, interaction, ease of use), usability (information structure, instructional comprehension), and user experience (sensory, cognitive, emotional experiences). Software developers and researchers partnered to develop two phases of wireframes and testing protocols (using Google Ventures Scripts). Phase 1 tested functionality and usability constructs via 33 app screens. Phase 2 added complexity and tested the user experience construct via 37 screens. Both included 15 semi-structured interview questions. Virtual (Zoom) testing sessions observed user interactions with the wireframe utilizing think-aloud techniques and followed up with interview questions. Videos and notes were reviewed after each phase, analyzed by construct by researchers and developers, and drove modifications for subsequent phases.

Results: Ten sessions (n=5/phase; 51-73 minutes) were conducted with 8 participants. Participants in both phases had positive experiences with functionality: interactions with various features (e.g., audio/video buttons, checklists, text boxes, photo uploads, dashboards) were intuitive and acceptable; ease of use in moving through the app was high and “almost common sense”. Usability items showcased that more complex features, including behavior change activities (i.e., goal setting), were not as intuitive and more attention was needed to contextualize these activities., revealing that for positive sensory and cognitive experiences, participants desired color and graphics, simplicity in design and function, text in small chunks, and content delivered in multiple formats (i.e., text, audio, video). A positive emotional experience was tied to an acknowledgement of participants’ progress (i.e., progress bar, affirmations, and congratulatory phrases).

Conclusion: Working in partnership with software developers to iteratively test wireframes of a mobile app early in the development process allowed for unique insights into the participant (end-user) experience. The systematic application of the user-centered design constructs during testing provide an interdisciplinary approach that can enhance the development and potentially participant engagement with digital interventions.

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Combining accelerometry and ecological momentary assessment to explore behavioural time-use and experienced wellbeing

Prof. Scott Duncan¹, Dr Tom Stewart¹, Dr Conal Smith², Ms Julia McPhee¹, Ms Flora Le³, Dr Dorothea Dumuid⁴, Dr Lisa Mackay¹, Prof Basile Chaix⁵, Prof Jasper Schipperijn⁶
¹Auckland University of Technology, Auckland, New Zealand, ²Kōtātā Insight, Wellington, New Zealand, ³Monash University, Melbourne, Australia, ⁴University of South Australia, Adelaide, Australia, ⁵Inserm, Paris, France, ⁶University of Southern Denmark, Odense, Denmark

O.1.08: The feasibility and usability of digital health measurement and intervention tools., Room 212, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Preamble: Data collection is currently in progress and will continue until April 2024. The results below were obtained from a sample of 191 participants; however, the final analyses will include approximately 300 individuals.

Purpose: While the links between physical activity, sleep, and long-term 'evaluative' wellbeing (such as life satisfaction) are well established, less is known about how activity behaviours impact short-term 'experienced' wellbeing. This study aimed to explore the relationship between daily time-use compositions and momentary affective states related to experienced wellbeing. The intention was to understand how different activities and rest periods are related to these psychological states.

Methods: A total of 191 New Zealand adults aged 18 to 65 years were equipped with a wrist-worn Axivity AX3 accelerometer and engaged in smartphone-based Ecological Momentary Assessment (EMA) over seven consecutive days. Accelerometer data provided 24-hour time-use compositions (sedentary, light activity, moderate-to-vigorous physical activity [MVPA] and sleep), while the EMA protocol captured real-time assessments of happiness, tiredness, and anxiousness on a 0-10 scale. Daily averages of these affective states and contexts were calculated and merged with the time-use data. A multilevel compositional analysis using the 'multilevelcoda' R package quantified the associations between daily activity compositions and affective states.

Results: Valid data for 959 individual days were obtained. Preliminary analysis revealed significant findings related to happiness: reallocating time from sedentary activities to sleep positively influenced happiness levels. While not statistically significant, there were notable trends suggesting that increasing time spent in MVPA, at the expense of any other activity, might be associated with a reduction in anxiety. These trends were predominantly observed at the within-person not the between-person level.

Conclusions: The study highlights the potential psychological benefits of optimising daily activity compositions. Particularly, the substitution of sedentary behaviour with sleep or physical activity may be beneficial for enhancing mood states, although the concurrent analysis make it difficult to identify causal pathways. Forthcoming prospective data will further clarify these associations and facilitate the development of targeted mental health interventions based on optimal daily activity compositions.

Motivational Profiles for Eating and Their Association with Intuitive Eating, Maladaptive Eating, and Self-Reported Health

Miss Hannah Martin¹, Associate Professor Andreas Stenling^{2,3}, Dr Sara Styles¹, Associate Professor Elaine Hargreaves¹

¹University of Otago, Dunedin, New Zealand, ²Umeå University, Umeå, Sweden, ³University of Agder, Kristiansand, Norway

O.1.09: Promoting Healthy Lifestyles: Interventions, Predictors, and Effects on Weight Loss and Physical Fitness, Room 213, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: This research aimed to understand women's eating motivation by identifying motivational profiles grounded in self-determination theory (SDT) that consider the specific eating regulation styles as well as the degree of self-determination. The derived profiles were compared on intuitive eating, maladaptive eating, and self-reported health.

Methods: Using sponsored ads on Facebook, 472 New Zealand women aged 40-50 years were recruited to complete an online survey. Participants (n = 472) reported motivation for eating using the Regulation of Eating Behaviour Scale (REBS), eating behaviour using the Intuitive Eating Scale-2 (IES-2) and the Dutch Eating Behaviour Questionnaire (DEBQ), and perceived health using the five-item World Health Organisation Wellbeing Index (WHO-5) and the EQ-5D Visual Analogue Scale (EQ-VAS). Novel bifactor S-1 exploratory structural equation modelling was used to analyse the REBS and disaggregate the global self-determination factor from the specific factors representing each of the unique regulation styles. Latent profile analysis was used to identify motivational profiles and chi-square analysis compared the derived profiles on the outcome variables.

Results/findings: Five distinct profiles characterised by differing levels of the global and specific forms of motivation were identified: (a) self-determined, (b) internalised, (c) externally motivated, (d) amotivated, and (e) uninterested. Women in the self-determined (57% of women) profile had higher intuitive eating and lower maladaptive eating scores and reported better mental and physical health. Women in the internalised (11%) profile reported better mental and physical health but had mixed results related to intuitive eating and maladaptive eating. Women in the externally motivated (8%), amotivated (11%), and uninterested (13%) profiles tended to have lower intuitive eating and higher maladaptive eating scores and reported lower mental and physical health.

Conclusions: This is the first study to examine motivational profiles for eating that considers both global and specific forms of motivation, and to examine these profiles in relation to important eating behaviours and health outcomes. Motivational profiles with higher self-determined motivation towards eating regulation appears to be beneficial. Therefore, SDT informed eating behaviour interventions that enhance women's self-determined motivation may lead to improved health and wellbeing outcomes.

Effectiveness of Cognitive Retraining Intervention on Weight Loss and Lifestyle-related Behaviours Among Adults: A Systematic Review and Meta-analysis

Mrs. Tanveer Kaur¹, Prof. Piyush Ranjan², Dr Harpreet Bhatia¹, Dr Gauri Shanker Kaloiya²
¹University Of Delhi, New delhi, India, ²All India Institute of Medical Sciences, New delhi, India

O.1.09: Promoting Healthy Lifestyles: Interventions, Predictors, and Effects on Weight Loss and Physical Fitness, Room 213, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Introduction: The review explores the potential benefits of cognitive retraining interventions in improving healthy behaviours, and its possible use as an alternative or complementary approach to traditional weight loss interventions.

Method: Studies were selected using different electronic databases (PubMed, Scopus, Embase), to identify RCTs published in the last 23 years on cognitive retraining interventions for weight loss. A total of 12 studies were finalized for systematic review and six for meta-analysis based on the inclusion criteria. The risk of bias was assessed by the two reviewers independently using the criteria outlined in the Joanna Briggs Institute Critical Appraisal Tool for RCTs. The R software was used to perform meta-analysis.

Result: The overall effect estimates slightly favoured the intervention group, with a standardised mean difference (SMD) of -0.26 [95% CI (-0.58- 0.06) P<0.05; I²= 0.00%]. This suggests that although the effect was not statistically significant, cognitive retraining interventions may have a small effect on weight loss. The findings of the systematic review revealed that cognitive retraining interventions may be effective in modifying lifestyle behaviours and these changes may contribute to achieving and maintaining weight loss in the long run.

Conclusion: Interventions exhibited a positive effect on weight loss. These interventions demonstrated promise in modifying lifestyle behaviours, suggesting a potential role in achieving and sustaining long-term weight loss. Further research is warranted to refine and validate these findings.

Joint associations of moderate-vigorous physical activity and sedentary time with adiposity and cardiometabolic risk factors in adolescents.

Dr. Monica Suarez-Reyes, Dr. Amanda E. Staiano, Dr. Peter T. Katzmarzyk
¹Pennington Biomedical Research Center, Baton Rouge, United States

O.1.09: Promoting Healthy Lifestyles: Interventions, Predictors, and Effects on Weight Loss and Physical Fitness, Room 213, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Physical activity and sedentary time are independent health determinants among adults. However, whether similar associations are observed in adolescents has been less explored. We aimed to examine the joint associations of moderate-vigorous physical activity (MVPA) and sedentary time (ST) with adiposity and cardiometabolic risk factors in adolescents.

Methods: The baseline data of a prospective cohort study were used. We included 309 adolescents aged 10-16 years (53% girls). Measurements were conducted between 2016 and 2018. MVPA and ST were measured using hip-worn accelerometers for at least 7 days. Adiposity (fat percent) was measured using DXA. A cardiometabolic risk score was calculated from waist circumference, blood pressure, HDL-C, triglycerides, and homeostasis assessment model of insulin resistance (HOMA-IR). MVPA and ST (min/day) were split into high and low categories using their median values, thus forming four groups: High-MVPA/Low-ST, High-MVPA/High-ST, Low-MVPA/Low-ST, and Low-MVPA/High-ST. Multivariable linear regression was used to test the association of group membership with adiposity and cardiometabolic risk adjusting for age, sex, race, and BMI.

Results: Group membership was significantly associated with adiposity and the cardiometabolic risk score ($P=0.001$). Compared to the High-MVPA/Low-ST group (reference), High-MVPA/High-ST showed no difference in adiposity ($\beta=2.58\%$ [-0.72-5.88], $P=0.12$) or cardiometabolic risk score ($\beta=1.09$ units [-0.04-2.22], $P=0.06$). In contrast, compared to High-MVPA/Low-ST, the Low-MVPA/Low-ST group showed higher adiposity ($\beta=4.43\%$ [1.17-7.67], $P<0.01$) and cardiometabolic risk score ($\beta=1.29$ units [0.18-2.40], $P=0.02$). Similar and more pronounced effects were observed in the Low-MVPA/High-ST group for both adiposity ($\beta=5.49\%$ [2.72-8.27], $P<0.01$) and cardiometabolic risk score ($\beta=1.96$ units [1.01-2.90], $P<0.01$).

Conclusions: In adolescents, having high MVPA is associated with less adiposity and a lower cardiometabolic risk score independently of ST. Importantly, the negative association with low MVPA are worsened when accompanied by high ST. These joint associations between MVPA and ST highlight the relevance of targeting both behaviors in health interventions in this age group.

Longitudinal Predictors of Adolescent Physical Activity Behavior: A Cross-Lagged Panel Network Analysis Using the Multi-Process Action Control Framework

Dr. Denver Brown¹, Mr. Christopher Huong¹, Dr. Matthew Kwan²

¹University of Texas at San Antonio, San Antonio, USA, ²Brock University, St. Catherines, Canada

O.1.09: Promoting Healthy Lifestyles: Interventions, Predictors, and Effects on Weight Loss and Physical Fitness, Room 213, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Action control theories such as the Multi-Process Action Control (M-PAC) framework have potential for explaining maintenance of physical activity (PA) behavior during adolescence when age-related declines typically occur. However, advanced analytical approaches with the capacity to model the relationship between theoretical correlates of PA and PA behavior as a complex dynamical system have received limited attention. Unraveling the complexity of these relationships stands to advance current theorizing and inform intervention development. This study explored the auto-regressive and cross-lagged effects of variables outlined in the M-PAC framework and PA behavior using a cross-lagged panel network model.

Methods: This study used three waves of data from the Canadian ADAPT prospective cohort study. A total of 1,421 adolescents (Mean age = 15.93 ± 0.53 years; 54% female) completed yearly surveys from Grade 11 to one-year post high school graduation beginning in October 2019. Measures assessed the reflective (instrumental attitude, affective attitude, perceived opportunity, perceived capability), regulatory (behavioral regulation), and reflexive (habit, identity) processes outlined in the M-PAC framework, as well as the International Physical Activity Questionnaire-Short Form to assess moderate-to-vigorous PA. Two cross-lagged panel network analyses, adjusted for age, gender, race/ethnicity, parental education, and school, were computed to understand the temporal relationships between variables from Grade 11 to Grade 12, and Grade 12 to one-year post-graduation.

Results: Only unidirectional relationships from M-PAC variables to PA were observed. Affective attitudes (B=4.27), behavioral regulation (B=15.52), habit (B=7.92) and identity (B=4.54) in Grade 11 were significant positive predictors of PA in Grade 12. Affective attitudes (B=20.30), behavioral regulation (B=17.98), and habit (B=13.73) in Grade 12 were significant positive predictors of PA one-year post graduation, whereas an inverse association was observed for perceived opportunity (B=-23.21). Behavioral regulation and affective attitudes were the most influential variables within these models.

Conclusions: PA enjoyment and post-intentional processes appeared to have the strongest influence on PA behavior one year later during adolescence, particularly when transitioning out of high school amidst the Covid-19 pandemic. Future studies should explore these complex relationships at shorter intervals and with device-measured PA behavior to determine whether these effects replicate.

Revisiting the spill-over effect between exercise and eating motivation, steps, and energy intake: A NoHoW Ancillary Study

Associate Prof. António Palmeira¹, Dr David Sanchez-Oliva², Dr Ines Santos^{3,1}, Dr Eliana Carraca¹, Associate Prof Marlene Silva^{1,4}, Professor Graham Horgan⁵, Professor James Stubbs⁶, Professor Berit Heitmann⁷, Professor Jutta Mata⁸

¹CIDEFES - Un. Lusófona & CIFI2D - Un Porto, Lisboa, Portugal, ²ACAFYDE Research Group, University of Extremadura, Caceres, Spain, ³Laboratório de Nutrição and ISAMB, Faculdade de Medicina, Universidade de Lisboa, Lisboa, Portugal, ⁴Direção-Geral da Saúde- Programa Nacional de promoção da Atividade Física, Lisboa, Portugal, ⁵Biomathematics & Statistics Scotland, Aberdeen, Scotland, ⁶School of Psychology, Faculty of Medicine and Health, University of Leeds, Leeds, UK, ⁷The Parker Institute, Frederiksberg and Bispebjerg Hospital; and Section for General Practice, The Department of Public health, University of Copenhagen, Copenhagen, Denmark, ⁸Health Psychology, School of Social Sciences, University of Mannheim, Mannheim, Germany

O.1.09: Promoting Healthy Lifestyles: Interventions, Predictors, and Effects on Weight Loss and Physical Fitness, Room 213, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Physical activity and eating-related behaviors are central factors in maintaining weight loss. The interplay between the motivation to engage in both behaviors long-term is an understudied, albeit fundamental, topic. A long-term weight loss trial from 2009 described a spill-over effect from exercise motivation to eating behaviors. This current randomized control trial seeks to revisit and expand upon these findings by examining the reciprocal effects between exercise and eating motivation, as well as steps taken and energy intake, over a 12-month period in a large, diverse sample.

Methods: This is an ancillary NoHoW study, utilizing data from 669 participants from Denmark, UK, and Portugal over a period of 12 months (age 46±11y, 70% women) who had complete data for the target variables. The study collected information on exercise motivation (BREQ3 questionnaire), eating motivation (REBS), steps taken (Fitbit charge 2, 14-day average before data collection calendar day), and energy intake (Intake24, 4 consecutive 24h dietary recalls before data collection calendar day). Data were modeled with latent growth models and cross-lagged panel analysis using Mplus software.

Results/findings: Both autonomous and controlled motivation models indicate a positive spill-over effect from exercise to eating motivation and vice versa over 12 months. That is, an increase in exercise autonomous motivation is linked to an increase in eating autonomous motivation, and an increase in exercise controlled motivation to an increase in eating controlled motivation. However, the associations were either small or non-existent when it comes to the relationship between motivation and behavior (i.e., steps taken or energy intake). The only exception was that higher initial levels of exercise controlled motivation resulted in higher energy intake after 6 months.

Conclusions: The results are aligned with previous finding, suggesting a motivational spill-over from exercise motivation to eating motivation for both autonomous and controlled forms of motivation. For controlled, a relation is also found from eating motivation to exercise motivation. This spill-over can be found longitudinally over the 12 months of the study. We did not find spill-overs from specific motivations to behavior, except from exercise controlled motivation to energy intake.

Accessibility to WIC-authorized ethnic food stores in Washington state: Implications for serving the needs of immigrant WIC-eligible populations

Mrs. Kana Ogaki¹, Dr. Edmund Seto¹, Dr. Cristen Harris¹, **Dr. Pia Chaparro**¹

¹University Of Washington, Seattle, USA

O.1.10: From Plate to Policy: Examining Food Insecurity in Relation to Access, Availability, Minimum Wage and WIC Policies, and a Framework for Climate Disaster, Room 214, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a U.S. nutrition assistance program serving pregnant and postpartum women, and children 0-5 years who live in low-income households. WIC provides supplemental foods which can only be purchased in WIC-authorized stores. At least 20% of WIC participants in Washington state are of immigrant background, but information on how many WIC-authorized stores are considered “ethnic stores”, where immigrant households could access culturally preferred foods, is unknown. This study’s purpose is to assess the availability and distribution of WIC-authorized ethnic stores in Washington state in relation to the location of immigrant WIC-eligible populations.

Methods: Information on WIC-authorized stores in Washington state was obtained from the WIC Shopper cellphone app; stores were categorized as ethnic or non-ethnic based on online store information. Sociodemographic data for Washington state census tracts were obtained from the American Community Survey (ACS) 2017-2021. Using ArcGIS Pro, a map displaying the census tract level percentage of 1) foreign-born individuals and 2) WIC-eligible children as well as 3) the location of WIC-authorized stores (ethnic/non-ethnic) was generated. The distribution of, and distance to, WIC-authorized ethnic/non-ethnic stores based on the distribution of foreign-born individuals and WIC-eligible children were analyzed in R (using chi-square tests) and ArcGIS Pro (using the “Generate Origin-Destination Link” function).

Results: Twenty nine percent of Washington state census tracts had WIC-authorized stores and only 1.7% had at least one WIC-authorized ethnic store. Census tracts with high proportions of both foreign-born individuals and WIC-eligible children had the highest proportion of WIC-authorized ethnic stores (14.5%) and the shortest distance to the nearest WIC-authorized ethnic store (3.0 km) when compared to census tracts with low proportions of foreign-born individuals and WIC-eligible children (0.5% and 20.3 km, respectively; $p < 0.001$).

Conclusions: While census tracts with higher proportions of foreign-born and WIC-eligible populations had the greatest accessibility to WIC-authorized ethnic stores, WIC-authorized ethnic stores are rare in Washington state. Washington WIC should consider loosening store authorization criteria to make it easier for ethnic stores to become authorized and, thus, better meet the cultural needs of WIC participants of immigrant backgrounds.

Effectiveness of a Mobile Produce Market designed to Address Nutrition Insecurity in Underserved Communities

Dr. Lucia Leone¹, Dr Christina Kasprzak¹, Dr. Anne Lally¹, Leah Vermont¹, Dr Lindsey Haynes-Maslow², Dr. Laurene Tumiel Berhalter¹, Rocco Paluch¹, Dr. Samina Raja¹, Dr. Alice Ammerman²

¹University at Buffalo, Buffalo, USA, ²University of North Carolina, Chapel Hill, USA

O.1.10: From Plate to Policy: Examining Food Insecurity in Relation to Access, Availability, Minimum Wage and WIC Policies, and a Framework for Climate Disaster, Room 214, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Veggie Van (VV) is a multi-level evidence-based mobile produce market intervention which has shown increases in fruit and vegetable consumption in lower-income communities. We conducted a hybrid type 1 effectiveness-implementation study to understand the impact of a VV intervention delivered by community partners on food security and diet-related behaviors.

Methods: In partnership with 9 community organizations, we conducted a cluster-randomized trial in 34 communities in 6 states in the United States. Partners selected community sites (e.g., community centers, churches) that reached lower-income individuals with limited access to healthy food. Between 2020-2022, sites were randomized in pairs to receive the VV intervention or a planning condition (delayed intervention control). Eligible study participants were age 18+, the primary shopper, and lived near/around the community site. Data collection included surveys on food insecurity, nutrition-related behaviors and perceptions, and two 24-hours dietary recalls at baseline and 1-year follow-up. We used SAS PROC GLIMIX to examine the effect of the intervention while adjusting for clustering within sites and baseline values.

Results: Across participants (N=699) in 34 communities, there was a non-significant ($p=0.2$) 7.5 percentage-point increase in the rate of high food security (from 47.7% to 55.2%) in VV intervention communities compared to a 3.8 percentage-point increase (from 47.0% to 50.8%) in control communities. Within communities that entered the study after the peak of COVID-19 related shutdowns (2021 or later) VV customers had significantly better ($p=0.01$) average food security scores ($n=102$, adj. mean=1.4, SE=0.18) after 1 year than non-shoppers ($n=201$, adj. mean=2.0, SE 0.15) using the USDA screener where lower scores indicate higher food security. While we saw trends of higher fruit and vegetable consumption at VV intervention sites and among customers, there were no statistically significant differences.

Conclusions: COVID-19 negatively impacted data collection, leading to reduced sample size and power, as well as implementation of the VV model. Additionally, highly fluctuating rates of food insecurity, increased access to food benefits, and changing dietary patterns during this period likely affected outcomes. Despite these limitations, VV customers improved their food security. Future research will examine how fidelity to the VV model by partners affects participant outcomes.

The association between state-level minimum wage policies and racial/ethnic inequities in household food insecurity

Dr. Pia Chaparro¹, Ms. Sophie Freije¹, Dr. Maeve Wallace²

¹University of Washington School of Public Health, Seattle, USA, ²Tulane University School of Public Health and Tropical Medicine, New Orleans, USA

O.1.10: From Plate to Policy: Examining Food Insecurity in Relation to Access, Availability, Minimum Wage and WIC Policies, and a Framework for Climate Disaster, Room 214, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: In the United States (U.S.), states can set different minimum wages than the federal government. We investigated the association between state-level minimum wage policies and racial/ethnic inequities in household food insecurity in the U.S. between 2015-2019. We hypothesized that the association between state-level minimum wage and food insecurity would be stronger for non-Non-Hispanic (NH) White households.

Methods: Household-level food insecurity and sociodemographic data were obtained from the U.S. nationally representative Current Population Survey 2015-2019 (n=189,665 households) and merged by state and year with state minimum wage and state cost of living data for 2015-2019 from governmental sources. We fitted state-clustered modified Poisson regression models with robust standard errors with household food insecurity as outcome and minimum wage (US\$) as predictor, adjusting for cost of living and household sociodemographic covariates. We tested for interactions between minimum wage and householder race/ethnicity on food insecurity and fitted race/ethnicity-stratified models. Further, with Map the Meal Gap 2019 data, we mapped the proportion of weekly wages needed to achieve food security in each state based on state-level minimum wages and food costs.

Results: State hourly minimum wages ranged between US\$7.25-10.50 in 2015 and between US\$7.25-14.00 in 2019. In fully adjusted models, state minimum wage had a small but significant impact on household food insecurity: a US\$1 increase in hourly minimum wage was associated with a 1% lower probability of food insecurity prevalence (PR=0.99, 95%CI=0.98-0.99). The interaction p-value for race/ethnicity and minimum wage was p=0.06. When stratified by race/ethnicity, results were only statistically significant for NH White households (PR=0.98, 95%CI=0.96-0.99). For NH Black (PR=0.99, 95%CI=0.96-1.02) and Hispanic (PR=0.98, 95%CI=0.94-1.02) households, the association between minimum wage and food insecurity was also negative but not significant, whereas the association was positive and non-significant for households of other race/ethnicities (PR=1.04, 95%CI=0.99-1.08). In general, states with higher minimum wages had better purchasing power for food even after considering variability in food costs.

Conclusions: Higher wages have better purchasing power for food when considering state-specific food costs. However, state minimum wages were only minimally associated with household food insecurity, with no apparent impact on racial/ethnic inequities in food insecurity.

Methods and Baseline Characteristics of “Eat Well Be Well”, an Evaluation of the Rhode Island Retail SNAP Incentive

Dr. Alison Tovar¹, Ms. Emily Elenio¹, Dr. Lisa Powell², Julien Leider², Andrea Pipito², Leonardo Arriola Carnicelli¹, Dr Vanessa Oddo², Dr Carmen Byker Shanks³, Hannah Reale¹, Ashleigh Floyd Clark³, Dr Haley Parker⁴, Dr Maya Vadiveloo⁴

¹Brown University, Providence, USA, ²University of Illinois Chicago, Chicago, USA, ³Gretchen Swanson Center for Nutrition, , USA, ⁴University of Rhode Island, Kingston, USA

O.1.10: From Plate to Policy: Examining Food Insecurity in Relation to Access, Availability, Minimum Wage and WIC Policies, and a Framework for Climate Disaster, Room 214, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: To describe the evaluation approach and baseline results of the Rhode Island (RI) Retail Supplemental Nutrition Assistance Program (SNAP) Incentive, “Eat Well Be Well.” This is the first statewide nutrition incentive program in the USA to provide a \$0.50 credit for every \$1.00 spent on fresh F&V at qualified retailers to SNAP customers.

Methods: “Eat Well Be Well” is being evaluated using a pre-post intervention-comparison study design to examine whether the incentive affects F&V intake among SNAP participants, with Connecticut as the comparison state. Baseline data were collected pre-policy implementation between May-September 2023 (follow-up May-Aug 2024). Participants (N= 1,253) completed a 45-minute online survey consisting of socio-demographic and food shopping questions and a food frequency questionnaire hosted by VioScreen. Recruitment included community partner engagement and WIC text-message blasts. Due to the risk of bots and duplicate entries, numerous strategies including the use of Captcha, geolocation, and single-use QR codes were implemented. Data were examined continuously for integrity; those with implausible dietary data were contacted by an RA to readminister the questionnaire via Zoom.

Results: After excluding those that had greater than 95 percentiles for F&V intake, the analytic sample consisted of 621 individuals from RI and 632 from CT. Mean age of participants was 35.2±11.7, 91.6% were female, 20.3% spoke mostly Spanish at home, 22.7% reported having full-time employment and 15.3% reported having a college degree. Participants in RI and CT were largely similar, though there were more Spanish-speaking participants and college graduates in CT vs. RI (22.0 vs. 18.7% and 17.1 vs. 13.5%, respectively). Most reported that a supermarket was their primary outlet for food shopping (71.7%) and that a lack of money was their primary barrier to accessing food (39.7%). The mean intake of total F was 2.4±2.0 and of total V was 2.3±1.5 cup equivalents.

Conclusions: Using a complex online survey enabled rapid recruitment of a large sample and timely policy evaluation, while employing a rigorous study design. This survey methodology can help inform future large online surveys. The results of this evaluation will have important implications for policymakers seeking large-scale implementation of nutrition incentives.

Beginning with the context in mind: Adapting the Our Voice method to engage Alaska Native Head Start parents in understanding barriers and facilitators to ‘eating in a good way’

Dr. Diane King¹, **Dr. Maja Pedersen**², Ms. Jane Jacob³, Dr. Andrea Bersamin³

¹University Of Alaska Anchorage, Anchorage, USA, ²University of Montana, Missoula, USA,

³University of Alaska Fairbanks, Fairbanks, USA

O.1.11: Empowering Communities: Transformative Strategies in Health Education and Intervention, Room 215, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: In remote Yup'ik communities in Alaska, 51% of three-year-olds have obesity. This qualitative study describes our use of Our Voice with Yup'ik parents of children enrolled in an early education program, Head Start, to understand their experiences feeding their families. We report on adaptations made to address parental barriers and to facilitate their participation in data collection in remote, sub-Arctic Indigenous communities, and themes / factors that influence ‘eating in a good way’ among Yup'ik families.

Methods: With input from tribal partners, we collaborated with Head Start program leaders and staff in twelve Yup'ik communities to recruit parents to use the Our Voice Discovery Tool app to take photos and record narratives about what makes it easy or challenging to feed their families ‘in a good way.’ Next, parents met with facilitators to discuss their data and generate ideas. We used the Community Based Participatory Research Conceptual Model to thematically analyze transcripts and documented adaptations of methods used to improve the fit and feasibility of the Our Voice method.

Results/Findings: Twenty parents participated. Participant age range was 27-55 (M=38.6). Barriers to data collection included remote geography, weather, connectivity, and scheduling activities to avoid conflicts with seasonal harvests and school and parent work schedules. Adaptations to Our Voice methods included crafting the Discovery Tool question to avoid stigma (e.g., ‘eating in a good way’ versus ‘healthy eating’); providing flexible options to access the data collection app; and framing discussions around storytelling, traditions, and strategies for ‘eating in a good way.’ Themes from parents included Cultural Factors (e.g., teaching kids to share foods with elders); Policies (e.g., National restrictions on hunting and fishing); Core Values (e.g., eating traditional foods); Individual Beliefs (e.g., assuring no child goes to bed hungry); and Health Outcomes (e.g. eating foods that help kids grow up healthy).

Conclusions: Beginning with context is critical to the development of an acceptable and relevant data collection protocol, especially among remote and Indigenous populations. Findings from this study provide critical community insight on factors that influence family nutrition practices that can inform the co-design of a contextually relevant, family-based nutrition intervention.

Engaging Adults with Intellectual and Developmental Disabilities (IDD) in Patient-Facing Preventive Care: The “IDD-Transform” Project at Stanford Clinics

Mr. Zakaria Doueiri¹, Ms. Alex Szawranskyj², Ms. Megan Cvitanovic³, Mr. Justin Steinberg³, Ms. Ann Banchoff¹, Dr. Abby King¹, Dr. Holly Tabor³

¹Department of Medicine and Department of Epidemiology and Population Health, Stanford, USA, ²Department of Human Biology, Stanford University, Stanford, USA, ³Center for Biomedical Ethics, Stanford University School of Medicine, Stanford, USA

O.1.11: Empowering Communities: Transformative Strategies in Health Education and Intervention, Room 215, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Introduction: For adults with intellectual and developmental disabilities (IDD), difficulties in accessing preventive healthcare around risk factors like physical inactivity have become significant determinants of inequities. This is revealed in significantly higher rates of comorbidities and an average lifespan ten years shorter for adults with IDD compared to the general population. This first-generation partnership between the Stanford IDD-Transform Project and the Our Voice Citizen Science Initiative investigates how adults with and without IDD experience barriers and facilitators to healthcare access through a patient-facing community data collection process.

Methods: Twelve adults (6 adults with IDD and 6 adults without IDD) partnered up to gather insights across three Stanford Hospital clinics: family medicine, internal medicine, and senior care. Data were collected using The Discovery Tool app, which enables participants to take photos+narratives of the assets and barriers in their surroundings. Our Voice-trained facilitators from the IDD-Transform team worked with participants to analyze the data and arrange them according to themes and priorities for future actionable steps. Clinic staff were invited to a separate meeting with participants, to hear their perspectives and ideas for change.

Results: Major initial findings indicate adults with IDD were able to, in partnership with adults without IDD, effectively capture aspects of the clinic environment that promoted or hindered their care. Participants captured a total of 170 photos and 154 narratives and categorized them into five themes: physical accessibility (e.g., narrow doorways, tripping hazards), accommodations (e.g., knowledge of what accommodations exist), signage (e.g., small lettering, broken directories), sensory considerations (e.g., lighting, noise) and informational handouts (e.g., lack of plain language).

Conclusion: Understanding the healthcare experiences of adults with IDD is a crucial step in improving the accessibility of healthcare and health outcomes for all. Engaging patients and caregivers in identifying and implementing recommendations is a key first step in achieving this aim. Following this project, the IDD-Transform team is working with the building facilities/signage committee to implement recommendations. Additional iterations of this project seek to expand participant recruitment and increase representation of clinic types, in addition to exploring the most compelling methods for instituting data-driven changes in healthcare settings

The dark side of co-creation for health promotion and behaviour change interventions: from limitations to misuse – a Health CASCADE study

Assistant Prof. Maïté Verloigne¹, Sebastien Chastin, Philippa Dall, Maria Giné-Garriga, Sonia Lippke, Dimitra Pappa, Margrit Schreier, Teatske Altenburg
¹Ghent University, Ghent, Belgium

O.1.11: Empowering Communities: Transformative Strategies in Health Education and Intervention, Room 215, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Over the past years, there has been increased attention for using co-creation when developing health promotion and behaviour change interventions. By generating collaborative knowledge and establishing an equitable partnership with stakeholders in the real world, the co-created intervention is tailored to the specific context and potentially more effective and sustainable. However, despite this tendency for optimism, it is important to recognize and investigate the pitfalls associated with co-creation. This “dark side” of co-creation can be seen as a continuum, ranging from limitations (i.e., flaws that affect the co-creation process or outcome) to misconduct (i.e., failing to adhere to specific principles or standards within co-creation) to misuse (i.e., purposively applying co-creation for the wrong reason or misusing the co-creators). The aim of this study is to examine the dark side of co-creation and identify its risk factors and strategies to overcome those risk factors.

Methods: This study is conducted within the Health CASCADE-project, a EU-funded project with the aim to develop the methodological foundation of evidence-based co-creation for health promotion research. From January 2024, we will start with a scoping exercise to collect evidence-based examples of limitations, misconduct and misuse in co-creation, from the perspectives of facilitators/researchers, co-creators and users of the intervention (presented in a 3x3 grid). Based on the scoping exercise, a series of workshops will be organized with experts in the field of co-creation to identify risk factors and to generate strategies that seem most feasible and effective in addressing these risks.

Results/findings: The scoping exercise will result in 3x3 grid data, which will be presented at the ISBNPA 2024 conference. We acknowledge that these data will not contain all possible pitfalls, but it provides a starting point for the risk and strategy analysis. This will lead to specific recommendations for facilitators/researchers and co-creators on how to recognize, avoid or deal with the dark side of co-creation.

Conclusions: This study will contribute to make co-creation a trustworthy methodology for health promotion and behaviour change interventions.

Engagement of an Indigenous-led Community Advisory Board (CAB) to Inform a Randomized Controlled Trial Intervention Examining the Effects of Diabetes Nutrition Education and Food Security Resource for Indigenous Adults with Type 2 Diabetes

Dr. Sarah Stotz¹, Ms. Kelli Begay², Dr. Luciana Hebert³, Dr. Michelle Dennison⁴, Ms Danielle Duran⁵, **Ms Jessica LaFromboise⁶**

¹Colorado State University, Fort Collins, USA, ²Maven Collective Consulting, LLC, Albuquerque, USA, ³Washington State University, Seattle, USA, ⁴Oklahoma City Indian Clinic, Oklahoma City, USA, ⁵University of Colorado Anschutz Medical Campus, Aurora, USA, ⁶Wewoka Indian Health Service, ,

O.1.11: Empowering Communities: Transformative Strategies in Health Education and Intervention, Room 215, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: L. Indigenous Research

Purpose: To demonstrate effective community-based participatory research through equitable partnership with Indigenous community members and local food security resource organizations who participate in a paid, project-long CAB to ensure our randomized controlled trial (RCT) is culturally informed, strengths-based, sustainable, and community-driven. This presentation outlines the CAB development and lessons learned.

Methods: The purpose of the CAB is to advise researchers conducting a 3-arm RCT to evaluate an intervention comparing the effects of a diabetes nutrition education curriculum, entitled “What Can I Eat?” (WCIE) with an added food security resource, WCIE alone, and food security resource alone for Indigenous adults with type 2 diabetes (T2D) at an urban Indian clinic in Oklahoma, OK, USA. WCIE is a culturally tailored curriculum developed for Indigenous people by Indigenous people, focusing on traditional foods and ways of knowing, balanced diabetes nutrition principles, mindful eating, and physical activity. The Indigenous CAB leader and lead researcher attended a day-long, Indigenous-led training to learn how to effectively engage a CAB. The CAB leader then worked with clinic staff to recruit CAB members through an application process. CAB members were selected using inclusion criteria – Indigenous, >18 years old, and willing to meet quarterly for 3 years.

Results: 10 CAB members were selected and attended a kickoff meeting at the clinic. This meeting focused on group-derived agreements for their CAB’s success, overview of the RCT to provide context for project advising, and team building. The CAB met twice more to determine the “food security resource” to use in the RCT and ensure it was culturally relevant, sustainable, and fit the needs of Indigenous people with T2D at the clinic. The CAB also informs recruitment and retention strategies, how to emphasize traditional foods, and will help interpret findings and guide dissemination efforts.

Conclusion: With increased emphasis on diversity, equity, inclusion, and justice in healthcare and research, engaging members of the priority community in equal partnership is critical to decrease health disparities and improve health outcomes for all. Engaging paid CABs can be successful but must be done with intention and provided with resources including time, funding, time, and leadership.

Makoyoh'sokoi, a holistic, nutrition and physical activity-based wellness program for Indigenous women - Using photovoice to understand the impact of programming

Dr. Sonja Wicklum^{1,2}, Mr. Levi Frehlich^{1,2}, Carly Checholik^{1,2}, Loretta Tuttau^{1,2}, Stacey Dyck^{1,2}
¹Department of Family Medicine, University Of Calgary, Calgary, Canada, ²Makoyoh'sokoi (MKS) Wolf Trail Program, , Canada

O.1.11: Empowering Communities: Transformative Strategies in Health Education and Intervention, Room 215, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: L. Indigenous Research

Purpose: Makoyoh'sokoi (the Wolf Trail Program) is a self-control, non-randomized, holistic health intervention for Indigenous women. The 15-week program includes exposure to diverse physical activities, nutrition education modules, and celebrations of culture through ceremony and sharing circles. It was developed through cross-sectoral collaboration and has always been community based, participatory research. The program is currently offered in 8 communities across Alberta, British Columbia, and Saskatchewan. We acknowledge the traditional territories of the people of the Treaty 6, 7 regions and are grateful to conduct programming and research on these lands. We asked, "How does Makoyoh'sokoi impact the health journey of participants?"

Methods: At the end of the program and one year later, participants are asked to complete a reflective photovoice project answering the question above. Perspectives of health that consider mental, physical, spiritual and emotional dimensions are encouraged. The project is led by a peer researcher. Participants present 1-4 photos to their group in a sharing circle format then reflect on recurring themes and write a caption for their photo. The photos and oral transcripts are analysed using NVivo software.

Results: Twenty-seven participants from two cohorts, as well as 3 program facilitators, and 2 researchers have completed the photovoice project to date, submitting a total of 80 photos for discussion. Preliminary results give rich insight into the experiences of participants and facilitators and give the research team and community leads strength to carry on despite numerous barriers. Frequently, participants used nature as a metaphor for health.

Conclusion: Community-based interventions that approach the multi-faceted nature of Indigenous health are important for addressing the systemic issues that contribute to prevalence of excess weight among Indigenous women. Participants enjoy the oral nature of photovoice as it aligns closely with Indigenous oral traditions, and it gives the participants agency over their narratives.

Associations of neighborhood food retail environment with weight status in a regional pediatric health system

Dr. Qianxia Jiang¹, Ms Lauren Fitzpartrick¹, Dr. Helena Laroche^{1,3}, Dr. Sarah Hampl¹, Dr. Sandro Steinbach⁴, Dr. Bethany Forseth^{1,2}, Dr. Ann Davis^{1,2}, Ms Chelsea Steel¹, Dr. Jordan Carlson^{1,3}

¹Children's Mercy Kansas City, Kansas City, USA, ²University of Kansas Medical Center, Kansas City, US, ³University of Missouri Kansas City, Kansas City, USA, ⁴North Dakota State University, Fargo, USA

O.1.12: Characterizing and exploring socio-economic inequalities, Room 216, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Given the increasing concern over childhood obesity and its long-term health implications, this study investigated associations of the neighborhood retail food environment with changes in children's weight status over five years.

Methods: Height, weight, and home address were obtained for 4,493 children (>75% were Black or Latinx) from primary care visits within a large pediatric health system in the Midwest. Eligible participants had measures collected during two time periods (2012-2014 [Time 1] and 2017-2019 [Time 2]). Home addresses, road network, and establishment-level food environment data from the National Establishment Time Series during both times were used to determine the number of four types of food outlets within a half-mile and three-mile road-network buffer from the children's residences: supermarkets/large grocery stores, convenience stores/small grocery stores, limited-service restaurants, and full-service restaurants. Food outlets within a half-mile buffer were categorized based on the presence (Yes) or absence (No) of certain stores. Children who moved residences between periods were 'movers' (N=1,052). Mixed-effects models, accounting for nesting of children within census tracts, were used to assess the associations of baseline and changes in food outlet number/status with Time 2 weight status. Models adjusted for weight status and socio-demographics of the child and neighborhood at baseline.

Results: Movers without a convenience store within a half-mile of their home (OR=4.706, p=0.032) or those with an increasing number of convenience stores at both times (OR=2.950, p=0.036) had higher odds of overweight or obesity compared to movers with a decreasing number of convenience stores within a half mile distance. Non-movers with limited-service restaurants within a half-mile distance at both times had higher BMIz-score at Time 2 compared with non-movers with decreasing limited -service restaurants at half-mile at Time 2 (B=0.117, p=0.038). No significant associations were observed for the three-mile buffer for both groups.

Conclusions: Findings suggest that reductions in the number of convenience stores and limited-service restaurants may support healthier BMI trajectories. The association differed between movers and non-movers. These insights are significant for public health, particularly in designing multilevel childhood obesity interventions and urban planning.

Do inequalities in neighborhood violence predict obesity? A longitudinal study in Sao Paulo city

Miss Bianca Onita^{1,2}, Doctor Marcelo Nery³, Professor Alex Floorindo^{1,2}

¹Graduate Course in Nutrition in Public Health – School of Public Health, University of Sao Paulo, São Paulo, Brazil, ²Group of Studies and Researches in Physical Activity Epidemiology (GEPAF) – School of Arts, Sciences and Humanities, University of Sao Paulo, São Paulo, Brazil, ³Center for the Study of Violence (NEV), University of Sao Paulo, São Paulo, Brazil

O.1.12: Characterizing and exploring socio-economic inequalities, Room 216, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: To describe obesity incidence and crime rate in neighborhood according to environmental and sociodemographic characteristics. Additionally, to assess if crime rate is a predictor of obesity.

Methods: Prospective study with data from ISA: Physical Activity and Environment with 931 adults aged 18 and over, residents in Sa Paulo city, Brazil, that participated in baseline (2014/2015) and second wave (2020/2021). The outcome was obesity incidence assessed through body mass index, calculated from self-reported height and weight. The independent variables were terciles of crime rate (vehicle, pedestrian and within public transportation theft, and intentional homicide) and intentional homicide rate per 1000 hab in 2015 within 1000m and 1500m linear buffers from each participant residence at baseline (1st tercile as reference with lower crime rate), obtained from official government dataset provided by the Center for the Study of Violence. Sociodemographic variables (age, skin color, educational level, and sex) and environmental variables (weighted GeoSES - Socioeconomic Index of Geographic Context for Health Studies - and perceived violence of neighborhood) were considered. Chi-square tests examined bivariate associations, and logistic regression models were applied for crude and adjusted analysis (adjusted for sociodemographic variables, perceived violence of neighborhood, and weighted GeoSES).

Results: The study identified a 14.8% incidence of obesity during the period, and was higher among women, young adults, and residents in lower-quartile GeoSES areas (1500m buffer). Crime rate showed association with GeoSES for both buffers, while intentional homicide rate was associated with all variables except age and sex. Importantly, crime rate emerged as a predictor of obesity; which individuals residing in areas with higher terciles of crime rate within 1000m and 1500m were 72% (CI95%=1.07-2.76) and 74% (CI95%=1.10-2.76) more likely, respectively, to develop obesity. Intentional homicide rate was not associated with obesity incidence.

Conclusion: These findings underscore the inequities in crime exposure, predominantly affecting socially vulnerable populations and environments. Living in areas marked by higher violence rates predicts a higher likelihood of developing obesity. This evidence supports the necessity of considering the social environment regarding obesity prevention actions and health promotion policies.

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Understanding the effectiveness of whole-systems, place-based approaches to address entrenched health and wellbeing inequalities, using a configurational-comparative method.

Dr. Simon Armour¹, Dr Rick Davies, Dr Robin Vincent, Dr Kevin Harris, Ryan Storey, **Mr. Louis Ryan, Dr. Katie Shearn**

¹Sheffield Hallam University, Sheffield, United Kingdom

O.1.12: Characterizing and exploring socio-economic inequalities, Room 216, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: This paper presents an innovative application of realist-informed configurational comparative analysis to gain insights into the factors influencing reductions in physical activity inequalities. This will evaluate the effects of Sport England's investment in whole-systems, place-based approaches (WSA) and inform future adoption of such strategies.

Methods: A cross case configurational approach was used to examine diverse causal configurations related to increasing physical activity and decreasing physical inactivity. Short- and medium-term outcomes were also identified to explore pathways to impact. The 'cases' corresponded to local authority areas in England, where collaborative groups were attempting to create conditions to enable people to be active. 'Causes' were characteristics or features of that case which we had reason to believe were necessary for there to be a change in physical activity inequalities. Causes were selected in a participatory way with stakeholders involved in these cases and with reference to academic literature. Presence or absence of causes were assessed for each case using a mix of data sources, including a questionnaire incorporating a scaled rubric. Responses were triangulated with other data sources, including evaluation outputs and follow-up meetings, to calibrate the scales and ensure consistency of interpretation. Given the complexity of WSAs, the study utilises an advanced stepwise technique to explore these 'causes' from situational context, financial and human resource inputs, areas of action and 'maturing system conditions' relating, for example, to the extent of community participation in design and delivery of actions and collaboration across diverse sectors. The theory-informed approach employs the EvalC3 software for hypothesis-led inquiry and inductive algorithm-based searches using predictive analytics.

Findings: The study involves 37 diverse locations, with ongoing analysis to identify necessary or sufficient configurations of conditions and develop causal explanations, in collaboration with stakeholders. The completion of this analysis is expected by March 2023

Conclusion: In conclusion, the paper suggests that the research has developed a valuable approach to understanding change in complex social systems, building on insights generated through realist evaluation and configurational comparative analysis. While further refinement is ongoing, the methodology appears promising for informing strategies to address physical activity inequalities.

Health-promoting resources associated with household food security status and dietary quality among U.S. Hispanic/Latino adults

Prof. Amanda McClain¹, Dr. Carmen R. Isasi², Dr. Krista M. Perreira³, Dr. Josiemer Mattei⁴, Dr. Guadalupe X. Ayala¹, Dr. Linda Van Horn⁵, Dr. Susan S. Levy¹, Dr. Martha Daviglius⁶, Dr. Franklyn Gonzalez II³, Dr. Gregory A. Talavera¹, Dr. Linda C. Gallo¹

¹San Diego State University, San Diego, USA, ²Albert Einstein College of Medicine, New York, USA, ³University of North Carolina, Chapel Hill, USA, ⁴Harvard Chan School of Public Health, Boston, USA, ⁵Northwestern Feinberg School of Medicine, Chicago, USA, ⁶University of Illinois Chicago College of Medicine, Chicago, USA

O.1.12: Characterizing and exploring socio-economic inequalities, Room 216, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Health-promoting resources (i.e., capacities/assets) that foster resiliency to adversity could improve cardiometabolic health among U.S. Hispanic/Latino adults. Whether these resources relate to food security and diet quality—two major cardiometabolic risk factors—is unknown. We sought to identify health-promoting resources associated with household food security and diet quality among Hispanic/Latino adults.

Methods: We analyzed cross-sectional data from adults (n=479) participating in two ancillary studies of the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). The 18-item Household Food Security Survey Module was used to categorize participants with scores < 3 or ≥ 3 as food secure (FS) or insecure (FI), respectively. The Alternate Healthy Eating Index-2010 assessed diet quality (range: 0-110), with scores < 48.2 or ≥ 48.2 categorized as low or high diet quality, respectively. Adjusted logistic regression models tested associations of self-reported material (e.g., food environment), human (e.g., optimism, education), social (e.g., social support, family cohesion), and cultural (e.g., religiosity) resources with odds [OR (95% Confidence Intervals)] of FI vs. FS and with low vs. high diet quality.

Results: Diet quality scores were low (mean=48.1 +/-7.3) and 40.1% of households were FI. Perceiving neighborhood fruits and vegetables [OR (CI): 0.4 (0.2, 0.6)] or low-fat foods [0.3 (0.1, 0.4)] as affordable (vs. unaffordable) and having higher optimism [0.9 (0.88, 0.99)] or social support [0.94 (0.91, 0.98)] scores related to lower odds of FI. Shopping at small to medium non-ethnic food stores (sometimes vs. never [0.5 (0.2, 0.95)]) or having high school [0.5 (0.3, 0.98)] vs. less educational attainment related to lower odds of having low diet quality. However, select material, social, and cultural resources were associated with higher odds of FI and having low diet quality. For example, higher family cohesion was associated with higher odds of FI [1.2 (1.1, 1.4)].

Conclusions: U.S. Hispanic/Latino adults have existing material, human, social, and cultural resources to protect against FI and low diet quality, but some of these relationships may be nuanced. Additional mixed methods research is required to better understand how these health-promoting resources can be leveraged as a part of programs to promote food security, diet quality, and cardiometabolic health.

COVID-19 Related Economic Supports, Rent Burden, and Food Insufficiency

Dr. Patrick Brady¹, Kaitlyn Berry¹, Dr. Rachel Widome¹, Dr. Sruthi Valluri², Dr. Melissa Laska¹

¹University of Minnesota, Minneapolis, USA, ²Brigham and Women's Hospital, Boston, USA

O.1.12: Characterizing and exploring socio-economic inequalities, Room 216, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: We examined whether the association between policies implemented in the United States that provided economic support during the COVID-19 pandemic and food insufficiency differed if experiencing rent burden.

Methods: We used the nationally representative U.S. Household Pulse Survey from June 2020 to May 2023. Our sample included renter households with incomes under 200% of the Federal Poverty Threshold (n=67,957). Our exposures were policy indicators for either Supplemental Nutrition Assistance Programs (SNAP) emergency allotments (participants in states and times where allotments were implemented, participants in states and times where allotments were not implemented, or non-participants) or rent assistance (received, waitlisted/denied, or did not apply). Our outcome was experiencing food insufficiency. The moderator was rent burden (rental costs greater than 30% of income or not). We modeled food insufficiency as a function of the policy indicator, rent burden, and their interaction adjusting for demographics, state, and survey cycle and produced predicted probabilities with 95% confidence intervals. Each policy was modeled separately.

Results: The predicted probability of experiencing food insufficiency was lower in SNAP-participating households that received emergency allotments versus those that did not for rent burdened households (25.9 [23.9-27.8] versus 30.2 [28.4-31.9]) but not for non-rent burdened households (23.9 [21.1-26.8] versus 26.1 [23.3-28.8]). There was no difference between rent and non-rent burdened households for SNAP non-participants (27.6 [26.8-28.5] versus 25.7 [24.1-27.3]). The predicted probability of experiencing food insufficiency was lower in households that received rental assistance versus those that were waitlisted/denied for rent burdened households (34.4 [32.5-36.4] versus 40.5 [38.4-42.5]) and non-rent burdened households (30.0 [26.7-33.2] versus 49.6 [43.5-55.7]). Households that did not apply for rent assistance had a higher predicted probability of experiencing food insufficiency if they were rent burdened (24.8 [24.1-25.6] versus 21.8 [20.6-23.1]).

Conclusion: SNAP emergency allotments and rental assistance supported low-income renters' food sufficiency. SNAP emergency allotments appeared to be more impactful at reducing the risk of experiencing food insufficiency among rent burdened households while rent assistance appeared more impactful in non-rent burdened households. Policymakers need to design policies and programs to better support economically marginalized households and account for conditions leading to housing and food insecurity.

Trapped in vicious cycles: unraveling the health experiences and needs of adults living with socioeconomic insecurity

Ms. Sanne Verra¹, Dr. Maartje P. Poelman², Ms Andrea L. Mudd¹, Dr. John de Wit¹, Dr. Carlijn B.M. Kamphuis¹

¹Utrecht University, Utrecht, Netherlands, ²Wageningen University & Research, Wageningen, the Netherlands

O.1.12: Characterizing and exploring socio-economic inequalities, Room 216, May 21, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: This study explores the role of health and health behaviors in the daily lives of Dutch adults (aged 25-49) experiencing one or more forms of socioeconomic insecurity stemming from their financial, housing, or employment situations. Our aim was to provide guidance for preventive health policies and interventions that correspond with the needs of this understudied population facing socioeconomic insecurity.

Methods: 28 in-depth, semi-structured interviews were conducted in the Netherlands between October 2022 and February 2023. The interview guide included questions on participants' socioeconomic situation, the role of health in their daily lives, their health-related and other needs. Data was interpreted using reflexive thematic analysis. An advisory board consisting of adults with lived experiences of socioeconomic insecurity were consulted at multiple stages of the study (recruitment, interview guide, interpretation of results).

Results: Participants' narratives revealed four key themes in relation to the role of health and health behaviors in daily life and associated needs. Firstly, socioeconomic insecurity led to unrest and diminished control over participants' lives, which led to the disruption of routines. Secondly, experiencing socioeconomic insecurity compelled participants to prioritize stress reduction and mental health improvement through calming yet potentially damaging coping behaviors, such as overeating. Thirdly, those who experienced little opportunity for improvement in their already long-lasting socioeconomic insecurity shared a sense of stagnation in life, which co-occurred with stagnation in unhealthy behavioral routines and diminished well-being. Fourthly, participants expressed the need for a professional to speak with and to help reflect on their lives. This support may help participants regain control, opportunities for more socioeconomic security, more calmness, and increased health and well-being.

Conclusions: This study sheds light on the challenges individuals face in dealing with socioeconomic insecurity, how it may affect their health, their behavior, and their needs. Having perspective to improved socioeconomic security and having easy access to professional support could have health promoting effects for individuals living with socioeconomic insecurity. It is recommended to integrate professional support and assistance regarding social security into health policies and interventions.

Negotiating Leisure-Time Physical Activity in Early Marriage: Reconciling Individual Preferences with Collective Experiences

Dr. Jeffery Sobal¹, Dr. Caron Bove¹
¹Cornell University, Ithaca, USA

O.2.13: Engaging parents and families in behavioral nutrition and physical activity, Ballroom B, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: New marital relationships require couples to negotiate their leisure-time physical activity (LTPA). We examined continuity and change in LTPA of couples during their transition into marriage.

Methods: We conducted a Qualitative Descriptive Study with 20 women and 14 male partners residing in the northeastern United States. We purposively recruited couples about to marry, conducted in-depth semi-structured interviews at the time of recruitment and again one year later, and iteratively analyzed the data using thematic analysis.

Results/Findings: Qualitative analyses revealed that LTPA involvements were complex and dynamic processes evolving from pre-dating through newlywed periods. Couples' LTPA experiences sometimes involved tension and conflict between collective leisure desires and individual LTPA preferences, which required negotiation and reconciliation. Most partners desired collective/shared LTPA, but some partners sought individual/separate LTPA because their own LTPA preferences and skills did not match with those of their marital partner. We inductively identified three primary patterns of LTPA involvement based on couples' own insights about and experiences of LTPA: joint patterns (high interaction between partners during shared LTPA), parallel LTPA patterns (low interaction between partners during shared LTPA), and individual LTPA patterns (LTPA involvements occurred separate from the mate). We also identified contextual LTPA patterns that merged two primary patterns—e.g., an individual/joint LTPA pattern—which facilitated individual LTPA within collective LTPA contexts and reconciled individual partner LTPA aims with couple desires for shared leisure.

Conclusions: Our findings revealed multiple layers and complex components of negotiating individual and collective LTPAs within the context of marital relationships. This study contributes innovative understandings of couples' LTPA patterns through its use of inductive methods, rather than the deductive approaches of prior research, to identify involvements in joint, parallel, and individual LTPA patterns. Couples' engagements in contextual LTPA patterns revealed how couples accommodated individual LTPA participation within collective LTPA contexts and thus satisfied spouses' desires for both LTPA autonomy and shared LTPA experiences. These novel findings contribute new knowledge about LTPA among married couples, which advances understanding of physical activity in couples and families and may help individuals to engage in healthy and satisfying lifelong physical activity.

Parenting Practices and Children's Objectively Measured Fruit and Vegetable Consumption

Dr. Amy Hutchens¹, Dr. Susan Sisson¹, Erin Schone¹, Amelia Barr¹, Alec Delsigne¹

¹The University of Oklahoma Health Sciences Center, Oklahoma City, USA

O.2.13: Engaging parents and families in behavioral nutrition and physical activity, Ballroom B, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Childhood obesity impacts 19.7% of children and adolescents in the United States and is a serious health problem.¹ Nutrition tracks over time in children, thus supporting the importance of establishing healthy eating habits at a young age.² Very few children in the US meet the recommended daily intake of fruit and vegetables.³ Family provides the social context where behavior patterns develop and influence children's physical activity levels and nutrition.⁴ Providing children with fruit and vegetables has been associated with increasing the likelihood that the child will consume them.⁵ Effective family-based prevention programs must utilize information on the link between parenting and child behaviors. The purpose of this study is to explore the impact of nutrition parenting practices on children's objectively measured fruit and vegetable consumption. We hypothesize that increased parental support for fruit and vegetable consumption will be associated with increased children's fruit and vegetable consumption.

Methods: Data collected from parents includes the Instrumental Social Support Scale (ISSPS) and Emotional Social Support Scale (ESSPS) for fruit and vegetable intake. The noninvasive veggie meter technology is utilized to assess children's fruit and vegetable consumption. The Veggie Meter is a noninvasive research grade instrument that detects and quantifies carotenoids in the skin in less than 2 minutes.⁶ Carotenoids are phytochemicals found in fruit and vegetables and are only obtained from diet. The Veggie Meter has been found to be a reliable objective instrument for measuring fruit and vegetable consumption ($r=.81$, $P<.001$).⁷

Results: Preliminary results will be provided. Bivariate comparisons of continuous skin carotenoid scores between desirable and undesirable parenting practices groups will be assessed using two sample t-test or Wilcoxon Rank Sum, as appropriate. Linear regression will be used to estimate differences in mean skin carotenoid scores between desirable and undesirable parenting practices.

Conclusions: Effective family-based prevention programs must utilize information on the link between parenting and child behaviors. This research will fill a gap by identifying potential relationships between parenting practices for healthy eating behaviors and children's objectively measured fruit and vegetable consumption. The results will provide the foundation for the development of a family-based intervention program.

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A ritual frozen in time; a grounded theory exploration of family meal experiences and processes over a 30-year period

Dr. Georgia Middleton¹, Professor Rebecca Golley¹, Dr Karen Patterson², Professor John Coveney¹

¹Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Bedford Park, Australia, ²Flinders University, College of Nursing and Health Sciences, Bedford Park, Australia

O.2.13: Engaging parents and families in behavioral nutrition and physical activity, Ballroom B, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The family meal is recognised as a health-promoting activity for families, however popular discourse suggests that changes to contemporary family life have led to the demise in regularity and quality of the family meal. While research has been conducted on family meals over the last three decades, there is no explicit investigation of the temporal pattern of family meals. The purpose of this study was to gain an understanding of the evolution of family meal practices over the last thirty years, to help with developing realistic expectations of this family ritual, and understanding how we can harness it to promote healthful behaviours, without increasing burden and pressure on parents.

Methods: A comparative analysis of qualitative interview data with South Australian parents in the 1990s (n=32) and interview data with South Australian parents in 2020 (n=22) was undertaken. Grounded theory methods of analysis were conducted and used to determine temporal patterns in family meal experiences between the two time points.

Results: The results indicated stability in many family meal experiences across time, particularly in the value placed on them and their significance in family life. Negotiations balancing time, cost, and food preferences persisted. Key differences included time available to make the meal and cost of ingredients being more acutely considered in 2020, and schedules of family members becoming harder to reconcile. While more fathers were involved in family meal practices in 2020, in many cases women were still undertaking most of this work, as in the 1990s.

Conclusions: This study employed innovative methodology, intentionally replicating a study from 30 years ago to allow for an across-time comparison. This unique exploration identified that many family meal practices remained consistent, despite changes to family life such as increasing pressures of time, cost, and schedules. The stability of family meal values and practices, and these increasing pressures on family life are important to consider when making recommendations, designing interventions, and creating services targeting the family meal. We must acknowledge that the existing promotion of family meals may not be aligned with the shifts occurring in society, which may lead to reinforcing unrealistic expectations.

How food insecurity, household and work chaos influence feeding practices among Australian fathers facing disadvantage: A cross-sectional survey study

Mr. Jeffrey Tsz Hei So^{1,2}, Dr Smita Nambiar^{1,2}, **Associate Prof. Rebecca Byrne**^{1,2}, Professor Danielle Gallegos^{1,2}, Dr. Kimberley Baxter^{1,2}

¹Centre For Childhood Nutrition Research, Faculty Of Health, Queensland University Of Technology, South Brisbane, Australia, ²School of Exercise and Nutrition Sciences, Queensland University of Technology, Kelvin Grove, Australia

O.2.13: Engaging parents and families in behavioral nutrition and physical activity, Ballroom B, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Parents are important gatekeepers in shaping their children's dietary behaviours. Families experiencing disadvantage may employ different feeding strategies due to resource constraints. Within the context of responsive feeding, little is known about how fathers engage in feeding whilst experiencing food insecurity or chaos in the household. This study aims to explore the extent of fathers' feeding involvement and the relationships between paternal feeding practices, food insecurity, and household and work chaos.

Methods: Australian fathers (n=264) with young children participated in a cross-sectional study involving an online survey to assess their feeding involvement and practices, household food insecurity, and household and work chaos. Feeding practices were measured for two different age groups (children <2 years and children 2 – 5 years) using validated, age-appropriate instruments. These instruments measured constructs related to coercive control, structure, and autonomy support. Multivariable linear regression models were used to examine the relationship between the key variables and each feeding practice, adjusting for sociodemographic factors.

Results: Fathers reported actively engaging in daily family meal preparation and child feeding. Three-quarters of the sample were food insecure (77%, 170/222), of these 58% experienced very low food security. Food insecurity had a greater impact on adults compared to children (71% versus 48%) and was associated with higher levels of household chaos. Food insecurity was linked to increased 'persuasive feeding' (B: 0.552, p=0.016) and 'parent-led feeding' (B: 0.472, p=0.030) in the younger child group. Household chaos was positively associated with coercive control practices in both younger and older child groups, with the strongest associations for 'using food to calm' (B: 0.068, p<0.001) and 'overt restriction' (B: 0.048, p=0.005), respectively. In fathers with older children, household chaos was negatively associated with two autonomy support practices, with the most notable being 'repeated presentation of new foods' (B: -0.038, p=0.013). Structure practices had no significant relationships with any factors, and work chaos did not predict the feeding practices measured.

Conclusions: These findings emphasise the need for societal and structural support to address food insecurity and household chaos. Tailored strategies are crucial to support fathers in ensuring optimal nutrition and responsive feeding for their children.

Effect of Nutrition Education and Medically-Tailored Meal Interventions on older adults with Type 2 Diabetes

Mrs. Harlivleen Gill¹, Mrs. Heather Engelman¹
¹Apostle Group, LLC, Germantown, USA

O.2.14: Nutrition and Lifestyle: Pathways to Health and Longevity, Room 212, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: A. Ageing

Purpose: Many older Americans exhibit a lack of practices that prevent the decline of overall health and well-being. This is, in part, due to limitations in technological proficiency and access to education, resources, and services. A program was created to study the impact of virtual diabetes education and medically-tailored meals on health outcomes and expenditures of older Americans with type 2 diabetes.

Methods: Referrals were received from Maryland-based healthcare providers for 200 adults, age 60 and over, with type 2 diabetes. All qualifying participants received non-randomized access to resources through simplified means of technology. Each participant was given a tablet to access nutrition and diabetes education resources and to enable connectivity with Registered Dietitians for virtual sessions of Medical Nutrition Therapy, as well as a virtual Diabetes Self Management Program. Those who were at risk for food insecurity also received (1) medically-tailored, shelf stable meals that adhered to diabetes and Maryland Department of Aging specifications, and (2) referrals to the Area Agencies on Aging for eligibility assessments on additional services. Qualitative and quantitative measures were used to evaluate the effectiveness of materials, medically-tailored meals, delivery mechanisms, and health outcomes. All individuals were evaluated for social isolation pre- and post- program. Additionally, participants were assessed for food security and other underlying diagnoses.

Results: The person-centered access to education and meals generated more self-care among participants who completed the intervention, which in turn decreased their hospital visits and expenses. Preliminary data revealed that total hospital visits were reduced by 26% and hospital-related charges were reduced by 75% three-months post-program, as compared to three-months pre-program.

Conclusions: Inadequate access to healthcare, nutrition, and additional services can negatively impact health outcomes and expenses. The provision of medically-tailored meals and diabetes education is critical to improving the health and wellbeing of older adults with type 2 diabetes. The preliminary findings from our program suggest that these services empower individuals to become more assured and self-reliant, equipping them with the power to care better for themselves and lessening the impact of health burdens.

Unveiling the digital pathways to active aging: an exploratory mixed methods study examining older adults' perceptions towards mHealth and the impact of person-level factors on engagement with the MyHealthPlan mHealth intervention

Prof. Delfien Van Dyck¹, Dra Stéphanie Carlier¹, Dr Julie Latomme¹, Dr. Femke De Backere¹, Dra Iris Maes¹

¹Ghent University, Ghent, Belgium

O.2.14: Nutrition and Lifestyle: Pathways to Health and Longevity, Room 212, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: A. Ageing

Purpose: First, we aimed to gain insight in older adults' opinions towards mHealth interventions, more specifically the MyHealthPlan application. Second, we examined whether person-level factors (age, gender, educational level, BMI, familiarity with smartphone) were linked to actually performing the exercises suggested through MyHealthPlan.

Methods: 40 older adults (+65 years) participated and were visited twice at home. During the first home visit, person-level factors were assessed with a questionnaire and the MyHealthPlan application was installed on the participant's smartphone (or a smartphone provided by the researchers). Participants were instructed to use MyHealthPlan for seven consecutive days. The application provided maximum 6 notifications/day with suggestions for stretch and strengthening exercises. Participants could indicate in the application whether they performed or skipped the exercise, and were asked for some feedback if they skipped the exercise. Additionally, participants wore a Fitbit Charge 2 activity monitor during the measurement period, as notifications were triggered according to the number of steps they had already taken on a given day. After one week, participants were re-visited and a semi-structured interview was conducted to gain insight into their experiences with the application and the Fitbit. Qualitative data were analyzed using deductive thematic analysis (NVivo 12). For the second research question, logistic regression analyses will be conducted.

Results: In total, 52.5% of the participants were female, 70% completed a non-tertiary education, mean age was 72.6 years (SD 5.6) and mean BMI was 26.6 kg/m² (SD 3.7). Seventy percent of the participants did not own a smartphone. The main themes emerging from the interviews were 1) opinions about smartphone notifications, including a) timing; b) number; c) keeping the smartphone with you, 2) suggested exercises, 3) providing feedback, 4) experiences with Fitbit, 5) overall suggestions for improvement. The content of these themes will be discussed during the presentation. At the conference, also the results of the second research question will be presented, as data analyses are currently ongoing.

Conclusions: This study provides valuable information to optimize the development of mHealth interventions that are tailored to older adults' specific needs, and align with their perceptions on the digital transformation in health promotion.

Dietary patterns and cardiorespiratory fitness in midlife in relation to subsequent all-cause dementia: Findings from The Cooper Center Longitudinal Study

Dr. Clare Meernik¹, Dr. Kerem Shuval¹, Prof. Sigal Eilat-Adar², Dr. David Leonard¹, Dr. Carolyn Barlow¹, Prof. Yariv Gerber³, Prof. Riki Tesler⁴, Dr. Carmen Byker Shanks⁵, Dr. Andjelka Pavlovic¹, Prof. Kelley Pettee Gabriel⁶, Dr. Laura DeFina¹

¹The Cooper Institute, Dallas, USA, ²Levinsky-Wingate Academic College, Netanya, Israel, ³Tel Aviv University, Tel Aviv, Israel, ⁴Ariel University, Ariel, Israel, ⁵Gretchen Swanson Center for Nutrition, Omaha, USA, ⁶University of Alabama at Birmingham, Birmingham, USA

O.2.14: Nutrition and Lifestyle: Pathways to Health and Longevity, Room 212, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: A. Ageing

Purpose: The Mediterranean and Dietary Approaches to Stop Hypertension (DASH) diets may be protective against cognitive decline, but evidence remains inconsistent. In this cohort study, we examined the association between Mediterranean or DASH diet adherence in midlife and dementia in later life, and the modifying effects of cardiorespiratory fitness.

Methods: Data are from 9,095 adults seeking preventive care at the Cooper Clinic (1987-1999) who completed a 3-day dietary record. Alzheimer's disease and related disorders or senile dementia (i.e., all-cause dementia) was identified from Medicare administrative claims (1999-2019). Illness-death models were used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for the association between Mediterranean or DASH diet adherence and all-cause dementia, adjusted for demographic and clinical factors. Effect modification by cardiorespiratory fitness was also examined.

Results: The mean age at dietary assessment was 50.6 years, and 1449 cases of all-cause dementia were identified over a mean follow-up of 9.2 years. Neither Mediterranean nor DASH diet adherence was associated with dementia risk models (HR, per SD of continuous score, Mediterranean model: 1.00, 95% CI: 0.94, 1.05; HR, per SD of continuous score, DASH model: 1.02, 95% CI: 0.96, 1.02). Participants with higher fitness had a decreased hazard of dementia in fully adjusted models (HR, per metabolic equivalent of task [MET] increase, Mediterranean model: 0.95, 95% CI: 0.92, 0.98; HR, per MET increase, DASH model: 0.96, 95% CI: 0.92, 0.97), though fitness did not modify the association between diet and dementia.

Conclusions: Whereas adherence to a Mediterranean or DASH diet was not associated with all-cause dementia, fitness was a significant predictor. Fitness should be targeted by encouraging health promoting physical activity in multimodal interventions for dementia prevention.

Development and pilot testing of a physical activity feedback graph designed to improve maternal self-efficacy for promoting infant movement behaviours

Dr. Alessandra Prioreschi¹, Ms Antonia Smith², Prof Shane Norris¹, Dr Kirsten Rennie²
¹SAMRC/Wits Developmental Pathways for Health Research Unit, Department of Pediatrics, School of Clinical Medicine, Faculty of Health Science, University of the Witwatersrand, Johannesburg, South Africa, ²MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom

O.2.15: Behavior Change through the Collaboration of Families and Schools, Room 213, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: The aim of this study was to describe the development of, and test the acceptability and feasibility of providing feedback on infant movement behaviours in the context of supportive approaches. We hypothesised that providing individual behavioural feedback to mothers may improve maternal self-efficacy to promote infant movement behaviours.

Methods: Feedback was developed following expert consultation with working groups, and consisted graphical feedback on mother and infant movement behaviours measured using accelerometry. Participants wore the devices for one week, following which individual feedback on movement behaviours was delivered using supportive guidance. Feasibility and acceptability was tested by conducting focus group discussions with a sample of 8 mothers of infants aged 4-months using a semi-structured interview guide. Each FGD was analysed using an inductive, iterative analytical approach. Main emerging themes and subthemes were identified by coding transcripts for content, line by line, and patterns in the data were thus interpreted and described.

Results: Mothers included in this study were generally single, unemployed, and less than half had completed formal schooling. The feedback was found to be both feasible, and largely acceptable in this context and compliance was 100%. Mothers reported learning about the importance of play and routines, but needed more information on promoting sleep. They were not previously aware of infant movement guidelines.

Conclusions: We have developed feedback with the potential to sensitise mothers to their infants' movement behaviours. When embedded in a supportive intervention, this feedback has the potential to improve mother's self-efficacy for promoting these behaviours through increasing feelings of competence.

Co-designing a behaviour change intervention to increase physical activity in a primary school.

Mr. Michael McCluskey^{1,3}, Dr Stephanie Jansen-Kosterink^{3,4}, Dr Fraser Philp¹, Professor Jaap Bourke^{3,4}, Professor Hermie Hermens^{3,4}, Professor Anand Pandyan², Mr Damian Penk⁵

¹University Of Liverpool, Liverpool, United Kingdom, ²Bournemouth University, Bournemouth, United Kingdom, ³University of Twente, Enschede, the Netherlands, ⁴Roessingh Research and Development, Enschede, the Netherlands, ⁵Sutherland Academy Primary School, Stoke-on-Trent, United Kingdom

O.2.15: Behavior Change through the Collaboration of Families and Schools, Room 213, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: A significant number of children fail to meet recommended daily physical activity levels, increasing their risk of poor health and wellbeing in the future. The use of school settings to deliver physical activity interventions in schools is common despite evidence suggesting they are not effective in increasing physical activity. This failure could, in part, be attributed to a lack of consideration of local context. Acknowledging the importance of local factors, the Medical Research Council emphasises the need for early stakeholder engagement in complex intervention development and implementation.

Method: This study used Experience-Based Co-Design (EBCD) principles and the Behaviour Change Wheel to develop a primary school intervention for improving childhood physical activity. Purposive sampling was used to recruit 45 participants from one school, 15 pupils, parents, and school staff each. The process involved setting up, collecting pupil, parent, and staff experiences, and a co-design event to finalise and agree on possible intervention for each identified priority. To address power dynamics, initial validation occurred solely with pupils to shape the co-design priorities. Pupils also had opportunity to provide feedback and approval of final interventions. This approach increased the likelihood of designing an intervention acceptable to the student population.

Results: Following the co-design event, two interventions were crafted. The first involves a daily group walk for 15 minutes per day, incorporating gamification with steps or distance tracking and certificates of achievement awarded for engagement. The second is an after-school fitness class for staff, children, and parents, led by school PE department. The school also acted independently to create a walking track with a learning area, fostering outdoor learning during the school day.

Conclusion: EBCD empowers and engages stakeholders in a collaborative process of problem solving and intervention design. It can be effective in developing tailored, complex health interventions for schools which are responsive to local needs and stakeholder contexts. Following completion of the process, the school was able to independently implement interventions enhancing children's activity opportunities leading to increased opportunity for all pupils and staff to be more active during the school day.

The Moderating Role of Pre-pregnancy Body Mass Index on the Association between Folic Acid Intake and Breastfeeding Duration among Hispanic Mothers in the US

Ms. Sueny Paloma Lima^{1,2}, Dr. Eric E. Calloway¹, Dr. Ilana R. A. Chertok², Dr. Zelalem T. Haile³

¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Ohio University College of Health Sciences and Professions, Athens, USA, ³Ohio University Heritage College of Osteopathic Medicine, Dublin, USA

O.2.15: Behavior Change through the Collaboration of Families and Schools, Room 213, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: This study provides insight into the worldwide significance of maternal nutrition, demonstrating the potential of pre-pregnancy nutritional status to impact maternal and infant health outcomes. By examining the moderating role of pre-pregnancy Body Mass Index (BMI) on the relationship between folic acid intake—as a proxy for the quality of antenatal care—and breastfeeding duration, the research seeks to reveal patterns that could improve maternal health standards worldwide. Despite its roots in US Hispanic population data, its findings contribute to a broader understanding of maternal health practices, potentially shaping international health guidelines and interventions sensitive to cultural and regional dietary practices.

Methods: Utilizing a robust secondary data analysis from the 2016-2021 Pregnancy Risk Assessment and Monitoring System, this study encompasses a diverse cohort of 27,671 Hispanic mothers. The analytical approach included stratified logistic regression models, controlling for potential confounders to isolate the impact of pre-pregnancy folic acid intake across different BMI categories.

Results: Among 27,671 mothers, 40.9% took folic acid pre-pregnancy, 64.9% breastfed for >3 months, and 2.9% were underweight, 38.8% were normal weight, 29.9% were overweight, and 28.3% were obese. In the logistic regression model stratified by pre-pregnancy BMI, among underweight mothers, there was a significantly lower likelihood of breastfeeding when mothers did not take folic acid (aOR=0.117, 95% CI 0.035-0.395), took 1-3 times per week (aOR=0.117, 95% CI 0.029-0.465), or took daily (aOR=0.085, 95% CI 0.024-0.304), compared to folic acid intake 4-6 times per week. Among mothers with normal weight and obesity, compared to folic acid intake 4-6 times per week, there was a significantly lower likelihood of breastfeeding when mothers did not take folic acid (aOR=0.702, 95% CI 0.503-0.978 and aOR=0.641, 95% CI 0.425-0.967, respectively).

Conclusions: The insight that folic acid intake—representative of antenatal care quality—can affect breastfeeding duration has significant implications for developing universal nutritional guidelines. These guidelines could be adapted to diverse healthcare systems worldwide, promoting longer breastfeeding durations and enhanced infant health outcomes. Further research should focus on cross-cultural studies to validate these findings and implement effective public health strategies in various international contexts.

A Postpartum Physical Activity Intervention among Women with Gestational Diabetes: an RCT

Dr. Samrawit Yisahak^{1,2}, Dr. Sarah Keim^{1,2,3}, Ms. Briana Stith¹, **Ms. Caroline Racke¹**, Dr. Steven Thung⁴, Dr. Mark Klebanoff^{2,3,4,5}, Dr. Steven Gabbe⁴, Dr. Mark Landon⁴, Dr. Reena Oza-Frank^{4,6}

¹Center for Biobehavioral Health, Abigail Wexner Research Institute, Nationwide Children's Hospital, Columbus, USA, ²Department of Pediatrics, The Ohio State University College of Medicine, Columbus, USA, ³Division of Epidemiology, College of Public Health, The Ohio State University, Columbus, USA, ⁴Department of Obstetrics and Gynecology, The Ohio State University College of Medicine, Columbus, USA, ⁵Center for Perinatal Research, Abigail Wexner Research Institute, Nationwide Children's Hospital, Columbus, USA, ⁶Ohio Department of Health, Columbus, USA

O.2.15: Behavior Change through the Collaboration of Families and Schools, Room 213, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Women diagnosed with gestational diabetes mellitus (GDM) during pregnancy have a high 10-year risk of developing type 2 diabetes mellitus (T2DM), which is exacerbated by postpartum weight retention. We conducted a randomized, controlled trial (RCT) to test the efficacy of a simple, novel intervention of wearing ankle weights during routine daily activities such as childcare and housework on changes in body weight, body composition, and glycemic, lipid, and inflammatory biomarkers in postpartum women who were diagnosed with GDM during their pregnancy.

Methods: The Moms in Motion parallel two-arm RCT tested the efficacy of wearing ankle weights (1.1 kgs each, 2 hours/day, from 25-35 to 190-210 days postpartum) compared to a standard-of-care control group in women diagnosed with GDM during pregnancy. The primary outcome was body weight while secondary outcomes included body composition and glycemic, lipid, and inflammatory biomarkers. 31/39 (79.5%) of participants had weight data at study completion (12 months postpartum). Linear mixed models with time*treatment arm interaction compared changes in outcomes among those assigned to the intervention (ANK, n=18) vs. those assigned to control (CTRL, n=21), adjusted for clinic site and pre-pregnancy BMI category.

Results: Median (IQR) age was 32 (28, 35) years. There was no significant effect of the intervention on change in weight (mean \pm SD: 3.8 ± 1.8 kg for ANK vs. 2.2 ± 1.6 kg for CTRL, P-for-interaction = 0.51) or percent body fat (-0.6 ± 0.9 for ANK vs. -1.5 ± 0.8 for CTRL, P-for-interaction = 0.48). Both groups significantly reduced their total cholesterol over time but there was no intervention effect on this change (-25.3 ± 7.3 mg/dL for ANK vs. -18.5 ± 6.7 mg/dL for CTRL, P-for-interaction = 0.50). ANK slightly increased their C-reactive protein while CTRL significantly reduced it (0.5 ± 1.6 mmHg for ANK vs. -4.0 ± 1.5 mmHg for CTRL, P-for-interaction = 0.048).

Conclusion: Contrary to our hypothesis, the ankle weight intervention did not result in more weight loss or improved biomarkers compared to standard care. Potential compensatory effects of the intervention on energy intake and other domains of physical activity are plausible explanations that warrant further research.

Associations between Social Support, Social Control, and Stage of Change with Self-reported and Objectively Assessed Physical Activity in Adult Latino Family Dyads

Dr. Larkin Strong¹, Dr. Jemima John², Soo Kyung Park², Dr. MinJae Lee³, Dr. Lorna McNeill¹, Prof. Deanna Hoelscher², Dr. Susan Schembre⁴, Dr. Belinda Reininger²

¹University Of Texas MD Anderson Cancer Center, Houston, USA, ²The University of Texas Health Science Center at Houston, Houston, USA, ³The University of Texas Southwestern Medical Center, Dallas, USA, ⁴Georgetown's Lombardi Comprehensive Cancer Center, Washington, USA

O.2.15: Behavior Change through the Collaboration of Families and Schools, Room 213, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Introduction: Health behaviors such as physical activity (PA) are socially influenced such that individuals from shared social networks or living environments may exhibit similar habits. This study examined the associations of social support, social control, and family member stage of change with self-reported and objective measures of moderate-to-vigorous PA in dyads of adult Latino family members.

Methods: We examined social support for PA using family participation and family punishment subscales, the study partner's stage of change, and perceived social control. We performed multivariable multilevel analysis using generalized estimating equations (GEE) to account for within-dyad correlations. We conducted negative binomial regression for MET-minutes (self-reported; N=429) and accelerometer data (N=356) and logistic regression for meeting PA guidelines (self-reported; N=429), adjusting for age, BMI category, gender, marital status, birth country, education, and insurance.

Results: Most dyads were comprised of spouses (41%) or parents and adult children (32%). The majority of participants (mean age=41) were women (77%), overweight/obese (86%), born outside the U.S. (88%), and had low levels of education (50% <0.0001) than those with low levels of support. Participants reporting medium to high family punishment were 98% higher in odds of meeting PA guidelines (1.98 aOR; 95% CI: 1.09, 3.61; p=0.025) and had 70% higher leisure-time MET-minutes (1.7 aIRR; 95%CI: 1.36, 2.13; p<0.0001) compared to those with low scores. Participants with study partners in action or maintenance stages had significantly higher MET-minutes of PA per week (aIRR=1.45, 95% CI: 1.10, 1.91, p=0.009 and aIRR=1.33, 95% CI: 1.01, 1.76, p=0.041, respectively) compared to those with partners in other stages. No statistically significant associations were observed for social control with any measure of PA or between psychosocial measures and accelerometer-assessed PA.

Discussion: Social influences appear to play an important role in PA engagement in Latino families and warrant further consideration for PA promotion efforts although further research is needed.

Healthy Eating and Active Living Policies Landscape in Louisiana Using Cooperative Extension Practitioners as Key Informants

Ms. Nila Pradhananga¹, Dr. Denise Holston¹, Dr. Laura Balis^{2,3}, Dr. Marybeth Lima⁴, Dr. Bailey Houghtaling^{1,2,3}

¹School of Nutrition and Food Sciences, Louisiana State University (LSU) & LSU Agricultural Center, Baton Rouge,, USA., ²Department of Human Nutrition ,Foods, and Exercise, Virginia Tech, Blacksburg,, USA., ³Gretchen Swanson Center for Nutrition, Omaha,, USA., ⁴Biological & Agricultural Engineering, Louisiana State University (LSU), Baton Rouge,, USA.

O.2.16: Community-Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living, Room 214, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: The application of implementation frameworks in evaluating Healthy Eating and Active Living (HEAL) policies is essential to foster informed decision-making and align programs with policy goals to ultimately enhance well-being in community settings. Given the pivotal role of Louisiana Cooperative Extension Service Family and Consumer Science (LFCS) practitioners in Extension, there is an opportunity to assess implementation aspects and gaps of these policies from their viewpoint. This research aimed to explore the HEAL policy landscape using LFCS practitioners as key informants.

Methods: A cross-sectional quantitative study following the Exploration process phase of the Exploration, Preparation, Implementation, and Sustainment (EPIS) framework was conducted in 2023. The survey included 43 questions adapted from two Policy Indicator Checklist (PIC) tools to explore the presence of HEAL policies related to healthy retail, farmer's markets, public service, community recreation, and safe streets with an option to acknowledge a lack of awareness to gain understanding of knowns and unknowns. LFCS practitioners were recruited via email and Qualtrics. Survey data were analyzed using the PIC scoring system and descriptive statistics.

Results: Thirty-two LCES practitioners from five state regions participated (45% were Nutrition agents). Most (56%) reported experience with implementing HEAL policy, systems, and environmental changes for at least six months. PIC scores for healthy eating policies were 49 of 65 (75%) possible points, whereas active living policies resulted in 91 of 135 (67%) possible points. Farmer's market provisions scored the highest at 38 out of 42 (90%) and had the lowest percentage of agents reporting a lack of policy awareness (23%). Overall, there were consistently lower scores for healthy eating compared to active living policies across all five regions. All participants either indicated a lack of awareness or noted the absence of policies for healthier public service venues.

Conclusions: Results provide a baseline quantitative score reflecting Louisiana's HEAL policy landscape and LFCS practitioners' awareness. This study suggests exploring policy through the lens of implementation science can help leverage the roles of key practitioners, especially within the Extension context, to advance HEAL policies.

A Dutch implementation of the Physical Activity Environment Policy Index (PA-EPI)

Ms. Fleur Heuvelman¹, Dr. Jeroen Lakerveld¹, Mr. Kevin Volf², Prof. Catherine B Woods², **Dr. Nicole den Braver**¹

¹Amsterdam UMC, Amsterdam, Netherlands, ²University of Limerick, Limerick, Ireland

O.2.16: Community-Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living, Room 214, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Reduction of physical inactivity necessitates effective government policies to cultivate healthy physical activity (PA) environments. The Physical Activity Environment Policy Index (PA-EPI) serves as a monitoring tool to assess the implementation of policies that promote PA. This study aims to assess the extent of PA policy implementation in the Netherlands and identify recommendations for implementation to improve its PA environment, using the PA-EPI.

Methods: Initial steps of the PA-EPI process involved collecting evidence for implementation of PA policy across 45 indicators of good practice. Government officials validated the evidence through survey and consultation, resulting in a Dutch PA-EPI Evidence document. Thereafter, non-government stakeholders (e.g. academics) independently rated the extent of implementation of PA policies by benchmarking the evidence against international best practice using a Likert scale (1: no/little implementation to 5: very high implementation). With aggregated scores implementation gaps will be identified. Finally, government officials (observers) and non-government stakeholders formulate policy recommendations in a workshop, based on these implementation gaps.

Results: Policy documents and letters from ministries, laws and regulations, websites describing policy actions and policy monitoring/evaluation studies were used to compile an extensive document encapsulating Dutch PA policies. For some policy domains evidence for implementation was easily identified (e.g. education, transport and infrastructure support domains) whereas for others this was more difficult (e.g. healthcare and community). The feedback received from fifteen government officials on the evidence document encompassed the arrangement of policy documents, some of which were linked to multiple indicators (across domains). Furthermore, the feedback served to clarify definitions and boundaries of Dutch PA policy. Based on the validation, twenty-three non-government stakeholders have agreed to rate the implementation of PA policies. The results and their associated recommendations for improving PA policy implementation will be presented.

Conclusions This study will identify which of the indicators are well-implemented and poorly implemented. Action is needed to provide key recommendations to achieve PA policy progress in the Netherlands. The PA-EPI is a valuable tool to create cross-sectoral discussions, develop a national coalition of government and non-government experts and for cross-country comparisons and benchmarking of PA policy implementation.

An explanatory framework for operationalising and evaluating whole systems approaches to tackle physical activity inequalities.

Dr. Katie Shearn¹, Dr Robin Vincent, Dr Kevin Harris, Ms Amy Murray-Evans, **Dr. Harriet Wingfield**, Dr. Simon Armour, Mr. Louis Ryan, Ms Maxine Gregory, Mr Lewis Haines, Professor Tim Crabbe, Professor David Broom
¹Sheffield Hallam University, Sheffield, United Kingdom

O.2.16: Community-Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living, Room 214, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Whole systems approaches (WSAs) are recommended internationally to promote physical activity and tackle physical activity inequalities. This paper critically examines the literature on WSAs and place-based approaches (PBAs). It argues that a focus on policy directives without attention to operationalization has led to issues such as overlooking local contexts, promoting professional-led approaches, and limiting beliefs about modifiability. The paper seeks to present an alternative explanatory framework to overcome these limitations and provide conceptual architecture to enable the accumulation of knowledge about them.

Methods: Adopting a mixed methods approach influenced by realist evaluation and participatory action research, the study co-designed a new explanatory framework. A scoping literature review identified key attributes from theoretical and empirical studies. Documentary analysis of longitudinal process evaluation reports (N=64) from 12 Local Delivery Pilots (LDPs which are place-based collaboratives supported by Sport England, an arm's length government body, to develop WSAs and PBAs to increase participation in sports and physical activity and reduce physical activity inequalities) was conducted to synthesise empirical evidence and derive stakeholder-led explanations of change to develop the framework. Stakeholder feedback (N=78 via two workshops) refined the framework which was subsequently tested by the 12 LDPs for utility in capturing unique case-based data.

Findings: The explanatory framework identifies three broad areas of action and ten cross-cutting conditions. Areas of action are: integrating physical activity across sectors, strengthening individual and community capacities, and tackling structural inequalities. Cross-cutting conditions pertain to proposed necessary features of a place to realize these areas of action.

Conclusions: The framework is broad enough for diverse WSAs and PBAs, yet detailed enough to inspire new approaches. The paper underscores the philosophical and ethical importance of this framework as a boundary object, emphasizing its role in centring the problem of physical activity inequalities in the operationalization and research of WSAs and PBAs. Given the rise in the international and national policy recommendations for WSAs and PBAs, the study contributes to bridging the gap between policy directives and effective implementation, providing a tool for evaluating and learning from a variety of approaches to address physical activity inequalities.

Mapping the community engagement process in policy, systems, and environmental initiatives to increase access to healthy food and active living opportunities

Dr. Leigh Ann Ganzar¹, Dr. Jennifer Pelletier¹
¹Professional Data Analysts, Minneapolis, USA

O.2.16: Community-Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living, Room 214, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Policy, systems, and environmental (PSE) approaches can sustainably and equitably increase access to healthy food and active living opportunities, but community residents are often not included in the process to create solutions in their own communities. Many researchers and practitioners engage in PSE work with communities, but methods for engaging communities that develop community ownership of changes and uplift community power to implement PSE changes are not well understood. The aim of this evaluation study was to examine the community engagement process by local health departments engaged in PSE initiatives with communities and develop a journey map of the key phases of the process.

Methods: To map the experience of community engagement, we conducted semi-structured interviews via video conference with local county health department staff who work on state-funded, PSE initiatives (n = 6 counties) in a Midwestern state in the United States. Interview questions were developed using a journey mapping approach, which is a method for visual storytelling about how participants experience and interact with processes and systems. Interview questions assessed the expected outcomes of community engagement, activities, barriers, facilitators, and emotions tied to the different phases of the community engagement process. To analyze the data and develop the visual representation of the community engagement journey, we used a qualitative analysis approach proposed by Yin (2016), which included five iterative phases of compiling, disassembling, reassembling, interpreting, and concluding.

Results/findings: We identified four phases of community engagement that local health departments experience as they engage the community in PSE initiatives: activate communities, implement changes, renew relationships and project ideas, and release control. Within each phase, we mapped key steps and conditions that enabled the development and implementation of community-aligned solutions to make progress towards sustainable changes in community health, capacity, connectivity, and power.

Conclusions: This study identified key phases and conditions that support community-led PSE initiatives. These can be used by community leaders, researchers, public health practitioners, and funding entities to support the implementation and assessment of meaningful community engagement in initiatives that seek to increase access to healthy food and active living opportunities.

Assessing the influence of crime on physical activity in urban and rural communities in Texas, USA

Ms. Ashley Messineo¹, Mr. Case Garza¹, Dr. Eugen Resendiz¹, Dr. Deborah Salvo¹
¹University of Texas at Austin, Austin, USA

O.2.16: Community-Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living, Room 214, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Background: Studies on the influence of crime (a social environment factor) on physical activity have yielded mixed results. Furthermore, few studies have examined this relationship in rural areas, despite 43% of the world's population residing in rural areas and facing unique challenges for physical activity. We examined the association between street crime and physical inactivity in rural versus urban counties in Texas, USA.

Methods: GIS analysis was done using ArcGIS Pro 2.8. County-level prevalence of physical inactivity data were from the CDC PLACES dataset, reporting participation in any leisure-time physical activity during the past 30 days. Counties were categorized as rural or urban based on Texas Department of Housing and Community Affairs criteria. Street crimes (motor vehicle thefts, violent crime, and robbery) per capita were calculated using Texas Department of Public Safety and US Census data.. We tested the association between county-level crimes per capita and physical inactivity prevalence using multinomial linear regression. Additionally, we ran stratified models by county type (rural and urban).

Results: Of 254 counties, 23.6% were urban, and 76.4% rural. The prevalence of physical inactivity ranged from 18% to 46%, with rural counties having a significantly ($p < 0.001$) higher prevalence (mean prevalence = 30.7, sd = 4.5) than urban counties (mean prevalence = 26.5, sd = 4.0). Crimes ranged from 0 to 368 per 1000 inhabitants; and no significant difference was observed by urban versus rural county type. Regression results, unadjusted for rural/urban status, showed a significant association between street crimes and physical inactivity prevalence, with every unit increase in number of crimes per 1000 inhabitants being associated with a 5% lower odds of high physical inactivity prevalence (CI: 0.91-0.99, $p = 0.03$). However, after adjusting for rural/urban county type, the association was no longer significant (OR: 0.99, CI: 0.95-1.03, $p = 0.79$). Stratified models by rural vs. urban county type found no significant associations between crime and physical inactivity prevalence.

Conclusions: Crimes on the street are not associated with leisure-time physical inactivity in Texas counties. Future studies should examine the effects of crime on active travel, a health behavior that may be more influenced by street safety than exercise, recreation, and sport.

Developing a culturally relevant framework to engage with communities: A Te Hotonga Hapori-Connecting Communities framework

Prof. Erica Hinckson¹, Dr Moushumi Chaudhury¹, Matua Anaru Ah Kew¹, Dr Lisa Mackay¹, Ms Megan Sommerville¹, Dr Vivien Ivory², Mrs Julia Mcphee¹, Professor Scott Duncan¹
¹Auckland University of Technology, Northcote, New Zealand, ²WSP, Lower Hutt, New Zealand

O.2.16: Community-Centered Solutions: Harnessing Qualitative Approaches and Implementation Science for Healthy Eating and Active Living, Room 214, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: To facilitate community empowerment via a community-based participatory approach by systematically gathering substantial and contextually relevant local data about the walkability of neighbourhood environments. However, implementing a participatory method borrowed from an overseas context may not be fitting particularly for diverse communities including Indigenous.

Methods: The Our Voice Citizen Science for Health Equity (Our Voice) method underwent a contextual adaptation for the Aotearoa New Zealand setting. This adaptation involved active engagement with social and health promotion agencies in Auckland, New Zealand. Employing content analysis, the Our Voice method was refined and transformed into the Our Voice Aotearoa NZ giving rise to a new Framework. The framework was developed to incorporate and reflect Māori and Pacific cultural perspectives, giving rise to a novel approach that aligns with the unique ways of being within these indigenous communities.

Results/findings: The Our Voice 4-step process of Discuss, Discover, Advocate and Change was expanded into a 5-step process by adding a step relating to Engagement. The 5-step process was then embedded into a wider framework that included four components: i) Historical and cultural realities ii) Community aspirations, iii) Building bridges and iv) Activation of neighbourhood urban and natural environments, all under the umbrella of active relationship-building.

Conclusions: The Empowering Communities-Wellbeing and Lived Experiences Framework was developed using local input to ensure respect and genuine relationship building with communities before any data collection. The process followed can be used as a guide for researchers in future engagement with communities.

Replicating Effective Programs: Pre-Implementation Phase of Adapting Physical Activity Intervention for Pregnant Women with Obesity for Community Delivery

Dr. Taren Swindle^{1,2}, Daphne Gaulden^{1,2}, Dr. Dong Zhang¹, Dr. Elisabet Børsheim^{1,2}, Dr. Aline Andres^{1,2}

¹University of Arkansas For Medical Sciences, Little Rock, United States, ²Arkansas Children's Nutrition Center, Little Rock, United States

O.2.17: Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity., Room 215, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Less than 25% of pregnant women in the United States do not meet guidelines for recommended physical activity (PA). Community-based approaches to overcome barriers to PA during pregnancy are needed. This study applied the Replicating Effective Programs (REP) framework to adapt a research clinic-based intervention for PA in pregnancy for community-based delivery. The pre-conditions phase of REP was completed in prior work. The objective of the pre-implementation phase was to assess feasibility and acceptability of the intervention in a pre-test while gathering input from partners for further refinement.

Methods: Building on findings from the pre-conditions phase, the pre-implementation phase tested a fully virtual (N = 3) and a hybrid (in person and virtual, N = 6) approach to community-based delivery of the intervention during COVID-19. Participants were engaged to attend 3 workouts per week between 15 weeks gestation and delivery and achieve a Rated Perceived Exertion (RPE) of 15 on the Borg scale. Engagement with the intervention was measured by assessing observational, survey, and qualitative input of participants and trainers. Results were shared with the established Evidence-Based Quality Improvement (EBQI) Panel including 11 community partners from diverse perspectives to inform further refinements to the intervention.

Findings: On average, for the fully virtual pre-test, participants attended 1.3 workouts per week and reported a RPE of 11.9. Most workouts in the virtual pre-test were completed live with the trainer (89%) versus via pre-recorded sessions (11%). On average, for the hybrid pre-test, participants attended 1.8 sessions per week and reported a RPE of 13.3. As with the virtual pretest, participants engaged in the hybrid pre-test elected to do most workouts live with a trainer (87%) versus via recording (13%). Qualitative and EBQI input favored refinement of data collection systems, a need to reconceptualize the social support component of the intervention, and a preference for accountability gained from live workouts.

Conclusions: Live, synchronous sessions were more preferred and successful for engaging participants across both pre-tests with the hybrid resulting in improved engagement and targeted exertion. REP provided a standardized, partner-engaged model for guiding the process of pre-testing a lifestyle intervention for community delivery.

Process evaluation of the WarriorWOD program to reduce PTSD in military veterans through physical activity and nutrition education

Dr. Kathleen Trejo Tello¹, Phillip Palmer, Gita Walkup

¹College Of Charleston, Charleston, USA

O.2.17: Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity., Room 215, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: The purpose of this study is to assess the feasibility and acceptability of the WarriorWOD intervention protocol to reduce Post Traumatic Stress Disorder symptoms in military veterans through nutrition education, physical activity, and peer to peer counseling.

Methods: Promising new research indicates that behavioral interventions promoting physical activity may be an effective approach to reducing PTSD symptoms in veterans (Shivakumar, et al, 2017). Drawing on this research, WarriorWOD, a non-profit community-based organization, established their mission of helping military veterans manage and reduce PTSD symptoms through fitness. Based on their mission, WarriorWOD created a multifaceted free program for veteran participants that includes physical activity, nutrition education and peer-to-peer mentorship. Participation entails veterans being provided with a six-month membership to a sport program, gym or fitness class of their choosing. They commit to attending a minimum of twice weekly. Additionally, they attend biweekly education sessions with a nutritionist and on alternating weeks they meet with a “battle buddy,” a fellow veteran, for peer-to-peer mentoring. To formally evaluate this program, community partners approached an academic partner to build a collaborative research relationship to conduct process and efficacy evaluation. A cohort of 30 participants were enrolled in the fall of 2023 in the Phase I process evaluation study. Participants completed online pre-intervention evaluations assessing their PTSD symptoms, motivations for, barriers to and perceptions of physical activity and health related questions. PTSD symptoms and program attendance are assessed and monitored monthly. Participants will be assessed following program completion for acceptability and feasibility. WarriorWOD organizers, nutrition counselors and peer-to-peer mentors will be interviewed for their experience in implementation.

Results: A total of 30 veterans completed the pre-intervention assessment, the majority (73%) were male. Factors affecting intervention implementation ease or difficulty, participant experience and acceptability of intervention components will be reported following conclusion of the six-month program in March of 2024. Full results will be available April 2024.

Conclusions: Findings from this study will help to evaluate the acceptability and feasibility of intervention components and inform any necessary modifications prior to evaluating the program’s efficacy for reducing PTSD symptoms in veterans through physical activity and nutrition.

Adaptations for dissemination and sustainability of Turtle Island Tales, an evidence-based obesity prevention program for Native American families

Dr. Emily Tomayko¹, Teresa Warne¹, Emily Matt Salois^{1,2}, Darnell Rides at the Door², Jennifer Gauthier³, Lee Ann Bruised Head⁴, Paul Estabrooks⁵, Alexandra Adams¹

¹Montana State University, Bozeman, USA, ²Blackfeet Nation, Browning, USA, ³College of Menominee Nation, Keshena, USA, ⁴Billings Area Indian Health Service, Billings, USA,

⁵University of Utah, Salt Lake City, USA

O.2.17: Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity., Room 215, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: To address the disproportionately high risk for obesity and related chronic diseases among Native American families, we collaboratively developed and demonstrated the efficacy and effectiveness of Turtle Island Tales, a year-long family-level wellness program. The purpose of this presentation is to describe additional adaptations that occurred to increase the generalizability and scalability of the intervention across a wider range of Native American communities.

Methods: After establishing the evidence base, a Native Advisory Group was engaged to further increase traditional knowledge integrated within the program and to improve cultural appropriateness. Program materials were revised collaboratively with this advisory group, a graphic design team, and other stakeholders with a goal to ensure the program could achieve greater reach, be easily adopted and implemented, and be sustained at reasonable cost.

Results/Findings: Adaptation of Turtle Island Tales from an evidenced-based intervention resulted in a program rooted in Native culture yet able to be adapted further to specific community contexts. For example, the Native Advisory Group informed the creation of the characters “Grandma” and “Igmu” (Grandma’s bobcat puppet “grandson”), who are featured throughout program materials and in short films on the program website. This use of a grandmother to model wellness aligns with Native values of elders passing on knowledge for the next generations, and communities can further adapt program materials with stories from their own culture or quotes from a local grandmother. Lessons also were adapted to feature a medicine wheel highlighting the interconnectedness of physical, spiritual, emotional, and mental health. New lessons on emotional regulation and family traditions were developed based on feedback from the advisory group and former participants. Comparisons of pre-post intervention materials provide a clear picture of changes that enhanced generalizability to a broader range of communities.

Conclusions: Even after interventions are designed using community-based, participatory approaches in the efficacy/effectiveness testing phases, additional unique adaptations can be applied to obesity prevention programs in Native American communities that change intervention form but are consistent with initial functioning principles. Culturally, the importance of a local grandmother to increase family and community engagement was a generalizable Native American specific innovation.

Implementation considerations of a family-centered digital health tool in community-based clinics

Dr. May May Leung^{1,2}, Meiqi Zheng², Nicole Brown², Jennifer Furman¹, Juan Pablo Chavez Salas², Yelitza Aguilera², Dr. Rachel Tabak³

¹Tufts University Friedman School of Nutrition Science and Policy, Boston, USA, ²Hunter College School of Urban Public Health, New York, USA, ³Washington University Brown School, St. Louis, USA

O.2.17: Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity., Room 215, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Culturally relevant and meaningful health promoting tools are limited for healthcare providers. Further, real world implementation must be considered during tool development to enhance its effectiveness and potential for dissemination and sustainability. Guided by Practical, Robust Implementation and Sustainability Model (PRISM), this study's purpose was to identify organizational and family perspectives relevant to a family-centered digital health tool's usefulness and potential implementation within community-based clinics.

Methods: Staff from community clinics in New York City, along with children 9-12 years, who attend the clinics and their parent/guardian, participated in semi-structured interviews via video-conferencing. Sessions were recorded and audio files reviewed using inductive content analysis processes to identify and categorize data into common themes related to three PRISM domains.

Results/findings: Participants included healthcare administrators/providers (n=5) and parent/child dyads (n=12). Both healthcare staff and dyads thought the tool would be helpful and appealing to the intended population, particularly as the clinics do not have regular nutritionist access. Parents appreciated its tailored content and as the tool would be directly connected to the clinics they thought it may motivate children to attend their wellness visit. All healthcare staff thought clinic staff would be receptive to the tool as it requires minimal provider effort and addresses important health issues, however, one administrator noted it should be introduced carefully as staff may be "tired of having to learn another new project". A potential external environment barrier noted by healthcare staff was the patients' limited access to technology in the clinics, which may interfere with introducing the intervention. However, implementation and sustainability infrastructure facilitators were highlighted, which included the Electronic Medical Record, where the intervention could be programmed as a pop-up reminder in the system. Also, the coordination across departments could support tool implementation as other staff, such as front desk associates and medical assistants, could also be engaged in the process.

Conclusions: While the tool appears to be useful for our intended population, findings highlight organizational barriers and facilitators that exist when considering implementation in a community clinic setting. Study insights will inform tool adaptation to enhance the potential for implementation in this real-world setting.

A study to co-create and determine the acceptability of intervention content designed to improve breastfeeding self-efficacy and outcomes in Soweto, South Africa

Ms. Helene Theunissen¹, Professor Shane Norris¹, Ms Fiona Bennin¹, Ms Sarah Cantrell¹, Professor Cindy-Lee Dennis², Dr. Alessandra Prioreshi¹

¹SA MRC/Wits Developmental Pathways for Health Research Unit, Department of Pediatrics, Faculty of Health Sciences, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa, ²Lawrence S Bloomberg Faculty of Nursing, Li Ka Shing Knowledge Institute, St. Michael's Hospital, University of Toronto, Toronto, Canada

O.2.17: Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity., Room 215, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Sub-optimal breastfeeding practices related to the early cessation of exclusive breastfeeding, early introduction of complementary foods and mixed feeding are common despite well-documented benefits of breastfeeding. This study aimed to 1) understand maternal perceptions and barriers around breastfeeding, breastfeeding self-efficacy and breastfeeding support and 2) use this information to develop intervention material aimed at improving breastfeeding self-efficacy and thus breastfeeding outcomes, and 3) to determine the acceptability of proposed material.

Methods: Twenty mothers with infants aged between 0 to 3 months, were included in two rounds of FGDs occurring two weeks apart. The first sought to explore mothers' perceptions and barriers around breastfeeding, based on which intervention material was created and presented to mothers in the second round of FGDs to ascertain acceptability. Following the acceptability discussion, participants were asked to complete an acceptability questionnaire exploring the mode, type of content and frequency of delivery that participants would prefer. Qualitative data was analysed using iterative thematic analysis and basic descriptive statistics were used for quantitative data analysis.

Results/Findings: Main barriers to breastfeeding were concerns around transmission of HIV, returning to work or school, impacted social life, lack of support, lactation concerns, lack of access to information and receiving conflicting advice. Intervention material was generally considered acceptable, participants indicating that they enjoyed engaging with the content (86.7%) and that it was easy to understand (80%). Participants preferred engaging with videos (53.3%) or a combination of video content, encouraging messages and infographics.

Conclusions: We were able to assess participant needs and develop acceptable intervention content to be implemented in a low resource setting in South Africa.

Determining the perceived acceptability of an intervention designed to improve health literacy around developmentally appropriate play during infancy, with a community advisory group of mothers, in Soweto, South Africa.

Ms. Fiona Bennin¹, Ms Helene Theunissen¹, Prof Shane Norris¹, Dr Alessandra Pioreschi¹

¹Developmental Pathways for Health Research Unit, University of Witwatersrand, Johannesburg, South Africa

O.2.17: Designing, adapting, and piloting physical activity and nutrition interventions for dissemination and equity., Room 215, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Children require unstructured, unrestricted active play as infants, to encourage positive health, socioemotional and developmental outcomes in life. Certain social and environmental factors in the home setting can limit participation in play, particularly in low resource settings. As caregivers (particularly mothers) are their infants' first teachers, they have the important role of providing opportunities for children to learn through play. However, there are limited interventions encouraging active play and development in low resource settings. This mixed methods, cross-sectional study aimed to test the acceptability of an intervention developed to improve health literacy around play and development with mothers from the Soweto community in South Africa.

Methods: Fifteen mothers with infants aged 0-3 months were included to form a Community Advisory Group (CAG). Two rounds of focus group discussions (FGDs) were conducted to explore the understanding of, and barriers to play and development, and to determine the acceptability of an intervention prototype presented to the participants in the group. The prototype included developmentally appropriate activities which would be delivered to participants as part of the intervention. A further questionnaire was administered to participants one week after the focus group to determine the acceptability of intervention activities which the participants engaged with at home, with their infants. Thematic analysis and descriptive statistics were used to analyse the qualitative and quantitative data, respectively.

Findings: A major theme emerging from the FGDs was around the reported barriers to play, which included limited options for safe outdoor play, overcrowding, insufficient time, limited resources, and conflicting information. Participants suggested that the intervention content be delivered weekly, through a data-free app, in English with subtitles in the local language. Overall, the prototype activities tested at home were deemed acceptable using the seven constructs of acceptability.

Conclusion: The reported barriers, together with a lack of motivation and self-efficacy observed in the participants, guided the researchers to develop intervention content focused on improving health literacy in active play and development, delivered in the form of an interactive mobile app. Future research will develop and test the efficacy of this intervention in a low resource setting in South Africa.

Finnish pre-service classroom teachers' perspectives on food education in primary schools

Mrs. Aija Laitinen¹, Dr. Sanna Talvia², Dr. Leila Karhunen¹, Dr. Tanja Tilles-Tirkkonen¹
¹University of Eastern Finland, Faculty of Health Sciences Department of Public Health and Clinical Nutrition, Kuopio, Finland, ²University of Helsinki, Helsinki, Finland

O.2.18: Diet and Physical Activity Perceptions and Behaviors among Parents and Providers, Room 216, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Purpose: Implementing food education as routine school activity poses a challenge, particularly as current classroom teacher training lacks education on food topics. In primary schools, food education emerges sporadically, most often only as part of a school meal, while its various dimensions may go unrecognized. In our previous study learning objectives and 14 themes for food education were defined by food education experts. That work provides a theoretical basis for evaluating and assessing its comprehensive content areas. This study aims to investigate which of these content areas have an important role in the pre-service classroom teachers' perceptions of food education.

Methods: Seventy-six pre-service classroom teachers at the final stage of their studies engaged in empathy-based storytelling. Twelve of them participated also in research interviews and constitute the participants of the current study. Participants wrote short stories envisioning themselves as food educators in a school setting. Subsequently, research interviews were conducted using co-research approach to discuss preliminary findings of the stories. Transcribed interviews underwent deductive qualitative content analysis.

Results/findings: Participants described various aspects of food education, including personal ('Values and attitudes'), practical ('Eating', 'Food choice'), and intangible themes ('Health and well-being', 'Culture'). Instead, intangible themes, like 'media', and 'nature' as well as a practical theme called 'food preparation' received limited attention.

Conclusions: Not all food education themes defined by food education experts emerge clearly in the pre-service classroom teachers' perceptions of food education. In particular, the importance of the themes 'food preparation', 'media' and 'nature' should be highlighted more in teacher training in the future.

Preschool teachers' movement behavior within and outside of work compared by work status and self-reported exercise.

Dr. John Rech¹, Miss Priyanka Chaudhary², Dr. Danae Dinkel²

¹University Of Nebraska At Kearney, Kearney, USA, ²University of Nebraska at Omaha, Omaha, USA

O.2.18: Diet and Physical Activity Perceptions and Behaviors among Parents and Providers, Room 216, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Background: The application of compositional data analysis (CoDA) is emerging in the field of movement behavior epidemiology. The job demands of preschool teachers and rates of negative health outcomes lend reason to closely investigate their compositional movement behavior; however, currently no research exists. The purpose of this study was to assess preschool teachers' movement compositions within and out of work and compare by teachers' work status (part-time vs. full-time) and self-reported exercise (exercisers vs. non-exercisers) using CoDA.

Method: Preschool teachers (N = 34) were instructed to wear an ActiGraph GT9x accelerometer on their non-dominant wrist and complete an activity log for one week. Raw accelerometer counts were processed and transformed into five movement thresholds (sedentary, inactivity, light physical activity [LPA], moderate-to-vigorous physical activity [MVPA], and MVPA bouts). Previously validated CoDA methods (MANOVA) for 24-hour movement behaviors were used (Gupta et al., 2018). If 95% Confidence Intervals, illustrated by interval plots, didn't contain zero this represented possible significant differences in movement thresholds between groups.

Results: Significant differences in movement composition were found between full- and part-time teachers within work ($p=0.077$), and between exerciser and non-exerciser groups outside of work ($p=0.008$). No significant differences were found by work status outside of work, and by exercise group within work. Full-time teachers spent a greater proportion of their time at work sedentary whereas part-time teachers were found to be more proportionally inactive and accumulate more LPA at work. Exercisers were found to have a greater proportion of time spent in LPA and MVPA bouts outside of work compared to non-exerciser teachers.

Conclusions: Differences in preschool teachers' daily movement seems to be dependent upon amount of time spent at work and performance of exercise. Part-time teachers may spend a lower proportion of their time at work being sedentary and spend more time on their feet engaged in LPA due to the quicker pace of a half-day preschool schedule. Future work should explore how movement composition within and out of work may predict certain health outcomes, and the association between teachers' movement composition and their promotion of positive movement behaviors to children.

Healthy teachers, healthy children: Insights about ECE wellness from a 2023 national survey

Dr. Christina Economos¹, Dr. Sujata Dixit-Joshi¹, Peter Bakun¹, **Dr Erin Hennessy**¹, Gayle Kelly², Katrina Sarson¹, Dr Parke Wilde¹, Dr Susan Roberts¹

¹Friedman School of Nutrition Science And Policy at Tufts University, Boston, USA, ²National Head Start Association, Alexandria, USA

O.2.18: Diet and Physical Activity Perceptions and Behaviors among Parents and Providers, Room 216, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: F. Early care and education

Background: To promote the physical, social, and emotional health of children at the population level, strategies designed to improve the health and well-being of their caregivers are desperately needed. Childcare and Early Childhood Educator's (ECE) nutrition and physical activity behaviors are associated with and influence nutrition behaviors of children in their care. ECEs are among the lowest paying jobs in the US and are at risk of food insecurity, poor eating habits, and physical inactivity. Workplace wellness programs (WWP) may be one strategy to improve the job satisfaction, staff turnover, and health of ECEs, in addition to reducing health care costs for employers. Despite growing evidence, few effective WWP are available for ECEs.

Methods: In April 2023 a nationally representative survey of Head Start (HS) providers was conducted. HS is the largest federally funded ECE program in the United States, employing over 225,000 staff and educators and reaching over 800,00 families. HS educators were recruited via (a) an email from Program Directors listed in the 2021-2022 Head Start Program Report and (b) direct email to a list of National Head Start Association members. In a three-week period, 2,611 educators from all 50 states completed the survey. Descriptive and multivariate regression analyses were performed to assess availability, participation, and interest in WWP.

Findings: About 71% of educators had access to at least one WWP, the top three programs were general health education and promotion, stress management, and healthy lunch and snacks. Among those with access to WWP, 72% participated in at least one program, with highest participation in general health and education programs followed by nutrition related programs. Among the 28% without WWP access, 98% expressed interest in one or more programs, the top three programs of interest were access to healthy lunch and snack options physical activity, and stress management.

Conclusions: WWP are offered to three-quarters of HS educators nationwide with varying rates of participation by program type. Additionally, interest in WWP not offered remains high. Findings will inform the design and implementation of a pilot RCT in Boston examining ways to improve participation in a health and wellness WWP.

Piloting the Appetite to Play for Parents Facilitator Training

Dr. E. Jean Buckler^{1,2}, Mr Chris Wright¹, Ms. Lorna Simms³, Dr. Angela Low³

¹University Of Victoria, Victoria, Canada, ²Institute on Aging and Lifelong Health, University of Victoria, Victoria, Canada, ³Child Health BC, Vancouver, Canada

O.2.18: Diet and Physical Activity Perceptions and Behaviors among Parents and Providers, Room 216, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The development of health behaviours (physical activity, food and feeding) begins in early childhood (0-5 years), and community resources such as library times, play groups, and other non-enrolled programs are underutilized to support parental knowledge and confidence in child health behaviours. Community leaders in these services may lack training to facilitate parent knowledge and confidence in physical activity or food and feeding. The purpose of this study was to pilot an online train-the-trainer program in physical activity, physical literacy, and food and feeding for community leaders in parent and family support (e.g. family support workers, librarians, parent group facilitators) to determine capacity to improve community knowledge and confidence in educating parents about these topics.

Methods: We recruited community leaders from across British Columbia Canada, who work regularly with families to pilot an online facilitator training to increase their knowledge and confidence in educating parents on physical activity, physical literacy, and food and feeding. Community leaders pre- and post-training surveys to capture their knowledge and confidence in these health behaviours. The intervention consisted of a 5-hour online, self-paced modules on the topics of facilitating workshops, physical activity and physical literacy, risky play, games and activities, food literacy, positive mealtimes, and meal planning.

Results/findings: Community leaders (n=30, all female, mean age= 43.5 years) had significant increases in knowledge (p<0.001) and confidence (p=0.009) in physical activity and physical literacy and knowledge (p<0.001) and confidence (p<0.001) in food and feeding. Participant satisfaction with content was high (mean=4.17/5) and participants reported that content was useful to them (mean=4.10/5).

Conclusions: Using an online portal to train community leaders to support parents in adopting evidence-based physical activity, physical literacy, and food and feeding practices shows promise in improving community leader knowledge and confidence in these areas. Continued research is needed to understand behaviour change at the parent level, and to determine effectiveness of scaling-up the training.

A comprehensive approach for adapting and evaluating a Home Food Inventory (HFI) to meet the cultural needs of English- and Spanish-speaking populations and those with low literacy

Dr. Jayne Fulkerson¹, Dr. Mary Hearst¹, Dr. Melissa Laska¹, Dr. Leslie Lytle², Dr. Uriyoan Colon-Ramos³, Sarah Friend¹, Dr. Aysegul Baltaci¹, Sandra Nikolov¹, Mariana Villegas Ramirez¹
¹University of Minnesota, Minneapolis, USA, ²University of North Carolina, Chapel Hill, USA, ³George Washington University, Washington DC, USA

O.2.19: Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements, Ballroom B, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Development of culturally-appropriate population-level interventions are critical to improve health equity. Yet, such research is often stymied by the lack of measurement tools that are specific, appropriate, and valid for diverse populations. Few valid home food environment assessment tools exist and none have been validated with large, immigrant or low-literacy populations. In 2008, our team developed and validated a Home Food Inventory (HFI) to assess the healthfulness and obesity risk of home food environments using a checklist format. The HFI showed good reliability and construct validity and it has been used extensively in the field. Yet, the original HFI was developed for English-speaking populations, is quite lengthy and is paper-based. We will present our process for developing an accessible home food environment assessment toolkit for use in English- and Spanish-speaking populations and describe our pilot findings.

Methods: The HFI-core was developed via secondary analysis of HFI and other data from four large studies. English and Spanish HFI-core versions were created and contextualized with advice from a local and multicultural community advisory board. Then we conducted “think aloud” interviews for cognitive testing (n=11) and pilot testing (n=40) with participants to assess usability, satisfaction, and criterion validity. The toolkit will include a revised paper version (HFI-core) and multi-media electronic tools (eHFI) targeting foods known to impact diet-related health.

Results: The number of food items in the HFI-core was reduced by 24% from the original HFI (from 175 to 134 items). “Think aloud” interviews informed use of language and instructions. Development of the Spanish HFI-core required careful consideration of local name variations of foods. Pilot findings showed high satisfaction (93% of participants were satisfied/very satisfied with the HFI-core). Average completion time was 17 minutes. Criterion validity varied across food groups and slightly by language. The HFI-core was revised and retested until acceptable criterion validity levels were reached (correlations>.60) in both languages.

Conclusions: The HFI-core demonstrated high participant satisfaction and reduced response burden. This preliminary work sets the stage to advance diet-related health research at a time when our world is becoming more globally-integrated, yet significant health inequities exist.

Optimizing Wearability: Assessing Feasibility and Acceptability of the PATCH device for Multichannel Heart Rate and Accelerometry Measurement in Children

Dr. Bridget Armstrong¹, Hannah Parker¹, Michal Smith¹, Jonas McAninch¹, Sydney Hill¹, Sahdev Swarnakar¹, Jacob Vaught¹, Sarah Burkart¹, R. Glenn Weaver¹, MVS Chandrashekhar¹
¹University of South Carolina, Columbia, United States

O.2.19: Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements, Ballroom B, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Combining heart rate and accelerometry data offers more accurate energy expenditure estimates than using either measurement individually. Yet, existing dual-measurement devices aren't child-friendly, leading to low compliance due to their distracting and uncomfortable design. Additionally, the use of proprietary processing methods in these wearable devices prevents true validation. Consequently, our team has developed an open-source PATCH (Platform for Accurate Tracking of Children's Health) device tailored to track heart rate and movement in children aged 3-8. Our study evaluated various PATCH casing materials and body positions to determine the feasibility of deploying the PATCH in free-living studies with children.

Methods: We recruited a convenience sample of 60 children ages 3-8 years (mean age = 5.98 years, ± 1.70 , 47% female; 72% White). We tested six material and placement combinations, termed 'waves,' including polycarbonate, thermoplastic polyurethane (TPU), and medical-grade silicone elastomer on either the chest or lower back. Over two weeks, parents completed daily surveys to document the children's use of the PATCH and to rate any issues such as pain, redness, itching, rashes, or tenderness on a scale from 0 (none) to 4 (severe). ANOVAs were used to examine differences by wave.

Results: Wave 3 (polycarbonate, lower back) had the highest wear (Mean = 12.40 days, SD = 1.78) and wave 5 (TPU, chest) had the lowest (Mean = 5.14 days, SD = 6.59). Waves 1 (polycarbonate, chest), 4 (polycarbonate, back) and 6 (silicone, chest) all had ≥ 10 days of wear on average ($>70\%$ compliance). Wave 2 (silicone, chest) had an average of 9 days of wear. Participants in wave 5 wore the PATCH for significantly fewer days compared to other waves ($f(5,53) = 3.51, p < .01$) and reported significantly higher rates of rashes ($f(5,54) = 4.27, p < .01$). There were no other differences by wave for days of wear, itch, redness, pain, or tenderness ($p > .05$).

Conclusion: Placing an adhesive PATCH device on either the chest or lower back is a practical option for children. Considering the materials, TPU seems unsuitable, whereas polycarbonate or silicone casings could be viable choices.

Methodology for Assessing Infant Movement Using Accelerometers: A Scoping Review

Dr. Danae Dinkel¹, Dr. John Rech, Ms. Priyanka Chaudhary, Mr. Rama Thelagothoti, Dr. Jon Youn, Dr. Hesham Ali, Dr. Brian Knarr

¹University of Nebraska at Omaha, Omaha, USA

O.2.19: Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements, Ballroom B, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Measuring infants' (0-2 years) physical activity is a growing area of research globally. Accelerometers have been widely used to measure older children's and adults' physical activity. An increasing number of studies have used accelerometers as a way to measure infant physical activity, which has resulted in the application of a variety of methods. To date, no existing study has focused specifically on synthesizing the various accelerometer methodologies in detail (e.g., type of accelerometer, wear location and time, data processing, etc.) used to measure daytime movement outcomes of interest among infants. Therefore, the purpose of this scoping review is to synthesize the published literature on accelerometer methodology to measure daytime physical activity among infants.

Methods: A systematic search of five online databases using carefully selected key terms was conducted to compile relevant literature. The results of the online database searches were screened for inclusion in the scoping review. In total, 105 articles met the inclusion criteria of using accelerometers to measure infants' physical activity. The methodologies used in included studies were categorized by age groups, <1 month, 1-6 months, >6-12 months, >12-18 months, >18-24 months, and longitudinal (i.e., multiple measurements taken across multiple age groups).

Results/findings: Accelerometry methodologies (e.g., wear location and time, number of devices, device initialization) and study design qualities (e.g., outcome of interest and location of data collection) varied widely between and within the various age groups. Accelerometer brand or type of device demonstrated greatest variation across included studies. However, ActiGraph devices to measure physical activity within free-living environments were the most common.

Conclusions: This review provides evidence of the need for researchers to ensure the methodology used is reported in detail in order to help develop methodology that can accurately assess infant daytime movement.

Use of BMI metrics for outcomes of a community-based Family Healthy Weight Program

Dr. Bryce Abbey¹, Dr. Kate Heelan, Dr. Jennie Hill, Dr. Todd Bartee, Dr. Paul Estabrooks
¹University of Nebraska at Kearney, Kearney, USA

O.2.19: Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements, Ballroom B, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Using BMI z-scores (zBMI) to illustrate changes in adiposity in children with severe obesity may be less accurate due to the compression of z-scores corresponding to extremely high BMI values into a very narrow range (Freedman et al., 2017). Therefore, reporting the BMI percent of the 95th percentile (%BMIp95) has been recommended when evaluating BMI in children with moderate or severe obesity. The purpose of this research was to evaluate the various BMI metrics for changes in outcomes for a community-based Family Healthy Weight Program (FHWP).

Methods: 90 children between 6-12 years of age qualified to participate in a FHWP based on a BMI \geq 95th percentile for age and gender. zBMI and %BMIp95 were calculated at baseline, after a 12-week intervention, and 6-month follow-up. Dual energy X-ray absorptiometry (DXA) was used to measure changes in body composition including fat mass (FM).

Results: 75 children (9.46 ± 1.74 years old) completed 12-week assessments and 47 completed 6-month assessments. 40% of children had severe obesity (%BMIp95: 140.5 ± 17.6). Change in FM at 12-weeks and 6-months had a strong correlation with changes in both zBMI and %BMIp95 for children with moderate obesity (Δ 12wk: $r=0.75$ ($p<0.05$), $r=0.81$ ($p<0.05$); 6mo: $r=0.82$ ($p<0.05$), $r=0.86$ ($p<0.05$)). In addition, change in FM had moderate correlation with changes in both zBMI and %BMIp95 for children with severe obesity at 12-weeks (Δ 12wk: $r=0.52$ ($p<0.05$), $r=0.61$ ($p<0.05$)) and a strong correlation at 6-months (Δ 6mo: $r=0.71$ ($p<0.05$), $r=0.87$ ($p<0.05$)).

Conclusion: Although baseline correlations were weak between FM and zBMI ($r=0.19$, $p>0.05$) and strong between FM and %BMIp95 ($r=0.73$, $p<0.05$), strong correlations were also found with improved body composition changes for both change in zBMI and %BMIp95. Due to the nature of the community-based program, severe obesity among the highest range (%BMIp95 >160) may be underrepresented in these data. Our results indicate that the use of zBMI or %BMIp95 may be options when evaluating change for child participants in a FHWP.

Preliminary validation of the PATCH: An open-source device designed to measure energy expenditure among children aged 3-8 years

Dr. MVS Chandrashekar¹, Michal Smith¹, Hannah Parker, Jonas McAninch¹, Sahdev Swarnakar¹, Sydney Hill¹, Jacob Vaught¹, Dr. Rahul Ghosal¹, Dr. R. Glenn Weaver¹, Dr. Bridget Armstrong¹

¹University of South Carolina, Columbia, United States

O.2.19: Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements, Ballroom B, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Background: A combination of heart rate (HR) and accelerometry provides better estimates of energy expenditure (EE) than either metric alone. However, existing devices are not designed for children and may be distracting or uncomfortable. Furthermore, data from existing devices is often closed source, meaning that it cannot be truly validated for children. Therefore, we developed the PATCH (Platform for Accurate Tracking of Children's Health), an open-source device designed to measure both HR and acceleration. The current study aimed to examine initial validity of the PATCH to measure children's EE.

Methods: Participants for the current study were 18 children aged 3-8 (mean age 8.6yrs, 50% Female, 67% White). Children participated in a semi-structured protocol ranging in intensity from sedentary (e.g., using an iPad) to vigorous (e.g., running). The PATCH was affixed to the chest using a spun lace adhesive. PATCH HR was measured using photoplethysmography while acceleration was measured using a 3-axis accelerometer (± 16 G). Indirect Calorimetry was used to measure oxygen uptake rate (VO₂/min) normalized for body weight (kg). All data were aggregated at the minute level. We used cross-sectional time series (CSTS) models to predict minute-by-minute EE from a combination of minute level HR and acceleration, participant characteristics (biological sex, age, weight, height) and significant interactions. Models included a random intercept to account for the nested nature of the data. Model fit was assessed using mean bias, mean absolute error (MAE), root mean squared error (RMSE), mean absolute percent error (MA%E) and variance explained (R²). We used Lin's concordance correlation coefficient (CCC) to assess the absolute agreement between PATCH indirect calorimetry.

Results: Compared to indirect calorimetry, PATCH MAE for VO₂ uptake rate was 1.54mL/min/kg (95% CI 0.1 to 5.0), RMSE was 2.61mL/min/kg, and MA%E was 11.1% (95% CI 0.8 to 31.6%). 95% limits of agreement for mean bias were -2.8mL/min/kg and 3.5mL/min/kg. The CSTS model predicted 86.2% of the variance in EE. Lin's CCC was >0.9 indicating near perfect agreement.

Conclusions: Upon preliminary assessment, the PATCH device is a valid measure of children's EE. Additional validation in free living conditions is needed to generalize beyond a laboratory setting.

Advancing objective mobile device use measurement in children ages 6-11 through built-in iPad sensors: a proof-of-concept study

Ms. OLIVIA FINNEGAN¹, Dr. Robert Glenn Weaver¹, Mr. Hongpeng Yang¹, Mr. James W White¹, Dr. Srihari Nelaukditi¹, Mr. Zifei Zhong¹, Dr. Rahul Ghosal¹, Dr. Yan Tong¹, Dr. Aliye Cepni¹, Dr. Elizabeth L Adams¹, Dr. Sarah Burkart¹, Dr. Michael W. Beets¹, Dr. Bridget Armstrong

¹University Of South Carolina, Columbia, USA

O.2.19: Advancements in Methods and Assessments: From Cultural Adaptations to Objective Measurements, Ballroom B, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Mobile devices (e.g., tablets, smartphones) have been rapidly integrated into the lives of children and have impacted how children engage with digital media. The portability of these devices allows for sporadic, on-demand interaction, thus reducing the already tenuous accuracy of self-report estimates of mobile device use. Passive sensing applications objectively monitor time spent on a given device for greater accuracy but are unable to identify who is using the device. Behavioral biometric authentication, using embedded mobile device sensors to authenticate users, could address this significant limitation. This proof-of-concept study examined the preliminary accuracy of machine learning models trained on iPad sensor data to identify the unique child user of an iPad device.

Methods: Data were collected on an opportunistic sample of nine participants (8.2 ± 1.8 years, 5 female) as part of two larger studies during the sedentary portion of their semi-structured physical activity protocols. SensorLog app was downloaded onto study iPads and collected data from the accelerometer, gyroscope, and magnetometer sensors while the participant interacted with the iPad. Five machine learning models, Logistic Regression (LR), Support Vector Machine, Neural Net (NN), k-Nearest Neighbors (k-NN), and Random Forest (RF) were trained using 57 features extracted from the sensor output to perform multi-class classification. A train-test split of 80%-20% was used for model fitting. Model performance was evaluated using F1 score, accuracy, precision, and recall.

Results/findings: Model performance was highly satisfactory, with F1 scores ranging from 0.75 to 0.94 and precision ranging from 0.77 to 0.94. RF and k-NN had the highest performance across metrics, with F1 scores of 0.94 for both models. The highest performing features of the RF model were maximum yaw, maximum roll, and mean yaw, which are derived from rotation about the Y-axis (yaw) and the Z-axis (roll).

Conclusions: This study highlights the potential of using embedded mobile device sensors to continuously identify the user of a device in the context of children's screen time measurement. Future research should explore the performance of this technology in larger samples of children across both standardized study conditions, as well as in free-living environments.

Cross-sectional Associations of Food Insecurity with Mental Health and Cardiometabolic Health at Baseline among Elementary School Teachers

Ms. Mackenzie Senn¹, Mr. Miao Tang¹, Ms. Angela Zieba¹, Dr Ru-Jye Chuang¹, Dr. Nalini Ranjit², Dr. Courtney Byrd-Williams², Dr. William Perkison¹, Ms. Jill Cox³, Ms. Katherine French³, Mr. Mike Pomeroy⁴, Ms. Azar Gaminian⁴, Dr. Shreela Sharma¹

¹UTHealth Houston School of Public Health, Houston, USA, ²UTHealth Houston School of Public Health in Austin, Austin, USA, ³Penn State University, State College, USA, ⁴Brighter Bites, Houston, USA

O.2.20: Navigating Food Security and Food Access through experimental and observational studies, Room 212, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: F. Early care and education

Purpose: The health and well-being of teachers are essential to a child's early learning and development. However, teachers are rarely the subject of health research. The objective of is to examine the cross-sectional associations between food insecurity, mental health, and cardiometabolic health at baseline among elementary school teachers.

Methods: 28 elementary schools in Houston, Texas, were recruited for the Nurturing Healthy Teachers study, an intervention targeting food security and diet among elementary teachers. Baseline data were obtained from 337 teachers from November 2022 to April 2023. The primary outcome was food insecurity. Secondary outcomes included mental and metabolic health. Metabolic markers and skin carotenoid levels were assessed during in person assessments (finger-stick blood measure for HbA1c, weight measurement, blood pressure measurement, and Veggie Meter), while all other measures were obtained through questionnaires. Descriptive statistics, correlations, and regression modeling were used to examine associations among these variables.

Results: Prevalence of food insecurity was 32% in this sample, which was mostly female, majority Hispanic, and had an average age of 42.5 years. Levels of food insecurity were higher among Hispanics compared to White or other racial groups. Compared to food secure teachers, teachers with food insecurity had higher levels of moderate depression (29% vs 34%, $p < 0.001$), moderate anxiety (12% vs 16%, $p = 0.105$), and lower levels of well-being (59% vs 49%, $p = 0.241$). Cardiometabolic outcomes (HbA1c levels, blood pressure, weight, and BMI) were comparable across food secure and food insecure teachers. HbA1c levels and hypertension did not differ by food insecurity level, but BMI did differ ($p = 0.008$).

Conclusions: Teachers are susceptible to poor diet quality, a sedentary lifestyle, and stress stemming from food insecurity. These results may provide guidance for intervention that can help combat the health and well-being of teachers facing food insecurity.

Changes in Food Availability Predicting Changes in Household Food Security in Majority Hispanic Households with Low Income

Ms. Keally Haushalter¹, Ms. Erin Hudson, Ms. Jennifer Morrison, Dr. Jaimie Davis
¹University Of Texas At Austin, Austin, USA

O.2.20: Navigating Food Security and Food Access through experimental and observational studies, Room 212, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Low food availability (FA) has been associated with food insecurity (FI). Further, FI has been linked with lower availability and intake of healthy foods and beverages. However, most studies analyze FI and FA cross-sectionally. Given that FA and FI change over time, this study assessed how changes in FA were associated with changes in FI over nine months.

Methods: This study is a secondary analysis from TX Sprouts, a school-based gardening, nutrition, and cooking randomized control trial that was conducted in 16 elementary schools serving primarily Hispanic families with low income. At baseline and follow-up, approximately nine months later, parents completed questionnaires that included questions regarding FI and FA. FI was assessed using the 18-item USDA Household Food Security Survey Module. Scores ranged from 0-18, in which a higher score indicates higher FI. FA was measured using the FA commonly used questionnaire which assesses in-home availability of seven food and beverage items: 100% fruit juice, vegetable juice, fresh vegetables, canned, frozen, or dried vegetables, salad, cut-up vegetables in a place a child could access, and soft drinks or sugar-sweetened beverages. A composite score of all items was also created. Parents indicated on a 4-point Likert-type scale how often the item was available in their household, with a higher score indicating the item being available more often. Multivariable linear regressions assessed the relationship between changes in FA and changes in FI, adjusting for child ethnicity, age, sex, intervention, and baseline FI and FA.

Results: The analytic sample included 861 participants. A one-point increase in the availability of fruit juice ($\beta=-0.14$ 95% CI: -0.27, -0.02, $P=.028$), vegetable juice ($\beta=-0.21$ 95% CI: -0.34, -0.08, $P=.002$), and fresh vegetables ($\beta=-0.30$, 95% CI: -0.46, -0.14, $P<.001$), and the composite score ($\beta=-0.06$ 95% CI: -0.10, -0.01, $P=.01$) were all significantly associated with a decrease in FI. There were no associations between a change in availability and FI for the other items.

Conclusions: This research suggests that increasing the availability of fruits and vegetables may be associated with an increased sense of food security, emphasizing the importance of the accessibility of healthy options.

Home food environment of low-income households with elementary-aged children in the United States before and during the COVID-19 pandemic – A serial cross-sectional analysis

Ms. Nivedhitha Parthasarathy¹, Dr. Nalini Ranjit², Dr. Christine Markham¹, Dr. Ru-Jye Chuang³, Mr. Mike Pomeroy⁴, Ms. Jacqueline Noyola⁴, Dr. Shreela V. Sharma⁵

¹Department of Health Promotion and Behavioral Sciences, University of Texas Health Science Center at Houston (UTHealth) School of Public Health, Houston, Houston, USA, ²University of Texas Health Science Center at Houston (UTHealth) School of Public Health, Michael & Susan Dell Center for Healthy Living, Austin, Austin, USA, ³Center for Health Equity, Department of Health Promotion and Behavioral Sciences, The University of Texas Health Science Center at Houston School of Public Health, Houston, Houston, USA, ⁴Brighter Bites, , USA, ⁵Center for Health Equity, Department of Epidemiology, UTHealth Houston School of Public Health, Houston, USA

O.2.20: Navigating Food Security and Food Access through experimental and observational studies, Room 212, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The COVID-19 pandemic resulted in school closures and financial crisis which may have impacted the home food environment. We examined the changes in the home food environment (HFE) of low-income households with elementary-aged children during the COVID-19 pandemic, and the interaction effect of household socioeconomic disadvantage (SED) and time period on the HFE component variables.

Methods: We conducted a serial cross-sectional analysis on data obtained from families enrolled with a national non-profit, Brighter Bites across U.S. cities (Houston, Austin, Dallas, Southwest Florida, and Washington DC). Data from four years, pre-pandemic: 2018,2019 (N=4410); early pandemic: 2020 (N= 1370); and mid-pandemic :2021 (N= 1384), were analyzed. Home food environment component variables included fruit/vegetable (FV) availability, frequency of cooking, family mealtime practices, parent communication on nutrition with child, and parental modeling of healthy behaviors. In order to estimate household SED, parent employment, parent education, food insecurity, and participation in government programs were summed to form a composite measure. This score was categorized into low, medium, and high SED. Mixed effects regression models we used to examine the interaction effects of household SED and time period (pre, early, and mid-pandemic) on home food environment.

Results: Trend analysis showed a significant increase in home food environment scores from pre to early/mid pandemic period, after adjusting for confounders. Upon examining the association between home food environment and household SED in data pooled across the three time periods (2018-2021), we found that parents in the high SED group (AOR: 1.45, $p < 0.001$) had greater odds of food preparation at home as compared to those in low SED group. Similarly, parents in medium (AOR: 1.24, $p: 0.02$) and high SED groups (AOR: 1.30, $p:$

0.001) had a greater odds of eating meals together with children as compared to parents in low SED group. No significant interaction effects of SED and time period were demonstrated.

Conclusion: The findings suggest that this sample experienced improvements in home food environment during the pandemic which may indicate adaptive changes in the low-income households. However, the observed associations between HFE and SED highlight nuanced dynamics, thus warranting further exploration.

Evaluating the impact of a produce prescription program among low-income overweight and obese children and their families.

Ms. Mallika Mathur¹, Dr. Allison Marshall³, Dr. Christine Markham¹, Dr Ru-Jye Chuang¹, Dr. Prajakta Yeragi¹, Dr. Vinay Prabhu¹, Dr. Sandra McKay¹, Mr. Mike Pomeroy², Ms. Azar Gaminian², Dr. Shreela Sharma¹

¹UTHealth Houston, Houston, USA, ²Brighter Bites, Houston, USA, ³Tulane University Translational Science Institute, New Orleans, USA

O.2.20: Navigating Food Security and Food Access through experimental and observational studies, Room 212, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: To evaluate the effectiveness of two produce prescription strategies (at-home delivery of fresh fruits and vegetables, and grocery store vouchers to purchase fruits and vegetables) compared to a waitlist control in improving obesity-related health outcomes and dietary behaviors among a cohort of Medicaid-eligible children.

Methods: The Brighter Bites/UT Physicians Produce Prescription Program uses a comparative effectiveness RCT design to evaluate two produce prescription strategies to improve obesity-related health outcomes and dietary behaviors among 150 low-income children aged 5-12 years with overweight/obesity from two pediatric clinics in Houston, Texas. Participants are randomized into one of three arms: 1) Bi-weekly \$25 produce vouchers to local grocery stores (n=50), 2) Bi-weekly produce delivery (n=50), or 3) waitlist controls (n=50). Main outcome measures are child BMI z-scores, blood pressure, hemoglobin A1c, liver and lipid panels. Secondary outcomes include food insecurity and diet quality. Measures were collected at baseline and are currently being collected at post. Descriptive statistics and group differences for baseline data were analyzed using chi-square and ANOVA analysis. Intention-to-treat and per-protocol analysis will be conducted to assess impact of the interventions.

Results/Findings: Our study sample had a mean age of 9 years, 47.9% Hispanic 45.3% AA, with a mean BMI z-score of 2.1, indicating the majority of the participants had obesity. All participants had a BMI percentile value above the 85th percentile. 7.5% of participants had a hemoglobin A1C value above the normal range, 18.0% had elevated liver panels and 85% had elevated lipid panels. Total fruit and vegetable intake among children was 0.66 servings per day, with 61.5% reporting being food insecure and 25.7% reporting being nutrition insecure at baseline. There were no significant differences between the three groups. Post outcome data collection and analysis will be completed by Spring 2024. We will present the results of outcome analysis of the CE RCT.

Conclusions: Baseline results indicate a need for produce prescription programs among this population due to the high household food insecurity, high prevalence of obesity and related cardiometabolic outcomes among children. This study will demonstrate the impact of the produce prescription strategies on pediatric health and behavioral outcomes in at-risk populations.

Policy, systems, and environmental strategies in rural communities to support food security: A Delphi study

Ms. Shelly Palmer¹, Ms. Emily Shaw¹, Ms. Paloma Lima Dos Santos^{1,2}, Dr. Carmen Byker Shanks¹

¹Gretchen Swanson Center for Nutrition, Omaha, United States, ²Ohio University, Athens, United States

O.2.20: Navigating Food Security and Food Access through experimental and observational studies, Room 212, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: In the United States, food insecurity rates are greater in rural communities as compared to more urban areas. Policy, systems, and environmental (PSE) strategies can be applied to address root cause issues of food insecurity in rural areas by making changes that support healthy communities. The objectives of this study were to 1) co-develop PSE strategies with family participants and practitioners to support food security in rural communities and 2) prioritize which PSE strategies will make the greatest impact in rural communities to support food security.

Methods: The Gretchen Swanson Center for Nutrition partnered with Share Our Strength for this study in rural communities of Arizona, Georgia, Kentucky, Michigan, and Texas. First, interviews were conducted with practitioners serving rural communities and families living in rural communities to co-develop PSE strategies. A list of 13 PSE strategies and activities to address food insecurity were developed. Next, using a two-step Delphi process four participant groups (practitioners, family participants speaking English, family participants speaking Spanish, and Share Our Strength staff) prioritized the acceptability, appropriateness, and feasibility of each strategy. Finally, a total of four focus groups were conducted (one with each participant group) to discuss areas of consensus or no- consensus of the priorities within each group.

Results/findings: PSE strategies that arose from the interviews were wide ranging, from making it easier for people to sign up for programs to expanding employment to increasing access to affordable health care. The three PSE strategies with the greatest support from the survey and those which mostly reached consensus during the focus groups to prioritize were: make it easier to sign up for programs, make people more aware of services, make it trouble free for people to use programs.

Conclusions: This study underlines the need for multi-pronged approaches to align policies, systems, and environments to support food security in rural communities. When planning for and implementing the PSE strategies, it is important to leverage assets and work with challenges to tailor programming to local communities.

Impact of de-implementing universal free school meals

Dr. Juliana Cohen^{1,2}, Dr. Michele Polacsek³, Dr. Marlene Schwartz⁴, Dr. Monica Zuercher⁵, Dr. Deborah Olarte¹, Dr. Leah Chapman¹, Dr. Lorrene Ritche⁵, Dr. Wendi Gosliner⁵

¹Merrimack College, North Andover, United States, ²Harvard TH Chan School of Public Health, Boston, USA, ³Center for Excellence in Public Health, University of New England, Portland, USA, ⁴Rudd Center, Harford, USA, ⁵Nutrition Policy Institute, Division of Agriculture and Natural Resources, University of California, Oakland, USA

O.2.20: Navigating Food Security and Food Access through experimental and observational studies, Room 212, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: G. Children and families

Purpose: To examine how school districts are impacted by de-implementing universal free school meal (UFSM) policies versus continuing UFSM with state-level policies, including school meal participation, stigma, revenues and unpaid meal debt, paperwork/administrative burden, and staffing challenges.

Methods: All School food authorities (SFAs) in 8 states (n=5 states that had de-implemented UFSM and n=3 with state-level UFSM policies) were invited to complete an online survey (developed in collaboration with key stakeholders) during the 2022-23 SY. Descriptive statistics and mixed effects logistic regression models with state as a random effect were used to examine differences by UFSM status (de-implementing versus continuing), adjusting for school demographic characteristics (urbanicity, enrollment size, and school poverty levels [e.g., percent of students eligible for free or reduced-price meals [FRPM]]).

Results: A total of 941 SFAs completed the survey (response rate ranging from 9-34% across the participating states). SFAs in states that de-implemented UFSM were more likely to report a decline in school meal participation (OR 14.5; 95%CI 4.0-52.2; p=0.0001) and foodservice revenues (OR 4.6; 95%CI 2.0-10.7; p=0.0001) compared with SFAs in states that continued UFSM. However, states that de-implemented UFSM reported lower foodservice staffing challenges (OR 0.7; 95%CI 0.5-0.9; p=0.02), potentially due to the lower participation rates. Conversely, de-implementation was associated with SFAs reporting an increase in unpaid meal debt (OR 47.3; 95%CI 8.3-269.4; p=0.0001) and an increase in stigma for students from low-income households (OR 4.3; 95%CI 1.5-12.6; p=0.01). There were no significant differences in reported paperwork or administrative burden; this may be in part due to the need to collect school meal applications even in the presence of statewide UFSM policies to receive federal reimbursement for FRPM school meals served.

Conclusions: Overall, the results of this study suggest that de-implementing UFSM is adversely impacting SFAs and their students. Policies to re-implement UFSM could help reduce stigma and meal debt, as well as provide more students access to healthy meals and better nutrition. Strategies to support states with UFSM – including more streamlined methods to obtain household eligibility for FRPM and ways to address current staffing challenges/shortages – are needed.

Application of Behavioral Theory in Cooking Interventions Targeting Dietary Intake in Adults: A Systematic Review

Ms. Anna Claire Tucker¹, Dr. Margaret Raber², Dr. Alice Ammerman³, Dr. Julia Wolfson¹
¹Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, ²University of Texas MD Anderson Cancer Center, Houston, 77030, ³University of North Carolina at Chapel Hill, Chapel Hill, 27599

O.2.21: Investigating the Impact of Theory-Based Interventions on Diet and Movement Behaviors, Room 213, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Cooking interventions to improve dietary intake continue to grow in popularity. Studies of cooking interventions often claim to be informed by behavioral theory. However, it is unclear how behavioral theory is used in the development, evaluation, and interpretation of these interventions. Understanding how theory is used is crucial to revealing how interventions may impact behavior change, as well as informing development of future interventions. This systematic review aimed to understand how behavioral theory is used in the development, evaluation, and interpretation of theory-based cooking interventions, and describe the impact of these interventions on dietary intake among adults.

Methods: We searched PubMed, Scopus, and CINAHL for articles published between January, 2000 to March, 2023. Both randomized and non-randomized cooking interventions for adults ages 18 years and older were included in this review if behavioral theory was mentioned. We extracted study characteristics and outcomes related to dietary intake and cooking behavior. We applied the Theory Coding Scheme (TCS) to assess theory use. Given that measures used to assess dietary intake varied greatly, we summarized results narratively and using descriptive statistics where appropriate.

Results: We identified 7,846 unique articles, of which 31 articles met inclusion criteria. On average, studies met less than 6 out of 17 criteria from the TCS. Forty-five percent of studies were based on a single theory, and 84% were informed by Social Cognitive Theory. Only twelve studies (39%) clearly identified specific theory constructs targeted by the intervention and provided evidence that these constructs were associated with behavior change. The majority (65%) of cooking interventions had a positive impact on at least one measure of dietary intake. However, just over half of studies (55%) measured cooking behavior, and less than half of these studies reported a positive impact on cooking behavior (41%).

Conclusion: Though use of behavioral theory is generally regarded as an important step in the development of behavioral interventions, overall implementation of theory was poor across studies. To better inform intervention development, future studies should link cooking intervention techniques with theoretical constructs, and evaluate whether changes in constructs mediate improvements in both cooking behavior and dietary intake.

Moderating impacts of community-built environments on a behavior intervention program for older adults in Brazil

Mrs. Natalia Santos¹

¹University Of Nebraska Medical Center, Omaha, USA

O.2.21: Investigating the Impact of Theory-Based Interventions on Diet and Movement Behaviors, Room 213, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: To verify if the benefits obtained in behavioral variables by intervention participants of the “Active Life Improving Health” (VAMOS) program were associated with regional access to places for physical activity and healthy eating.

Methods: Street network buffer areas of 500- and 1,000-meters were created around residences of VAMOS’ participants, healthy adults older than 18 years old (n=125). Built environment's exposure variables were accounted for by the number of physical activity and healthy eating places in each buffer, and geo-referenced in Google Earth. Behavior variables focus on the primary health outcomes of VAMOS (i.e., sedentary behavior, moderate to vigorous physical activity, quality of life). We used the following definitions for built environment variables: • Leisure Public Spaces (LPS): free open spaces which favor physical activity (i.e., parks, seaside coastal region, open gyms) • Food retail: stores that sell a mix of both in-natura (i.e., fresh fruits and vegetables) and processed foods • Walkability Index: pedestrian-friendliness considering sidewalk presence, street connectivity, access to public transportation, and proximity to amenities. A Geodatabase for the development of the walkability index was created in ArcGIS Pro 3.1.3. A choropleth map was created using Manual Intervals to classify areas of negative and positive walkability (classes=2).

Results: There are significant interactions on how the presence of Leisure Public Spaces at 500m decreased sedentary behaviors ($p= 0.046$) and waist circumference ($p=0.038$), and increased physical activity levels ($p=0.001$) at participants from baseline to the end of the program at 12-weeks. Walkability indices did not impact behavior change for study participants. Geospatial analysis of Walkability Index within street network buffers of 500- and 1,000-meters (figure 1).

Conclusions: Having Leisure Public Spaces and food retailers that sell healthy foods closer to participants can influence positive behavior change. This study found more significant changes when built environment factors were within a 500m buffer, especially with physical activity changes around spaces LPS. Walkability levels did not directly impact behavior change, which could be a result of how participants perceive walkability in their communities, and what their threshold is for considering spaces unfit or unsafe for walking. Future studies should consider locations post-COVID and assess perception of participants on how they move around their communities.

Examining the gap between physical activity intention and next-day moderate-to-vigorous physical activity: The moderating role of exercise preference and tolerance

Ms. Kristen Moore¹, Ms. Lori Hatzinger¹, Mrs. Rachel Crosley-Lyons¹, Dr. Bridgette Do¹, Dr. Shirlene Wang², Mrs. Kelsey McAlister¹, Ms. Tiffany Chapman¹, Dr. Britni Belcher¹, Dr. Genevieve Dunton¹

¹University of Southern California, Los Angeles, United States, ²Northwestern University, Chicago, United States

O.2.21: Investigating the Impact of Theory-Based Interventions on Diet and Movement Behaviors, Room 213, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: According to the theory of planned behavior, physical activity (PA) intention predicts PA engagement. However, intentions do not always translate into behavior, a phenomenon known as the intention-behavior gap. The intention-behavior gap is notably pronounced in PA research, where intentions to engage in PA only materialize into behavior about half of the time. A promising unexplored factor that may explain the intention-behavior gap is individual differences in exercise preference (i.e., one's predisposition to select higher-intensity exercise) and tolerance (i.e., one's ability to continue exercising at an imposed level of intensity). The purpose of this study was to examine whether exercise preference and tolerance moderate the within-person association between PA intention and next-day moderate-to-vigorous physical activity (MVPA) behavior using smartphone-based ecological momentary assessment (EMA) and accelerometry.

Methods: The present study analyzed data from adults ages 18 to 65 years old living in the United States. Exercise preference and tolerance were assessed at baseline using the Preference for and Tolerance of Intensity of Exercise Questionnaire (PRETIE-Q). A 14-day protocol captured PA intention each evening through EMA and next-day MVPA engagement through accelerometry. Separate multilevel linear regression models (days [level 1] nested within people [level 2]) assessed the main effects of within-person PA intention on next-day MVPA engagement and cross-level interaction effects of between-person differences in exercise preference and tolerance on this association.

Results/Findings: Complete data from 62 adults (Mean age = 39 years old, standard deviation = 4.29 years) were included in this analysis. A negative within-persons main effect of PA intention on next-day MVPA engagement was observed ($\beta = -.20$, $p < .001$). Exercise preference was a significant cross-level moderator of the association between PA intention and next-day MVPA engagement ($\beta = .04$, $p < .001$). Specifically, evenings with greater PA intention as compared to usual were associated with greater next-day MVPA engagement among those with a stronger preference for higher-intensity exercise. However, exercise tolerance was not a significant moderator of the association.

Conclusions: Exercise preference may partially explain the intention-behavior gap, such that individuals who prefer higher-intensity exercise are more likely to translate their intentions into behavioral engagement. Intervention strategies may seek to enhance individual preferences for higher-intensity exercise when tailoring interventions to improve MVPA engagement.

Diet and movement ideation among children: Testing the theory of the PEDAL intervention among primary school children in Singapore

Ms. Cindy Mei Jun Chan¹, Dr. Falk Müller-Riemenschneider^{1,2}, Dr. Michael Yong Hwa Chia³, Dr. Zoe Jane-Lara Hildon¹, Dr. Mary Foong-Fong Chong^{1,4}

¹Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, Singapore, ²Center for Digital Health, Berlin Institute of Health (BIH) at Charité-Universitätsmedizin, Germany, ³Physical Education & Sports Science Academic Group, National Institute of Education, Nanyang Technological University, Singapore, ⁴Singapore Institute for Clinical Sciences, Agency for Science, Technology and Research, Singapore

O.2.21: Investigating the Impact of Theory-Based Interventions on Diet and Movement Behaviors, Room 213, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Underpinned by Kincaid's Ideation metatheory, the Promoting hEalthy Diet and Active Lifestyle (PEDAL) intervention was developed to improve diet and movement behaviours of primary school children in Singapore. Ideation consists of three psychosocial domains (cognitive, emotional, social) that are assumed to cumulatively influence behaviour. This study aims to validate PEDAL's programme theory by examining the relationships between ideational factors and children's diet and movement behaviours, including fruit and vegetable intakes, time spent on moderate-to-vigorous physical activities (MVPA) and screen time.

Methods: Data from a self-reported baseline survey of primary school student participants were used for these analyses (n=144, 47.2% girls, mean age 10.6 years \pm 0.5). Ideations were asked about separately for health eating and in relation to being more active. Individual component and cross-domain composite ideational scores were derived for both behavioural grouping. Measures captured included (cognition) knowledge, attitudes; (emotions) self-efficacy, enjoyment; (social) support. We report adjusted multivariate logistic regression examining the relationships between ideation and behaviours of interest. All variables were binarized at the median.

Results: Median ideational composite scores were 3 for both healthy eating (range: 0-6) and physical activity (range: 0-7). The higher ideational composite scores for healthy eating were associated with greater likelihood of high intake of fruit (OR: 1.47, 95%CI: 1.19-1.81) and vegetables (OR: 1.51, 95%CI: 1.51-2.52). Likewise, associations with higher activity related ideations were identified for time spent on MVPA (OR: 1.20, 95%CI: 1.01-1.44), and lesser likelihood of screen time (OR: 0.78, 95%CI: 0.65-0.94). Associations with individual components of ideations were identified for enjoyment and self-efficacy toward healthy eating; these were significantly associated with high fruit (OR: 3.76, 95%CI: 1.81-7.80 and OR: 2.72, 95%CI: 1.33-5.58) and vegetable intakes (OR: 4.39, 95%CI: 1.90-10.13 and OR: 6.56, 95%CI: 2.54-16.94), respectively. Furthermore, self-efficacy was significantly associated with higher levels of MVPA (OR: 2.17, 95%CI: 1.10-4.29), as was social support (OR: 3.68, 95%CI: 1.79-7.54).

Conclusion: These findings support PEDAL's programme theory, indicating that the assessed ideational factors are associated with positive diet and movement behaviours among primary school children. Findings also support the intervention's content which includes activities to improve self-efficacy, affect, and parental involvement.

Determinants of physical activity among adults in mental health therapy: A theory of planned behavior process model

Dr. Emily Mailey¹, Ms. Aspen Streetman¹, Dr. Gina Besenyi¹, Dr. Jared Durtschi¹
¹Kansas State University, Manhattan, USA

O.2.21: Investigating the Impact of Theory-Based Interventions on Diet and Movement Behaviors, Room 213, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: There is strong evidence that physical activity (PA) is effective for managing prevalent mental health conditions such as depression and anxiety. Understanding factors that influence PA among individuals with these conditions may help inform future interventions to promote PA for mental well-being. This study aimed to test a Theory of Planned Behavior (TPB) process model in a large, representative sample of adults currently in therapy and to explore potential moderators of the relationships between attitudes, subjective norms, perceived behavioral control (PBC), and intentions.

Methods: Participants (N=478, M age=31.7 years, 44.6% male) completed an online survey that included validated measures of PA attitudes, subjective norms, PBC, intentions, and behavior (Godin Leisure-Time Exercise Questionnaire). We tested a model whereby attitudes, norms, and PBC predicted PA behavior indirectly through PA intentions, controlling for age, income, gender, sexual orientation, body mass index, PA barriers, depression, anxiety, stress, loneliness, and body dissatisfaction. Control variables were also evaluated as moderators.

Results: The fully adjusted model fit the data well ($\chi^2[282]725.27$, $p<.01$; RMSEA=.06, CFI=.93). PBC had a significant positive bootstrapped indirect effect on PA behavior via intentions ($b=13.57$, 95%CI:8.51-21.96). The indirect effects of attitudes and subjective norms on PA behavior were not significant. The association between PBC and PA intention was significantly moderated by body dissatisfaction ($b=.08$, $p=.035$), such that the association was stronger among participants with high body dissatisfaction. Depression moderated the relationship between attitudes and intentions ($b=-.02$, $p=.011$), and body dissatisfaction moderated the relationship between subjective norms and intentions ($b=-.05$, $p=.003$), such that the associations were stronger among participants with low depression and low body dissatisfaction, respectively.

Conclusions: These results demonstrate that PBC strongly predicts PA intentions, and intentions predict PA behavior in a representative U.S. sample of adults in therapy. Clinicians in mental health settings may use these results to inform discussions about PA with clients. Therapists should reframe PA as daily movement and help clients identify activities they enjoy to reduce perceived barriers, which may translate to improvements in PA intentions and behavior. Therapists should also consider clients' presenting concerns and symptoms and personalize discussions to address clients' unique needs and preferences.

Perceived barriers and facilitators to performing evening regular activity breaks at home: A COM-B analysis

Miss Jennifer Gale¹, Dr Meredith Peddie¹, Dr Elaine Hargreaves²

¹Department of Human Nutrition, University of Otago, Dunedin, New Zealand, ²School of Physical Education, Sport and exercise Sciences, University of Otago, Dunedin, New Zealand

O.2.21: Investigating the Impact of Theory-Based Interventions on Diet and Movement Behaviors, Room 213, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Experimental evidence indicates interrupting evening sedentary time with regular activity breaks improves metabolism and sleep. To determine whether people will perform activity breaks in 'real life' it is essential to understand factors that will promote or hinder this behaviour. To date, exploration of such factors has been limited to educational and occupational settings. Therefore, this study aims to explore potentially unique barriers and facilitators that relate to an individual's capability, opportunity, and motivation (COM-B) to perform regular activity breaks in the evening, to inform future free-living intervention development.

Methods: Individual, face-to-face, semi-structured interviews were conducted with 28 participants (female n=20, mean age 25.4 years SD 5.5) who had performed a laboratory-based, evening regular activity breaks intervention. Interview questions explored what would facilitate, and hinder participants from incorporating regular activity breaks, into their everyday lives at home in the evening. The interview transcripts were analysed first using inductive thematic analysis, and subsequently using deductive analysis using the concepts of the COM-B model to explore factors that could influence behaviour change.

Results: The perceived barriers of 1) not wanting to interrupt sedentary time, 2) general lack of motivation and 3) forgetting to do activity breaks, related to reflective and automatic motivation. Barriers relating to the social environment, such as 'not wanting to interrupt other people' and the physical environment, such as 'being comfortable in bed' could be directly mapped to opportunity. The perceived facilitators of 1) being reminded to do activity breaks, and 2) having a source of motivation such as 'goal setting' or 'progress tracking' could be mapped to automatic and reflective motivation. Additionally, participants stated that both 'known' and 'experienced benefits' could increase their psychological capability to take regular breaks. Facilitators relating to environmental factors such as 'others in the room doing movement' and 'not needing a large space' could be mapped to social and physical opportunity.

Conclusions: To promote successful reductions in evening sedentary time, future activity breaks interventions should utilise physical prompts and cues, and social support and be individually tailored to the participant, and the specific context of their evening sedentary time.

Gaining traction on addressing unhealthy beverages in the US: A systems-oriented approach

Dr. Megan Winkler¹, Dr. Yeeli Mui², Ms. Angela Zhang¹, Ms. Alexis Smith¹, Dr. Jim Krieger³
¹Emory University Rollins School Of Public Health, Atlanta, United States, ²Johns Hopkins Bloomberg School of Public Health, Baltimore, United States, ³Healthy Food America, Seattle, United States

O.2.22: Decoding Diets: Unraveling the Impact of Ultra-Processed Foods and Unhealthy Eating Habits, Room 214, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Sugar-sweetened and other unhealthier (i.e., non-sugar-sweetened) beverages have long been recognized as key contributors to poor population health with inequitable impacts. Over the past two decades, multiple US initiatives have attempted to address the issue through public awareness campaigns and policy levers (e.g., sugar-sweetened beverage [SSB] taxes, default beverages in kids' meals) with varied success. Yet, recent indicators, such as stalling declines of SSB sales, increasing shifts to low-calorie alternatives, and limited growth in enacted SSB policies suggest more needs to be done to accelerate progress. This study presents the approach and results of a systems-oriented modeling process to inform new thinking and actions towards addressing unhealthy beverages in the US.

Methods: A participatory group model building workshop series was conducted in 2023 to develop a causal loop diagram, depicting key mechanisms underlying the high and inequitable persistence of unhealthy beverage promotion, availability, and consumption in the US. Five facilitated, structured group exercises were used to identify variables, their connections, and review and refine the model. Twenty-four public health experts and advocates from across the US representing perspectives from government (n=6), academia (n=7), advocacy organizations (n=7), and community-led groups (e.g., food policy councils) (n=4) participated. Perspectives from industry were also integrated into the model.

Results: The resulting model identified six feedback loops describing the causal effects of Corporatocracy and the beverage industry, Environmental impacts, Water infrastructure and norms, Public health advocacy, Voter suppression, and Civic engagement in health issues. Of the 27 variables included in the model political will for public health played a prominent role in several feedback loops. For instance, political will for health was key to generating action to improve safe drinking water and its associated acceptance, supporting public health funding for healthy beverage campaigns, and limiting industry power and its associated marketing, retail, manufacturing, and lobbying influence.

Conclusions: Gaining traction on addressing unhealthy beverages is a complex, dynamic problem. Participatory, systems-oriented approaches are a promising tool and, in this iteration, led to renewed thinking about the actions and strategies necessary to achieve higher levels of effectiveness and reignite traction in the US.

Trends in US adults' consumption of unprocessed/ minimally-processed and ultra-processed foods at home and away from home from 2003-2018.

Dr. Julia Wolfson¹, Ms. Anna Claire Tucker¹, Dr. Cindy Leung², Dr. Casey Rebholz¹, Dr. Vanessa Garcia-Larsen¹, Dr. Euridice Martinez-Steele³

¹Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, ²Harvard T.H. Chan School of Public Health, Boston, USA, ³University of Sao Paulo School of Public Health, Sao Paulo, Brazil

O.2.22: Decoding Diets: Unraveling the Impact of Ultra-Processed Foods and Unhealthy Eating Habits, Room 214, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Ultra-processed foods (UPFs) comprise >50% of United States (US) adults' energy intake, with the proportion of calories from UPFs increasing over time. Overall, dietary quality of US adults is poor, and foods consumed at home are, on average, healthier than those consumed away from home. However, less is known about whether UPFs are primarily consumed at home or away from home. In this study we examine trends in consumption of UPFs as well as unprocessed/minimally processed foods (MPFs) at home and away from home among US adults overall and among socio-demographic subgroups.

Methods: We analyzed data from a nationally representative sample of 34,661 adults (aged ≥20 years) with two 24-hour dietary recalls from the 2003-2018 waves of the National Health and Nutrition Examination Survey (NHANES). We calculated intake from MPFs and UPFs as a proportion of total energy intake and as a proportion of home energy intake and away from home energy intake. We examined trends over time using generalized linear models adjusted for sex, age, race/ethnicity, education, and household income. We examined differences in trends by socio-demographic groups using interaction terms and stratified models.

Results: Overall, and for most demographic subgroups, UPFs comprised >50% of at home energy intake and >50% of away from home energy intake, with UPFs increasing over time and MPFs decreasing over time as a proportion of energy intake at home and away from home. The proportion of total energy intake from UPFs increased for food consumed at home (33.6% to 37.1%, p-trend<0.001), but not for UPFs consumed away from home (19.5% to 18.8%, p-trend=0.88). From 2003-2004 to 2017-2018, the proportion of total energy intake from MPFs declined for foods consumed at home (23.6% to 20.8%, p-trend<0.001) and away from home (9.7% to 7.5%, p-trend<0.001). Stratified models revealed different levels of MPF and UPF at home and away from home by socio-demographic subgroups though trends over time were similar and interaction terms were generally not significant.

Conclusions: Findings highlight the ubiquity of UPFs in US adults' diets regardless of whether foods are being consumed at home or away from home.

The L.A.B.E.L. Study: Learning About Beliefs Surrounding “Edulcorantes” (Non-Sugar Sweeteners) Labeling in Brazil

Ms. Mariana Faundes Grilo¹, Beatriz Nunes², Maria Fernanda Pereira Eberle², Claudia Nieto³, Uriyoan Cólón-Ramos¹, Lindsey Smith Taillie⁴, Ana Clara Duran², Allison C Sylvetsky¹
¹The George Washington University, Washington, USA, ²University of Campinas, Campinas, Brazil, ³World Health Organization, Mexico City, Mexico, ⁴University of North Carolina, Chapel Hill, USA

O.2.22: Decoding Diets: Unraveling the Impact of Ultra-Processed Foods and Unhealthy Eating Habits, Room 214, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Non-sugar sweeteners (NSS) are commonly found in beverages that children frequently consume, yet there is uncertainty about the health effects of NSS consumption. This is concerning, especially in countries like Brazil, where new front of package nutritional labeling (FOPNL) for products ‘high in sugar’ is likely to increase the use of NSS. This study investigated parents’ perceptions and knowledge about NSS, terminology related to NSS, and how they would like to have information about NSS on packages.

Methods: Seven focus groups with parents and caregivers (hereafter parents) of children between 2-5 and 6-11 years old were conducted in a small- and a large municipality in São Paulo, Brazil. A socioeconomically diverse sample of parents was recruited at public and private schools/early education centers. Focus groups (3-8 participants/group, total n=40) were conducted by a nutritionist and research assistant using a semi-structured guide. We inquired about parents’ understanding of the Portuguese word for NSS (“edulcorantes”) and their perceptions regarding their children’s consumption of NSS. Finally, parents were probed to reflect on the healthfulness of NSS compared with added sugars and if and how they would like to have information about NSS on beverage packaging.

Results: The Portuguese term for NSS, “edulcorantes”, found in the list of ingredients, was not recognized by most parents, especially due to confusion with the term “corantes”, which translates to “food coloring.” Parents indicated having difficulty identifying NSS in beverages and presented divergent opinions about giving beverages with NSS to children and regarding the healthfulness of NSS compared with added sugars. Overall, parents agreed that FOPNL information calling attention to NSS would be helpful, in particular with the statement “not recommended for children,” similar to what has been implemented in Mexico and Argentina.

Conclusions: The term “edulcorantes” was not recognizable to parents of young and school-aged children and they reported difficulties identifying NSS in beverages, suggesting that parents are not aware that the products they provide contain NSS. FOPNL information disclosing the presence of NSS along with the statement they are not recommended for children could help parents identify NSS and make more informed product choices.

Both Financial Scarcity and Having Enough Income to Get By Correlate with Higher Ultra-Processed Food Intake During Pregnancy

Ms. Erin Hudson¹, Dr. Jaimie Davis¹, Ms. Madalyn Rosenthal¹, Dr. Lorie Harper², Dr. Allison Cahill², Ms. Keally Haushalter¹, Dr. Marissa Burgermaster²

¹University of Texas at Austin, Austin, USA, ²Dell Medical School, Austin, USA

O.2.22: Decoding Diets: Unraveling the Impact of Ultra-Processed Foods and Unhealthy Eating Habits, Room 214, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Ultra-processed food (UPF) intake in pregnancy is linked to poor maternal health outcomes. Financial circumstances, time scarcity, and social support often correlate with eating behavior but remain unexplored concerning UPF intake during pregnancy. Identifying the role of these factors on maternal UPF intake would guide interventions and policy.

Methods: We analyzed data from the SUPER pregnancy cohort in a cross-sectional structural equation model (SEM). Independent variables included: number of adults and children at home; weekly hours spent working; perceived time scarcity; perceived social support from friends and family; income (having enough, not enough, or more than enough to get by); and 4 subscales that comprise financial scarcity (shortage of money, worry, short-term focus, and lack of control). For our dependent variable, UPF, we used two 24-hour recalls from each participant to categorize foods and beverages using NOVA and calculate the contribution of UPF to total grams of dietary intake.

Results: In the analytic sample (n=94, 54% Hispanic/Latina), 30.6%±16.6 of participants' dietary intake in grams were UPF. In a fully saturated SEM (R-squared=0.20; p=0.006), consuming a greater proportion of UPF in the diet was associated with a lack of financial control ($\beta_{\text{standardized}}=0.605$, p=0.004) and with income ($\beta_{\text{standardized}}=0.238$, p=0.04). There were also multiple significant relationships among the independent variables. Income and social support were inversely associated; income and social support were both associated with each of the four financial scarcity subscales, and time scarcity was positively associated with the financial scarcity subscales (all p<0.001). Children at home was positively associated with 3 of 4 financial scarcity subscales and inversely associated with income (all p<0.05).

Conclusions: Among a diverse cohort of pregnant women, we found that those who felt a lack of control over their finances as well as those who reported more sufficient income both had higher UPF intakes. This seemingly contradictory finding may be explained by the heterogeneity of UPF, which includes cheap, convenient products marketed to people experiencing financial scarcity and products with health halos targeted to consumers with higher incomes. Further research should explore the nuanced relationship between financial experiences and the heterogeneity of UPF intake.

Foods targeted at children: sugary and artificially flavored and colored

Ms. Florencia Alcaire¹, Ana Giménez, Gastón Ares

¹Facultad de Química, Universidad de la República, Montevideo, Uruguay

O.2.22: Decoding Diets: Unraveling the Impact of Ultra-Processed Foods and Unhealthy Eating Habits, Room 214, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: The availability of ultra-processed foods has largely increased in the last decades across the globe. These products are frequently marketed to children, despite their unfavorable nutritional profile and the presence of food additives. In this context, the present research aimed to explore the nutritional composition and the prevalence of additives in processed and ultra-processed foods targeted at children commercialized in Uruguay, an emerging Latin American country.

Methods: A survey of products in 9 supermarkets in two cities was conducted using a cellphone app. A total of 7443 products from 75 different categories were classified as (not) targeted at children based on the information included in the labels. The nutritional composition and the ingredient lists were extracted from the labels. Notification of functional classes of additives was determined using a computer-assisted method. Results were summarized using descriptive statistics and products targeted at children were compared with those not targeted at children using t-tests and chi-square.

Results/findings: A total of 570 products (7.7%) from 35 categories were identified as products target at children. Categories with the higher number of products targeted at children corresponded to discretionary ultra-processed products: candies (n=111); cookies (n=105 products); breakfast cereals (n=44); cocoa and sweetened cocoa powder (n=37); vegetable, cereal, flour or starch based snacks (n=30); chocolates (n=25); decorations, coatings, and fillings (n=24); and powder mixes to prepare desserts (n=23). Most of the products targeted at children were high in nutrients associated with non-communicable diseases and contained at least one additive. On average, products targeted at children had a significantly higher content of sugar than those not targeted at children, as well as a higher frequency of notification of flavorings (86% vs 53%), colorings (53.9% vs 24.5%) and emulsifiers (31.6% vs 25.8%). Considering the emerging evidence about the negative effects of artificial colorings and emulsifiers on health, these results stress the need to discuss the risks associated with exposure to these substances from an early age, and highlight the need to broaden the scope of regulatory policies beyond nutritional composition.

“WARNING: ULTRA-PROCESSED”: Examining the impact of an “ultra-processed” front-of-package warning label on consumers’ ability to identify ultra-processed foods

Ms. Aline D’angelo Campos^{1,3}, Dr. Marissa Hall^{1,3}, Dr. Shu Wen Ng^{2,3}, Dr. Lindsey Smith Taillie^{2,3}, Dr. Ana Clara Duran^{4,5}, Dr. Neha Khandpur^{5,6}

¹University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Department of Health Behavior, Chapel Hill, USA, ²University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Department of Nutrition, Chapel Hill, USA, ³Carolina Population Center, University of North Carolina at Chapel Hill, Chapel Hill, USA, ⁴Center for Food Studies and Research (NEPA), University of Campinas, Campinas, Brazil, ⁵Center for Epidemiological Studies in Nutrition and Health (NUPENS), University of São Paulo, São Paulo, Brazil, ⁶Harvard T.H. Chan School of Public Health, Department of Nutrition, Boston, USA

O.2.22: Decoding Diets: Unraveling the Impact of Ultra-Processed Foods and Unhealthy Eating Habits, Room 214, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: H. Policies and environments

Purpose: Nutrient content and food processing level are two complementary but distinct concepts, and a large body of evidence shows that ultra-processed foods can have detrimental health effects independently from their nutrient content. In 2015, the Brazilian Ministry of Health published dietary guidelines recommending that Brazilians choose less processed foods and avoid ultra-processed products. In turn, in 2022, the Brazilian Regulatory Health Agency implemented a new front-of-package “high in” warning label system to inform consumers when products are high in nutrients of concern (i.e., sugar, saturated fat, and sodium). The potential additional impact of an “ultra-processed” warning to this labeling system remains unknown. Thus, we examined whether adding a warning label indicating an ultra-processed product to existing nutrient warnings could influence consumers’ product perceptions and purchase intentions.

Methods: In 2023, a sample of adults in Brazil (n=1,004) participated in an online experiment where they saw images of four different products carrying warning labels. Participants were randomly assigned to view either existing nutrient warnings or nutrient warnings with the addition of an “ultra-processed” warning. Participants then answered questions about their intentions to purchase the products, product perceptions, and perceived label effectiveness.

Results: The addition of an “ultra-processed” warning label led to a higher share of participants who correctly identified products that were ultra-processed (Cohen’s $d=0.16$, $p=0.02$). However, the addition of the “ultra-processed” warning label did not significantly influence purchase intentions, product healthfulness perceptions, or perceived label effectiveness compared to nutrient warnings alone (all $p>0.05$). In exploratory analyses, demographic characteristics (age, gender, education, health status) and level of understanding of the concept of ultra-processed did not significantly moderate the effect of the “ultra-processed” warning on purchase intentions or identification of ultra-processed products.

Conclusions: “Ultra-processed” warning labels may help consumers better identify which products are ultra-processed, but do not seem to influence their behavioral intentions and product perceptions beyond the influence already exerted by nutrient warnings. Future research should examine how “ultra-processed” warning labels would work in naturalistic store settings.

The effectiveness of e-Health and m-Health interventions for physical activity, sedentary behaviour, healthy eating and sleep: a meta-meta-analysis.

Prof. Carol Maher¹, Dr Ben Singh¹, Dr Mavra Ahmed², Associate Professor Amanda Staiano³, Dr Claire Gough⁴, Dr Jasmine Petersen⁴, Prof Corneel Vandelanotte⁵, Dr Chelsea Kracht³, Christopher Huong⁶, Zenong Yin⁶, Dr Maria Vasiloglou⁷, Chen-Chia Pan⁸, Assoc Prof Camille Short⁹, Dr Matthew Mclaughlin¹⁰, Lauren von Kilnggraeff¹¹, Christopher Pfladderer¹², Lisa Moran¹³

¹University Of South Australia, Adelaide, Australia, ²University of Toronto, Toronto, Canada, ³Pennington Biomedical Research Center, Baton Rouge, USA, ⁴Flinders University, Adelaide, Australia, ⁵Central Queensland University, Rockhampton, Australia, ⁶University of Texas, San Antonio, USA, ⁷Nestlé Institute of Health Sciences, Lausanne, Switzerland, ⁸University of Bremen, Bremen, Germany, ⁹University of Melbourne, Melbourne, Australia, ¹⁰Telethon Kids Institute, Perth, Australia, ¹¹Augusta University, Augusta, USA, ¹²University of Texas , Austin, USA, ¹³Monash University, Clayton, Australia

O.2.23: Understanding the effectiveness and efficacy of digital health interventions., Room 215, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: This study aims to assess the efficacy of e-Health and m-Health (electronic and mobile health) interventions in improving health behaviors, specifically focusing on physical activity, sedentary habits, healthy eating, and sleep. These interventions represent innovative strategies within the modern healthcare context. The study was undertaken as a collaboration between members of the ISBNPA e- & mHealth and Implementation Science Special Interest Groups.

Methods: A comprehensive meta-meta-analysis was conducted, reviewing randomised controlled trials (RCTs) that evaluated the effectiveness of e- and m-Health behavioral interventions. Data were extracted from nine electronic databases for studies published up to 1 June 2023. The analysis included 47 systematic reviews with meta-analyses, encompassing 507 RCTs and 206,873 participants. The interventions studied varied, including mobile apps, web-based platforms, and SMS-based strategies, targeting diverse health behaviors. Only a very slight degree of overlap in component studies was present (CCA 0.5%) therefore meta-meta-analysis was performed. Certainty of evidence was graded from A (high level evidence) to D (low level evidence).

Results/Findings: The meta-meta-analyses revealed significant improvements across multiple health behaviors. Notably, there was a significant increase in daily steps (mean difference of 1329 steps/day), moderate-to-vigorous physical activity (55.1 min/week), total physical activity (44.8 min/week), and reductions in sedentary behavior (426.3 min/week), saturated fat consumption (5.5 grams/day), and energy intake (102.9 kcals/day). Additionally, fruit and vegetable intake significantly increased by 0.57 servings/day, and bodyweight decreased by 1.89 kg. Moderate-to-large improvements were also observed in sleep quality (SMD 0.56) and

insomnia severity (SMD -0.90). All findings were graded as Grade A, indicating consistent evidence from RCTs. Subgroup analysis showed that the interventions had similar effectiveness across various age groups and health conditions, indicating their broad applicability.

Conclusions: The findings demonstrate that e- and m-Health interventions significantly enhance health behaviors in a diverse population. These interventions, scalable and accessible, offer promising solutions for encouraging healthier lifestyles. Their effectiveness across a range of behaviors and demographics highlights their potential as key tools in addressing public health and healthcare challenges, particularly in promoting and sustaining healthy behaviors.

Impact of a 6-week, personalised healthy eating challenge, delivered via weekly email campaigns on overall diet quality: A pre-post study.

Prof. Clare Collins¹, Dr Rebecca Collins¹, Mrs Grace Manning¹, Dr Lee Ashton¹, Prof Tracy Burrows¹, Assoc Prof Melinda Hutchesson¹, Assoc Prof Marc Adam²

¹University Of Newcastle, School of Health Sciences, College of Health, Medicine and Wellbeing, Callaghan, Australia, ²University Of Newcastle, School of Information and Physical Sciences, Callaghan, Callaghan

O.2.23: Understanding the effectiveness and efficacy of digital health interventions., Room 215, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: Improving diet quality represents a major public health challenge! Innovative approaches are needed to reach, engage and support adults to eat more healthily. The primary aim was to evaluate whether a targeted 6-week online nutrition challenge could improve participants' diet quality. The study also assessed online engagement and impact on weekly food expenditure and self-reported weight and BMI.

Methods: In a single-arm, pre-post study, adults ≥ 18 years from Australia were recruited into a 6-week online healthy eating challenge delivered by weekly emails. Emails encouraged participants to visit the nutrition website (<https://www.nomoneynotime.com.au>) to view personalised resources (i.e., setting goals, self-monitoring, meal plans, blogs, e-books, recipes). Diet quality was assessed using the validated Australian Recommended Food Score (ARFS) diet quality index. Engagement with weekly emails was assessed as open rate (OR) and click through rate (CTR). Mixed effects linear regression, unadjusted and adjusted for gender, age, SES, previous quiz completion and vegetarian status was used to assess change in outcomes from baseline to 6-weeks.

Results: A total of 481 Australian adults (49.7 ± 13.9 years, 84% female) started the nutrition challenge, with 79 (16%) completing surveys at baseline and 6-weeks. Statistically significant increases in diet quality (ARFS) were observed for challenge participants, with a mean 3.8 ($p < 0.00$, $d = 0.58$) point ARFS increase at 6-weeks compared with baseline. ARFS sub-scale improvements occurred for vegetables ($+0.9$, $p = 0.01$, $d = 0.32$), fruit ($+1.2$, $p < 0.00$, $d = 0.55$) and dairy sub-scales ($+0.9$, $p < 0.00$, $d = 0.58$) and remained statistically significant in adjusted models. A significant reduction in weekly household spend on takeaway/snacks/coffee of \$8.9 AUD per week ($p = 0.01$, $d = 0.29$), 0.6kg weight reduction ($p = 0.03$, $d = 0.26$) and 0.2 kg/m² BMI reduction (p -value = 0.02, $d = 0.28$) also occurred at 6-weeks. The challenge email OR remained constant at around 67% (range 56% to 75%) across the six weeks, while average CTR was 18% (range: 7.1% to 37.9%).

Conclusion: The 'No Money No Time' healthy eating challenge presents an easy-to-implement, innovative solution to address improving diet quality, body weight and food spending among Australian adults. Assessing effectiveness on a larger scale is warranted.

Association between change in dietary intake with change in body mass index and waist circumference among World Trade Center responders with PTSD participating in a nutrition intervention

Dr. CHRISA ARCAN¹, Ms. Esse Noudegbessi¹, Dr. WEI HOU², Ms. Kathryn Hughes Hoffman³, Ms. Amanda Reichardt³, Dr. Sean Clouston, A.P.⁴, Dr. Evelyn Bromet⁵, Dr. Benjamin Luft, J³
¹Virginia Commonwealth University, Richmond, USA, ²Vertex Pharmaceuticals, Biostatistics, Boston, USA, ³Stony Brook WTC Health and Wellness Program, Commack, USA, ⁴Stony Brook University, Family, Population and Preventive Medicine Department, Stony Brook, USA, ⁵Stony Brook University, Renaissance School of Medicine, Stony Brook, USA

O.2.23: Understanding the effectiveness and efficacy of digital health interventions., Room 215, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: Responders to the 9/11 World Trade Center (WTC) disaster suffer from high levels of post-traumatic stress disorder (PTSD) and other chronic conditions such as obesity, increased systemic inflammation, and cardiovascular disease. A Mediterranean dietary pattern (MedDiet) has been shown to lower systemic inflammation and risk of metabolic syndrome. Following a nutrition intervention, this study examines the participants' reported change in dietary intake and associations with changes in their waist circumference (WC) and body mass index (BMI).

Methods: Longitudinal analysis of the participants' reported dietary intake and anthropometrics. Data were taken from the WTC-HP Nutrition, a digitally delivered 10-week pilot randomized controlled trial among WTC responders (age 45-65 years) with overweight or obesity and PTSD; study goals were to improve dietary intake, weight status and systemic inflammation. The Participants (N=62; males: 87%) were randomly assigned to intervention (MedDiet n=31) or control (usual nutrition counseling n=31). Participants completed the Dietary Screener Questionnaire (DSQ) and a survey assessing nutrition knowledge and had their anthropometrics measured at baseline, post-intervention and 3-month follow up. Repeated measures analysis was used to evaluate associations between changes in dietary intake (foods groups) and with changes in BMI, WC, and knowledge of MyPlate recommendations among all participants combined.

Results: Both groups experienced significant improvements in WC and BMI. There were significant associations between change in the consumption of fruit (p=0.0108) and vegetables (p=0.0239) with change in WC and changes in the consumption of cereal (p=0.0106), fruit (p=0.0303), vegetables (p=0.0061), and red meat (p=0.0046) with changes in BMI. Change in the consumption of cereal (p=0.0003), fruit (p=0.0136), and vegetables (p=0.0001) was associated with change in knowledge of MyPlate recommendations for starch intake only.

Conclusion: In this pilot study, both groups experienced improvements in WC and BMI. Changes in the consumption of certain food groups were associated with changes in WC, BMI, and knowledge on MyPlate recommendations for starch intake. A larger study with a delayed intervention is needed to confirm the findings and examine potential moderating factors.

Theoretical Mediators of a Digital Weight Loss Intervention: A Signal Detection Analysis

Dr. Michele Patel¹

¹Stanford University, Palo Alto, USA

O.2.23: Understanding the effectiveness and efficacy of digital health interventions., Room 215, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: To evaluate theoretical mediators, including psychosocial and behavioral constructs, in a 3-month digital weight loss intervention among adults with overweight or obesity.

Methods: Data are from a digital weight loss intervention among 100 adults with overweight or obesity (M age = 43y; 84% female; 33% racial/ethnic minority). The intervention focused on healthy eating and increasing physical activity, and was delivered remotely without any counseling component. Change in 16 psychosocial and behavioral constructs between baseline and 1-month were tested as mediators of achieving 5% weight loss at the end of the 3-month intervention. Psychosocial constructs include sleep quality and quantity, perceived stress, self-regulation, mood, perceived mastery of tracking, self-efficacy for tracking, self-efficacy for eating, cognitive restraint, uncontrolled eating, and emotional eating. Behavioral constructs include tracking rates, intervention engagement, and dietary change. We used signal detection analysis, which is a recursive partitioning method, to assess mediators.

Results: Change in self-efficacy for tracking one's dietary intake was the best predictor of the 5% weight loss threshold, such that 50% of individuals with greater improvement in self-efficacy met this threshold compared to only 15% of those with less or no improvement. Next, among those with higher self-efficacy, greater improvement in cognitive restraint in eating resulted in higher success (80% met the threshold) versus lower or no improvement in cognitive restraint (25% met the threshold).

Conclusions: This analysis suggests the importance of promoting both self-efficacy in dietary tracking and cognitive restraint in eating in order to enhance weight loss outcomes in a fully digital intervention. While other studies have examined mediators in digital interventions, few have examined psychosocial constructs, which were shown to be more influential than behavioral factors, in this analysis.

Effectiveness of a Digital Lifestyle programme in Reducing Sedentary Behaviours among Overweight/Obese Adults with Prediabetes: A Three-Armed Randomized Controlled Trial

Mrs. Jundi Yang¹, Dr Mandy Ho¹, Mr Will Cheng², Dr Esther Yu², Dr Pui Hing Chau¹
¹School of Nursing, The University of Hong Kong, Hong Kong, Hong Kong, ²Department of Family Medicine and Primary Care, The University of Hong Kong, Hong Kong, Hong Kong

O.2.23: Understanding the effectiveness and efficacy of digital health interventions., Room 215, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: D. E- & mHealth

Purpose: To determine the effects of a smartphone application (app) with/without an online lifestyle programme on physical activity (PA) levels among overweight/obese Chinese adults with prediabetes.

Methods: This 12-month parallel three-arm randomized controlled trial recruited 293 overweight/obese Chinese adults aged 40-60 years with prediabetes. Participants were randomly assigned to: (i) digital lifestyle group (n=98), which received a smartphone app combined with an online lifestyle program; (ii) smartphone app group (n=97), which received the smartphone app intervention only; and (iii) wait-listed control group (n=98), which received general lifestyle advice in-person at baseline and 12 months. The smartphone app allowed participants to set prescribed goals and self-monitor their weight, health indices, diet, and PA. The online lifestyle program focused on dietary modification, increased PA, reduced sedentary time, and weight management. It was delivered through online videos weekly for the first 4 months and monthly for subsequent 8 months. Primary outcome was the duration of PA per week assessed at baseline, 4-, and 12-month using the Chinese version of International Physical Activity Questionnaire short form. Intention-to-treat analysis was conducted using a generalized linear mixed-effects model.

Findings: At baseline, the proportion of participants reporting zero vigorous (VPA), moderate (MPA), and moderate-to-vigorous PA (MVPA) were 56.2%, 53.1%, and 41.0%, respectively, without significant differences between the groups. However, at 12 months, the proportion of participants reporting zero VPA and MVPA significantly decreased in both the digital lifestyle and smartphone app groups compared to the control group (VPA: digital lifestyle group: odds ratio (OR) 0.10, 95% confidence interval (CI) 0.04-0.23; smartphone app group: OR: 0.24, 95% CI 0.10-0.57; MVPA: digital lifestyle group: OR: 0.07, 95% CI 0.03-0.18; smartphone app group: OR: 0.32, 95% CI 0.13-0.79). There was no significant difference in these outcomes between the two intervention groups. However, the proportion of participants reporting zero MPA in the digital lifestyle group significantly decreased compared to the smartphone app group (OR: 0.29, 95% CI 0.12-0.70) and control group (OR: 0.35, 95% CI 0.15-0.86).

Conclusions: Both the smartphone app, with or without the online lifestyle program, were effective in reducing sedentary behaviors among overweight/obese Chinese adults with prediabetes.

Measuring healthcare outcomes, utilization, and costs within produce prescription projects across the United States: A multiple case study evaluation

Dr. Sarah Stotz^{1,2}, **Ms. Elise Mitchell¹**, Ms. Melissa Akers³, Dr. Carmen Byker Shanks¹, Dr. Christopher R. Long¹, Dr. Nadine Nugent¹, Dr. Hilary Seligman³, Dr. Amy Yaroch¹

¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Colorado State University, Fort Collins, USA, ³University of California San Francisco, San Francisco, USA

O.2.24: Measurement and Approaches to Address Socio-economic Inequalities, Room 216, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Produce prescription projects (PPRs) engage multisector partnerships, most often between healthcare organizations (e.g., clinics) and food retailers (e.g., groceries, farmers' markets), to mitigate food insecurity and reduce diet-related chronic disease. In the United States (US), the largest federal funding source for PPRs is the US Department of Agriculture (USDA) Gus Schumacher Nutrition Incentive Program (GusNIP). GusNIP requires that PPR projects collect healthcare outcomes, utilization, and costs data for evaluation. However, substantial challenges exist. The objective of this study is to understand facilitators, barriers, lessons learned, and emergent best practices for healthcare evaluation processes among PPRs. This work will inform implementation of nutrition-related behavior change programs in the US.

Methods: This evaluation, conducted by the GusNIP Nutrition Incentive Program Technical Assistance, Training, and Information Center used an instrumental, multiple methods, case study design. The sample included four PPRs funded in a 1-year pilot grant to measure healthcare outcomes, utilization, and costs. Data includes funded grant applications (n=4), a contextual description of each unique PPR, pre/post qualitative interviews (n=8), and midpoint focus groups (n=2) with program leadership. Researchers employed a thematic qualitative analytic approach to construct themes focused on facilitators, barriers, and opportunities.

Results: Three salient themes emerged: 1) PPR projects need sufficient time and resources to develop procedures to collect and share healthcare data; 2) healthcare data procedures should be tailored to PPR design (e.g., PPR distribution and redemption method), outcomes of interest, and electronic health record (EHR) capabilities; 3) PPR projects need technical support related to technology, data security, and data sharing.

Conclusions: EHR data can provide insight on the impact of PPRs and related healthcare interventions on health outcomes and cost-effectiveness in reaching target patient outcomes. To be successful, evaluation efforts must consider project capacity and ensure adequate resources to collect, securely share, and analyze healthcare data. Our findings are based on data collected from diverse health care contexts and models and indicate that there need to be multiple approaches to evaluate the impacts of PPRs and related programs on health outcomes, healthcare utilization, and costs, in the US and possibly other countries with similar health care systems.

Comparing Adolescent and Caregiver Report of Very Low Food Security: Sociodemographic Correlates in a Diverse Sample of Adolescent-Caregiver Dyads

Dr. Mikayla Barry¹, Dr. Vivienne Hazzard¹, Dr. Melissa Laska¹, Dr. Dianne Neumark-Sztainer¹
¹University of Minnesota, Minneapolis, USA

O.2.24: Measurement and Approaches to Address Socio-economic Inequalities, Room 216, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Due to lack of age-specific food insecurity (FI) measures, youth-focused research and interventions usually rely on caregiver-reported FI. However, there is growing evidence that many youth report FI differently than their caregivers and may be misclassified using traditional measures. To better understand which groups are at risk of misclassification, we examined how sociodemographic factors pattern across adolescent-caregiver dyads according to adolescent and caregiver report of very low food security (VLFS).

Methods: Data were collected through two coordinated, population-based studies: EAT 2010 and F-EAT 2010. Students from Minneapolis/St. Paul area public schools (USA), along with their primary caregivers, were surveyed in 2009-2010. Adolescents reported past-year VLFS, or hunger because their family could not afford more food, using a single survey item. Caregivers completed the U.S. Household Food Security Survey Module Six-Item Short Form. The analytic sample included 425 adolescent-caregiver dyads with caregiver-reported household FI, where the caregiver and/or adolescent reported any VLFS. Adolescents (mean age=14.8 years) were 54.8% female and 87.4% people of color. Linear and logistic regression models examined cross-sectional associations between alignment of adolescent and caregiver VLFS with sociodemographic factors.

Results: In 78 dyads, both adolescent and caregiver reported VLFS; in 122 dyads, only the adolescent reported VLFS; and in 225 dyads, only the caregiver reported VLFS. Compared to dyads with adolescent and caregiver VLFS, dyads with adolescent-only VLFS had more children per household (Beta=1.13, $p<.0001$); they were also more likely to include adolescents of color (Odds Ratio [OR]=2.84, $p=0.02$) and/or caregivers of color (OR=2.51, $p=0.008$). Findings for individual racial/ethnic identities will be shared in the presentation. There were no significant differences by adolescent age or gender, caregiver gender, whether the adolescent lived in multiple households, or household receipt of public assistance.

Conclusions: These results suggest that caregiver-reported FI might mask some experiences of adolescent hunger, with certain sociodemographic groups being disproportionately affected. These findings should inform further investigation into the reasons for adolescent-caregiver reporting differences (e.g., potential differences in adolescent and caregiver experience of VLFS, unintentional or intentional misreporting, etc.). Finally, these results also underscore the need for accurate, age-specific methods for measuring FI in diverse populations.

Evaluation on the Effect of the Houston Food Bank (HFB) Food Rx Program on Key Outcomes Among High-Risk Pregnant Women Served by Community Health Choice

Ms. Naomi Tice¹, Dr. Shreela Sharma¹, Dr. Nalini Ranjit², Ms. Jennifer Aiyer¹, Mr. Wes Gibson¹, Mr. Joshua Fernelius³, Ms. Danielle Sanders⁴, Mr. Jack Toups⁵, Ms. Kristi Williams³, Ms. Savitri Appana¹

¹UTHealth Houston School Of Public Health, Houston, USA, ²UTHealth Houston School Of Public Health In Austin, Austin, USA, ³Community Health Choice, Houston, USA, ⁴Houston Food Bank, Houston, USA, ⁵McGovern Medical School at UTHealth Houston, Houston, USA

O.2.24: Measurement and Approaches to Address Socio-economic Inequalities, Room 216, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: We present the overall design and lessons learned from implementation of the Houston Food Bank (HFB) comprehensive food prescription (Food Rx) program on gestational weight gain, pregnancy and birth outcomes, and food/nutrition security in low-income, ethnically diverse, at-risk women in Houston, TX.

Methods: Utilizing a quasi-experimental design, the study involves high-risk pregnant women served by Community Health Choice (CHC) Clinics over a 24-month period. The Food Rx program provides bi-weekly produce prescription box deliveries from the Houston Food Bank (HFB). The primary outcome of interest is excess gestational weight gain (EGWG), while secondary outcomes encompass adverse pregnancy events, birth outcomes, food/nutrition security, and diet quality. Data collection includes pregnancy outcomes (gestational weight gain as the primary outcome, blood pressure, HbA1c), and birth outcomes (pre-term birth, gestational week of delivery), mental health outcomes, food security, nutrition security and diet quality at enrollment, 3 and 6 months post-enrollment, and a post-partum survey at 2 months. Self-reported data is matched with claims data from CHC. Data on the number of successful Food Rx deliveries will be collected by the Houston Food Bank.

Results: A sample size of 620 women, considering a minimum detectable effect size for EGWG of 2.7 lbs, provides 80% power for detecting effects, with a 20% overage for potential study dropouts. Mixed effects models with linear, logit, or non-linear links will be utilized to account for missing data, repeated measures, and different specifications of outcomes. Regression-based methods, mixed effects models, and dose-response analyses will examine Food Rx's impact on weight gain and secondary outcomes. As part of the dose-response analyses, mediation models will be utilized to examine the role of food insecurity and diet quality in weight change.

Conclusion: This study contributes insights into the effectiveness of produce prescriptions on maternal health outcomes and lessons learned in the implementation process of a produce prescription program.

Status and inequality in physical activity research in Africa: The Global Observatory for Physical Activity

Dr. Adewale Oyejemi¹, Dr. Andrea Ramirez Varela², Prof. Estelle Lambert³, Eduardo Ribes Kohn⁴, Prof. Pedro Hallal⁵, Prof. Michael Pratt⁶

¹Arizona State University, Phoenix, United States, ²University of Texas Health Science Center, Houston, United States, ³University of Cape Town, Cape Town, South Africa, ⁴Federal University of Pelotas, Pelotas, Brazil, ⁵University of Illinois Urbana-Champaign, Champaign, USA, ⁶University of California San Diego, San Diego, USA

O.2.24: Measurement and Approaches to Address Socio-economic Inequalities, Room 216, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Improving physical activity (PA) research in Africa is key to action on developing PA promotion strategies to address the rising epidemic of non-communicable diseases in the region countries. Yet, there is a paucity of country-level PA indicators for research, surveillance and monitoring, and policy across the African region. We aim to describe the evolution of PA research in Africa, examine income and gender inequalities, and discuss future possibilities.

Methods: This was a secondary analysis of the Global Observatory for Physical Activity (GoPA!) data on PA research in Africa (1950 to 2019). The GoPA team conducted a systematic review of PA and health articles indexed in PubMed, SCOPUS, and ISI Web of Knowledge for all world countries in 2020. In 2023, we further analyzed the systematic review dataset to (1) determine sex disparities in authorships, and (2) explore relationships between PA research characteristics and country-level human and public health indicators for African countries.

Results/Findings: We identified 514 PA articles from 47 African countries in the past 70 years. Majority (83.1%) of the articles were published between 2012 and 2019. Fifteen countries had no publications. Six countries (South Africa [n=156], Nigeria [n=85], Ethiopia [n=44], Ghana [n=41], Kenya [n=39], and Cameroon [n=20]) accounted for about 75% of the publications. Most articles were observational (92.4%), single-country studies (78.4%), with male first (58.4%) and last authors (68%), and were classified as surveillance studies (45.1%). Few studies addressed interventions (5.8%) and policy (3.5%) or used device-based PA measurement (14.0%). The number of articles per country was positively related to human population level ($r=0.552$, $P=0.000$) and GDP % spent on Research and Development ($r=0.301$, $P=0.040$). The publication rate per 100,000 people was positively related with Human Development Index ($r=0.349$, $P=0.016$), and negatively with Gender Inequality Index ($r= -0.360$, $P=0.019$).

Conclusions: Our results provide an overview and status of PA research in Africa, highlighting country differences and gender inequalities in authorship. The findings may be used to benchmark the evolution of research in the region and to inform areas for improvement. There is an urgent need for more PA interventions and policy studies in Africa.

Iterative Development of a Mobile App for Parent-Child Dyad Physical Activity Promotion: The Family Fit App

Dr. Danielle E. Jake-Schoffman¹, Hannah Lavoie, David Mejia, Francesca Wilkins, Dr. David Fedele, Dr. Lisa Anthony, Dr. Stephen Anton, Dr. Jon Moon, Dr. JeeWon Cheong
¹University Of Florida, Gainesville, USA

O.3.25: Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA, Ballroom B, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: D. E- & mHealth

Purpose: Given low levels of aerobic physical activity in children and adults, and the further declines in activity that occur during adolescence, interventions are needed before this period, to prevent declines and capitalize on this ideal period for family-based health promotion. The goal of the current study was to develop and iteratively refine a prototype of the Family Fit app to be used in an intervention to promote parent-child dyad physical activity.

Methods: An Advisory Board of parent-child dyads (child 9-12 years old) were recruited from the community to participate in iterative app testing and refinement, facilitated via Zoom. In Rounds 1 and 2, dyads participated in interactive co-design activities (e.g., modified version of layer elaboration) and provided input on app prototypes. Prototyped materials included physical activity targets and progress displays, feedback messages, topics for a parent support Facebook group, brief training videos, and the study logo and colors. In Round 3, dyads participated in a 2-week field test of the app. Dyads completed a final semi-structured interview to explore their experience using the app and advice for refinements.

Results: All 9 dyads (parents: 40.1+4.8 years, 88% female; children: 10.6+1.2 years, 55% female) participated in Round 1, and 8 (88.9%) participated in Rounds 2 and 3. In response to feedback in Rounds 1 and 2, the app menu was streamlined (e.g., switching from list of features to picture icons), additional discussion topics were added to feedback messages and the Facebook group, and the logo and feedback graphs were adjusted to include more colors. Round 3 results demonstrated that the dyads largely enjoyed the app and found it easy to navigate. However, they reported difficulty reading certain features due to font size. In response, new linked-out versions of reports were added, including a web app to display larger versions of progress graphs.

Conclusions: Following iterative refinements, the final version of the Family Fit app was found to be usable and acceptable. The app will now be tested in a randomized pilot to explore the feasibility of an app-supported intervention to promote parent-child dyad physical activity.

Patterns of adolescent health behavior engagement in the United States: The connections among diet, activity, sleep, substance use, and mental health in a longitudinal study

Dr. Katherine Kidwell¹, Dr. Rebecca Brock², Dr. Cara Tomaso², Mr. Eric Phillips², Ms. Tiffany James³, Dr. Amy Lazarus Yaroch⁴, Dr. Jennie Hill⁵, Dr. Jennifer Mize Nelson^{2,3}, Dr. W. Alex Mason⁶, Dr. Kimberly Andrews Espy⁷, Dr. Timothy Nelson²

¹Department of Psychology, Syracuse University, Syracuse, USA, ²Department of Psychology, University of Nebraska-Lincoln, Lincoln, USA, ³Office of Research and Economic Development, University of Nebraska-Lincoln, Lincoln, USA, ⁴Gretchen Swanson Center for Nutrition, Omaha, USA, ⁵Department of Population Health Sciences, University of Utah, Salt Lake City, USA, ⁶Nebraska Center for Research on Children, Youth, Families & Schools, University of Nebraska-Lincoln, Lincoln, USA, ⁷Department of Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, USA

O.3.25: Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA, Ballroom B, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: Adolescence is a critical time for establishing healthy behaviors, as poor habits may persist into adulthood, increasing the risk of lifestyle-related chronic diseases. Extant research has identified that unhealthy behaviors tend to cluster in predictable patterns. However, the literature in adolescence is limited, particularly in terms of studies that include a wide range of health behaviors (e.g., behavioral nutrition, physical activity, sedentary activity, sleep, and substance use), have rigorous/multidimensional measurement (i.e., actigraphy, 24-hr dietary recalls), and employ sophisticated analyses. Addressing existing gaps, this study characterized health behavior profiles in adolescents and examined their associations with mental health.

Methods: This study draws data from two assessment points completed by 201 adolescents from a larger longitudinal study in the Midwest United States (53.7% female, Time 1 m-age=15.37; Time 2 m-age=16.29; 41.3% below U.S. federal poverty guidelines). Participants completed 24-hour dietary recalls on three non-consecutive days and wore an actigraph for 14 days. Self-report measures supplemented objective measurement. Mixture models were conducted in Mplus.

Results/Findings: Analyses identified three distinct patterns of health behaviors among adolescents. The most common pattern (51.9%) involved above average physical activity compared to others in the sample, but diets high in added sugar and sleep well below recommended duration; this group had minimal substance use. The next most common pattern (27.9%) was characterized by overall healthy behaviors in terms of diet, physical activity, sedentary activity, and sleep, except nearly half endorsed e-cigarette use. The smallest, but most concerning group (20.2%) had high caffeine and sugar consumption, limited fruit/vegetable intake, and were the most sedentary, least physically active, and had below-average sleep duration, along with the most substance use. Analyses exploring associations between the

probability of pattern membership and mental health found that these adolescents were more likely to have co-occurring mental health symptoms ($\chi^2(2)=13.74, p < .001$).

Conclusions: This study contributes to the advancement of behavioral nutrition, physical activity, and sleep knowledge and practice by providing insights into the interrelated nature of adolescent health behaviors and their connection to mental health. Identifying high-risk groups allows for more efficient intervention efforts, opening up multiple targets for intervention.

Free-Living Associations of Sedentary Time and Cardiac Autonomic Nervous System Function in Youth with Overweight and Obesity

Ms. Kelsey McAlister¹, Tiffany Chapman¹, Kristen Moore¹, Stephanie Castillo¹, Jonathan Kaslander¹, Micaela Hewus¹, Dr. Christina Dieli-Conwright^{2,3}, Dr. Chih-Hsiang Yang⁴, Dr. Britni Belcher¹

¹University of Southern California, Los Angeles, USA, ²Dana-Farber Cancer Institute, Boston, USA, ³Harvard Medical School, Boston, USA, ⁴University of South Carolina, Columbia, USA

O.3.25: Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA, Ballroom B, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: Excessive sedentary time (ST) may disrupt cardiac autonomic nervous system (cANS) function, which could increase cardiovascular disease risk. Mechanisms underlying risk are unknown in youth and may be influenced by high body fat (BF) and low cardiorespiratory fitness (CRF). This preliminary study investigated free-living associations of daily ST with cANS via heart rate variability (HRV) among youth with overweight and obesity (OW/OB). We further explored BF and CRF as moderators in these relationships.

Methods: Preliminary data were collected from 15 youth aged 8-11 years with OW/OB (mean age=9.5±0.9 years, 40% girls, 87% Hispanic). Youth wore a thigh-mounted activPAL accelerometer and MyPatch electrocardiogram (ECG) monitor for 24 hours for 7 consecutive days. Youth who had ≥3 days with ≥10 hours of waking time each day were included. BF percent and CRF were collected via dual-energy x-ray absorptiometry and treadmill VO₂max testing, respectively. Day-level total ST (minutes) via accelerometry and day-level mean HRV metrics [standard deviation of normal-to-normal intervals (SDNN), root mean square of successive normal-to-normal interval differences (RMSSD), low frequency (LF), high frequency (HF), LF/HF ratio] via ECG were calculated. Multilevel models assessed whether within-person and between-person ST predicted each day-level mean HRV variable, adjusting for sex, ethnicity, and day-level moderate physical activity and accelerometer wear time. Interaction terms were included to assess person-level BF percent and CRF as moderators.

Results/findings: There were 71 valid days of accelerometer and ECG data. Compared to others, more weekly time in ST was associated with lower SDNN ($\beta=-0.13$ ms, $p=0.01$), HF ($\beta=-2.19$ ms², $p=0.03$), and higher LF/HF ratio ($\beta=0.01$, $p=0.05$) and marginally associated with lower RMSSD ($\beta=-0.13$ ms, $p=0.09$) and LF ($\beta=-1.85$ ms², $p=0.09$). Within-person ST was not associated with HRV ($p>0.05$). BF percent and CRF did not moderate ST-HRV associations ($p>0.05$).

Conclusions: More weekly average time in ST was associated with worse cANS function on multiple HRV metrics, but day-level ST was not associated with cANS function. Week-level, habitual ST may be an important behavioral target for preventing adverse cANS alterations in youth vulnerable to high cardiovascular disease risk. More studies are needed in larger samples to support our preliminary findings.

Association of SNAP, WIC and Head Start Programs with Food and Nutrition Security in Households with 2–6-Year-Old Children

Ms. Tirna Purkait¹, Dr. Dipti Dev¹, Dr. Natalie Koziol¹, Ms. Naveta Bhatti¹, Ms. Jean Ann Fischer¹, Ms. Natalie Sehi¹, Ms. Donnia Behrends¹, Dr. Lisa Franzen-Castle¹
¹University of Nebraska-Lincoln, Lincoln, USA

O.3.25: Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA, Ballroom B, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Background: Approximately 3 million young children in the US face food insecurity. To combat this, USDA's Food and Nutrition Assistance Programs (FNAPs) such as SNAP (Supplemental Nutrition Assistance Program), Head Start (HS), and Women, Infants, and Children (WIC), help low-income families with young children. However, research gaps exist in understanding the influence of these FNAPs, individually and collectively, on improving household food environments that significantly affect children's health and development.

Purpose: To compare SNAP beneficiaries with those receiving HS, WIC, or both, and evaluate their influence on household food environment measures, assessing food and nutrition security, healthfulness, dietary choices, food store perceived limited availability, utilization barriers, and food access barriers in households with 2–6-year-old children.

Method: This study, part of SNAP-Ed Needs and Assets Assessment Survey 'Healthy People, Healthy State,' analyzed cross-sectional data from Nebraska's low-income households (n=2337), focusing on households with at least one 2-6-year-old child (n=1316) and a subgroup exclusively participating in SNAP (n=257), SNAP+HS (n=349), SNAP+WIC (n=132), and SNAP+WIC+HS (n=83). We compared program participation for household food environment means using MANOVA while controlling for demographics and applied Benjamini-Hochberg correction, then compared corrected p-values to $\alpha=0.05$.

Results: Compared to other groups, SNAP+HS reported comparatively higher levels of household food security, whereas SNAP+HS+WIC reported lower levels ($p<0.01$). SNAP+HS also showed higher levels of nutrition security, dietary choices, better perceived availability of healthy foods in stores, fewer food access and utilization barriers ($p<0.001$, $p<0.05$). In pairwise comparisons, SNAP+HS consistently outperformed other groups in most measures, except for healthfulness choice.

Conclusion: Recent ACF-FNS policy changes aim to facilitate SNAP households' access to HS, aligning with this study's findings. Integrating HS with SNAP offers a promising approach to improve overall food environment and child development outcomes for low-income families by combining nutritional assistance with early childhood education and health services. However, perceived lack of control over acquiring healthy foods among participants suggest a need for targeted nutrition education. Combination of three FNAPs may pose challenges due to potential complexity of coordinating multiple programs. Future research should explore long-term outcomes, implementation challenges, family experiences, and demographic variations to inform policies and practices.

Unveiling changes in preschool-aged children's twenty-four hour movement behaviors: a within-person analysis from the school year to the summer

Ms. Hannah Parker¹, Dr. Sarah Burkart¹, Dr. Lauren von Klinggraeff², Mrs. Meghan Savidge¹, Dr. Christopher D. Pfladderer³, Ms. Zhu Xuanxuan⁴, Dr. Layton Reesor-Oyer⁵, Dr. Elizabeth L. Adams¹, Dr. R. Glenn Weaver¹, Dr. Bridget Armstrong¹, Dr. Michael W. Beets¹

¹University of South Carolina, Department of Exercise Science, COLUMBIA, USA, ²Augusta University, Department of Community and Behavioral Health Sciences, Institute of Public and Preventive Health, Augusta, USA, ³University of Texas Health Science Center at Houston, School of Public Health, Austin Regional Campus, Austin, USA, ⁴University of South Carolina, Department of Epidemiology and Biostatistics, Columbia, USA, ⁵University of Florida, Department of Health Education and Behavior, Gainesville, USA

O.3.25: Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA, Ballroom B, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose/Background: The Structured Days Hypothesis (SDH) posits children have healthier movement behaviors (sleep, physical activity, and screen time) when engaged in structured environments, such as during the school year. However, most research supporting the SDH has been conducted among elementary-aged children. Therefore, the purpose of this study was to examine if the SDH holds true in preschool-aged children, comparing their 24-hour movement behaviors during the school year versus during the summer.

Methods: Preschool-aged children between 3-5yrs (N=39; 53% female; 61% White; 5.0±0.3yrs) were recruited from 8 preschool programs serving families with low income during Spring 2023. Parents completed nightly surveys about daily screen time and nocturnal sleep. Children wore an Actigraph GT3X accelerometer around their waist to measure light physical activity (LPA) and moderate-to-vigorous physical activity (MVPA) for 7 days during the school year (April/May 2023) and summer (July 2023). Accelerometry was processed using GGIR (v2.8-2). Valid days were defined as ≥16 hours/day of wear time. Mixed effects models compared school year versus summer movement behaviors. Sex and accelerometer non-wear time were included as covariates.

Results: When comparing the school year and summer, children had an average of 97.4 minutes/day vs 120.2 minutes/day (22.8; 95CI = 4.7, 41.0) of screen time, 606.6 minutes/night vs 645.6 minutes/night (39.0; 95 CI = 18.6, 58.8) of sleep, 130.0 minutes/day vs 156.3 minutes/day (26.3; 95CI = 7.6, 45.0) of LPA, and 203.4 minutes/day vs 194.7 minutes/day (-8.7; 95CI = -29.3, 11.8) of MVPA, respectively.

Conclusion: Preschool-aged children accumulated significantly more minutes of LPA, screen time, and sleep, with no changes in MVPA, on summer days compared to the school year. Findings are consistent with previous literature in elementary aged children suggesting children spend more time on screens and more time sleeping when engaged in unstructured environments; however, our findings for LPA and MVPA are inconsistent with previous research. Studies with large sample sizes are required to further understand the context of what preschool-aged children are doing that could explain these inconsistencies.

Monitor-Independent Measures of Physical Activity Volume and Intensity are Associated with Adiposity Indicators Among Children and Adolescents in the US

Dr. Denver Brown¹, Dr. Christopher Pflедderer², Dr. Peter Stoepker³, Dr. Kar Hau Chong⁴, Dr. Chelsea Kracht⁵, Dr. Stuart Fairclough⁶

¹University of Texas at San Antonio, San Antonio, USA, ²UT Health School of Public Health, Austin, USA, ³Kansas State University, Manhattan, USA, ⁴University of Wollongong, Wollongong, Australia, ⁵Pennington Biomedical Research Center, Baton Rouge, USA, ⁶Edge Hill University, Ormskirk, United Kingdom

O.3.25: Unraveling the Complexity of Child and Family Health: Insights into Determinants of Behavioral Nutrition and PA, Ballroom B, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: The widespread use of device-based measures is promising for physical activity (PA) surveillance efforts, but comparison of PA estimates across devices is limited by the varied cut-points used to operationalize PA. Utilizing device-agnostic, alternative metrics derived from raw acceleration data represents an opportunity to overcome this issue and reduce bias in associations with health outcomes. This study investigated the association between PA volume and intensity, as expressed in monitor-independent movement summary (MIMS) unit metrics, and four adiposity indicators among children and adolescents.

Methods: Nationally-representative cross-sectional data from three cycles of the US National Health and Nutrition Survey (2011-2012; 2012 National Youth Fitness Survey; 2013-2014) were analyzed. A total of 5,260 participants (49% female) between 6 to 17 years of age wore an accelerometer on their non-dominant wrist for 7-days. MIMS units were used to represent PA volume (Daily MIMS/1000 units) and intensity (Peak 60-min MIMS/100 units). Four adiposity indicators were examined: body mass index (BMI) z-scores, body fat percentage via dual-energy X-ray absorptiometry, overweight/obesity status, and abdominal obesity status. Weighted linear and logistic regression models were computed to examine associations between PA volume and intensity with adiposity indicators, adjusted for sex, age, race/ethnicity, household income, parental education, sleep duration and caloric intake.

Results: PA volume and intensity were inversely associated with BMI z-scores (Daily MIMS: B = -0.02, 95% CI: -0.03, -0.01; Peak-60 MIMS: B = -0.03, 95% CI: -0.03, -0.02) and body fat percentage (Daily MIMS: B = -0.31, 95% CI: -0.43, -0.19; Peak-60 MIMS: B = -0.26, 95% CI: -0.31, -0.22). PA volume and intensity were also associated with significantly lower odds of overweight/obesity (Daily MIMS: OR = 0.95, 95% CI: 0.93, 0.97; Peak-60 MIMS: OR = 0.94, 95% CI: 0.93, 0.95) and abdominal obesity (Daily MIMS: OR = 0.94, 95% CI: 0.92, 0.97; Peak-60 MIMS: OR = 0.94, 95% CI: 0.93, 0.95).

Conclusions: Greater PA volume and intensity may be protective against adiposity indicators during childhood and adolescence. Longitudinal studies using cut-point-free metrics such as MIMS units are warranted to determine the respective influences of total volume and intensity of PA for adiposity prevention among youth.

A validated measure of caregiver adherence to the Satter Division of Responsibility in Feeding is associated with lower intake of potatoes and French fries among children 3 to < 6y

Dr. Elizabeth Ruder¹, Dr. Barbara Lohse¹

¹Rochester Institute of Technology, Rochester, USA

O.3.26: Feeding and Eating in Early Care and Education Settings, Room 212, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: F. Early care and education

Purpose: The Satter Division of Responsibility in Feeding (sDOR) model is an approach to establish trusting feeding relationships for enjoyable mealtimes with young children. Adherence to sDOR has not been studied in relation to children's dietary intake. The study purpose was to evaluate the association between caregiver sDOR adherence and children's dietary intake. **Methods:** A cross-sectional asymmetric survey with measured child weights/heights was used. Caregivers and children ages 3 to < 6 years were recruited from early childhood education centers. A survey was completed by 91 dyads from August–November 2019;. The association between sDOR adherence (sDOR.2-6y™) and dietary intake (Block Kids Food Screener) was tested by Spearman rho correlation coefficient. **Results/findings:** Children's energy intake (n=86) was 916.0 ± 46.5 kcals (mean \pm standard deviation (SD)). Food group consumption in cup equivalents was: Fruit/Fruit Juice: 1.4 ± 0.7 , Vegetables (no potatoes/legumes): 0.5 ± 0.3 , Potatoes (including French fries): 0.1 ± 0.1 , Dairy: 1.7 ± 0.8 ; and ounce equivalents of Whole Grains 0.4 ± 0.3 , and Meat, Poultry, Fish: 1.5 ± 0.8 . Complete sDOR and dietary data was provided by n=65 caregivers. Greater sDOR adherence to child autonomy was associated with lower intake of potatoes and French fries among children (overall child autonomy domain rho= -0.28; n=65; P=0.03), but no significant correlations were found among other dietary components. **Conclusions:** sDOR.2-6y™ is a tool to measure caregiver feeding practices rather than the foods or nutrient quality of meals, yet sDOR adherence was inversely correlated with children's consumption of potatoes and French fries. Given this association, continued investigation of dietary intake with more robust methods of dietary quality and a larger sample is warranted.

Adaptation of Mealtime Emotional Climate in Child Care Observational Scales (MECCOS) for Family Child Care Home Settings

Ms. Jasmin Smith¹, Dr. Dipti Dev¹, Dr. Saima Hasnin², Ms Carly Hillburn¹, Dr. Natalie Koziol¹, Dr. Patty Kuo¹, Dr. Jaclyn Saltzman³

¹University of Nebraska-Lincoln, Lincoln, USA, ²University of Illinois at Urbana-Champaign, Urbana-Champaign, USA, ³The MITRE Corporation, Bedford, USA

O.3.26: Feeding and Eating in Early Care and Education Settings, Room 212, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: F. Early care and education

Purpose: The purpose of this research is to systematically adapt and pilot an observational measure, called the Mealtime Emotional Climate in Child Care Observational Scales (MECCOS), to assess MEC in family childcare homes (FCCHs). MEC—defined as the quality of emotional interactions between the child and caregiver—has a relationship with children’s diet in family homes, but there is no validated tool to measure MEC in childcare settings.

Methods: This cross-sectional study utilized data from 55 video-recorded lunchtime observations of Nebraska FCCH providers. To create MECCOS, FCCH mealtime videos were first coded using the Iowa Family Interaction Rating Scales (IFIRS). The IFIRS was chosen because it has been widely utilized with children aged 3-5 years and has been previously adapted to measure MEC in the home with clear definitions of constructs and a detailed codebook. After coding each video individually with the adapted tool, the team met to discuss and adapt the MECCOS tool based on the video coding. After the iterative process, adaptations were made to the IFIRS tool in 4 themes: purpose and definitions of the scales, relevance for use in an FCCH setting including examples of interactions during mealtimes between the provider and children, refining the scoring scheme, and including additional items from previously validated measures. The final measure included 21 items. To understand the underlying structure for the items in the adapted MECCOS tool, an exploratory factor analysis with an oblimin rotation was conducted using SPSS v.29

Results/findings: EFA analyses indicated that two factors accounted for 56.4% of the total variance in responses to the MECCOS. Factor 1 appeared to capture ‘Positive Mealtime Emotional Climate’ and emerged with five items (i.e. relationship quality, communication, positive emotion expression, positive reinforcement, explanations/reasoning) and loadings ranging from .5 to .9. Factor 2 appeared to capture ‘Negative/Hostile Emotional Climate’ and included three items (i.e. hostile, negative emotion expression, intrusive/controlling) with factor loadings ranging from .3 to .7.

Conclusion: This study advances the field by adapting a measure to assess MEC in childcare settings for fostering a pleasant mealtime environment that is beneficial for children’s development and healthy eating behavior.

Associations of infant food exposures and appetitive traits with early childhood diet quality

Dr. Tonja Nansel¹, Dr. Leah Lipsky¹, Dr. Kyle Burger², Dr. Grace Shearer³, Dr. Anna Maria Siega-Riz⁴

¹Eunice Kennedy Shriver National Institute Of Child Health And Human Development, Bethesda, USA, ²University of North Carolina Chapel Hill, Chapel Hill, USA, ³University of Wyoming, Laramie, USA, ⁴University of Massachusetts, Amherst, USA

O.3.26: Feeding and Eating in Early Care and Education Settings, Room 212, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: Early life food exposures may influence food preferences and receptivity, thereby impacting long-term diet quality. Infant exposure to discretionary foods may be more detrimental for infants with high food approach traits; conversely, early exposure to fruits and vegetables may be more important for those with high food avoidance traits. This study investigated associations of infant food exposures with early childhood diet quality and whether these associations are modified by infant appetitive traits.

Methods: Data are from the Pregnancy Eating Attributes Study (PEAS) and Sprouts follow-up study, a prospective cohort assessed from the first trimester of pregnancy through early childhood. Birthing parents completed the Baby Eating Behavior Questionnaire assessing food-approach and food-avoidance appetitive traits at 6 months and food frequency questionnaires assessing infant age at introduction to and frequency of consuming food groups at ages 6, 12, and 24 months. At child ages 3.5 and 5 years, parents provided three 24-hour dietary recalls, from which the Healthy Eating Index-2020, a measure of conformance to U.S. dietary guidelines, was calculated. Structural equation models examined associations of age at introduction to, and intake frequency of, fruit/vegetables and discretionary foods, and their interactions with food-approach and food-avoidant appetitive traits, on child diet quality at age 3.5 & 5 years, controlling for income, education, and breastfeeding duration.

Results: Higher childhood diet quality was associated with later infant age at introduction to discretionary foods ($\beta=0.26\pm0.07$, $p<0.001$), lower intake of discretionary foods at ages 12 ($\beta=-0.24\pm0.09$, $p=0.006$) and 24 ($\beta=-0.47\pm0.14$, $p<0.001$) months, and greater intake of fruits and vegetables at age 24 months ($\beta=0.46\pm0.11$, $p<0.001$). Childhood diet quality was not associated with infant age at introduction to fruits and vegetables or their intake at age 12 months. Infant appetitive traits were not associated with childhood diet quality and did not modify associations of infant food exposures with childhood diet quality.

Conclusions: Exposure to discretionary food in the first two years of life was consistently associated with lower diet quality in early childhood regardless of the strength of appetitive traits. Findings suggest the public health importance of efforts to reduce infant intake of discretionary foods.

The impact of a family-based, multi-component randomized controlled obesity prevention intervention on infant diet quality.

Dr. Melissa Kay¹, Alison Brinson, Dr. Taylor Richardson, Dr. Michelle Graf, Dr. Alexis Barr, Dr. Harlyn Skinner, Dr. Amanda Thompson, Dr. Heather Wasser
¹Duke University, Durham, USA

O.3.26: Feeding and Eating in Early Care and Education Settings, Room 212, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: The first two years of life are an important period in which to begin infant feeding practices that will promote healthy growth and development. Dietary intake during early infancy influences lifelong flavor preferences and dietary behaviors that can impact long-term health.

Methods: Mothers & Others was a family-based, multi-component randomized controlled obesity prevention intervention with a goal of introducing appropriate and timely complementary foods during infancy. We aimed to determine the efficacy of this intervention to impact diet quality in the obesity prevention group versus the infant safety attention control group. We used a two-part binary choice model that included the type and amount of fruits, vegetables, juice, french fries, sweet drinks, sweet foods, and salty foods consumed at infant ages 6, 9, 12, and 15 months. The model first estimated the probability of any consumption using logistic regression, followed by a regression model conditional on consumption. We used logistic regression to assess the treatment effects on introduction of complementary foods before 4 months.

Results: At 9 months, among consumers, infants in the obesity prevention group consumed sweet foods 0.59 times more per day ($p=.05$) compared to those in the attention control group. At 12 months, infants in the obesity prevention group were more likely to consume french fries [OR 1.94 (1.07, 3.50), $p=.03$], sweet foods [OR 1.95 (1.06, 3.61), $p=.03$], sugar sweetened beverages [OR 2.15 (1.05, 4.37), $p=.04$], and salty snacks [OR 2.26 (1.18, 4.34), $p=.01$] compared to infants in the attention control group.

Conclusion: Our results suggest parents need increased behavioral support, beyond knowledge acquisition, to minimize introduction of foods high in added sugars, fat, and sodium. Future interventions may benefit from providing guidance earlier, beginning during pregnancy; including an increased dose and array of behavior change strategies (frequent goal setting, weekly tailored feedback) adapted to the period of complementary feeding; and targeting other household or environmental influences during this critical period of dietary behavior development.

Concordance in dietary intake among caregivers and infants during the period of complementary feeding: A scoping review

Ms. Sara Angulo², Dr. Brooke Nezami², Dr. Stephanie Martin², **Dr. Melissa Kay**¹, Dr. Taylor Richardson², Dr. Heather Wasser²

¹Duke University, Durham, USA, ²University of North Carolina, Chapel Hill, USA

O.3.26: Feeding and Eating in Early Care and Education Settings, Room 212, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: Dietary intake during infancy shapes later food preferences and is important for short- and long-term health and wellbeing. Although caregivers are thought to influence the developing food preferences of infants, children less than two years old have been notably absent in existing meta-analyses on the topic. We conducted a scoping review to fill this gap by using a systematic process to identify and summarize the published literature on the resemblance of caregiver and infant diet during the period of complementary feeding (ages 6-23 months).

Methods: Articles were included if they assessed intake of foods or beverages other than human milk or commercial milk formula and reported a test of association between the intake of caregivers and infants. Four electronic databases (PubMed, EMBASE, Scopus, and Global Health) were systematically searched for articles published since 2000. Thirty-three articles, representing 32 studies, were identified.

Results: Most studies examined infant intake of food groups or items (n=20), seven studies examined infant dietary patterns, and six studies examined dietary diversity. Studies predominantly reported associations between diets of mothers and infants (n=31); three studies reported associations for fathers. Most studies assessed infant diet at one timepoint (n=26), with 12 studies combining the intakes of younger (0-11 months) and older infants (12-23 months). Food groups examined, in order of frequency, included 'non-core' foods and beverages (n=14), vegetables (n=13), fruits (n=12), protein foods (n=6), grains (n=5), and dairy (n=4). Definitions of variables for food groups and dietary patterns were highly heterogeneous, but consistent for dietary diversity. Nearly all studies (n=31) reported significant associations between dietary intakes of caregivers and infants.

Conclusions: Across the various aspects of diet examined, studies consistently reported significant associations between the dietary intakes of caregivers and their infants, suggesting caregiver diet may be a promising focus for interventions aiming to shape the food preferences and dietary intakes of infants. Future studies should include assessments of other caregivers who may be responsible for feeding, such as fathers and grandmothers.

Immigrant Mothers' Attitudes and Beliefs about Infant Feeding: A Systematic Review

Ms. Elaine Beulick¹, Dr. Dixie Meyer¹, Dr. Maria Romo-Palafox¹

¹Saint Louis University, Saint Louis, USA

O.3.26: Feeding and Eating in Early Care and Education Settings, Room 212, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: This pre-registered systematic review synthesizes qualitative studies examining infant feeding attitudes and beliefs among mothers who immigrated to the United States. It aims to consolidate existing knowledge and enhance culturally competent care among healthcare providers engaging with immigrant mothers about infant feeding.

Methods: Utilizing the SPIDER framework, inclusion and exclusion criteria were established. Eligible studies: (1) focused on mothers who immigrated to the United States; (2) provided a comprehensive review of infant feeding attitudes and beliefs; and (3) were qualitative in nature. Searches were conducted across PubMed, Web of Science, SCOPUS, and PsycInfo, restricting date (2000 to present) and language (English). A narrative synthesis followed.

Findings: Out of 153 identified outputs, 93 titles and abstracts, and 39 full-texts were screened. Ultimately, twelve studies met inclusion criteria. The studies involved immigrant mothers from diverse origins (Marshall Islands, Vietnam, the Dominican Republic, the Democratic Republic of Congo, Burundi, China, Mexico, El Salvador, Bangladesh, Korea, Brazil, Cambodia, and Somalia) and revealed factors influencing infant feeding attitudes and beliefs across the social ecological model. Nine themes emerged including: (1) truly individual attitudes and beliefs; (2) familial influence on mother's infant feeding attitudes and beliefs (e.g., a Hispanic mother shared "my mother told me [breastfeeding] was healthier"); (3) relationship with child's effect on maternal feeding attitudes and beliefs; (4) struggle between family and healthcare provider advice; (5) healthcare system and provider influence on infant feeding attitudes and beliefs; (6) home country culture (with subthemes: breast is best, first foods, and postpartum practices); (7) cultural disconnects (e.g., Marshallese mothers shared "in the Islands you can [breastfeed] freely. But here you got to cover your breasts with blankets"); (8) necessity of employment in the United States; and (9) WIC's influence on infant feeding attitudes and beliefs.

Conclusions: This review emphasizes the multifaceted impact of intrapersonal factors, interpersonal processes, organizational processes, community factors, and public policy on immigrant mothers' attitudes and beliefs towards infant feeding. Healthcare providers must navigate and respect these influences to provide culturally sensitive care. The findings emphasize the need for tailored approaches in healthcare practices concerning infant feeding among immigrant mothers.

Weight neutral behavioral approaches to diabetes management are successful in improving glucose metabolism: a systematic review

Dr. Jennifer K. Frediani¹, Miss Maya Degneemark², Miss Fatima Waseem³, Miss Daisy Kaplan³, Miss Jordan Pelkmans¹, Ms. Sharon Leslie⁴

¹Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, USA, ²Goizueta Business School, Emory University, Atlanta, USA, ³Emory College of Arts and Humanities, Atlanta, USA, ⁴Woodruff Health Sciences Library, Emory University, Atlanta, USA

O.3.27: Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors, Room 213, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Weight loss interventions as the primary strategy for diabetes management is often unsuccessful in the long term. These interventions can lead to poor mental health and quality of life due to weight cycling. There are several weight neutral interventions to improve diabetic outcomes. Our objective was to summarize the results of weight neutral behavioral approaches to diabetes management.

Methods: Six bibliographic databases were searched: CINAHL (EBSCO), Embase.com, Health Source: Nursing/Academic (EBSCO), MEDLINE via PubMed, PsycInfo (EBSCO) and Web of Science Core Collection. Inclusion criteria included: participants ages 13+ years with or at risk for type 2 diabetes; outcomes of glucose metabolism; articles between January 1, 2000 and May 31, 2022. Exclusion criteria included: studies in animals, weight loss interventions or any calorie restriction. Study designs included were randomized trials and prospective observational studies. Cochrane Risk of Bias and Grading of Recommendations, Assessment, Development, and Evaluation were used to assess methodology.

Results: There were 3001 studies screened, 243 full text studies assessed, and 55 studies included in the review. Studies were divided into categories based on intervention type; diabetes self-management education (DSME) (23 studies), diet and exercise (23 studies), and other (9 studies) which included comprehensive interventions (DSME + specific diet and exercise components and support). Out of the total, 21 were rated as low amount of bias and 14 had high methodological quality. There was good evidence for the use of DSME interventions without weight loss, where most studies showed improvement by six months. Diet interventions alone did not improve diabetic outcomes, most studies were three months in duration.

Conclusions: Improvement of diabetic health outcomes without focus on weight loss is possible. Behavior change in this area requires ongoing support and a combination of education and improvements in diet quality and exercise. This review may provide new strategies for healthcare providers of patients with or at risk for type 2 diabetes. Targeted advice on how to change diet, monitor disease and overcome barriers to behavior change that does not involve a scale would improve the mental health and quality of life of these patients.

“There’s just a real good vibe....it’s like you’re part of something”: Non-competitive sport as a vehicle for physical activity participation amongst adult women.

Dr. Ciara O’Hagan¹, Mr Daire Swords¹

¹South East Technological University, , Ireland

O.3.27: Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors, Room 213, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Women are less likely than men to meet physical activity guidelines, and women who are mothers are particularly likely to be inactive. Furthermore, adult women are more likely to participate in individual or group exercise than team sports; an important distinction given that while any form of physical activity is associated with physiological benefits, participation in team sports may have higher psychosocial benefits than individual exercise. The aim of this study was to identify factors contributing to the success of a community-based non-competitive team sport programme in engaging women in physical activity.

Methods: Gaelic football is a popular field sport in Ireland which has some similarities to soccer and Australian Rules football. “Gaelic for Mothers & Others” (G4MO) is an extremely successful novel community-based non-competitive programme administered via the pre-existing network of Gaelic football clubs. G4MO is played using the standard rules of Gaelic Football but there are no competitions and all matches are “friendlies” with no scores recorded. Sixteen current and previous G4MO participants (age 29 to 49 years) recruited via purposive sampling from clubs in urban, suburban and rural locations participated in individual semi-structured interviews focusing on their reasons for initiating and continuing participation in the programme. Interview data were analysed using an inductive thematic analysis method.

Results: Initial analysis (8 interviews) has identified three themes in participants’ reasons for playing G4MO. (1) Sense of belonging: women felt that they both gained and contributed to a social and emotional support network which developed through training together. (2) Sport without pressure: women greatly valued the opportunity to play organised sport without an expectation to be highly skilled or to engage in training schedules which did not suit their interests, goals or other life commitments. (3) Non-formal competition: despite the stated non-competitive ethos of the programme, women enjoyed the chance to express their competitive nature, without the pressure to win matches or tournaments.

Conclusions: Development of non-competitive pathways for participation in mainstream sports may be a way to engage women in physical activity by harnessing the value of social support while removing the perceived pressures associated with competitive sport.

Changes in Desk-Based Workers' Sitting, Standing, and Stepping Time: Short- and Longer-Term Effects on Musculoskeletal Pain

Dr. Francis Q. S. Dzakpasu^{1,2}, Prof. Neville Owen^{2,3}, Dr. Alison Carver⁴, Dr. Christian J. Brakenridge^{2,5}, Prof. Elizabeth G. Eakin⁶, Prof. Genevieve N. Healy⁷, Prof. Anthony LaMontagne⁸, Prof. Marj Moodie⁹, Dr. Pieter Coenen^{10,11}, Prof. Leon Straker¹², Prof. David W. Dunstan^{2,13}

¹Mary MacKillop Institute for Health Research, Australian Catholic University, Melbourne, Australia, ²Physical Activity Laboratory, Baker Heart & Diabetes Institute, Melbourne, Australia., ³Centre for Urban Transitions, Swinburne University of Technology, Melbourne, Australia, ⁴National Centre for Healthy Ageing, Peninsula Clinical School, Monash University, Frankston, Australia, ⁵Active Life Lab, South-Eastern Finland University of Applied Sciences, Mikkeli, Finland, ⁶School of Public Health, The University of Queensland, Brisbane, Australia, ⁷School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia, ⁸Institute for Health Transformation & School of Health & Social Development, Deakin University, Geelong, Australia, ⁹Deakin Health Economics, Institute for Health Transformation, Deakin University, Geelong, Australia, ¹⁰Public and Occupational Health, Amsterdam UMC Location Vrije Universiteit, Amsterdam, Netherlands., ¹¹Amsterdam Public Health, Societal Participation & Health, Amsterdam, Netherlands, ¹²Curtin School of Allied Health, Curtin University, Perth, Australia, ¹³Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia

O.3.27: Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors, Room 213, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Sitting at work can be associated with musculoskeletal pain, but the effect of reductions in sitting is not well understood. We examined relationships with musculoskeletal pain of changes in sitting, standing, stepping, and short and long bouts of these behaviors.

Methods: Analyses pooled data from 224 desk workers (68.4% women; mean \pm SD age = 45.5 \pm 9.4 yr; body mass index = 28.1 \pm 6.1 kg·m⁻²) in intervention trial. Device-assessed (activPAL3) sitting, standing, and stepping time and multisite musculoskeletal pain (Nordic Questionnaire; 12 body areas) were assessed at baseline, 3 months, and 12 months. Compositional data analyses in linear mixed-effects regressions examined relationships within 16 waking hours of the behaviors and their short and long bouts, with changes from baseline in acute and chronic multisite musculoskeletal pain at 3 and 12 months. Analyses were adjusted for initial group randomization and relevant covariates.

Results: At 3 months, increased standing relative to changes in other compositions was significantly associated with increased multisite musculoskeletal pain (acute: β = 1.54, 95% confidence interval [CI] = 0.10 to 2.98; chronic: β = 1.49, 95% CI = 0.12 to 2.83). By contrast, increased stepping relative to changes in other compositions was significantly associated with reduced multisite musculoskeletal pain (acute: β = -1.49, 95% CI = -2.97 to -0.02; chronic: β = -1.87, 95% CI = -3.75 to -0.01). Neither sitting reduction relative to changes in other compositions nor changes in short bouts relative to long bouts of the behaviors were

significantly associated with multisite musculoskeletal pain changes. At 12 months, there were no significant associations for any of the compositional changes.

Conclusions: In the short term, while increasing standing with reduced sitting time can be unfavorable, concurrently increasing stepping could potentially reduce musculoskeletal pain. In the longer term, musculoskeletal pain may not be increased by moderate reductions in sitting time through spending more time standing or stepping.

The Influence of Outcome Expectations on Adherence to Exercise in Adults with Heart Failure Enrolled in an Exercise Study

Mr. Troy Scheer¹, Mrs. Erin Salahshurian¹, Dr. Kevin Kupzyk¹, Dr. Bunny Pozehl¹, Dr. Windy Alonso¹

¹UNMC College of Nursing, Omaha, USA

O.3.27: Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors, Room 213, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Exercise improves quality of life (QOL) in adults with heart failure (HF); however, few initiate and adhere to long-term exercise. Improving self-efficacy, attitudes, and relapse management increase exercise adherence in adults with HF. Few studies have examined the relationship between anticipated consequences of engaging in exercise and long-term exercise adherence. Aligned with Social Cognitive Theory, the purpose of this study is to test the hypothesis that anticipated consequences (outcome expectations) of engaging in exercise are associated with long-term exercise adherence in adults with HF.

Methods: This secondary analysis used a convergent mixed methods approach to integrate qualitative and quantitative data. The parent study randomized 204 adults with HF to test interventional effects on long-term exercise adherence. Prior to randomization, open-ended questions explored participants' expectations of exercise. Qualitative responses were organized into themes using content analysis. Minutes of moderate intensity exercise were extracted from heart rate monitors at 6- and 12-months. Adherence was defined as ≥ 120 minutes of exercise per week. Data were integrated using Chi-square tests to evaluate associations between each theme and 6- and 12-month exercise adherence.

Results: Participants with complete expectation and adherence data (n=134) were 47% female, 42% non-White, and 60.2 years old. We identified five, non-mutually exclusive themes for exercise outcome expectations: Improved physical and mental health (n=110), HF symptom control (n=68), Global health improvements (n=67), Better QOL with HF (n=67), and Establishing exercise routines (n=62). Within each theme, participants were balanced between intervention and usual care; group assignment did not bias the impact of outcome expectation themes on exercise adherence. At 6 months, exercise adherence was significantly less likely (p=0.02) in participants expecting improved physical and mental health and significantly more likely (p=0.01) in those expecting better QOL with HF. No significant associations were identified at 12 months.

Conclusion: These important findings suggest outcome expectations may initially promote exercise adherence in adults with HF, an association needing further study. Future studies are needed to further elucidate the role of outcome expectations in exercise behavior and examine the application of social cognitive constructs in clinical practice to promote long-term exercise adherence in adults with HF.

Co-producing the SPACES physical activity intervention in England's National Health Service for people with severe mental illness

Dr. Gareth Jones¹, Miss Laura Bailey², Mr Matthew Faires³, Dr Katarzyna Machaczek¹, Miss Eleanor Bowes², Miss Lauren Walker⁴, Dr Emily Peckham⁵

¹Sheffield Hallam University, Sheffield, United Kingdom, ²University of Leeds, Leeds, United Kingdom, ³York St John University, York, United Kingdom, ⁴City, University of London, London, United Kingdom, ⁵Bangor University, Bangor, United Kingdom

O.3.27: Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors, Room 213, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: To support physical activity through co-production in people with severe mental illness (SPACES) and address a novel research question; What does a co-produced National Health Service (NHS) delivered physical activity (PA) intervention for people with severe mental illness (SMI) look like in the UK? People living with SMI experience a mortality gap of 10–20 years compared with those without SMI. The majority of deaths are attributable to physical health conditions and modifiable lifestyle behaviours including physical (in)activity. Helping people with SMI increase their PA could reduce the mortality gap.

Methods: Data collection involved an iterative process of multi-stakeholder focus groups and literature searches. Co-production of the SPACES intervention utilised focus groups involving NHS health professionals, people with SMI lived experience, carers, and academics to collaboratively work from the outset to design and deliver the SPACES intervention. Data collection sought to uncover barriers and facilitators to PA and unearth pragmatic solutions. A multi-stakeholder intervention design group utilised this data to inform decisions regarding the SPACES intervention. A Patient and Public Involvement and Engagement group supported the co-production process and intervention design. The behaviour change technique (BCT) mechanisms of action tool was utilised to identify key intervention BCTs.

Results/findings: Co-design, uniting literature and primary data from multiple perspectives led to the creation of a 20-week multi-component intervention, including 30 BCTs. Components included (1) a 2-hour weekly group-based session comprising of up to 60-minutes PA, a 30-minute workshop on a relevant subject and up to 30-minutes social time, (2) 3-6 one-to-one consultations (long-form) with a physical activity coordinator (PAC), (3) 2-4 one-to-one check-ins (short-form) with a PAC, (4) participant handbook, (5) activity monitor offer, (6) attendance prompts, and (7) social support (professional and peer).

Conclusions: The co-production process strengthened the design of a PA intervention delivered within the NHS. The combined nature of lived experience and expertise enabled negotiation of complex behavioural and institutional needs, requirements, and hurdles, whilst achieving programme aims. The co-production process highlighted nuanced considerations for intervention design and behaviour change that would have been missed or difficult to overcome in the absence of multi-stakeholder co-production.

Understanding barriers and facilitators to diet and physical activity modification in people with polycystic ovary syndrome: a mixed method systematic review

Miss Margaret McGowan¹, Dr Rhonda Garad¹, Ms Girija Wadhvani², Ms Sophia Torkel¹, Ms Vibhuti Rao³, Ms Alison Maunder, Ms Elaine Osei-Safo¹, Dr Stephanie Cowan¹, **Associate Professor Lisa Moran¹**

¹Monash Centre Health Research and Implementation (MCHRI), Monash University, Clayton, Australia, ²Faculty of Health, Deakin University, Burwood, Australia, ³NICM Health Research Institute, Western Sydney University, Westmead, Australia

O.3.27: Unraveling the Links: Exploring the Relationship between Mental and Physical Health and Change of Healthy Behaviors, Room 213, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: B. Motivation and behavior change

Polycystic Ovary Syndrome (PCOS) is an endocrine disorder affecting 8 to 13% of reproductive aged women. Lifestyle changes are the first-line therapy to assist with symptom and weight management and to reduce the risk of reproductive, metabolic and psychological comorbidities. However, women with PCOS have a higher weight, experience weight gain, and a higher prevalence of living in a larger body. Health professionals (HPs) play a crucial role in delivering lifestyle advice for people with PCOS. Thus, the aim of this systematic review is to understand the barriers, facilitators, experiences, and perceptions of engagement and compliance with lifestyle modifications in people with PCOS and in HPs providing or referring people with PCOS to lifestyle modifications. A mixed-method systematic review was conducted with quantitative studies narratively synthesised and all studies thematically analysed. There were 68 eligible papers, including n=59 (n=5198) people with PCOS and n=17 (n=2,622) HPs. Several themes were identified as impacting people with PCOS' ability to make lifestyle changes. HP education on PCOS management through lifestyle was viewed by HPs and people with PCOS to be inadequate, further impacting the quality of care and health outcomes. Lifestyle advice delivered by a multidisciplinary team, including dietitians, was identified as a key component for change. Both people with PCOS and HPs agreed that there was a need for individualised and PCOS specific lifestyle advice. However, HPs viewed that there was limited evidence supporting these recommendations and a lack of time to deliver this care. Weight stigma was identified as impacting both those in larger and smaller bodies with PCOS, reducing the quality of care and affecting self-perception and mental health. People with PCOS perceived that lifestyle advice is overly focused on weight loss and fertility, independent of their own personal motivations and goals. Systemic changes, including receiving lifestyle advice that meet the individual's needs, are necessary for leading to long-term sustainable changes and improvements in health outcomes. A multidisciplinary team approach and an overhaul of HPs' perceptions and mentality of weight and weight-centric care for those with PCOS are essential in delivering effective lifestyle advice.

A new decision-making model for optimizing access to fruits and vegetables in a rural community in the US

Dr. Eduardo Pérez¹, [Dr. Cassandra Johnson](#)¹, Dr. Yan Li², Dr. José Pagán³

¹Texas State University, San Marcos, USA, ²Icahn School of Medicine at Mount Sinai, New York, USA, ³New York University, New York, USA

O.3.28: Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity, Room 214, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Objective: Many rural communities experience limited access to fruits and vegetables (FV) and may benefit from food environment interventions that increase the number of produce markets selling FV. Systems analysis is an innovative approach for informing policy, systems, and environmental (PSE) change interventions for the food retail environment. However, there has been little research.

Methods: This study describes a new decision-making model that optimizes placement of new FV markets in a rural community in Texas. The decision-making model was based on an existing agent-based model for the same community and built using an open-source tool, Open Solver add-in, for Microsoft® Excel. Models used secondary sources of data. Three intervention factors were tested: recommended driving distance to nearest produce market, service capacity of new and existing FV markets, and financial resources. Each factor had three levels of low, normal, and high defined based on literature. Models estimated the potential effects on for three intervention outcomes: number of new FV markets, and ratio of fast food (FF) outlets to FV markets, and population coverage or proportion of local population with access to FV. In total, the analysis tested 27 different interventions and compared effects to a benchmark.

Results: When no new FV markets were added to the local food environment or the benchmark, 46.4% of the population had access to FV markets and the ratio of FF outlets to FV markets was eight. The smallest increase in population coverage was 19% compared to benchmark, while other interventions increased population access to FV to 100%. Models showed that the largest relative gain in access to FV, from 29% to 37% for the local population, was at a lower level of financial resource availability (\$15-20,000 per month).

Conclusions: The most impactful interventions were less intensive with fewer financial resources or based on greater driving distances. Findings provide evidence for the potential effects of food environment changes for one rural Texas community. With this model, stakeholders can generate insights to inform context-specific decisions about their communities. In addition, this new decision-making model can be adapted for other communities to support PSE change interventions for nutrition.

Menu labels are most effective among individuals with at least moderate health literacy

Ms. Yiqing "Skylar" Yu¹, Dr. Dan Graham¹, Dr. Megan Mueller¹

¹Colorado State University, Fort Collins, USA

O.3.28: Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity, Room 214, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Restaurant meals are becoming normative in the U.S. and are higher in calories and sodium compared to meals prepared at home. Research suggests sodium warning labels are associated with reductions in total sodium ordered while calorie labeling is minimally effective. This is the first study assessing the moderating role of health literacy on the effect of menu labels and ordering behavior. Understanding whether individuals can interpret and utilize these labels is pivotal in improving food labeling policy.

Methods: 2,829 participants from Amazon's Turk Prime US sample completed an online survey, in which they selected: an entrée, side, beverage, and dessert from a Wendy's menu. Participants were randomly assigned to view menus either displaying calorie information or not, featuring stoplight-style sodium warnings or not, and containing All-Natural labels or not (a 2×2×2 experimental design). Surveys included demographic and health-related questions, including the Newest Vital Sign (NVS) inventory to assess health literacy. Linear regression models adjusting for sociodemographic information, typical ordering behaviors, and frequency of fast-food consumption were used to evaluate the interactive effect between menu labeling condition and health literacy on the experimental food orders.

Results: Individuals' health literacy significantly predicted their orders' calories and sodium ($p < .05$) and moderated the effect of menu labels on food choice. NVS score had a significant negative correlation with total calories ($r = -.24$, $p < .001$) and total sodium ($r = -.11$, $p < .001$) of orders. Menu labels lowered calories and sodium among individuals with moderate literacy ($p < .01$), not those with high or low literacy. Having both sodium warning and calories information seems to be the most effective combination to improve people's food choices.

Conclusions: Policy changes may produce differential outcomes depending on factors like individuals' capacity to comprehend and apply health-related information in making more informed decisions. The interaction effect between menu labels and health literacy introduces a novel direction for interventions: prioritizing educational program to individuals with low health literacy to help them gain a moderate level of health knowledge might be the most pressing and effective way to improve population level food choices.

Machine Learning to identify key behavioral predictors: a case study identifying individual, park, and neighborhood determinants of park use

Dr. Marilyn Wende¹, Sathvik Varma¹, Dr. Andrew Kaczynski²

¹University of Florida, Gainesville, USA, ²University of South Carolina, Columbia, USA

O.3.28: Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity, Room 214, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Algorithm models are innovative and effective for predictive modeling with complex datasets. However, behavioral research primarily uses data models, leaving random forest algorithm approaches underexplored. This study aims to apply random forests to pinpoint individual, park, and neighborhood predictors of park use.

Methods: The current data were derived from the ParkIndex study, which occurred in 128 census block groups in Brooklyn(NY), Seattle(WA), Raleigh(NC), and Greenville County(SC). Using an innovative map-based survey, adult respondents (n=320) provided demographic/behavioral characteristics and indicated parks within one half-mile of their block group used within the past month. Parks (n=263) were audited using the Community Park Audit Tool. Measures were collected at the individual (park visitation, physical activity, sociodemographics), park (distance, quality, size), and block group/neighborhood (count of parks, population density, age structure, racial composition, walkability) levels. Random forests were employed to create an accurate predictive model that can handle complex datasets and provide insights into feature importance for making predictions. Random forest models were comprised of an ensemble of 100 decision trees with class weight adjustment. Python 3.10.9 and scikit-learn version 1.2.1 were used.

Results/findings: The random forest model ranked variables based on the significance of their impact on the model's performance in predicting park use (feature importance (FI)): distance to parks (FI=0.24), park size (FI=0.21), park quality (FI=0.09), participant physical activity (FI=0.06), neighborhood age structure (FI=0.06), participant age (FI=0.06), count of parks (FI=0.05), neighborhood median household income (FI=0.05), population density (FI=0.05), neighborhood racial composition (FI=0.05), neighborhood walkability (FI=0.04), participant education (FI=0.02), participant race (FI=0.01), and participant gender (FI=0.01). The random model performed well in predicting park non-use (high precision and recall, F1-score=95%), with high overall accuracy (90%) to predict both park use and non-use. For park use, precision was sufficient (79%) but recall was lower (50%), resulting in a lower F1-score (61%).

Conclusions: Random forests proved effective in identifying crucial park use predictors. Enhancements in sample size, representativeness, and data quality can further improve predictive performance. Researchers looking to develop robust predictive models of park use, or other behavioral outcomes, should consider the use of random forests or other algorithm modeling techniques.

Exposure to Crime at Food Stores: Implications for Nutrition and Health among Black Americans

Dr. Chelsea Singleton¹, Ms. Danielle Gartner¹, Dr. Fikriyah Winata², Dr. Diego Rose¹, Dr. Karen Sheehan³, Dr. Sara McLafferty⁴

¹Tulane University, New Orleans, USA, ²Mississippi State University, Starkville, USA,

³Northwestern University, Chicago, USA, ⁴University of Illinois at Urbana-Champaign, Urbana, USA

O.3.28: Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity, Room 214, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Crime continues to be a pervasive public health issue that disproportionately affects historically racialized communities in America. Studies have reported that food stores (e.g., grocery stores, corner stores, fast-food restaurants) can attract crime due to their high volume of cash transactions and lack of security measures. There is limited understanding of how exposure to crime in food stores affects the diets and health of community residents. This study aimed to fill this gap in knowledge by exploring the self-reported experiences of Black Americans.

Methods: In 2023, 502 Black-identifying adults (mean age: 47.2; 60.2% female) living in the U.S. completed a cross-sectional survey online. They self-reported their socio-demographic characteristics, height, weight, and prior experiences with crime at food stores in their community. Furthermore, they completed validated screeners for household food security status and fruit and vegetable (FV) intake. Crude and multivariable-adjusted regression models were used to examine associations between self-reported exposure to crime at food stores and the following variables: low food security status, obesity status, and daily servings of FVs (cups).

Results: Findings indicated that 150 (29.9%) survey respondents avoided one or more food stores in their community due to crime while 102 (20.5%) previously witnessed a crime at a food store in their community. After adjusting for age, sex, education level, and annual income, those that avoided food stores in their community due to crime had greater odds of low food security (OR: 2.16; 95% CI: 1.41 – 3.32) and obesity (OR: 2.12; 95% CI: 1.32 – 3.39) compared to others. In addition, they consumed fewer cups of FVs per day ($p = 0.04$). Those that witnessed a crime had significantly greater odds of low food security (OR: 3.78; 95% CI: 2.23 – 6.41) and consumed fewer cups of FVs per day compared to others ($p = 0.03$).

Conclusions: Exposure to crime in local food stores may have important health and nutritional implications for community residents. Future studies should explore these implications, particularly in racially minoritized populations that are disproportionately affected by crime.

Evolution of the cost of a healthy food basket in an emerging Latin American country between 2011 and 2022

Mr. Gerónimo Brunet¹, Dr. Lucía Antúnez², Dr. Gabriela Fajardo³, Dr. Alejandra Girona³, Ms. Belén Araujo³, Dr. Viviana Santin³, Mr. Guillermo Silva³, Ms. Vanessa Gugliucci³, Dr. Florencia Ceriani³, Gastón Ares²

¹Espacio Interdisciplinario, Universidad de la República, Montevideo, Uruguay, ²Facultad de Química, Universidad de la República, Montevideo, Uruguay, ³Escuela de Nutrición, Universidad de la República, Montevideo, Uruguay

O.3.28: Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity, Room 214, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: The design of strategies to increase the affordability of healthy diets and guarantee the right to food requires the development of new methodological approaches to measure the costs of diets. The present work intended to analyze the evolution of the cost of a healthy food basket (HFB) in Uruguay, an emerging Latin American country, from January 2011 to October 2022, and to compare it to the evolution of the official Basic Food Basket (BFB) of the country.

Methods: The HFB for the Uruguayan population was constructed considering Uruguayan dietary guidelines, recommendations on nutrient intake, and the dietary patterns of the Uruguayan population. It included unprocessed, minimally processed, and processed foods and beverages consumed by at least 10% of the households, according to the 2016-2017 National Survey of Expenses and Incomes of Households. Linear programming was used to minimize the cost of the basket considering restrictions for nutrient intake and consumption of specific foods and groups of foods. Data from the National Institute of Statistics were used to calculate the cost of the HFB and to analyze differences with respect to the BFB.

Results/findings: The cost of the HFB in May 2017 was 4.93 USD per person per day (international dollars). Fruits and vegetables accounted for 25.9% of the total cost, while meats represented 17.0%. The nominal cost of the HFB was on average 25.2% higher than the cost of the BFB (minimum 19.3%, maximum 32.0%). Throughout the evaluated period, differences in nominal costs tended to be higher in December-January. The cost of the two baskets experienced similar trends in most of the series. Differences between the interannual increase in the costs of the baskets did not show a clear trend in favour of one over the other.

Conclusions: The present work contributes to the development of methodological approaches to measure the affordability of healthy diets and provides valuable insights for the design of public policies aimed at achieving SDG 2. Results enhance discussions regarding the cost of healthy diets and the criteria to determine food necessities and wellbeing indicators.

Park Prescription Behaviors and Cognitions in a Sample of United States Healthcare Workers

Prof. Jay Maddock¹, Dr. Robert Zarr, Ms. Yanyan Chen, Dr. Stacy Stryer

¹Texas A&M University - College Station, TX, College Station, USA, ²Park RX America, Washington, USA

O.3.28: Navigating Change: Policies, Systems, and Environmental Strategies with an Environmental Emphasis for Diet and Physical Activity, Room 214, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Physical activity and time spent in nature have both been shown to positively affect physical and mental health. Nature prescriptions, written by a healthcare professional, are a potentially powerful way to increase time spent in greenspace and physical activity. However, uptake in the medical field has been slow. ParkRx America provides an easy-to-use platform to prescribe greenspace along with Continuing Medical Education (CME) training on why and how to write nature prescriptions. In this study, characteristics of people who had registered with Park Rx America and their prescription habits were examined.

Methods: In October 2023, email invitations were sent to the 1,580 professionals registered with ParkRx America. Interested participants were taken to a Qualtrics survey and completed a 5–10-minute survey on their nature prescription habits, demographics, connectedness to and time spent in nature, and other related items.

Results: The survey was completed by 168 health professionals (12% response rate) with 147 providing complete data. More than half (55.1% or 81 providers) had ever prescribed nature to their patients. However, of those, less than 42% prescribed nature to patients at least weekly. Providers who reported a stronger connection to nature, took more frequent breaks outside, and perceived nature prescriptions to be extremely valuable were more likely to prescribe nature ($p < .05$). Among those who had ever prescribed nature, the conditions for prescribing nature were: physical inactivity (72.8%), anxiety (72.8%), depression (72.8%) and general health (75.3%). Major reasons for not prescribing included: time constraints (43.5%), patient and family barriers (29.9%) and not knowing how to start the conversation (15.6%). Providers cited the following as facilitators to write nature prescriptions: embedding nature prescriptions into the EMR (58.5%), working with local park systems (52.4%) and hanging posters in the office (42.9%).

Conclusions: Nature prescriptions have a strong potential to improve health, yet few American health care providers routinely issue nature prescriptions. More research is needed to study the effect of motivations (posters, posters, partnerships with local park systems, embedding nature prescriptions in EMR) on overcoming the cited barriers to issuing nature prescriptions. Lessons learned from other countries may inform future practices.

Strengthening Nutrition Incentive and Produce Prescription Projects: An Examination of a Capacity Building and Innovation Fund

Ms. Megan Reynolds¹, Dr. Sarah Stotz^{1,2}, Hollyanne Fricke¹, Dr. Carmen Byker Shanks¹, Tessa Lasswell¹, Laurel Sanville¹, Rachel Hoh¹, Dr. Courtney Parks¹
¹Gretchen Swanson Center For Nutrition, Omaha, USA, ²Colorado State University, Fort Collins, USA

O.3.29: Implementation strategies in community settings., Room 215, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: The Gus Schumacher Nutrition Incentive Program (GusNIP) Nutrition Incentive Training, Technical Assistance, Evaluation, and Information Center (NTAE) is charged with supporting implementation and evaluation of nutrition incentive (NI) and produce prescription (PPR) projects across the United States. Alongside NI and PPR grants, a Capacity Building and Innovation Fund (CBIF) is offered to grantees to expand capacity and innovation within their project. The purpose of this presentation is to systematically describe the CBIF mechanism, detail the needs of organizations applying from 2020-2022, and define technical assistance strategies to best support NI and PPR projects. This work can also be applied broadly to programs that seek to build organizational capacity to implement and disseminate projects that address public health nutrition and physical activity nationally and globally.

Methods: Each CBIF application from 2020-2022 was independently coded by two researchers from the Nutrition Incentive Program Training, Technical Assistance, Evaluation, and Information Center (NTAE) using document-based thematic content analysis methods. In addition, a pre-determined codebook was used to abstract quantitative data from the applications.

Findings: Applicants (N = 130) requested funds to build capacity and innovation around one or more domains: leadership and staffing (n = 72); communications (n = 67); diversity, equity, and inclusion (DEI; n = 57); and technology (n = 42). Three key qualitative themes emerged: “applicants need staffing and technology to streamline their projects;” “applicants need training, resources, and funding to enhance DEI within programs;” and, “opportunities exist for the NTAE to strengthen support of GusNIP grantees and strengthen the CBIF funding mechanism”. The NTAE has taken steps to respond to these findings by offering a DEI workshop for GusNIP grantees and their partners in 2022, given that almost half of the CBIF applications (43.8%) requested capacity building in this area.

Conclusions: Findings from this study can increase awareness about capacity building and innovation needs of organizations who implement NI and PPR projects, policymakers, and funders to consider when supporting healthy food incentive projects – further advancing the implementation and dissemination implications for innovative behavior change interventions that address public health nutrition and physical activity nationally and globally.

Characteristics of rural implementation teams for an evidence-based family healthy weight program

Ms. Ali Malmkar¹, Dr. Jennie Hill², Dr. Paul Estabrooks², Dr. Kate Heelan¹

¹University Of Nebraska Kearney, Kearney, USA, ²University of Utah, Salt Lake City, USA

O.3.29: Implementation strategies in community settings., Room 215, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Background: Children living in rural areas and small towns in the United States are at higher risk for obesity but have much lower access to evidence-based family healthy weight programs (FHWP). Developing local community capacity for implementation has the potential to leverage local resources to adopt, deliver, and sustain FHWP. We developed the Building Healthy Families (BHF) Online Training and Resource Package to support rural community implementation capacity for BHF, an evidence based FHWP.

Purpose: To describe the characteristics of rural and micropolitan communities and implementation teams that participated in the BHF program in seven US communities.

Methods: Pilot communities were selected through a fund and contract process and submitted a brief application that described the community priorities, assets, and organizations that could assist with recruitment and implementation of the BHF program. Successful communities created a BHF implementation team to address the roles of program, nutrition, lifestyle modification, and physical activity coordination. Information such as level of education, place of work, and certifications were used to characterize the implementation personnel.

Results: Seven rural communities (populations ranged from 5,603 to 51,440 people) were successful in the fund and contract process and each community team involved an average of 3 partner organizations including healthcare, public health departments, schools, and parks and recreation. No two communities had identical organizational partners. Of those partners, 60% engaged in program implementation with the remainder addressing program support by contributing to recruitment or providing resources to the implementation team. Implementation personnel also varied with some teams consisting of members with experience in coordinator-specific roles (n=11; 44%). Over half of the implementation staff (n=13; 52%) were credentialed professionals including registered nurses and licensed medical nutrition therapists.

Conclusion: Community assets and implementation personnel vary in rural areas. Through partnership and collaboration, these communities were able to assemble community resources and implementation teams, with relevant experience or expertise, to deliver an evidence based FHWP to families in their communities.

Recruiting Route Leaders for Successful Implementation of Walking School Bus Programs and Safe Routes to School

Dr. Karynn Glover¹, Dr. Bethany Forseth², Chelsea Steel¹, Dr. Ann Davis², Dr. James Sallis³, Dr. Ross Brownson⁴, Dr. Jon Kerner⁵, Dr. Jordan Carlson¹

¹Children's Mercy - Kansas City, Kansas City, USA, ²University of Kansas Medical Center, Kansas City, USA, ³University of California San Diego, San Diego, USA, ⁴Washington University in St. Louis, St. Louis, USA, ⁵Canadian Partnership Against Cancer, Toronto, CA

O.3.29: Implementation strategies in community settings., Room 215, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Walking school bus (WSB) programs are among the most effective Safe Routes to School strategies for supporting walking to/from school and increasing daily physical activity. WSBs utilize adult route leaders to keep children safe during their commute to school. Despite their effectiveness, uptake of WSBs has been low in the U.S., largely due to challenges recruiting route leaders. This study investigated the types of route leaders existing WSB programs have successfully recruited.

Methods: Program coordinators from N=146 existing WSB programs from 34 U.S. states completed a questionnaire on school and program characteristics. Generalized mixed models examined whether programs with certain characteristics were more likely to be successful in recruiting 3 types of route leaders (school, outside organization, parents).

Results/findings: Programs experienced success recruiting route leaders from the school (79%; e.g., teachers, staff), outside organizations (79%; e.g., community organizations, universities), and parents (70%). Only 37% of programs were successful in recruiting all 3 types of route leaders. Programs were more successful in recruiting school route leaders if the coordinator was a school representative (OR=14.7, 95%CI=[3.0,72.1]), the school initiated the program (OR=7.5 [1.6,36.2]), or the school had a higher free/reduced lunch eligibility (OR=1.2 [1.0,1.4]). Programs were more successful in recruiting outside route leaders if the school had bussing (OR=3.5 [1.1, 11.1]), the coordinator was from a community organization (OR=10.1 [2.3,46.0]), or the program implemented multiple built environment activities (OR=1.3 [1.0,1.8]). No school or program factors were associated with successful recruitment of parent route leaders. Programs were more successful in recruiting multiple types of route leaders if the school had bussing (OR=3.4 [1.0,11.6]), the coordinator was from a community organization (OR=6.5 [1.3, 2.9]), or the program implemented multiple built environment activities (OR=1.8 [1.2,2.7]).

Conclusion: Across WSB programs, different types of route leaders have been successfully engaged. Future research should identify effective strategies for leveraging multiple types of route leaders within a program, as well as route leaders who are from a different source than the organizer (e.g., school route leaders within programs operated by outside organizations), given previous research emphasizes these factors' importance in WSB sustainability.

Application of implementation strategies for Turtle Island Tales, an evidence-based obesity prevention program with Native American communities

Ms. Teresa Warne¹, Dr. Emily Tomayko¹, Dr. Paul Estabrooks², Dr. Alexandra Adams¹

¹Center for American Indian and Rural Health Equity, Montana State University, Bozeman, USA,

²University of Utah, Salt Lake City, USA

O.3.29: Implementation strategies in community settings., Room 215, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Turtle Island Tales is an effective childhood obesity prevention intervention that was developed, using community-based participatory research methods, with and for Native American (NA) families. The purpose of this presentation is to describe an approach to scale up Turtle Island Tales for families who live in persistent poverty census tracts.

Methods: Turtle Island Tales is a home-based culturally adapted intervention delivered monthly over one year to facilitate family interaction and promote health. We used community engaged dissemination and implementation (CEDI) principles to identify and document strategies to improve scale up across 3 states and increase reach into NA families. Strategies were specified to include the actor, action, target of action, temporality, dose, and intended mechanism and outcome using the Consolidated Framework for Implementation Research, RE-AIM, and the Framework for Reporting Adaptations and Modifications to Evidence-Based Implementation Strategies.

Results/findings: Four primary strategies were identified to improve reach including (1) the development of a project steering committee with membership from potential delivery systems, key community partners, and the scientific team, (2) local community implementation teams focused on implementing strategies to increase reach, adoption, implementation quality, and program maintenance, (3) pursuing and achieving recognition in an evidence-based intervention in the SNAP-ED intervention repository, and (4) creating a centralized distribution center to reduce the complexity of local program implementation. The project steering committee and the community implementation teams were designed to meet quarterly/monthly and contribute to the design, revision, and application of strategies specific to increasing program reach. Within these strategies, use of social media support for family recruitment (locally and project-level) and place-based recruitment strategies through community Head Start appear to be promising approaches to improve reach. Inclusion in the repository has also demonstrated initial success at increasing states and SNAP-Ed provider adoption of Turtle Island Tales. Finally, using centralized distribution facilitated ordering, packaging, and distribution to communities, though current concerns related to cost and scale are still being considered.

Conclusions: Identifying strategies to improve scale up of evidence-based interventions in persistent poverty areas and underserved communities—adoption and reach, in particular—has the potential to fast-track implementation and increase community impact.

Trusted organizations and webinars: Practitioners' preferences for learning about implementation strategies

Ms. Whitney Clausen¹, Dr. Bailey Houghtaling^{1,2}, Dr. Samantha Harden², Dr. Hannah Lane³, Dr. Marilyn Wende⁴, Ms. Emiliane Pereira⁵, Dr. Gabriella Maria Mcloughlin^{6,7}, Dr. Laura Balis^{1,2}
¹Gretchen Swanson Center For Nutrition, Omaha, USA, ²Virginia Tech, Blacksburg, USA, ³Duke University School of Medicine, Durham, USA, ⁴University of Florida, Department of Health Education and Behavior, Gainesville, USA, ⁵University of Nebraska Medical Center, Department of Health Promotion, Omaha, USA, ⁶Temple University, Philadelphia, USA, ⁷Washington University Implementation Science Center for Cancer Control, St. Louis, USA

O.3.29: Implementation strategies in community settings., Room 215, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Implementation strategies – methods of moving research to practice – have primarily been developed and studied in clinical settings. As a result, researchers and practitioners in community settings are not fully utilizing implementation strategies to integrate primary prevention interventions (nutrition, physical activity, tobacco prevention). To address this gap, a new compilation of community setting implementation strategies for researchers and practitioners was recently developed. The goal of this work was to inform a dissemination plan for the compilation by understanding public health practitioners would prefer to receive this information.

Methods: This research was conducted as part of a qualitative study investigating implementation strategies used by public health researchers and practitioners in community settings. Purposive and snowball sampling was used to recruit practitioners working in seven settings: education, social services, city planning and transportation, workplaces, recreation/sport, faith-based, and public health. A portion of semi-structured virtual interview questions focused on preferred dissemination methods for practitioners following the Diffusion of Innovations theory regarding sources (who provides information) and channels (how information is provided). A rapid deductive approach was used to analyze findings using a coding matrix based on DOI in alignment with the interview guide. Two researchers coded each interview and resolved discrepancies.

Results: Practitioners (n=8) completed interviews; most (n=6) reported delivering interventions across multiple focus areas (e.g., both nutrition and physical activity) and working in public health (n=3) or multiple (n=3) community settings. Interviewees shared preferred dissemination channels (n=24) and sources (n=23). Webinars (n=6), listservs/newsletters (n=5), and conferences (n=3) were the most mentioned dissemination channels. National public health organizations (n=13; e.g., professional associations, accreditors, non-profit organizations) were the most mentioned dissemination sources.

Conclusions: Results reported here expand on past findings and suggest the involvement of broad-reaching public health organizations to disseminate implementation strategies to practitioners in diverse settings. Future work could equip researchers with the skills and strategies to leverage these channels in ways that influence practitioners' uptake of implementation strategies to improve nutrition and physical activity intervention adoption, implementation, and sustainability.

Technical assistance for Community Nutrition Programming: The Evolution of a Learning Collaborative Model

Ms. Holly Dingman², Dr. Sarah Stotz^{1,3}, Mr. Tony Gargano¹, Ms. Leah Carpenter¹, Ms. Emily Hulse², Ms. Maya Wedlow², Ms. Shelly Palmer¹, Dr. Amy Yaroch¹

¹Gretchen Swanson Center for Nutrition, Omaha, United States, ²Children's Nebraska, Lincoln, United States, ³Colorado State University, Fort Collins, United States

O.3.29: Implementation strategies in community settings., Room 215, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: G. Children and families

Purpose: Learning collaborative (LC) is a broad term used to define structured activities to bring organizations with similar interests together. LC's are used to support adoption and implementation of programming. This leaves a gap among program implementers on evaluation and maintenance to sustain and scale programming. The purpose of this presentation is to elucidate the evolution of developing a LC model to support community-based organizations in implementing and evaluating programming to support the nutrition and health needs of children.

Methods: Children's Nebraska, the regions only full-service pediatric health system, provides funding to ten community partners biennially across Nebraska as part of their community benefit investments. Programs that promote positive health outcomes of children by addressing family-based needs where children live, learn, and play are of priority. Funding alongside opportunities to build capacity for sustained programming are provided to grantees. Starting in 2016, Children's partnered with the Gretchen Swanson Center for Nutrition (GSCN), a non-profit research center with expertise in evaluation to provide LC's for grantees. The LC's provide an opportunity for the grantees to collaborate, share best practices for implementation and evaluation, and build collective community-based capacity for sustainability.

Results: Throughout the 2017-2022 funding cycles, Children's and GSCN have provided a total of 18 LC's to 30 grantees. Topic areas included evaluation, data management and analysis, sustainability, and dissemination and reporting. During the first year, grantees suggested adding conversations on building and maintaining partnerships, opportunities to share lessons learned to address barriers, and shortening the requirement of six, three-hour sessions. Adaptations to the LC model include four group LC sessions instead of six, two individual evaluation-specific meetings with each grantee, a hybrid model, and setting a focus of health equity in the 2021-2022 funding cycle.

Conclusions: The LC model allows community-based organizations working to address nutrition and health of families in their communities to network, expand capacity and knowledge, as well as learn evidence-based approaches to evaluation and program sustainability. Children's and GSCN continue to implement and adapt the LC model as a core component of technical assistance. Children's incorporates lessons learned each year into their new call for proposals.

Perceived 'high risk' factors for cardiovascular disease among adults living in poor settings in sub-Saharan African countries: findings from a citizen science and qualitative study

Dr. Kufre Okop^{1,7,2}, Prof. Abby King^{3,4}, Prof Naomi Levitt¹, Dr Stephen Kasenda⁵, Professor Rawleigh Howe⁶

¹Department of Medicine, University of Cape Town, Cape Town, Cape Town, South Africa, ²Department of Prevention Research, Citizen Science Research Foundation, Cape Town, South Africa, ³Department of Epidemiology and Population Health, Stanford University School of Medicine, Stanford, USA, ⁴Department of Medicine, Stanford University School of Medicine, Stanford, Stanford, USA, ⁵Malawi Epidemiology and Intervention Research Unit, Lilongwe, Malawi, ⁶Armauer Hansen Research Institute, Addis Ababa, Ethiopia, ⁷Department of Prevention and Evaluation, Leibniz institute for Prevention Research and Evaluation BIPS, Bremen, Germany

O.3.30: Health and Wellness in Diverse Populations: A Multidimensional Approach, Room 216, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Background: The burden of cardiovascular disease (CVD) continues to increase in sub-Saharan Africa, as the global CVD death rate is projected to rise to an estimated 22.7 million in 2030. Understanding community- and individual-level perceptions of vulnerability to CVD risk factors can inform the development of acceptable and sustainable population-based CVD prevention interventions.

Methods: We utilized citizen science and a semi-structured questionnaire to explore what participants in low-income (rural/urban) settings in South Africa, Malawi, and Ethiopia considered as the main 'high-risk factors' for CVD, and ways to mitigate these factors. The study participants ranked the most popular risk factors among eight factors that they had indicated viz. nutrition (diet-related factors), substance use (tobacco, drug, simulants), litter (hygiene/sanitation), emotional factors (stress, loss of relative/job, sickness, anger, inadequate sleep), crime (crime, violence, abuse), physical inactivity (inadequate or lack of activity), poverty-related (poor housing, unemployment), and obesity (overweight, body image). Thematic analyses were undertaken using a systematic citizen science method. Results are presented using bubble graphs based on weighted proportions (ranking) of key risk factors indicated by participants.

Results: The main CVD risk factors of concern to participants were not the usual conventional risk factors. An overall weighted ranking of indicated 'high risk factors' for the three countries (combined) showed that substance use, nutrition, litter, and emotional factors were ranked highest, in that order. In individual countries, nutrition, substance use, and litter were ranked highest, with rankings differing by rural/urban settings. In each country, physical inactivity was ranked as low risk, while diet-related factors and litter were commonly ranked as high. Crime/violence was ranked as moderately high risk in South African townships. Suggested

strategies to mitigate the risk factors included, addressing the litter challenge, access to junk/unhealthy food, alcohol and tobacco use, and crime.

Conclusion: Although regular physical activity has been demonstrated to be a key mutable risk factor for CVD, residents from these three African countries ranked it low compared to seven other risk factors. There is a critical need to align setting-specific interventions with community-related perceptions of risk factors for CVD to support equitable participation in physical activity for all.

Revisiting the impact of Health at Every Size® Interventions on health and cardiometabolic related outcomes: An updated systematic review with meta-analysis

Dr. Erin D Clarke^{1,2}, Dr. Jordan Stanford^{1,2}, Dr. Maria Gómez Martín^{1,2}, **Laureate Professor Clare E Collins**^{1,2}

¹School of Health Sciences, College of Health, Medicine and Wellbeing, The University of Newcastle, Callaghan, Australia, ²Food and Nutrition Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia

O.3.30: Health and Wellness in Diverse Populations: A Multidimensional Approach, Room 216, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: M. Other

Purpose: The objectives of this review were twofold: (1) to synthesise evidence from interventions based on Health at Every Size (HAES)® principles concerning dietary, physical, and/or psychological health outcomes in people with overweight and obesity, and (2) to report between-group differences by comparing HAES® interventions with control interventions when assessing the impact of HAES® interventions on health and related outcomes.

Methods: Six databases were searched from their inception until November 2022 to find studies that met the following criteria: the studies were conducted on adults who are overweight or obese, used HAES®-based interventions compared to control interventions, and reported dietary, physical and/or psychological outcomes. We extracted data on between-group differences and assessed the risk of bias using ROB2. Outcomes with at least three studies reporting the same or comparable data were included in random-effects meta-analyses.

Results/findings: Out of 128 studies that were identified, 19 full-text articles were included in the analysis. These articles comprised 10 unique studies, of which 6 were published since 2017. All studies were conducted in females only. The results of the meta-analysis showed that there was a significant reduction in susceptibility to hunger in the HAES® intervention groups as compared to the control interventions ($P=0.005$). However, there was no significant difference ($P>0.05$) observed between the HAES® interventions and control groups for anthropometric, psychological or cardiometabolic outcomes such as total cholesterol, HDL cholesterol, triglycerides, systolic or diastolic blood pressure.

Conclusions: HAES® interventions had similar results to other control interventions relating to anthropometric and cardiometabolic outcomes. HAES® interventions had a significant benefit in reducing susceptibility to hunger. The decision to use a HAES®-based intervention should be personalised to meet individual needs and goals. Further research in more diverse populations is required using standardised outcome measures to facilitate future meta-analyses.

Development of a food literacy scale for Puerto Rico focusing on environmental sustainability and nutrition

Ms. Lisa Poirier¹, Mr César Ostolaza², Ms Julianna Cienfuegos Szalay², Dr Joel Gittelsohn¹, Dr. Uriyoán Colón-Ramos³

¹Johns Hopkins Bloomberg School Of Public Health, Baltimore, USA, ²Instituto Nueva Escuela , San Juan, , ³Milken Institute School of Public Health- George Washington University, Washington, USA

O.3.30: Health and Wellness in Diverse Populations: A Multidimensional Approach, Room 216, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: M. Other

Purpose: Food literacy (FL) is a person or group's knowledge, skills, and attitudes regarding food. Previous research has shown that FL and its constructs are context specific. Due to the growing importance of climate change and its effect on the food system in Puerto Rico, this project set out to create a FL scale focusing on environmental sustainability and nutrition.

Methods: The research team adapted a FL survey developed in Korea that had high validity on environmental sustainability and nutrition constructs. Questions were excluded or added to the survey if they were not relevant or if there was a gap in relation to the cultural context of Puerto Rico (PR). Selected questions were presented to a panel of PR food system experts who rated each question regarding their opinion on the wording and relevance to PR context. A survey with a section including the final 14 food literacy questions was distributed to a convenience sample of 1,505 PR adult citizens. Exploratory factor analysis was used to determine the number of constructs, calculation of Cronbach's alpha (α) was used for reliability testing and descriptive statistics were used to summarize scores.

Results: 993 participants completed the food literacy portion of the survey. Principal-component factor analysis identified three factors. These factors are Understanding of Food Labeling (UFL) with 5 questions ($\alpha = 0.78$), Nutrition Knowledge (NK) with 3 questions ($\alpha = 0.66$), and Environmental Sustainability (ES) with 6 questions ($\alpha = 0.82$). A summative score was created for each concept and in total. A higher score indicates a higher level of agreement with the statements in each question. The average score for each section out of each total were: 18.23/25, 12.32/15, 20.96/30, and 51.50/70 for UFL, NK, ES, and the total score, respectively.

Conclusions: This FL survey with constructs on environmental sustainability and healthy diet practices could be considered reliable and valid in the Puerto Rican context. Future work may use this scale to help understand food related issues and concerns given the importance of the nexus climate change and nutrition.

Towards Sustainable Food Systems: Perspectives of Farmers Participating in United States Nutrition Incentive Projects

Dr. Whitney Fung Uy¹, Dr. Carmen Byker Shanks¹, Dr. Bailey Houghtaling¹, Ms. Alexandra Shilen¹, Ms. Jenna Eastman¹, Dr. Amy Yaroch¹

¹*Gretchen Swanson Center for Nutrition, Omaha, USA*

O.3.30: Health and Wellness in Diverse Populations: A Multidimensional Approach, Room 216, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: M. Other

Purpose: This study aimed to describe the factors that influenced the adoption of sustainable food system practices among farmers participating in the Gus Schumacher Nutrition Incentive Program (GusNIP). GusNIP is a federal initiative that funds nutrition incentive (NI) projects across the United States (U.S.) to provide financial incentives to increase fruit and vegetable (FV) intake among people with low-income. Several GusNIP projects rely on farmers to provide FV to participants.

Methods: Guided by the Sustainable Food Systems Framework and the Diffusion of Innovation theory (DoI), semi-structured in-depth interviews (n=15; target n=20-25) were conducted with farmers. Farmer recruitment was conducted by leveraging existing partnerships with GusNIP-funded projects across the U.S. (n=6). The characteristics of farmers sought included high potential for implementing sustainable practices such as adoption of regenerative farming and interest in economic and climate/environmental impacts. Codebook development and coding (inductive and deductive) involved an iterative, team-based approach and were refined as interviews were conducted. Applied thematic analysis was used to identify salient themes; data collection is still in process and will occur until saturation has been met.

Results/findings: Preliminary findings guided by DoI suggest that farmers participating in GusNIP projects are likely early innovators of sustainable farming, where decision making involves a balance of economic, environmental, and social impacts. Farmers appreciated any sales from NI projects but also noted barriers in participation and recommendations to improve existing NI models. For example, farmers experienced minor administrative issues such as problems with incentive redemption or policies around eligible food products. Nearly all farmers mentioned one major benefit of NI participation which was the ability to support populations with low-income that would not have been able to access locally grown food.

Conclusions: The intersection of nutrition, agriculture, and climate impact is emerging as an important area of study. This study highlights perspectives from small farmers which are crucial to help inform food systems research, both in the U.S. and globally. Current study findings offer GusNIP-specific recommendations to better support farmers and suggest ways that federal funding can bolster farmer resiliency to address environmental and related vulnerabilities.

Variability in self-reported health behaviors among Special Olympics athletes across seven global regions

Dr. Heidi Stanish¹, Dr. Alicia Dixon-Ibarra², Monica Forquer³, Dr. John Hanley², Gwendolyn Apgar², Melissa Otterbein², Dr. Andrew Lincoln²

¹University of Massachusetts Boston, Boston, USA, ²Special Olympics, Washington, USA,

³George Washington University, Washington, USA

O.3.30: Health and Wellness in Diverse Populations: A Multidimensional Approach, Room 216, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: M. Other

Purpose: Special Olympics (SO) is an international sport organization that reaches over 3 million athletes with intellectual disabilities (ID) worldwide. SO promotes health and fitness among people with ID through programming, education, and advocacy. The 2023 SO World Summer Games represented a unique opportunity to examine health among a global sample of athletes with ID. This study examined self-reported health behaviors and self-rated health among athletes with ID across seven regions: Africa, Asia Pacific, East Asia, Europe Eurasia, Latin America, Middle East/North Africa, and North America.

Methods: A lifestyle survey was developed to gather information on self-reported health behaviors directly from athletes competing at the World Games in Berlin, Germany. The survey included questions on physical activity (PA), sedentary behavior, nutrition, sleep, and self-rated health. Adults with ID and content experts reviewed the instrument and provided feedback on questions, response options, wording, and format. The survey was translated into seven languages and completed electronically on a tablet with support from a coach/caregiver if needed.

Results: A total of 443 athletes representing all seven global regions and 90 countries completed the survey. Half of respondents (50.1%) completed the survey in English. The proportion of athletes engaging in 30+ min/day of moderate PA on 5+ days/week ranged from 6.6% (East Asia) to 26.0% (North America); 8.0% (Asia Pacific) to 22.4% (Latin America) participated in 30+ min/day of vigorous PA 5+ days/week; 48.5% (East Asia) to 76.0% (Latin America) consumed 5+ fruits/day; 28.1% (East Asia) to 60.7% (Latin America) consumed 5+ vegetables/day; 5.1% (Africa) to 19.2% (North America) reported sitting for 8+ hours/day; and 73.5% (Middle East) to 90.9% (East Asia) slept for 7+ hours/night. Athletes reporting that their health was good-excellent ranged from 75.4% (Latin America) to 96% (Asia Pacific).

Conclusions: These findings represent a step toward understanding global differences in PA, nutrition, and health as reported directly by athletes with ID. With further refinement of the SO lifestyle survey, there is potential to gather information from large global samples of people with ID and determine priorities for targeted health promotion.

Unraveling the Relationship Between Sleep Behaviors and Physical Activity in the U.S: Insights from 2013-2020 NHANES Data

Ms. Deepali Ernest¹, Mr. Bipin Singh, Dr. Fathimath Shamna, Dr. Shreela Sharma

¹University Of Texas Health Science Center Houston School Of Public Health, Houston, USA

O.3.30: Health and Wellness in Diverse Populations: A Multidimensional Approach, Room 216, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: M. Other

Purpose: To examine the association between sleep behaviors and moderate (MPA) / vigorous physical activity (VPA) and determine whether race/ethnicity moderates this association.

Methods: Demographics, physical activity, and sleep behaviors for a sample of 14,284 U.S. participants were collected via interviews/questionnaires as part of the National Health and Nutrition Examination Survey 2013-2020. Chi-square and t-test determined bivariate associations, while logistic regression models assessed age and gender-adjusted associations of sleep behaviors with VPA and MPA. Subgroup analyses examined whether race/ethnicity moderated the above associations.

Results: Participants were, on average, 47.4 years old (SD=18.9); 51.1% female, 33.5% White, 11.5% Hispanic, 24% Black, 23.3% engaged in VPA, and 41.4% in MPA. Sleep duration, snoring, and breath cessation were positively associated with VPA ($p < 0.0001$), while the same sleep behaviors and trouble sleeping were also positively associated with MPA ($p < 0.0001$). Those engaging in VPA had 20% higher odds of having trouble sleeping [OR=1.2; 95% CI: 1.10,1.32], 37% higher odds of snoring frequently [OR=1.37; 95% CI: 1.22,1.53], and a 31% higher odds of breath cessation while asleep [OR=1.31; 95% CI: 1.17,1.48] compared to non-VPA participants. Similarly, MPA participants had 33% higher odds of having trouble sleeping [OR=1.33; 95% CI: 1.23,1.43], 45.5% higher odds of snoring frequently [OR=1.45; 95% CI: 1.33,1.59], and a 34% higher odds of breath cessation while asleep [OR=1.34; 95% CI: 1.21,1.48]. Subgroup analyses indicated that Hispanics engaging in VPA and MPA had relatively higher odds of snoring ≥ 5 times/week compared to other races ($p < 0.05$), while Blacks engaging in VPA and Whites engaging in MPA had higher odds of breath cessation ≥ 5 times/week compared to other races ($p < 0.05$).

Conclusion: This study highlights the importance of physical activity rigor in predicting sleep behaviors across individuals of various ages and genders. Race may moderate the relationship between sleep behaviors and vigorous/moderate physical activity, necessitating further longitudinal investigation to understand its role in sleep health and care

POSTER PRESENTATIONS

Variability and error in measurement of infant formula powder and water: An experimental study

Prof. Richard Rosenkranz¹, Ms. A. Daniela Gonzalez¹, Mr. Chris Acosta¹, Dr. Andrew Hooyman¹, Mr. Jose Hidalgo¹, Ms. Romina Ballesteros-Paniagua¹, A/Prof Sara Rosenkranz¹
¹UNLV, Las Vegas, USA

P1.01: Early care and education, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: F. Early care and education

Purpose: Formula feeding provides a viable alternative to breastfeeding, offering benefits such as convenience and the ability to provide consistent nutrition. Substantial error in the dilution of the formula, however, may lead to hypernatremia, dehydration, gastroenteritis, and other digestive problems, or long-term excessive weight gain. The present study was aimed to investigate the accuracy of caregiver measurements, compared with manufacturer specifications, when preparing infant formula under multiple conditions.

Methods: A diverse sample of caregivers (N = 84, 39% non-Hispanic white) from Kansas and Nevada participated in this cross-over experimental study. Each participant measured infant formula powder and water using their own materials (bottles, formula, and scoop) and a standardized researcher set of materials. Participants were asked to hand-scoop infant formula powder and pour water to prepare 4oz and 7oz feedings, simulating usual practices. Research assistants recorded weights using a calibrated Bonvoisin Lab Scale 5000g x 0.01g high precision electronic analytical balance. The weights listed (in grams) on the formula label for each type of infant formula powder served as the theoretical gold standard. Linear mixed effects models were used to estimate primary fixed effects of target amount (4oz versus 7oz) and materials (participant versus researcher) on mean absolute percent error (MAPE) of measurement.

Results: Across all conditions MAPE was significantly greater for measuring powder than for water (9.03% vs. 4.44%; $p < 0.001$). In models mutually adjusting for relevant caregiver characteristics, there was significantly greater powder MAPE for: 7oz feeding (vs. 4oz; $p = 0.006$); participant materials (vs. researcher; $p < 0.001$); among those occasionally breastfeeding (vs. only bottle feeding; $p = 0.001$); smaller typical feeding volumes (vs. larger volumes; $p = 0.02$). For water MAPE, there were no significant differences by condition or caregiver characteristics ($p > 0.05$).

Conclusions: We observed considerable measurement variability and error during infant formula preparation, particularly for hand-scooping of powder, which tended toward higher values than the gold standard. Greater measurement error was associated with the 7oz preparation and—unexpectedly—with the participants' own materials. In combination, error from powder and water could compound, generally toward under-dilution of formula. Many caregivers and infants may benefit from interventions to improve formula feeding practices.

Design, Protocol and Baseline data of Nurturing Healthy Teachers, a cluster non-randomized controlled trial to improve the health, well-being, and food security of pre-kindergarten and school teachers

Ms. Mackenzie Senn¹, Mr. Miao Tang¹, Ms. Angela Zieba¹, Dr Ru-Jye Chuang¹, Dr. William Perkison¹, Dr. Nalini Ranjit², Dr. Courtney Byrd-Williams², Ms. Jill Cox³, Ms. Katherine French³, Ms. Azar Gaminian⁴, Mr. Mike Pomeroy⁴, Dr. Shreela Sharma¹

¹UTHealth Houston School of Public Health, Houston, USA, ²UTHealth Houston School of Public Health in Austin, Austin, USA, ³Penn State University, Stage College, USA, ⁴Brighter Bites, Houston, USA

P1.01: Early care and education, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: F. Early care and education

Purpose: Our study seeks to examine the short- and long-term effectiveness of a multi-component Nurturing Healthy Teachers intervention implemented over 9 months in improving multiple health-related outcomes among teachers of Pre-K and elementary school age kids. The primary aim is to examine impacts of NHT on nutrition security, diet, mental health and well-being, and markers of metabolic health, and to evaluate the extent to which these impacts, if any, are mediated by food insecurity.

Methods: 28 elementary schools in Houston, Texas, were recruited for the Nurturing Healthy Teachers study. The study design was non-randomized controlled trial (16 intervention and 12 comparison schools). Nurturing Healthy Teachers intervention included teachers receiving Brighter Bites, an evidence-based coordinated school health program that combines access to fresh produce and nutrition education proven to improve dietary and Create Healthy Futures, a web-based nutrition education program that targets nutrition knowledge, self-efficacy, mindfulness, and social support to create healthy habits among teachers. Baseline data was obtained from 337 teachers from November 2022 to April 2023. Post-intervention measurements were completed in December 2023. During both in-person visits at schools, we measured participating teacher weight, blood pressure, veggie meter reading (skin carotenoid levels), and glycosylated hemoglobin (HbA1c) levels measured. Teachers completed surveys on demographics, food security, mental health, dietary behaviors, and home nutrition environment. The primary outcome was food insecurity. Secondary outcomes included mental and metabolic health outcomes. Descriptive statistics, correlations, and regression modeling were used to examine associations among these variables.

Results: At baseline, most of the participants were female, 63% identified as Hispanic, were highly educated, and had a mean age of 42.5 years. Moderate to severe depression was experienced by 18% of teachers at baseline in addition to 23% of teacher experiencing moderate to severe anxiety. Overall, 50% of teachers were classified as being obese and 20% had high cholesterol. At baseline teachers had a mean HbA1c (%) of 5.6%. Results of pre-to-post intervention impact on study primary and secondary outcomes are currently being conducted and will be presented.

Conclusions: The results of this study will inform next steps towards future implementation and evaluation of teacher-focused interventions.

Methods to detect and address biases in physical fitness surveillance data for school-aged youth

Dr. Emily D'Agostino¹, **Dr. Brooke Wagner¹**, Kevin Konty², Kira Argenio², Dr. Cody Neshteruk¹, Dr. Hannah Thompson³, Sophia Day²

¹Duke University School of Medicine, Durham, USA, ²New York City Department of Health and Mental Hygiene, New York, USA, ³University of California Berkeley, Berkeley, USA

P1.01: Early care and education, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: F. Early care and education

Purpose: The New York City Fitnessgram (NYCFG) comprises a powerful surveillance system monitoring longitudinal changes in objectively measured youth physical fitness for the largest and most diverse school system in the nation. Fitness (aerobic capacity, muscular strength, muscular endurance, flexibility, body composition) and physical activity are strongly associated, and frequent vigorous physical activity predicts fitness. However, even objective measurements may be subject to errors and inaccuracies. Recent improvements in data completeness and use of calibrated scales have highlighted potential for height and weight data quality issues in the NYCFG as youth transition from middle to high school. Therefore, we aimed to explore methods to identify data biases across middle and high school subgroups. We additionally propose strategies to address biases in physical fitness surveillance data systems more broadly.

Methods: Data comprised 10 consecutive years of the NYCFG (2009/10-2019/20). Data quality was assessed using two proxy variables; 1) Implausible weight loss: Decreasing weight >5% over two consecutive years; 2) Shrinking: Decreasing height >.01cm over two consecutive years. Prevalence of implausible weight loss and shrinking were assessed overall, and by individual grade level (5th-12th), sex, race/ethnicity, weight class, and sex*race/ethnicity subgroups.

Results/findings: The analytic population included 1,255,650 youth (4,204,546 observations; 51% male, 39% Hispanic, 28% non-Hispanic black, 36% with overweight/obesity). The overall prevalence of implausible weight loss and shrinking ranged from 2.8-10.2% and 2.4-14.4%, respectively. Implausible weight loss was more prevalent among girls than boys (up to 10.1% vs. 7.6%, respectively), and youth who were overweight, particularly between 8th and 9th grades (10.3%). Shrinking was more prevalent among girls than boys (up to 15.3% vs. 7.9%, respectively), and youth with Class III obesity (up to 16.7% from 9-10th grade).

Conclusions: Inaccuracies in data reporting are likely occurring in the NYCFG surveillance system, particularly for select subgroups. Future research should explore methods to mitigate BMI data inaccuracies, including data flags, corrective weighting for subgroups, and reducing weight stigma during data collection. This work can provide insight for youth fitness surveillance systems nationally to improve data quality, and ensure that reporting objective measures of physical fitness address accurate health inequities to promote youth health.

Evaluating Needs and Interests Related to Staff Mental Health and Well-being programming in Schools: Findings from the Iowa SWITCH Project.

Mr. Jimmy Duhamahoro¹, Dr Gregory Welk¹

¹Iowa State University, Ames, USA

P1.01: Early care and education, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: F. Early care and education

The SWITCH initiative (School Wellness Integration Targeting Child Health) provides a capacity-building framework for schools to build and sustain school wellness programming. The standardized implementation model guides schools to plan and deliver programming focused on physical activity, nutrition, and sedentary behavior. Success with implementation varies based on a variety of school level factors, but little attention has been given to the organizational climate and structure of schools as a predictor of school wellness programming. Specifically, few studies have investigated the impact of staff mental well-being on school implementation or distal outcomes from school wellness programming. The present study summarizes descriptive information about school staff needs and interests related to mental well-being using schools engaged in the 2023 iteration of SWITCH. The study was a needs assessment initiative and used a mixed method approach. School Core Teams in SWITCH were guided to promote school-wide completion of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) as a standardized instrument to examine staff well-being. Schools were incentivized to promote completion of the survey by at least 50% of school staff to ensure generalizable data. A total of 481 staff from 21 schools (84% of targeted schools) completed the needs assessment survey with an average of 50.81 (± 8.32). The results reveal variability in needs regarding school mental health programming as staff were in high (13%), moderate (64%), low (15%), and very low (8%) categories of the WEMWBS classifications. Across schools, staff responses averaged at 63.71 (± 2.27) in high, 51.53 (± 18.2) moderate, 42.26 (± 0.67) low, and 34.95 (± 2.40) in very low categories. Approximately 68 % of schools re-enrolled in the 2024 iteration of SWITCH with 60% choosing to participate in the follow-up implementation cycle focused on fostering changes in school staff well-being. Schools in the 2024 iteration were guided to adopt 1 of 3 adapted staff well-being activities (Alliance for Healthier Generation (2 schools), Make It OK (2 schools), or 5-2-1-0 Healthy Choices Count! (8 schools). Survey and interviews of schools will be integrated using mixed method approaches to summarize the effectiveness of staff well-being training to support schools.

Accuracy in measurement of formula powder and water by caregivers with and without a crying baby present

Associate Prof. Sara Rosenkranz^{1,2}, Chris Acosta¹, Ana Gonzalez-Alvarez^{1,2}, Dr. Andrew Hooyman¹, Jose Hidalgo¹, Romina Ballesteros-Paniagua¹, Prof. Richard Rosenkranz^{1,2}

¹University of Nevada, Las Vegas, Las Vegas, USA, ²Kansas State University, Manhattan, USA

P1.01: Early care and education, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: F. Early care and education

Purpose: Formula feeding offers a convenient alternative to breastfeeding, with the potential to provide consistent nutrition. Making substantial errors in the preparation of formula can pose serious threats to infant health. The present study aimed to compare the accuracy of caregiver measurements while preparing infant formula for feeding under multiple conditions, including the presence or absence of a simulated crying baby.

Methods: A diverse sample of caregivers (N = 84) from Kansas and Nevada participated in this crossover experimental study, wherein each participant measured infant formula powder and water. Participants were randomly assigned to prepare formula with or without the simulated crying baby (holding a life-size doll while a recording of a crying infant was played), then asked to hand-scoop infant formula powder and pour water to prepare 4oz and 7oz feedings. Research assistants meticulously recorded weights using a calibrated high-precision electronic analytical balance. The weights (g) listed on the formula label for each type of infant formula powder served as the theoretical gold standard for mean absolute percent error (MAPE) calculations. Due to positive skew, MAPE values were log-transformed. Linear mixed effects models (for both powder and water) were used to estimate the primary fixed effects of baby (present versus absent) target amount (4oz versus 7oz) and materials (participant versus researcher) on MAPE measurement.

Results: Compared to when the baby was absent (MAPE=9%), there was a non-significant effect on powder formula MAPE with the baby present (10%; $\beta_{\text{Baby}}=1.16$, 95% CI=[0.99; 1.34], $p=0.056$), representing a 16% greater error with the baby present. The standardized effect size for the baby condition was 0.15, considered small in magnitude. Results were similar for water MAPE (4.3–4.5%; $\beta_{\text{Baby}}=0.96$, 95% CI=[0.80; 1.14], $p=0.63$); standardized effect size=-0.04. Interactions between materials and target amount with baby presence were not significant for either powder or water.

Conclusions: We observed substantial error during infant formula preparation, with no significant differences between measurements in the presence or absence of a simulated crying baby. Due to possible negative health outcomes from over-dilution and under-dilution errors, some caregivers and infants may benefit from interventions to improve formula-feeding practices.

Essential motor skills and evidence-based activities for enhancing child motor skill development during out-of-school time programming: An expert consensus study.

Dr. Peter Stoepker¹, Dr. Duke Biber², Dr. Brian Dauenhauer³, Dr. Leah Robinson⁴, Dr. David Dziewaltowski⁵

¹Kansas State University, Manhattan, United States, ²James Madison University, , United States, ³University of Northern Colorado, Greeley, USA, ⁴University of Michigan, Ann Arbor, USA, ⁵University of Nebraska Medical Center, , USA

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: Locomotor and object control skills are essential for children to learn due to their potential impact in aiding in future health-enhancing physical activity. Evidence indicates that out-of-school time programs (OST) can provide meaningful physical activity opportunities for children. It has been found that leaders of OST programs are not equipped with the proper training to improve children's motor skills. The purpose of this study was to gather expert consensus on the essential motor skills that should be practiced and evidence-based strategies that should be integrated during OST programming.

Methods: A three-round Delphi method was used to establish expert consensus on the essential motor skills children (5-10 years of age) should practice and evidence-based strategies that OST leaders should integrate during OST programming to enhance child motor skill development. Surveys were conducted using Qualtrics and experts were given 14 days to complete each round. Round one analysis comprised of compiling and then listing all the essential motor skills and evidence-based practices provided by each expert. Round two analysis involved compiling and analyzing the frequency of what experts listed as the five most essential motor skills and evidence-based strategies. Round three analysis was based on if >70% of experts agreed that each essential motor skill and strategy listed was considered an essential skill to practice and integrate during OST programming.

Results: Seven experts completed three rounds and consensus was established (>70% agreement). Five essential motor skills were identified: overhand throwing, kicking, catching, jumping, and striking. Six evidence-based strategies were agreed upon: team sport play, racket sports, swimming, resistance training, jogging/walking, and game-based approaches.

Conclusion: Results from this study provide specific motor skills and evidence-based strategies that OST program leaders could integrate during programming to enhance child motor skill development. These findings could help inform OST leader practices during programming that could help create a more active environment and improve children's motor skills.

Considerations, Advocacy, and Resources for Empowerment (CARE) upon Return-to-Work: Can video education improve a mother's self-efficacy for continuing lactation upon return to work?

Alyssa Wessling², Ms. Audra Losey¹, Dr. Kailey Snyder²

¹University Of Nebraska Lincoln, Lincoln, USA, ²University of Nebraska Medical Center, Omaha, USA

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: This investigation aimed to determine how a video education series comprised of community resources (i.e., childcare providers, lactation experts) can influence a mother's self-efficacy for continuing lactation upon returning to work.

Methods: A concurrent embedded mixed methods design was employed using surveys and interviews. Subjects were eligible to participate if they had not yet returned to work and were lactating. Participants were recruited through women's community resources, WIC, breastfeeding support services, and Facebook mothers' groups. The survey consisted of demographic information and a previously validated lactation self-efficacy inventory. Participants were asked to complete the survey before receiving the videos and again after. Participants were also asked to complete a telephonic interview guided by feasibility constructs of demand, reach, satisfaction, and fidelity. Survey data was analyzed for descriptive findings, and pre/post-inventory scores were compared utilizing paired t-tests. Interview data was analyzed via a deductive content analysis utilizing previously developed definitions for each feasibility construct.

Results: Seventeen individuals were given the education package and completed the pre/post-survey. Out of these seventeen, ten completed a follow-up telephonic interview. The average participant was 28.2 years old and had just had their first child. Pre/post-inventory mean score differences were insignificant (80.8 ± 4.1 vs 80.4 ± 6.1). Qualitative findings determined that demand for the videos was high as participants that viewed the videos identified them as beneficial and as providing new information. However, video reach was limited as many participants reported not watching all the videos due to lack of time or forgetfulness. In addition, participant satisfaction for the videos was high but participants did not report any changes related to self-efficacy.

Conclusion: While qualitative findings suggest the videos were positively perceived and allowed for the dissemination of new knowledge, the video-based approach does not appear to improve perceptions of self-efficacy for continuing lactation upon return to work. Future intervention strategies should consider additional components, such as in-person education discussions or social support opportunities, to enhance video-based learning. Identifying environments to share the videos, such as clinic waiting rooms or within childcare orientations, may help alleviate barriers related to inconsistency in video viewership.

Exploring how the features of the outdoor play space influence fundamental movement skills and physical activity through an outdoor loose parts play intervention

Ms. Nila Joshi¹, Dr. Son Truong¹, Dr. Janet Loebach², Dr. Daniel Rainham¹, Dr. Becky Feicht¹, Dr. Michelle Stone¹

¹Dalhousie University, Halifax, Canada, ²Cornell University, Ithaca, United States

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Introduction: Outdoor play spaces (OPS) offers unique opportunities for unstructured play, allowing children to freely explore, experiment, and move their bodies in different ways within a natural and unrestricted area. Outdoor play fosters the development of fundamental movement skills (FMS)—including locomotor, object control, and stability skills—that are important for overall physical development and participation in physical activity (PA). Loose parts (LP) are open-ended materials that can be moved and manipulated in various ways, enriching children's outdoor play experiences. Integrating LP into OPS not only enhances play opportunities but increases movement possibilities. There is currently limited research looking at the role of OPS and LP within it, and their influence on children's FMS and PA behaviours.

Purpose: This study aimed to explore how OPS and LP within it, influence FMS and PA behaviours in school-aged children. **Methods:** This study used a multi-site, case study approach to examine the impact of an outdoor LP play intervention at two after school sites in Nova Scotia, Canada. Children's FMS (locomotor, object control, stability) and PA behaviours (sedentary, light activity, moderate activity, high activity) were recorded through the process of behavioural mapping. Children's FMS and PA behaviours were observed and recorded, comparing the observations pre-post the LP intervention. In total, 59 children were observed: n=43 at Site A and n=16 at Site B. A descriptive and spatial analysis will be conducted using ArcGIS, to understand the distribution of the behaviours observed and to determine how LP are used with the OPS, to support FMS and PA behaviours. The output will be an analysis of the relationship between LP and FMS and PA behaviours, illustrated via maps.

Anticipated Results and Conclusion: It is anticipated that clusters of FMS and PA behaviours will be associated with specific features of the OPS. These findings will demonstrate the types of LP materials that are used in these areas to support these behaviours. The findings from this study will shed light on how LP, in tandem with OPS, can influence FMS and PA behaviours, all which are important for children's physical development and for promoting active living.

Pediatric Physical Activity: Tailored Intervention for Preschool-Aged Children Born to Mothers with Obesity – Preliminary Data

Dr. Clifton Holmes^{1,2}, Dr. Dong Zhang¹, Daphne Gauden^{1,2}, Dr. Elisabet Børsheim^{1,2}, Dr. Aline Andres^{1,2}, Dr. Taren Swindle^{1,2}

¹University Of Arkansas For Medical Sciences, Little Rock, USA, ²Arkansas Children's Nutrition Center, Little Rock, USA

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: Sedentary behavior is a primary contributor to the rise in childhood obesity seen in the U.S. Moreover, children with a higher body mass index have demonstrated lower motor coordination and deficiencies in learning fundamental movement skills. Previous studies implementing physical-activity programs for children have suggested that incorporating family members into the programs, with parental monitoring and role modeling, may significantly influence children's activity behavior. The purpose of this pilot study was to test a 6-week physical activity intervention to assess concepts and gross motor skills progressions in mother-child pairs.

Methods: Three mom-child pairs (limited number due to COVID-19 pandemic) participated in a 6-week physical activity intervention where participants were asked to attend two, 1-hour in-person or virtual sessions per week. Mothers with BMI ≥ 30 kg/m² and their child (aged 3-5), neither having an exercise restriction, were enrolled. The Test of Gross Motor Development-2 (TGMD-2) was used to assess the children's competence for 6 locomotor and 6 object control motor skills pre and post-intervention. The intervention included a variety of games and activities based on TGMD-2 specific gross motor skills.

Results: Of the 12 total sessions, compliance was 9.7 ± 2.5 sessions, or $80.6 \pm 21.0\%$. Individual session compliance rates (58.3%, 83.3%, and 100.0%) were associated with TGMD-2 score changes (-9.9%, 4.5%, 6.8%, respectively), where the dyad with the lowest compliance had the lowest score, while the dyad with the highest compliance showed an increase in score. In a post-intervention maternal focus group interview, the participants stated a preference for in-person sessions and enjoyment of activities with other mother-child pairs. Participants noted this being the first opportunity to observe their child's motor and social skills compared to other similar-aged children and viewed the intervention as an introduction to sports and extra-curricular activities without financial burden.

Conclusion: The $>70\%$ average compliance, increased mean TGMD-2 scores, positive feedback from participants, and key lessons learned from this pilot study will support the expansion to a larger, 18-week program in this population.

Food Insecurity and Child Development in Nebraska: The Role of Income, Home Learning Environment, and Family Socio-Demographic Factors

Dr Grace Mabila-Maye¹, Dr Abbie Raikes¹, Dr Marcus Waldman¹, Dr Katelyn Hepworth¹
¹University of Nebraska Medical Center, Omaha, USA

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: Food insecurity is a well-known risk factor for delayed child development. Still, the contribution of other factors, such as income, home learning environment (HLE), and family socio-demographic factors, remains to be determined. Therefore, the study aimed to determine the association between food insecurity and child development and assess the role of income, HLE, and family socio-demographic factors in that association.

Methods: We used secondary data from the Nebraska Early Childhood Study, a cross-sectional study of caregivers of children under five years old in Omaha and Lincoln. Child development, food insecurity, and HLE were measured using a caregiver report of child development. We used multiple regression to analyze the data.

Results: The results showed that food insecurity was negatively related to developmental outcomes (Est = -0.217, SE = 0.091, ES = -0.109, $p = .018$) even after adjusting for Income (Est = -0.222, SE = 0.092, ES = -0.112, $p = .048$). HLE was positively associated with children's developmental outcomes after controlling for income, child's age, sex, race, and ethnicity (Est = 0.376, SE = 0.092, ES = 0.198, $p < .001$). HLE did not moderate the association between food insecurity and children's developmental outcomes (Est = -0.287, SE = 0.185, ES = -0.095, $p = .121$). These results indicate that even if a child has access to a stimulating HLE, they may still experience developmental setbacks if they do not have enough nutritious food.

Conclusions: This research reveals the impact of food insecurity on childhood development and the complex factors influencing outcomes. The study highlights needs for research on causal links and differential impacts, expanded food security policies and programs, investments in early childhood education for at-risk families, screening and referrals for food assistance, and parent coaching on stimulating home activities. Most importantly, the findings underscore the urgent need to prioritize initiatives that address basic nutrition and learning opportunities for young children in poverty. Collaborative efforts across sectors are imperative to meet the needs of vulnerable children during this critical window. Access to nutritious food and nurturing early learning environments must be priorities to promote health and development

Which interventions are more effective to improve breastfeeding duration among primiparous women? -Preliminary findings of a scoping review

Mrs. Jasmine Keurentjes^{1,2}, Miss Laurie-Ève Brault^{1,2}, Miss Stéphanie Bégin², Mrs Maude Perreault^{1,3}, Mrs Véronique Gingras^{1,2}

¹Nutrition department, University of Montreal, Montreal, Canada, ²Research Center of Sainte-Justine University Hospital, Montreal, Canada, ³Research Center of the Centre Intégré Universitaire de Santé et de Services Sociaux du Nord-de-l'Île-de-Montréal - Centre Jean-Jacques Gauthier, Montreal, Canada

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: Worldwide recommendations encourage exclusive breastfeeding from birth until 6 months of age, and maintaining breastfeeding combined with complementary foods for at least the following two years. Despite the high breastfeeding initiation rate observed in Quebec (89%), the duration remains an issue, with a reported rate of approximately 50% at 6 months. Since no prior review exists on the topic, our scoping review aims to identify effective interventions to improve breastfeeding duration in primiparous women, essential for the health of future populations by: 1) assessing interventions' effectiveness during prenatal and postnatal periods separately or combined, and 2) exploring the role of sociodemographic characteristics in primiparous mothers and their families in order to guide future interventions.

Methods: Grey literature and several databases (MEDLINE, Embase, CINAHL, Cochrane, Web of Science, Cab Abstract, Sociological abstract and Social Science abstract) were used, applying a keyword search strategy. A first selection of articles is ongoing (n= 16 167, 99% of selection has been completed by 2 reviewers) by screening titles and abstracts. From the first selection, a second selection is also ongoing, established on the full-text review of articles (n=267 articles currently retained, 36% of the selection has been completed). Articles are selected by two evaluators independently, based on pre-established eligibility criteria, using Covidence software. An assessment of articles quality will then be performed using the Revised Cochrane risk of bias tool for randomized studies (RoB2). Data extraction will be conducted using Excel for subsequent analysis.

Preliminary findings: Eleven articles have been retained so far, proposing interventions in the prenatal period (2 studies), postnatal period (5 studies), as well as both periods combined (4 studies). Most common approaches varied from in-person to online and involved either professionals or peer support. The observed similar demographic characteristics indicate that most mothers were in the age range of 22 to 32 years old, had the intention of breastfeeding and were married.

Conclusion: By identifying the most promising or effective strategies, this study will contribute to the development of effective and accessible services to increase breastfeeding duration and to establish a robust dietary foundation for mothers and children.

Practices and determinants of complementary feeding introduction among first-time and non-first-time parents – Preliminary findings from a qualitative study

Miss Audrey Nantel^{1,2}, Miss Stéphanie Bégin², Mrs Marie Marquis¹, Mrs Andraea Van Hulst³, Mrs Sophie Desroches⁴, Mrs Sandra Pelaez², Mrs Elisabeth Codsi^{1,2}, Mrs Véronique (corresponding author) Gingras^{1,2}

¹University of Montreal, Montreal, Canada, ²Sainte-Justine Research Center, Montreal, Canada, ³McGill University, Montreal, Canada, ⁴Laval University, Quebec, Canada

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: The first two years of life are fundamental in the physical and cognitive development of children. During this period, solid foods are introduced into their diet, alongside breastmilk or infant formula to meet their increasing nutritional needs. Despite the availability of educational resources, parental adherence to guidelines regarding complementary feeding (CF) remains low worldwide and very few studies have investigated factors surrounding parental decisions during this period. This qualitative study thus seeks to gain a deeper understanding of the determinants of CF practices in Quebec from the perspective of first and non-first-time parents. More specifically, we aim to describe overall timing and ordering of CF introduction, to explore individual and interpersonal factors as well as medical/public health messages as determinants of CF, and to explore the roles of each parent in the decision-making process.

Methods: Twenty-four English or French speaking parent dyads of children aged 3-6 months with no significant pregnancy or birth complications were recruited during their postnatal follow-up at the Obstetrics and Gynecology Center of the Sainte-Justine Hospital or through social media. Of those, 12 dyads were first-time and 12 dyads were non-first-time parents. Socio-demographic, medical, and breastfeeding-related data were collected at inclusion. When the child was around 8 months, we collected data on breastfeeding and CF practices with a phone-questionnaire. At 9 months of age, a single interviewer conducted individual semi-structured interviews using a pre-tested questionnaire based on the Social-Ecological Model (SEM) to understand each parent's perspective on factors influencing CF and adherence to guidelines. Interviews were recorded and transcribed. Qualitative analysis is under way (combination of inductive and deductive approaches based on the SEM) and will provide insight on parent's experiences during CF.

Preliminary findings: Of the 48 parents included, 41% were first or second-generation immigrants. CF was introduced at 5.5 months on average and only 33% of children were breastfed exclusively during 6 months (n=18).

Conclusions: This project will be the first qualitative study on the determinants of CF practices in Quebec, and will inform the design of nutrition interventions that aim to support optimal growth and the development of healthy eating habits.

Fathers' Profiles Based on Food and Physical Activity Parenting Practices

Dr. John A. Jimenez-garcia^{1,4}, Dr. Louise C. Mâsse^{2,5}, Dr. Robert L. Newton³, Dr. Salma Musaad^{1,4}, M.S. Alicia Beltran^{1,4}, Dr. Teresia M. O'Connor^{1,4}

¹Baylor College of Medicine, Department of Pediatrics, Houston, USA, ²University of British Columbia, School of Population and Public Health, Vancouver, Canada, ³Pennington Biomedical Research Center, Baton Rouge, USA, ⁴USDA/ARS Children's Nutrition Research Center, Houston, USA, ⁵BC Children's Hospital Research Institute, Vancouver, Canada

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: Food parenting practices (FPP) and physical activity parenting practices (PAPP) are often studied independently and lack a comprehensive exploration of fathers' profiles for promoting children's healthy lifestyles. We aimed to: 1)-identify father's profiles combining FPP and PAPP using Latent Profile Analysis (LPA) and 2)-examine profile differences in co-parenting and household responsibility.

Methods: We conducted a secondary analysis of cross-sectional data. A racially and ethnically diverse sample of US fathers, who lived with their 5-11-year-old child $\geq 50\%$ of the time, completed reduced versions of the FPP and PAPP item banks, along with sociodemographic, co-parenting, and household responsibility questionnaires. Using an empirically-tested factor structure, we applied Bartlett's approach to compute FPP and PAPP factor scores. We used the scores in the LPA model, estimating parameters with the expectation-maximization algorithm. We selected the "best" model using fit indices and theoretically-based criteria. We tested differences between profiles in co-parenting and household responsibility using the Kruskal-Wallis test ($\alpha=0.05$) and pairwise differences using Wilcoxon test with Bonferroni correction ($\alpha=0.005$).

Results/Findings: We analyzed data from 606 fathers (age= 38 ± 8.0 ; Hispanic= 37.5%). Most fathers self-identified as white (57.9%) or African American/black (17.7%); were overweight (41.1%) or obese (34.8%); attended college (70%); earned $> \$47,000$ (62.7%); worked 40hrs/week (63.4%); and were biological fathers (90.1%). Most children (boys= 55.5%) were 5-8-year-old (65.2%). We identified five latent-profiles that combined FPP and PAPP: 1)-Engaged Supporter (n= 94[15.5%]): positive autonomy promotion and structure (higher in PAPP), nuanced but measured control; 2)-Leveled Father (n=160[26.4%]): balanced autonomy promotion and structure, nuanced but balanced control; 3)-Autonomy-Focused Father (n=117[19.3%]): positive autonomy promotion, low to average structure, low control; 4)-Uninvolved Father (n=113[18.6%]): low autonomy promotion, structure, and control; 5)-Control-Focused Father (n=122[20.1%]): balanced to low autonomy promotion and structure, high control (higher in PAPP). We observed significant differences between profiles in co-parenting and household responsibility ($p < 0.005$). We found more significant pairwise differences in co-parenting (n=5) than household responsibility (n=1).

Conclusions: Understanding the interplay of fathers' FPP and PAPP may enhance assessments for a holistic understanding of children's health environments. Recognizing characteristics and differences between fathers' profiles may allow tailored interventions to family dynamics and needs, potentially leading to improvements in health trajectories.

Comparing Measures of Diet and Physical Activity for Use with Latino Immigrant Families Participating in a Community-Based Intensive Weight Management Program

Dr. Sarah Polk¹, Dr. Lisa DeCamp

¹Johns Hopkins University, Baltimore, United States

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: Guidelines recommend intensive weight management for treatment of child obesity. Reliable, pragmatic measurement of changes in diet, physical activity (PA) and sleep resulting from program participation is difficult. We describe the use, acceptability, feasibility and cost of diet, sleep and PA measures used to evaluate an intensive weight management program for obese children in Latino immigrant families.

Methods: Data were collected via pre/post surveys and ActiGraph GT9X-BT accelerometers. We measured diet with the Texas School Physical Activity and Nutrition (SPAN) Survey, Block Kids 2-17 Screener (BLOCK) and the Home Food Inventory (HFI). We measured PA with one question and accelerometry. We measured sleep with items from the Children's Report of Sleep Patterns (CRSP) and accelerometry.

Results: 39 parent/child dyads completed the study. Survey questions were free except for the BLOCK and available in Spanish except for CRSP. We had CRSP questions professionally translated and reviewed by an expert panel. BLOCK questions cost \$5.20/participant and \$52.00/month for maintenance. Accelerometers cost \$326 (we needed 30) plus staff time for delivery and retrieval. The BLOCK and HFI took a mean of 9 and 60 minutes, respectively, to administer. BLOCK analysis demonstrated a wide range of daily calories (336-1622); other diet components (e.g. g/fiber/day) were less variable but not meaningful to families. SPAN responses were used to create a family report to support behavior change. Families enjoyed the HFI as an opportunity to review food purchasing practices. Accelerometers were worn a mean of 84% of the time and none were lost. Measurements for sleep and activity were highly variable.

Conclusions: In this study population the SPAN was easy to use and provided actionable diet information for families. Wearing accelerometers was acceptable but data reliability and validity for sleep/activity was uncertain. Pragmatic evaluation in the future will involve use of the SPAN and HFI for diet. It remains unclear how best to measure sleep/PA particularly given the cost of accelerometry. More and better measures of diet and PA validated in Spanish for Latino immigrants from Mexico and Central America are needed given that Latino children in immigrant families experience disproportionately high rates of obesity.

Feasibility and efficacy of a remotely-delivered high intensity interval training program in underrepresented adolescents with overweight/obesity

Dr. Britni Belcher¹, Miss Tiffany Chapman¹, Miss Kristen Moore¹, Miss Kelsey McAlister¹, Mr. Alejandro Smith¹, Mr. Hanyang Liu¹, Ms. Ana Romero¹, Dr. Christina Dieli-Conwright², Dr. Kathleen Page¹

¹University of Southern California, Los Angeles, USA, ²Dana Farber Cancer Institute, Boston, USA

P1.02: Children and families, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: G. Children and families

Purpose: This pilot randomized trial tested the feasibility, acceptability, and efficacy of a remotely-delivered high intensity interval training (HIIT) program during COVID-19 to improve cardiometabolic, mental, and cognitive health indicators in underrepresented youth with overweight/obesity. Feasibility was defined by >50% of participants completing: 1) 70% of exercise min/week; 2) 70% of the exercise sessions; 3) a target heart rate (HR) for ≥85% per session. We explored the efficacy of the intervention on body composition, physical activity (PA) measures, mental health, and cognitive outcomes.

Methods: The control group completed self-directed yoga stretches. The intervention group completed 8 weeks of HIIT 3x/week on a stationary bicycle via Zoom. Each 20-minute HIIT session was comprised of seven 1-minute exercise intervals at 90% HRmax followed by a 2-minute recovery period. At post-test we collected self-reported intervention acceptability, appropriateness, and feasibility. Efficacy measures collected pre- and post-study were: % body fat, self-reported exercise score, PA self-efficacy, perceived stress, and cognitive function.

Results: Adolescents (N=6, mean(SD): age=13.5(1.5) yrs, BMIz=2.4(0.7)) were 67% male and 50% were Hispanic and 50% were Black. All intervention participants (N=3) reported that HIIT was convenient and welcomed, with 67% reporting that HIIT was appealing, likable, and a good match for their needs. Target heart rate (90%HRmax) was reached for an average of 37% of all HIIT intervals, with only 1 visit with a target HR >85% for the entire session. All intervention participants attended >70% of sessions (range: 79-92%) but none averaged >70% of weekly exercise minutes (range: 33-44%). From pre- to post-intervention: body fat decreased by 7.1(4.6)%, exercise score increased by 29(12.5), and 67% reported increases in PA self-efficacy and decreases in perceived stress. There were no changes in cognitive function.

Conclusions: This pilot study provides preliminary evidence that a remotely-delivered HIIT program is feasible and acceptable for adolescents with overweight/obesity who have limited access to exercise facilities. Utilizing a home-based virtual program may increase feasibility and longevity of exercise intervention programs. This work provides the basis for a larger and longer trial to test the efficacy of HIIT to improve cardiometabolic and mental health outcomes in underrepresented youth with obesity.

The Impact of Sleep on Energy Intake Among Mid-Western US College-Aged Females: A Pilot Study

Miss Sierra Rohs¹, Miss Kia Wilson¹, Dr Kate Heelan¹

¹University Of Nebraska At Kearney, Kearney, USA

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

Purpose: There is mounting evidence that people who get too little sleep have a higher risk of weight gain and obesity than people who get seven to eight hours of sleep a night (Harvard, n.d.). Studies have shown an average of 300-500 extra calories being consumed over 24 hours after limited sleep (McNeil, 2016). The purpose of this study is to determine if sleep impacts energy intake (EI) among midwestern US college-aged females.

Methods: Twenty-two college aged females (21 ± 1.5 years; BMI= 24.9 ± 3.1 kg/m²) wore activity monitors (FitbitTM or ApplewatchTM) on their wrist for three 24-hour periods to record total sleep time and daily energy expenditure (EE). During the same 3 days, participants kept a food diary using the MyFitnessPalTM app to record EI. Days of recording were divided into LOW sleep days (≤ 7 hours) and HIGH sleep days (≥ 9 hours). A T-test was used to compare EI between the LOW and HIGH sleep days and evaluate differences in EI and EE.

Results: 66 total days of measure were evaluated and the average sleep was 7 ± 1.3 hours/night. LOW sleep (6.4 ± 0.7 hours) was recorded on 18 nights (EI: $1,795 \pm 713$; EE: 2628 ± 668 kcals/day) and 11 HIGH sleep nights (9.8 ± 0.8 hours; EI: $1,683 \pm 478$; EE: 2274 ± 330 kcals/day). Overall, there was no significant difference between the LOW and HIGH sleep nights for EI. However, on LOW sleep days participants significantly underate (-708 ± 667 kcals) compared to the HIGH sleep days (-324 ± 665 kcals/day).

Conclusions: Although there was not a significant difference found in EI between the LOW and HIGH sleep groups, college aged females appear to get adequate sleep but are not eating adequate calories compared to their expenditure. Better measures of EE and sleep may be warranted for future studies.

Influence of College Students' Friendships During Adolescence on Current Physical Activity Perceptions and Behaviors

Miss Halle Brin¹, Mr. Justin Montney¹, Javier Martinez¹, Dr. Emily Mailey¹
¹Kansas State University, Manhattan, USA

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

Purpose: Establishing physical activity (PA) habits in college can create a foundation for maintaining a physically active lifestyle during adulthood. The interplay of current social environments and past adolescent friendships may influence college students' PA behaviors. This qualitative study aimed to explore the influence of adolescent friendships on current PA perceptions and behaviors.

Methods: College students from a midwestern U.S. university completed surveys (N=156) in the 2022 spring semester. Qualitative data from an open-ended survey question, "Describe what impact you believe your experiences with friends during adolescence had on your PA today", were analyzed using inductive thematic analysis.

Results/Findings: Three primary themes were identified: fun/enjoyable, building an active lifestyle, and social norms. Participants described how engaging in enjoyable activities with friends increased their motivation and desire to be active, built companionship, strengthened their relationships, and created lasting positive perceptions of PA (e.g., associating PA with a good mood). In some cases, having fun while being active with friends during adolescence encouraged individuals to seek out social opportunities to be active in college. Participants conveyed adolescent friendships helped establish value towards PA, the confidence to try new activities, and facilitated internal motivation and desire to build an active lifestyle. Similarly, participants sought to align with friends' PA engagement to 'keep up' with them, shared daily activities (e.g., organized sports), and observed activities of their peers to help shape their PA engagement. Nonetheless, participants described challenges in maintaining an active lifestyle without the support of a friend group, potentially demonstrating codependency around PA, and those who socialized with more physically inactive peers tended to adopt similar behaviors.

Conclusion: The current findings contribute to a consistent body of evidence highlighting the strong positive and negative influences of peers on PA among adolescents and young adults. Many positive themes were identified that may contribute to college students valuing and prioritizing PA behavior, whereas negative influences highlight the challenges to maintaining an active lifestyle during young adulthood. Therefore, adolescent friendships are important to help form perceptions towards PA and potentially influence PA behavior during college.

Exploring the mediating role of Disordered Eating Behaviors in the relationship between Food Insecurity and Substance Use Disorder among Youth Transitioning to College

Ms. Tran Huynh¹, Dr. Emma Jane Rose¹, Dr. Meg Bruening¹

¹Pennsylvania State University, State College, USA

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

Purpose: Food insecurity (FI) and substance use (SU) are both common in college students and may be mechanistically linked. FI predicts disordered eating behaviors (DEB), which are independently linked with SU. Thus, DEB might mediate associations between FI and SU; however, this role remains to be investigated in populations at risk of all three. This study examined the mediating role of DEB in the relationship between FI and SU in undergraduate students.

Methods: Participants were drawn from a convenience sample of incoming first-year undergraduate students (n=2312; 50% female; 34% BIPOC) in a study about student life prior to arrival on campus from a large U.S. university. FI and SU over the past year were assessed using the Adult Food Security Survey Module and the Tobacco, Alcohol, and Drug questionnaire, respectively. SU was a summed score of the total number of substances used. DEB were assessed using the Eating Disorder Examination Questionnaire (EDEQ; 6.0), in which subscales were summed for a global DEB score. Mixed linear regression and logistic regression were applied, adjusting for sex, race/ethnicity, Pell Grant status, parent's highest education, and parent's employment status.

Results: In total, 8% of participants reported FI, 37% reported a global DEB score of at least 1, and 28% used at least one substance. FI was significantly associated with higher SU ($\beta=0.34$, $SE=0.07$, $p<.0001$) and global DEB ($\beta =0.64$, $SE=0.11$, $p<.0001$). DEB was significantly associated with SU ($\beta=0.13$, $SE=0.01$, $p<.0001$). When global DEB was included as a mediator, the impact of FI on SU was reduced ($\beta=0.27$, $SE=0.07$, $p<.001$). Global DEB partially mediated the association between FI and total SU, accounting for 23% of the overall effect.

Conclusions: Findings suggest that DEBs may partially mediate the association between FI and SU. Food-insecure students may develop DEB to regulate aversive emotional states, which may stimulate greater engagement in SU. Screening FI and effective strategies to manage FI and DEB may reduce the risk of SU in youth transitioning to college. Future research is needed for a comprehensive understanding of the complex interplay between FI, DEB, and SU in this population.

Feasibility and Safety of a Progressive Walking Program Early After Anterior Cruciate Ligament Reconstruction

Dr. Dave Werner¹, Dr. Michelle Howell¹, Dr. Yvonne Golightly¹, Dr. Michael Rosenthal¹, Dr. Matt Tao¹, Dr. Elizabeth Wellsandt¹

¹University of Nebraska Medical Center, Omaha, United States

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

Purpose: Individuals after anterior cruciate ligament reconstruction (ACLR) have reduced physical activity (PA) compared to uninjured peers. Achieving sufficient PA in this population is important for both short and long-term health, particularly to reduce the risk of chronic conditions (e.g., obesity, osteoarthritis). To address inadequate PA in this population, the purpose of this study was to assess the feasibility and safety of a walking program early after ACLR.

Methods: This is a report of the quantitative data from a mixed-methods study. Individuals who underwent ACLR within the last 6-8 weeks were recruited. Ten participants completed a 10-week progressive walking program based on baseline step counts that were progressed by 10% weekly during Zoom meetings with a physical therapist. Feasibility metrics included appointment attendance, activity monitor (Actigraph GT9x Link) wear compliance, adverse events, and achievement of step count goals. A comparison group of individuals matched for sex, age, days since ACLR, BMI, and pre-injury activity levels from a separate longitudinal study was created. T-tests were used to compare steps/day, moderate to vigorous PA/day, and percentage of time in sedentary activity between these groups. A priori α was 0.05.

Results/Findings: Participants were 60% female, 20.2±3.9 years old, and BMI of 22.6±2.9kg/m². Participants wore their activity monitor 94.2% of days, attended 94.2% of appointments, and met their recommended goal 54.8% of days with 40% averaging 10,000 steps per day for at least one full week. Fifty percent reached their PA target at least 50% of weeks. No adverse events related to the walking program were reported. When compared to matched controls, there was no statistically significant difference in any PA metric.

Conclusions: This study demonstrated feasibility and safety of a progressive walking program early after ACLR. Participants demonstrated high adherence wearing an activity monitor and completing weekly virtual PA program sessions. However, daily PA goals were only met approximately half of the time and did not lead to higher PA levels than in participants not completing a targeted PA program after ACLR. Future work will qualitatively assess participant feedback to the walking program to enhance the intervention to better meet patient needs.

Understanding action control of physical activity behavior among adolescents and emerging adults

Miss Carah Porter¹, Dr. Denver Brown

¹The University of Texas at San Antonio, San Antonio, USA

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

Purpose: Intention-behavior discordance remains a challenge in understanding physical activity (PA) behavior. This study examined distributions of intention-behavior profiles for PA among adolescents and emerging adults, and explored predictors of these profiles using the Multi-Process Action Control (M-PAC) framework.

Methods: This study included independent samples of 2,418 college students (Mage = 19 ± 2 years; 64% female) and 1,849 high school students (Mage = 16 ± 1 years; 52% female) living in South-Central Texas. Participants completed surveys including measures to assess the reflective, regulatory, and reflexive processes outlined in the M-PAC framework as well as the International Physical Activity Questionnaire-Short Form to assess weekly moderate-to-vigorous PA (MVPA) behavior and intention to engage in MVPA at age-specific public health recommendations (i.e., 150 min/week for adults; 60 min/day for adolescents). Participants were classified into profiles based on intention (yes/no) and PA guideline adherence (yes/no).

Results: Four intention-behavior profiles emerged: a) unsuccessful intenders (adolescents: 31.6%; emerging adults: 22.7%), b) successful intenders (adolescents: 39.9%; emerging adults: 60.0%), c) active non-intenders (adolescents: 6.4%; emerging adults: 5.6%), and d) successful non-intenders (adolescents: 22.1%; emerging adults: 11.7%). The intention-behavior gap was larger for adolescents (44.2%) than emerging adults (27.4%). Discriminant function analysis indicated 65.6% of emerging adults were classified into the correct intention-behavior profile via two separate functions that explained 93.3% and 6.7% of the variance, respectively. For the adolescent sample, 51.6% of participants were correctly classified via one discriminant function which accounted for 97.6% of the variance. Identity, habit, and behavioral regulation emerged as the strongest correlates of the discriminant functions, indicating their importance in predicting intention-behavior profiles. Follow up one-way ANOVAs demonstrated consistent findings across the samples; significant differences were observed between the intention-behavior profiles for all of the M-PAC framework variables, with successful intenders reporting the highest scores.

Conclusions: Most adolescents and emerging adults had intentions to be active, yet many failed to follow through. Intention-behavior discordance appears larger for adolescents, although this disparity may be an artefact attributable to differences in PA guidelines. Behavior change techniques that target post-intentional processes should be prioritized in interventions seeking to help translate PA intentions into action.

Exploring the Roles of Food Parenting Practices, Dietary Self-Efficacy, and Food Insecurity on Fruit and Vegetable Consumption Among College Students

Ms. Caitlin Smith¹

¹Syracuse University, Syracuse, United States

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

Purpose: This study examines the influence of food parenting practices on college students' dietary self-efficacy and subsequent fruit and vegetable consumption, considering the moderating effect of food insecurity. The research aims to elucidate the complex interplay between early-life parental influence, individual self-efficacy in dietary choices, and the challenges posed by food insecurity.

Methods: A sample of 360 college students completed an online survey, providing data on their fruit and vegetable intake, recollections of food parenting practices during childhood, current levels of dietary self-efficacy, and experiences with food insecurity. A moderated mediation model was applied to assess the direct and indirect effects of recalled parental food restriction and pressure to eat, with dietary self-efficacy as the mediator and food insecurity as the moderator.

Results/Findings: Parental food restriction and pressure to eat in childhood are significantly and negatively associated with dietary self-efficacy (a -path = $-.2188$, $p = .0024$), suggesting these practices may diminish children's confidence in making healthy food choices. Dietary self-efficacy was found to be a significant predictor of fruit and vegetable consumption; however, this relationship is compromised under conditions of food insecurity (b -path coefficient = $-.1495$, $se(HC4) = .0692$, $t = -2.1606$, $p = .0314$, R^2 -change = $.0076$). The direct effect of food parenting practices on consumption, not mediated by dietary self-efficacy, was not significant (c' -path coefficient = $-.0892$, $se(HC4) = .1075$, $p = .4070$, R^2 -change = $.0015$), indicating that the impact of food parenting practices is primarily through dietary self-efficacy. The index of moderated mediation was significant (value = $.0327$, $BootLLCI = 0.0018$ to $BootULCI = .0728$), indicating food insecurity significantly moderates the indirect effect of food parenting practices on fruit and vegetable consumption through dietary self-efficacy.

Conclusions: The findings underscore the critical role of early food parenting practices in shaping dietary self-efficacy and the exacerbating effect of food insecurity on young adults' dietary behaviors. Interventions to promote healthy eating among college students should support dietary self-efficacy and the challenges posed by food insecurity, which is a growing concern with increasing rates among college students.

Goal Setting, Movement Behaviors, and Perceived Health during an Online Health Coaching Intervention: A Mediation Analysis

Ms. Yuhuan Xie¹, Miss Lingyi Fu¹, Dr. Ryan Burns¹, Dr. Julie Lucero¹, Dr. Timothy Brusseau¹, Assistant Prof. Yang Bai¹

¹University Of Utah, Salt Lake City, USA

P1.03: Young Adults, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: J. Young Adults

The purpose of this study was to examine the associations of goal setting, movement behaviors, and health perceptions in young adults after an online health coaching intervention. Participants were young adults from a US university (N=257; 57.2% female). Participants met with health coaches in an online setting for one hour and goals were set for two behavior areas. Physical activity (PA), sitting time, sleep, and perceptions of general health and emotional wellbeing were collected at baseline and 2- and 4-weeks after the coaching session. Mediation analyses determined the associations of goal setting and time on health perceptions and the indirect associations of each movement behavior. No movement behavior positively mediated the associations of goal setting or health coaching, although PA, sitting time, and weeknight sleep at 2-weeks predicted general health at 4-weeks ($\beta=0.17-0.39$, $p<0.01$) and predicted emotional wellbeing at 4-weeks ($\beta=0.16-0.21$, $p<0.01$). Emotional wellbeing mediated the association of time (health coaching) on general health (IE=0.19, $p<0.001$) and general health mediated the association of health coaching on emotional wellbeing (IE=0.09, $p<0.001$). Movement behaviors correlated with health perceptions, but no positive mediating associations were observed. Emotional wellbeing mediated the effect of health coaching on general health and vice-versa, suggesting a bidirectional association between health perceptions.

Polyfest: A Space for Pacific Youth to Participate and Compete as Themselves

Dr. Dion Enari¹, Dr Sierra Keung, Miss Tita Leaupepe, Miss Fila Fuamatu

¹Auckland University of Technology, Auckland, New Zealand

P1.04: Indigenous Research, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: L. Indigenous Research

Polyfest is a Secondary School cultural dance festival in Auckland, New Zealand that enables young people the opportunity to engage with their cultural identity, values, and practices. A key objective of this study was to explore the lived experiences of Pacific youth participants in Polyfest to better support their modes of movement and development. A secondary objective was to explore whether cultural dance is physical activity and/or sport.

Methodology: Kakala and Talanoa were used to weave together the young Pacific voices and lived experiences. This framework acknowledged the collectivism and Pacific cultural nuances that evolved from the talanoa (conversations). Talanoa were engaged in with young people through various mechanisms (i.e., interviews, kava bowl) at each Polyfest site across NZ.

Summary of results: The reason for participating in Polyfest has nothing to do with the value or benefits of physical activity. Young Pacific people will not engage in activities that are not community, culturally or collective-oriented. Meaningful participation is dependent on the value that is placed on culture and identity. Young Pacific people believe that cultural dance is the equivalent of being physically active.

Conclusion: Overall, these findings underscore the need to prioritize cultural inclusivity, community orientation, and the provision of opportunities like Polyfest for young Pacific individuals to express themselves authentically. By recognising and embracing cultural heritage, practitioners, policymakers, and sport organisations can foster an environment that not only values their identity but also promotes holistic well-being.

Evaluating the impact of short-term sports programs on Fundamental Movement Skills in 5-12-year-old children

Dr. Taru Manyanga^{1,2}, Professor Guy Faulkner², Professor Patti-Jean Naylor³, Dr. Nathan Reis², Ms Nicole White¹, Dr. Chelsea Pelletier¹

¹University Of Northern British Columbia, Prince George, Canada, ²University of British Columbia, Vancouver, Canada, ³University of Victoria, Victoria, Canada

P1.04: Indigenous Research, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: L. Indigenous Research

Purpose: Fundamental Movement Skills (FMS) are foundational to sport participation and recreational physical activities. Community-based programs may be key in facilitating sport participation, thereby improving FMS among children, especially in smaller, rural communities where cost, and access, are often prohibitive. This study explored the impact of 5–8-week community-based sports programs on the FMS of 5-12-year-old children in a smaller Canadian city.

Methods: Participants were recruited from children enrolled in 5–8-week community sport programs designed to improve physical literacy. The study followed a pre and post intervention design. Sport for Life's validated PLAY Basic instrument was used to evaluate five (run, hop, kick, overhand throw, balance) FMS. After obtaining consent and participant assent, data were collected at baseline and post intervention by two trained research assistants who independently scored each participant on the five FMS. Research Assistants' scores on each skill were averaged to obtain a final score. Of the 163 participants who completed baseline assessments, 145 (89%) had complete data for the five skills at post-intervention assessments. Paired t-tests comparing baseline and post-intervention scores were used to evaluate program effectiveness. Statistical analyses were performed in R Studio with significance level set at $\alpha=0.05$.

Results: The average age for the sample ($n=145$; 66% male) was 8.3 ± 1.8 . There was a statistically significant change in the overall FMS score from 28.9 ± 7.9 at baseline to 30.9 ± 7.6 after the intervention ($t=4.7$; $p < 0.0001$). Except kicking (baseline $p=0.003$; post-intervention $p=0.03$), there were no other statistically significant differences in individual or total FMS scores by sex. There were statistically significant improvements in scores for each of the five FMS skills between baseline and post intervention: balance ($t=2.2$; $p=0.03$), overhand throw ($t=3.6$; $p=0.0003$), kick ($t=2.4$; $p=0.02$), hop ($t=3.0$; $p=0.003$), run ($t=3.3$; $p=0.001$). Older children (> 8 yrs) had higher baseline and post intervention scores on each of the five skills compared to younger children, but the overall change scores did not significantly differ by age group ($p = 0.2$).

Conclusion: Our findings suggest that short-term community-based programs could contribute to improving key FMS among children in a small city.

Impact of a health education program on leisure time physical activity among elderly individuals

Dr. Harunobu Usui¹, Assistant Professor Kosuke Hamada¹, Prof. Mayumi Kato¹
¹Aichi Medical University, Kiyosu, Japan

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: We have offered a program in which elderly individuals learn about health. This program is conducted over a period of 10 months annually for individuals >65 years of age residing in Kiyosu City, Aich, Japan. It helps participants learn about exercise, nutrition, elderly health issues, and health promotion. We investigated participants' physical activity before and after joining the program. The aim is to reveal the association between increased physical activity among elderly individuals and participation in the program.

Methods: A total of 139 elderly individuals participated in the health education program from 2017 to 2022. The program was held from May to February each year. Participants completed the International Physical Activity Questionnaire before and after the program. We analyzed total physical activity, light, moderate, and vigorous activity levels, and sedentary time. Additionally, we calculated physical activity levels at work, transportation, domestic, and leisure. Statistical analysis was conducted using the Wilcoxon signed-rank test to compare physical activity levels before and after the program.

Results: The median total physical activity before and after the program was 3132 and 2829 METs*min/week, respectively. Prior and subsequent total physical activity were not significant. Similarly, light, moderate, and vigorous activity levels and sedentary periods were not significantly different before and after the program. The median physical activity in leisure time before and after joining the program was 1181 and 1274 METs*min/week, respectively. Leisure time physical activity after the program was significantly greater than before joining the program. Activity levels in work, transportation, and domestic settings were not significant before and after joining the program.

Conclusions: The findings suggest that participation in the health education program leads to an increase in leisure time physical activity among elderly individuals. However, other aspects of physical activity did not show significant changes. Participation in this program is voluntary. Therefore, it is possible that individuals who are already physically active may be more inclined to enroll.

Feasibility of a physical activity intervention for stroke survivor-caregiver dyads: An ongoing descriptive case series

Dr. Emily Kringle¹, Dr. Beth Lewis¹

¹University Of Minnesota, Minneapolis, USA

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: Low levels of physical activity place adults with stroke-related disability and their caregivers at risk for cardiovascular, cardiometabolic, and mental health conditions. There are no existing interventions that aim to address stroke survivors' and caregivers' shared physical activity needs. The duoABLE intervention combines behavioral activation and social interdependence to build physically active lifestyles (reduced sedentary behavior, increased daily step count) among stroke survivor-caregiver dyads. The purpose of this study is to assess the feasibility of delivering duoABLE to stroke survivor-caregiver dyads.

Methods: Community-dwelling ambulatory stroke survivors (≥ 6 months post-stroke) and their caregivers (age ≥ 18 years, face-to-face interaction more than once per week) were recruited to a descriptive case series. Each dyad member completed descriptive measures and wore an activPAL micro4 for 7 days at week 0 and week 8. Dyads participated in 12 duoABLE sessions over 6 weeks (2x/week). Feasibility metrics included: participant retention, session attendance, and satisfaction (Client Satisfaction Questionnaire-8). Individual change over time in sedentary time and step count were examined.

Results/findings: Dyads (N=4) with spousal (75%) and parent-adult child (25%) relationships enrolled in this study. Stroke survivors ranged in age (58 to 63 years), chronicity (11 to 25 months post-stroke) and were predominantly white (100%) and male (75%). Caregivers ranged in age (28 to 62 years) and were predominantly white (75%) and female (100%). Stroke survivors (100%) and caregivers (75%) were retained in the study. 3 of 4 dyads completed all intervention sessions. The mean satisfaction score was 3.9 out of 4.0 (range: 3.7 to 4) among stroke survivors and 3.8 out of 4 (range: 3.6 to 4.0) among caregivers. PA results are being analyzed and will be available at the time of the conference presentation.

Conclusions: Delivering a sedentary behavior and physical activity intervention that addresses stroke survivor-caregiver dyads' shared goals appears acceptable to both dyad members. Strategies to enhance retention of dyads should be explored.

Relational and Generational Household Composition and Food Insecurity among Households with at least one Member Aged 60 and Older

Dr. Patrick Brady¹, Kaitlyn Berry¹, Dr. Rachel Widome¹, Dr. Sruthi Valluri², Dr. Melissa Laska¹
¹University of Minnesota, Minneapolis, USA, ²Brigham and Women's Hospital, Boston, USA

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: There is limited research on how the relational and generational make-up of household members relates to experiencing food insecurity among older populations. This gap may obscure our understating of the contexts in which older individuals face inadequate food access. We describe the prevalence of experiencing food insecurity in households with at least one member aged 60 or older in the United States.

Methods: We used nationally representative 2020 and 2021 Current Population Survey Food Security Supplement data. Our sample included households with someone age 60+ (n=24,436). We defined household composition as: single person households, partners only, two-generation (e.g., parent, child), three plus generation (e.g., grandparent, parent, child), skipped generation (e.g., grandparents, grandchild), or other arrangements. We also classified households for selected demographic characteristics. We estimated the prevalence of food insecurity for each type of household.

Results: Most households with a member aged 60+ were single person households (36.3%) or partners only (35.9%), while fewer were in two-generation (14.1%), three plus generation (3.4%), skipped generation (1.3%) or other arrangement (9.0%). Households with at least one member belonging to a minoritized racial or ethnic group were more likely to be two-generation, three plus generation, skipped generation, or other arrangement households. Overall, 8.5% [8.0-8.9%] of households experienced food insecurity. The prevalence of food insecurity was lowest for partners only (3.6% [3.2-4.1%]), slightly above the average for single person households (10.6% [9.8-11.4%]) and two generation (10.0% [8.9-11.3%]), and highest for three plus generation (16.7% [13.6-20.4%]) and skipped generation (18.1% [13.6-23.8%]) households.

Conclusion: Households with differing generational and relational compositions also experienced food insecurity at differing rates. Policies and programs designed to support food security among adults aged 60+ should be inclusive of the wide variety of households they live in. For example, Older Americans Act nutrition programs specify that spouses under the age of 60 are eligible to receive meals, but do not have explicit allowances for other family members such as grandchildren. This type of oversight may discourage older adults with the most need, such as those living in skipped and three plus generation households, from accessing food assistance.

Unveiling the Tapestry of Healthy Ageing among Older Adults: A Qualitative Exploration of Motivators, Facilitators and Impediments in Predominantly Low Socioeconomic Conditions

Ms. Lieke J.E. Duijsens¹, Prof. Catherine A.W. Bolman¹, Ms. Alissa S. Paas¹, Dr. Trijntje Völlink², Dr. Denise A. Peels¹, Prof. Lilian Lechner¹

¹Department of Health Psychology, Faculty of Psychology, Open Universiteit, Heerlen, The Netherlands, ²Department of Lifespan Psychology, Faculty of Psychology, Open Universiteit, Heerlen, The Netherlands

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: This qualitative study is part of an extensive research project aimed at developing an integral approach to promote healthy ageing among older adults with a low socioeconomic status (SES). As part of a large-scale Needs-and-Assets assessment, this study investigates the requirements and resources for healthy ageing among older adults in community settings, acknowledging the multidimensional nature of health and the complex interplay of personal, social, and environmental factors. Its findings will guide intervention development by identifying priority issues and local resources to support healthy ageing in place.

Methods: A generic qualitative study design, with a constructivist naturalistic approach, was performed in five Dutch neighbourhoods with varying levels of urbanisation and a predominantly low SES. A semi-structured interview was conducted with 37 community-dwelling older adults (65 years and over) to examine three important aspects of healthy ageing: physical activity, social connectedness, and digital literacy. All conversations were thematically analysed using Braun and Clarke's (2006) six-step approach.

Results: The majority of participants were female (61.2%), lower educated (56.8%), and residing in a rural neighbourhood (73.0%). Their primary motivators for healthy ageing were to remain independent, maintain their social network, and keep up with modern society, including digitalisation. In addition to the numerous individual determinants at play, many factors that promote or impede healthy ageing were attributed to local activities, support services, facilities, and environmental characteristics. The main facilitators were diverse and affordable opportunities for recreation, sufficient and accessible local facilities, nature and green spaces, and municipal support. The most influential impediments were an inadequate provision of information, individualisation of society, growing digitalisation of support services, and, consequently, shutting down local facilities. Although facilities were generally more satisfactory in urban compared to rural areas, other barriers such as criminality and feelings of insecurity prevailed.

Conclusions: This study underscores the multifaceted nature of healthy ageing among older adults with a low SES, emphasising the importance of addressing individual and environmental determinants in fostering well-being. Proceeding forward, interventions should prioritise enhancing access to recreational opportunities and addressing digitalisation and societal changes in ways that resonate with the needs and capabilities of older adults.

Nutritional status and loneliness impact functional status in community dwelling older adults

Mr. Khalid Abdul Jabbar¹, Prof. Ngaire Kerse¹, Dr. Sue Lord², Dr. Silvia Del Din³, Dr. Ruth Teh¹

¹University Of Auckland, Auckland, New Zealand, ²Auckland University of Technology, Auckland, New Zealand, ³Newcastle University, Newcastle upon Tyne, United Kingdom

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: The relationship between physical activity (PA) and functional status (FS) is well established. Information on how health determinants (HD) such as sleep, nutrition, oral health and loneliness interact with this relationship is scarce. We investigated how sleep, nutrition, oral health and loneliness affect the association between PA and FS.

Methods: PA was measured using seven days of accelerometry data from 53 community-dwelling older adults (79.8 ± 6.1 yrs, 71.7% females) and was quantified using the AX6 sensor on the lower back. Volume, pattern and variability of walking, upright, sitting and lying bouts were extracted. Measures include: NEADL for FS, PSQI for sleep, SCREENII for nutritional risk, OHIP-14 for oral health and UCLA 3-item for loneliness. Linear regression models investigated the direct association between FS (dependent variable) and PA. The impact of HD on the direct relationship between PA with FS was investigated by entering each HD as a covariate and an interaction term.

Results: FS was associated with daily total walk duration ($p = 0.008$), number of daily walking bouts ($p = 0.010$), number of daily steps ($p = 0.007$) and pattern of upright bouts ($p = 0.010$). Those who reported poorer nutrition (SCREENII < 50) had higher FS when they spent more time on their feet ($p = 0.046$, partial eta-squared (η^2) = 0.09). Those who reported less loneliness (UCLA < 5) had higher FS with greater number of daily walks ($p = 0.025$, $\eta^2 = 0.11$). Neither the quality of sleep nor oral health affected the association between FS and PA.

Conclusion: Nutritional status and loneliness affect the relationship between PA and FS. A nuanced and comprehensive understanding of how these HDs impact PA in older people will help us better plan resources to identify the onset of functional loss and push back the progression of change. Older adults, particularly those with higher nutrition risk or loneliness, may benefit from more walking activities.

Handgrip Strength is Associated with A Components of Metabolic Syndrome among Elderly in Indonesia: A Nationwide survey

Mr. Sandy Ardiansyah¹

¹Ministry of Health (MOH), Indonesia, South Jakarta, Indonesia

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

The purpose of this study was to investigate associations between handgrip strength with components of metabolic syndrome (MetS) among elderly Indonesians. This was a cross-sectional study using secondary data of the Indonesia Family Life Survey (IFLS)-5. The participants was placed into elderly. Handgrip Components of MetS including central obesity, hypertension, high blood pressure, high glucose (diabetes treatment), and dyslipidemia (cholesterol treatment). Analysis of covariance was used to examine the differences and multivariate with logistic regression analysis of the odds of handgrip strength. This study found that central obesity was less likely to be associated with handgrip strength in elderly Indonesians in the model multivariate both of male (OR) 1.81, 95% (CI) 1.27~2.60, $p=0.001$), and female (OR) 1.47, 95% (CI) 1.04~2.07, $p=0.026$) with (OR adjusted for age and cognitive impairment. The proportion of females had metabolic syndrome and low handgrip strength was 61.1% more than males. The presence of MetS was not significantly related to handgrip strength. The conclusion of this study was Handgrip strength is independently associated with an increase in central obesity in both male and female respondents. Therefore, the routine use of hand grip measurement is strongly recommended in clinical practice for identifying elderly individuals at risk of poor health status to prevent metabolic disorder.

Relationships among Older Adult's 24-hour movement behaviors, Well-being, Cognition, and BMI

Suryeon Ryu, **Mr. John Oginni**¹, Dr. Zan Gao¹

¹University Of Tennessee-knoxville, Knoxville, United States

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: The interplay between Older Adults' 24-hour movement behaviors, Well-being, Cognition, and BMI remains largely unexplored. This study aimed to investigate the interdependent relationship of older adults' daily engagement in physical activity (PA), sedentary behavior (SB), and sleep (S) in the context of a Tai Chi intervention.

Method: A total of 41 healthy older adults participated in a remote Tai Chi program, employing a cross-over design. Participants wore a Fitbit band (Inspire 3) for an average of at least 23 hours a day, five days a week, over six months. The Fitbit device continuously tracked Light PA, Very Active PA, SB, and Sleep durations. Quality of Life and Cognitive flexibility were assessed using the Older People's Quality of Life Questionnaire and the Dimensional Change Card Sort Test, respectively. BMI was calculated using participants' weight (kg) and height (m) squared. A compositional analysis (CODA) paradigm was used to investigate the codependent associations among these variables.

Result: Linear regression models utilizing CODA indicated significant associations between the outcomes and the relative time spent in the four-movement behaviors. BMI showed a strong relationship ($p < 0.01$), and Quality of Life was also significantly associated ($p = 0.0024$), while cognitive flexibility approached significance ($p = 0.06$), hinting at a potential link with Light PA. The models accounted for a substantial proportion of the variance in BMI (Adj. $R^2 = 0.977$), with the proportion of time in Very Active PA being particularly influential ($B = -0.87$, $p = 0.014$). Quality of Life models explained a moderate variance (Adj. $R^2 = 0.295$), though no proportional times were significantly linked.

Conclusion: Very Active PA emerges as a key focus for interventions targeting older adults, significantly influencing BMI. Although not statistically significant, a potential positive correlation between light PA and cognitive flexibility in older adults was observed.

Associations of physical activity, sedentary behavior, and sleep patterns with cognitive function among middle-aged and older community-dwelling adults: A latent class analysis

Dr Yuzei Zhang¹, Dr. Laura DeFina², Dr. David Leonard², Dr. Baojiang Chen¹, Dr. Emily Hébert¹, Dr. Harold Kohl¹

¹Michael & Susan Dell Center for Healthy Living, UTHealth School of Public Health in Austin, Austin, United States, ²Cooper Institute, Dallas, United States

P1.05: Ageing, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: A. Ageing

Purpose: The current study aimed to identify movement patterns of physical activity, sitting time (ST), and sleep and examine the association of movement patterns with cognitive function.

Methods: This cross-sectional study included 1,240 participants aged ≥ 55 years participating in the Cooper Center Longitudinal Study who visited the Cooper Clinic, Dallas (2016-2019) for preventive health care. Four movement behaviors, including leisure-time aerobic activity, muscle-strengthening activity, ST, sleep, and other characteristics, were self-reported. Cognitive function was assessed by the Montreal Cognitive Assessment (MoCA). Four categorical indicators were created for each movement behavior and used to identify latent classes using latent class analysis. Information criterion, relative entropy, and model interpretability were used to determine the optimal number of classes. Participants were assigned to the predicted classes based on their highest posterior probabilities. Multinomial regressions examined the association between movement patterns and each covariate. Linear regression models examined the association of movement patterns and cognitive function. A sensitivity analysis was conducted adjusting for misclassification errors.

Results/findings: Participants were predominantly non-Hispanic White (95%), male (71%), with an average age of 62 years. A 3-class model fit the data best, comprising class-1: active long sleepers, class-2: very active short sleepers, class-3: moderately active short sleepers, representing 11%, 62%, and 27% of the sample. Compared to class-2, class-1 was more likely to be older and female, while class-3 was more likely to be female, had less education, were overweight and obese, and had chronic conditions. Compared to class-2, class-3 was associated with a lower MoCA total score ($\beta = -0.28$, $SE = 0.14$, $p = 0.045$), adjusting for sociodemographic factors. When further controlling for health behaviors and indicators, there were no differences in MoCA total scores between classes. Sensitivity analysis suggested that class-3 had a significantly lower average MoCA total score than class-2 (Difference in means = -0.42 , $p = 0.025$).

Conclusions: The current study identified three distinct movement patterns and found different sociodemographic and health characteristics, and cognitive functions correlated with classes. Findings highlight that less active, more sedentary, and shorter sleep adults were associated with worse cognitive function, especially among females, those with less education, and with chronic diseases.

Characteristics of Dietary Behaviors and Cardiometabolic Health in East African Immigrants living in the San Diego Area: Preliminary Insights from the HAWAASH2 Study

Ms. Amy Atun¹, Ms. Nicole K. Karongo¹, Sahra Abdi², Tsigealem Birhane², Jabir Mohamed², Meshate Mengistu², Xochitl Aguinaga¹, Dr. Cheryl A.M. Anderson¹
¹Herbert Wertheim School of Public Health and Human Longevity Science, University Of California, San Diego, San Diego, USA, ²United Women of East Africa and East African Cultural Center, San Diego, USA

P1.06: Participatory Research in Health Promotion, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: To characterize dietary behaviors and cardiometabolic health status among East African immigrants residing in the San Diego area.

Methods: In partnership with the United Women of East Africa and East African Cultural Center, we recruited a sample of 46 individuals who are refugees or immigrants living in San Diego. Data were collected between May and November 2023 through personal mobile phones, computer tablets and/or laptops using the REDCap survey platform. Participants responded to the survey in English, and standardized assistance with interpretation was provided, if needed.

Results: The sample was 63% female, with a median age of 38.5 years (IQR: 22, 53.75). Fifty nine percent of participants were born outside the United States, and within this group there were 65% born in Somalia, 10% born in Ethiopia, 6% born in Kenya, and 3% in Sudan. Ninety eight percent of the sample observe the Muslim religion. Seventy two percent of participants achieved a high school degree or higher. Eighty three percent of participants earned a household income under the median household income in San Diego (\$98,657). Twenty seven percent of participants reported having a hypertension or pre-hypertension diagnosis and 50% reported a family history of hypertension. Thirty percent of participants reported having been diagnosed with diabetes. Among individuals not born in the United States, 42% reported a perceived decline in overall health post-migration. Fifty five percent of the overall sample reported consistently cooking meals at home, and 33% reported making a conscious effort to integrate cultural traditions when choosing healthier foods. Fifty eight percent obtained household foods from wholesale clubs like Sam's Club and Costco.

Conclusion: Our findings of consistent home cooking practices and the incorporation of cultural traditions into food choices underscore the importance of tailoring dietary interventions for immigrant populations and promoting access and availability of culturally significant foods. The prevalence of cardiometabolic conditions in the sample suggest a need for effective integration of cardiovascular health promotion and disease prevention into dietary interventions.

Learning preferences of elementary-aged children regarding classroom-based physical activity: Cross-sectional results from an implementation study conducted in Texas, USA

Ms. Emma Saving¹, **Dr. Christopher Pfledder²**, Dr. Derek W. Craig¹, Mr. Kempson Onadeko¹, Dr. Timothy J. Walker¹

¹The University Of Texas Health Science Center at Houston School of Public Health, Houston, USA, ²The University of Texas Health Science Center at Houston School of Public Health, Austin Regional Campus, Austin, USA

P1.06: Participatory Research in Health Promotion, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Background: Brain boosts and physically active learning are evidence-based approaches to improve students' physical activity by integrating movement into the classroom. However, less is known about student learning preferences regarding engagement in movement-based approaches in the classroom. The purpose of this study was to: 1) examine student participation in classroom-based physical activity and 2) compare student preferences for learning while moving versus sitting.

Methods: We used baseline data from a parent study that developed and tested an implementation strategy to support classroom-based physical activity. During late fall 2023, we administered a paper-based questionnaire to 3rd-5th grade students at two elementary schools in Texas, USA. The questionnaire included six questions about student learning preferences and their teacher's use of classroom-based physical activity approaches. Outcomes for this study utilized data from the following questions: 1) how much do you like to learn while sitting? (5-point scale); 2) how much do you like to learn while moving? (5-point scale); 3) did you do any moving around in your classroom this week, like dancing, running, jumping, stretching, skipping, or anything else that made you move? (yes/no/don't know). We used linear mixed models to compare learning preferences while controlling for gender, race/ethnicity, grade, and free and reduced lunch status (school partners shared demographic data for control variables).

Results: A total of 135 3rd-5th grade students (51% female, 69.6% Hispanic, 92.6% free or reduced lunch qualified) completed the questionnaire. Seventy-three percent of students (n=127) reported participating in classroom-based physical activity at least once within the past week. Students reported significantly higher scores for liking to learn while moving (m=4.23, sd=1.17) compared to while sitting (m=3.59, sd=1.26) (p<0.001.).

Conclusions: Results suggest that elementary-aged students prefer to learn through movement compared to sedentary approaches. These findings were consistent across grade levels, gender, race/ethnicity, and free/reduced lunch status. In addition to supporting physical activity and health, movement-based approaches may also help to better engage students in learning.

Feasibility of a digital diabetes prevention intervention among Hispanic adolescents with obesity: The Fit24 study.

Dr. Erica Soltero¹, Dr. Salma Musaad¹, Dr. Teresia O'Connor¹, Dr. Debbe Thompson¹
¹USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, USA

P1.06: Participatory Research in Health Promotion, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Hispanic adolescents are disproportionately burdened by type 2 diabetes. Digital health interventions are promising for reaching and engaging high-risk youth in disease prevention opportunities, yet few digital interventions have been developed and tested among Hispanic adolescents. The purpose of this study was to examine the feasibility and acceptability of Fit24, a 12-week intervention that uses a Fitbit and theoretically grounded text-messages to promote physical activity and sleep among Hispanic adolescents (14-16 years) with obesity.

Methods: A randomized waitlist-controlled trial with a process evaluation was conducted to assess feasibility (NCT04953442). Youth randomized to the intervention (n=22) received a Fitbit, guidance on setting adaptive activity and sleep goals, and daily text messages (n=125) grounded in Self Determination Theory to support goal attainment. Youth randomized to the waitlist control (n=21) received a Fitbit only. A priori feasibility criteria were to: (1) recruit 48 Hispanic adolescents with obesity; (2) retain ≥85% of participants for pre- and post-assessments; (3) record Fitbit wear time ≥5 days/week throughout the intervention; (4) achieve an 80% response rate of text messages when prompted; (5) ≤10% technical issues with Fitbit and text messages; and (6) have ≥80% of youth report 'agree' – 'strongly agree' that they were satisfied with the program.

Results: We enrolled 90% (n=43) of the goal and retained 93% (n=40) of participants for post-assessment. 68% of participants wore their Fitbit ≥5 days/week and 60% responded to text messages when prompted. Some youth reported charging issues (n=2) with the Fitbit or that the watchband irritated their skin (n=4). For intervention youth, almost half (45.5%, n=10) experienced Fitbit sync issues at least once throughout the intervention. We achieved 87% "agree/strongly agree" satisfaction ratings.

Conclusions: Fit24 is a promising approach for reaching and engaging Hispanic youth in a diabetes prevention program. Given that sync issues experienced with the Fitbit hindered our ability to set adaptive goals and provide accurate feedback on goal attainment, strategies are needed to address technical issues experienced prior to conducting a larger randomized trial to assess effectiveness. Findings from this feasibility study will inform future digital diabetes prevention strategies focused on high-risk pediatric populations.

Comparison of step-count outcomes across seven different activity trackers: A free-living experiment with young and older adults

Dr. Takashi Nakagata¹, Dr. Yosuke Yamada¹, Dr. Masashi Taniguchi², Dr. Hinako Nanri¹, Dr. Misaka Kimura³, Dr. Motohiko Miyachi^{1,4}, Dr. Rei Ono¹

¹National Institutes of Biomedical Innovation, Health And Nutrition, Settsu, Japan, ²Kyoto University, Kyoto, Japan, ³Institute for Active Health, Kyoto University of Advanced Science, Kyotanabe, Japan, ⁴Waseda University, Tokorozawa, Japan

P1.06: Participatory Research in Health Promotion, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

This study aimed to compare step-count outcomes between older and younger adults using seven different activity trackers, addressing a gap in existing research which often overlooks variations in walking patterns and gait speeds between these age groups.

Purpose: Previous studies have compared activity trackers, including pedometers and accelerometers, in various scenarios; however, older adults frequently display distinct walking patterns and gait speeds compared to younger adults. This study aimed to compare the step-count outcomes between older and younger adults using seven different activity trackers.

Methods: This study included 35 younger adults (21–43 yrs) and 57 older adults (65–91 yrs). All the participants were equipped with one pedometer and the following six activity trackers: ActiGraph GT3X+ Wrist and Hip, Actimarker, Omron, TANITA, Yamasa, and Yamasa AS-200. We examined the correlation of step-count as measured by all activity trackers, employing standardized major axis analysis.

Results: Wrist-worn ActiGraph GT3X devices consistently recorded step counts consistently over 4,000 steps higher than waist-worn activity trackers in free-living experiments involving both young and older adults. When ranking the six waist-worn devices by step count, the Actimarker consistently scored highest overall, recording an average of $8,569 \pm 4,881$ steps (mean \pm SD). Furthermore, this device ranked highest among younger adults, with an average of $9,624 \pm 5,177$ steps, and among older adults, with an average of $7,890 \pm 4,562$ steps. In contrast, the Yamasa AS-200 pedometer recorded the lowest step count among all devices, averaging $6,442 \pm 4,249$ steps overall. In the younger adult group, it ranked second to last, registering an average step count of $7,517 \pm 4,388$, whereas in the older adult group, it recorded the lowest average at $5,750 \pm 4,015$ steps. The correlation among all devices demonstrated a very high consistency, with the exception of the ActiGraph worn on the wrist.

Conclusion: Step counts recorded from four activity trackers and one pedometer showed a variation of approximately 2200–2600 steps for both groups, yet maintained a high correlation with each other, except for the wrist-worn ActiGraph.

Impact of Physical Activity and Sleep Quality on the Relationship between Time Spent in Greenspace and Mental Health among College Students

M.S. Ssu-Yu Yeh¹, MPH M.S. RD Yanyan Chen¹, PhD MPH Christiaan Abildso⁴, PhD Rich Christiana⁵, PhD Aaron Hipp², PhD MPH Alicia Nunez³, PhD Jay E. Maddock¹

¹Texas A&M University, College Station, USA, ²North Carolina State University, ³San Diego State University, ⁴West Virginia University, ⁵Appalachian State University,

P1.07: Other, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: M. Other

Purpose: This study investigates the relationship between time spent in greenspaces (TSG) and mental health while exploring the mediating role of physical activity (PA) and sleep quality among college students.

Method: A cross-sectional study was conducted in 2023 across five universities. Data was collected through a Qualtrics survey from a random sample of undergraduates at each institution. Questions included a self-assessment of mental health status and frequency and duration of exposure to green spaces. The survey assessed sleep quality with a modified version of the Insomnia Severity Index-3 (ISI-3) and physical activity levels based on the Godin Leisure-Time Exercise Questionnaire. To boost response rates, participants were recruited through email invitations, with follow-up reminders sent one week and three weeks after the initial contact and a drawing for a chance at a gift card. IRB approvals were obtained from multiple institutions. Data was analyzed using Structural Equation Modeling (SEM) with STATA v.18.

Result: The study was completed by 1864 students, with an average mental health score was 66.4 out of 90 (SD = 9.9), with 74.3% being physically active. The average sleep duration was 6.8 hours (SD = 1.4), and approximately 20% of students experienced moderate to severe difficulty falling asleep. SEM results showed the hypothesized model had a good fit with the data (RMSEA = 0.036, CFI = 0.993, TLI = 0.959, SRMR = 0.014). The path test suggested that TSG was significantly associated with PA ($r=0.2$, $p<0.001$) and mental health ($r=0.09$, $p<0.001$), respectively, yet TSG wasn't significantly related to sleep quality. The mediation results suggested that only physical activity was a mediator between TSG and mental health ($p<0.001$). The total indirect effect was also significant ($p<0.05$), indicating 21.9% of the total effect being mediated.

Conclusion: To improve mental health among college students, interventions tailored to increase their time in greenspace and physical activity are recommended. College students may have lifestyle patterns that differ from other populations. Future studies are suggested to explore additional mediators besides sleep quality in this population.

Using a Rapid Qualitative Analysis Approach: Understanding Farmer and Food Access Practitioners' Perspectives on Production, Distribution, and Impact of Specialty Crops in the Midwestern United States

Dr. Whitney Fung Uy¹, Dr. Amy Yaroch¹, Ms. Katie Nelson¹, Mrs. Emily Shaw¹, Ms. Maryan Isack¹, Ms. Laura Flournoy¹, Dr. Laura E. Balis¹

¹Gretchen Swanson Center for Nutrition, Omaha, USA

P1.07: Other, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: M. Other

Purpose: Rapid qualitative analysis has been proposed as a rigorous approach to quickly analyze and translate research findings to real world settings. This project describes the rapid deductive approach used for a study to understand farmer and food access practitioners' perspectives regarding specialty crop production and distribution and the impact on human health and the environment in the Midwestern United States (US).

Methods: Specialty crop producers (n=11) and practitioners working in local food distribution channels such as food pantries or schools (n=15) from the Midwestern US (including the states of Iowa, Illinois, Indiana, Minnesota, Nebraska, and Wisconsin) were interviewed. Interview guides and analysis templates were developed using the RE-AIM (reach, effectiveness, adoption, implementation, maintenance) framework. Two researchers independently coded the first two interviews. The research team reconciled and refined coding guidance and the analysis template. Thereafter, interviewers served as primary coders by taking notes in the template, and a second coder captured any missing information by listening to the interview recordings. Saturation was determined using a team-based approach to agree on the point at which no new information was generated across participants.

Results/findings: Diverse crop production largely impacted the environment in that growers adopted and implemented practices which led to increased effectiveness in improving soil health, productivity, and biodiversity. Although farmers reached customers through various distributions channels, long-term maintenance was a concern due to the need for sustainable profits and the physical labor of farming. Food access practitioners' roles focused on improving health and reaching people experiencing food insecurity or with limited incomes. Food access programs were widely adopted and implemented to address specific issues such as increasing fruit and vegetable intakes, however, evaluation of program effectiveness varied across programs. Additionally, funding was often a barrier to program maintenance.

Conclusions: Rapid qualitative analytical methods may provide timely feedback to inform practice-based settings, next phases of a study, or time-sensitive changes in interventions. Given the urgency to address the food system impacts on the environment and human health in the US and globally, study findings can inform community efforts to support local food systems and better connect farmers and practitioners.

Powerbuilding Improves Physical Literacy Among Women

Ms. Aspen Streetman¹, Ms. Halle Brin¹, Dr. Emily Mailey¹, Dr. Katie Heinrich¹

¹Kansas State University, Manhattan, USA

P1.07: Other, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: M. Other

Purpose: Physical literacy (PL) describes the motivation, confidence, physical competence, knowledge, and understanding to appreciate and assume accountability to engage in lifelong physical activity and exercise. Resistance training (RT) is a form of exercise that involves using resistance or force, typically weights, resistance bands, or body weight, to strengthen and build muscles. Powerbuilding (PB) is a hybrid form of RT that combines powerlifting and bodybuilding movements to increase strength and promote a muscular physique. While RT has been shown to improve PL, the relationship between PB and PL in women is unknown. Therefore, this study aims to understand how PL changes during and after an eight-week PB intervention.

Methods: Fourteen women, age 27.7 ± 9.6 , with no RT or PB experience, participated in an eight-week PB intervention and completed a follow-up survey. The intervention met for one hour three times weekly. All intervention workouts were structured similarly, including a standardized warm-up, workout instruction, and PB-based workout. Participants partnered with each other, creating a supportive community. PL was assessed pre- and post-intervention and eight weeks after the intervention concluded (i.e., follow-up) using the PlaySelf PL self-description questionnaire. The 12-item questionnaire was scored according to standard procedures where higher scores corresponded to higher PL: very high = 900-1,200, relatively high = 600-900, relatively low = 300-600, and very low = 0-300. A repeated measures ANOVA was conducted to examine changes in PL. Partial eta-squared (η^2p) was used to estimate effect sizes, interpreted as small (0.01), medium (0.06), and large (0.14).

Results: Mean scores for PL at pre- (731.7 ± 184.2), post-intervention (793.6 ± 132.8), and follow-up (803.3 ± 167.1) changed significantly [$F(2, 26) = 3.91$, $p = 0.033$]. The intervention elicited a large effect on PL ($\eta^2p = 0.23$).

Conclusion: PL significantly improved among women who completed an eight-week PB intervention. Interestingly, while PL improved the most from pre- to post-intervention, it continued to improve on average, though not significantly, even after the intervention ended. These results suggest that PL can be improved through PB. Future research should promote RT and PB among women to improve PL.

Lunchtime Fruit and Vegetable Preparation Styles in Family Child Care Homes Caring for 2–5-year-old Children in Oklahoma City, Oklahoma

Miss Zohreh Shariati¹

¹Oklahoma University Health Science, OKC, USA

P1.07: Other, Ballroom C, May 21, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: M. Other

Purpose: Young U.S. children consume excessive amounts of added sugar and sodium, in part due to low intake and variety of freshly prepared, non-processed foods. An important setting to address children's dietary intake are Family Child Care Homes (FCCHs), the second most common childcare setting in the U.S. Many US preschoolers receive two-thirds of their dietary requirements while at FCCHs. The purpose of this study was to describe lunchtime fruit and vegetable preparation styles in urban-residing Oklahoma FCCHs.

Methods: This descriptive study examined baseline measures of a randomized control trial in Oklahoma FCCHs. Fifty-one licensed FCCH providers who participated in the Child and Adult Care Food Program (a federal food subsidy program) and served 2–5-year-olds were included. Lunch was observed on two days and recipes and meal preparation style were recorded by a research assistant. Frequencies of fruit and vegetable preparation styles (fresh, frozen, canned, and fruit juice) were calculated.

Results: Providers were 100% women, 44.2 ± 14.2 years old, and 53.1% identifying as white, 30.6% Black/African American, and 4.1% American Indian/Alaska Native. Providers spent 2.0 ± 1.0 hours/day on average preparing meals (including lunch) For lunch, vegetables were mainly served from canned (48.5%), or fresh (35.3%), and it was less common to do frozen (23.4%) or dried prepared (5.05%); and fruits were served mostly from fresh (57.5%), or canned (35.3%), less frozen (4.15%), and no dried (0.0%). Only 3.0% served fruit juice at lunch. There was no significant difference in the preparation style frequency between two observation days.

Conclusions: Approximately, half of the served vegetables were canned, whereas the majority of fruits served were fresh. Given the nutrient density in fresh vegetables and fruit and the added sugar and sodium in canned versions, opportunity exists to enhance nutrient quality and variety of produce served in FCCH. Future research should explore how to support preparation of healthier alternatives in FCCH, specifically fresh and frozen vegetables and fruit.

Body Mass Index and Cognitive Functioning Decline: Exploring the Relationship

Mrs. Tanveer Kaur¹, Prof. Piyush Ranjan², Dr Harpreet Bhatia¹, Dr Gauri Shanker Kaloiya²
¹University Of Delhi, New delhi, India, ²All India Institute of Medical Sciences, New Delhi, India

P2.08: Motivation and behavior change, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: B. Motivation and behavior change

Aim: Cognitive functions may have an important role in the management of obesity by ensuring compliance towards lifestyle-related behaviours. This study aimed to identify the cognitive deficits among adults and study their association across different BMI categories in an Indian setting.

Methods: The indexed study is a cross-sectional survey of a sample attending a tertiary care hospital in northern India. The MoCA scale was administered in an interview schedule to assess participants' cognitive performance across eight domains. The responses were analysed to determine the association between BMI and total MoCA scores and domain-specific MoCA scores.

Results: Three hundred forty-nine participants with a mean age of 36.9 ± 10.9 years and BMI of 26.7 ± 4.6 kg/m² were recruited. BMI was found to be significantly associated with total MoCA score, indicating a negative relationship ($p < 0.001$). A significant negative association between six domain-specific scores, namely, visuospatial, attention, language, abstraction, delayed recall ($p < 0.001$), orientation ($p < 0.05$), and BMI, was also found.

Conclusion: A dose-effect association between BMI and cognitive functioning (overall and domain-specific) was observed. In these cases, visuospatial, attention, language, abstraction, delayed recall, and orientation were found to be impacted.

Role of Doulas Across the Pregnancy Care Continuum on Maternal and Child Health: A Scoping Review

Ms. Priyanka Chaudhary¹, Mr John Rech², Mrs. Kailey Snyder³, Mr. Gaurav Kumar³, Mrs. Danae Dinkel¹

¹University Of Nebraska Omaha, Omaha, USA, ²University of Nebraska Kearney, Kearney, USA, ³University of Nebraska Medical Center, Omaha, USA

P2.08: Motivation and behavior change, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: B. Motivation and behavior change

Background: Modern maternity care often lacks sufficient nurse support for mothers during labor, with nurses spending only 6-10% of their time on labor support despite new moms expecting 53% of their time. Given the comfort derived from having support during childbirth, doula-trained non-clinical birth workers have gained prevalence. This scoping review aims to examine and consolidate evidence on the impact of doulas throughout the entire pregnancy care continuum, including the prenatal phase, during pregnancy, and postpartum.

Methods: We searched PubMed, Scopus, EMBASE, CINAHL, Cochrane Review, and Cochrane Central to identify articles using the search words with the Boolean operator “doulas” AND “labor support” AND “birth outcomes” AND “pregnancy” AND “maternal health.” Peer-reviewed articles focusing on doulas and birth outcomes, written in English, and published between 2000 to 2022 were included to understand the current state of knowledge.

Result: Following the removal of duplicates, a review of 765 articles titles and abstracts yielded 115 articles for full-text review and 23 articles met the final inclusion criteria for a full review. Overall, the study found that doula supervision in pregnancy care was associated with better delivery outcomes, such as fewer cesarean sections, preterm deliveries, shorter labor durations, and reduced labor pain. Notably, doula help was also associated with breastfeeding initiation. However, one study indicated that doula support was associated with longer hospital stays. Furthermore, the emotional support provided by doulas has been linked to decreased stress and anxiety.

Conclusion: Doulas emerge as a significant resource for birthing women, encouraging discussion for increasing utilization. This study highlights the potential benefits of doulas for both the mother's and child's well-being. Future research and policy considerations should investigate ways to promote access to doula support, given its potential to improve mother and child health outcomes. Furthermore, there is a need to explore the impact of doulas on health behavior change during pregnancy. This will provide a more evidence-based foundation for maternal and child well-being decision-making.

The impact of COVID-19 on university worksite wellness programs

Dr. Marilyn Nehls¹, Dr. Rick Ingram¹, Dr. Carrie Davidson¹, Dr. Dave Fardo¹, Dr. Martha Riddell¹

¹University Of Kentucky, Lexington , USA

P2.08: Motivation and behavior change, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Worksite wellness programs are popular employer offerings as of the last few decades. The COVID-19 pandemic caused major shifts in behavior since these programs have been implemented. The purpose of this study was to see how the pandemic affected various offerings within a university worksite wellness program.

Methods: This study is a secondary analysis of a university worksite wellness program, and it compares participation in the various offerings in response to the COVID-19 pandemic by evaluating 2019 participation (pre-pandemic) to 2020 participation (including onset of the pandemic and after). This worksite wellness program, which is available to employees at the University of Kentucky (Lexington, KY, USA) and individuals on the university-sponsored health insurance programs, included approximately 40,000 eligible individuals per year in 2019 and 2020. The main outcome measures include participation in the three arms (MoveWell, EatWell, and BeWell) of this university worksite wellness program.

Results: Participation in the MoveWell and EatWell arms decreased after the onset of the pandemic in Kentucky (-33.6% and -32.1%, respectively), but participation in the BeWell arm increased (+41.8%). The most dramatic increase in participation that occurred was through BeWell's health coaching, which increased by +76.1% when compared to the same time frame in 2020.

Conclusions: Although participation was reduced in the MoveWell and EatWell arms of this worksite wellness program, individuals were still participating in these programs, which is noteworthy during a pandemic. BeWell program participation increased during the pandemic and is a suggested point of focus for employers during pandemics.

Mental Health, Sleep Quality, and Psychological Well-Being During the Month of Ramadan

Mr. Danny Jandali¹, Mr. Abdullah Alwaleedi¹, Mr. Amine Sheikh¹, Ms. Malak Elayyan¹, Ms. Sarah Liener¹, Dr Weiyun Chen¹

¹University Of Michigan, Ann Arbor, USA

P2.08: Motivation and behavior change, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

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Purpose: This study aimed to explore the relationship between mental health factors (depression, anxiety, and stress), sleep quality, and psychological well-being (subjective happiness and life satisfaction) during the month of Ramadan among participants and by gender.

Methods: The study enlisted 163 participants (74% female, 25.7% male), with an average age of 36.8 years (SD = 13.1), mostly of Middle Eastern descent. Recruitment was conducted via flyers at local community mosques, social media, and outreach through local religious leaders. Data collection took place in the last three weeks of Ramadan, utilizing a Qualtrics survey that included the Depression Anxiety and Stress Scale (DASS-21), the Subjective Happiness Scale (SHS), Satisfaction with Life Scale (SWLS), and the Pittsburgh Sleep Quality Index (PSQI). Data were analyzed by means of descriptive statistics and multiple linear regression models using SPSS version 28.

Results: The study indicates that while mental health and psychological well-being remained within normal levels during Ramadan, sleep scores indicated a significant sleep disturbance among participants (5-21). Multiple linear regression models revealed that subjective happiness, sleep duration, and global PSQI score were significant predictors of stress for the total sample ($F=9.816$, $p=.001$). Life satisfaction was the only significant predictor of anxiety ($F=7.258$, $p=.001$), and it, alongside subjective happiness, significantly predicted depression ($F=12.317$, $p=.001$). For men, subjective happiness alone predicted stress, while life satisfaction was a predictor for both anxiety and depression ($F=4.637$, $p=.001$). In women, sleep latency and medication usage were linked to stress, but not anxiety. Life satisfaction and subjective happiness were, however, predictors of depression ($F=6.380$, $p=.001$).

Conclusion: Fostering positive affective states can serve as a protective mechanism against the potential psychological distress associated with altered sleep patterns and lifestyle changes that accompany Ramadan. The study highlights the need for strategies to accommodate sleep and well-being needs during Ramadan, especially in non-Muslim majority contexts like the USA, to safeguard against potential psychological distress. Further research using longitudinal and objective methodologies is recommended to explore these findings across different cultures and religions.

A Comparison of Physical Activity Before, During and After Pregnancy among a Cohort of Rural Postpartum Women

Dr. Kailey Snyder¹, Dr. Julie Peterson², Ms. Kari Bargstadt-Wilson²

¹University Of Nebraska Medical Center, Omaha, USA, ²Creighton University, Omaha, USA

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Purpose: The purpose of this investigation was to determine how primary physical activity mode and frequency differed from before, during and after pregnancy (≤ 12 months since childbirth).

Methods: A survey for a larger study was disseminated electronically via a social media recruitment strategy to 282 individuals in the Spring of 2022. Individuals were eligible if they lived in a community with $\leq 50,000$ people and had given birth to a child in the last year. The survey used previously validated questions to determine primary physical activity mode (1) Walking, cycling or other light exercise at least four hours a week (2) Sports or heavy gardening at least four hours a week (3) Hard exercise training or competitive sports regularly and several times a week (4) Reading, watching TV or other sedentary behavior. Participants were asked to reflect on their activity at 3 time points (1) before pregnancy (2) during pregnancy (3) at the time of survey completion. A one-way ANOVA was completed to compare physical activity mode between the 3 time points.

Results: The average participant was 30.8 ± 4.4 years old and had given birth to a child 5.1 ± 3.3 months before completing the survey ($n=282$). The majority of participants identified as White (47.2%), had a household income between \$50,000-\$99,999 (42.4%) and had an Undergraduate degree (39.7%). Mode of exercise varied significantly between the 3 time points ($p < .001$). Light exercise was the predominant form of activity across the 3 time points (T1: 50.4% vs T2: 58.2% vs T3: 52.5%). Sedentary behavior was highest in the postpartum period (T1: 14.9% vs T2: 28.7% vs T3: 33.7%). Sports or heavy gardening (T1: 18.1% vs T2: 7.4% vs T3: 6.7%). and heavy exercise training (T1: 13.1% vs T2: 3.5% vs T3: 3.5%) were most commonly reported in the pre-pregnancy period.

Conclusion: Women residing within rural areas self-report being predominantly sedentary or engage in light exercise activities such as walking. Engagement in higher intensity activities declined from pre-pregnancy through the perinatal period. These findings suggest rural women are not achieving moderate intensity physical activity recommendations which may be detrimental to their health during the perinatal period.

Negative body image is associated with routine dietary restraint and not compensatory restraint.

Miss Yaqi Wang¹, Ms Mandy Ho¹, Ms Pui Hing Chau¹, Mr Yee Tak Fong¹

¹University of Hong Kong, Hong Kong, China

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Purpose: Negative body image, including overestimation and dissatisfaction of body weight, is related to increased attempts to restrain eating. This study examined the relationships between negative body image and routine and compensatory restraints, respectively.

Methods: This study used a cross-sectional online survey design. A validated 13-item Chinese version of the Weight-related Eating Questionnaire assessed routine and compensatory restraints, emotional and external eating. Body weight perception was evaluated by comparing self-rated weight status with calculated weight status from self-reported weight and height. The attitude to current body weight was assessed by four options: (1) weight satisfaction (2) weight dissatisfaction with the desire to lose weight (3) weight dissatisfaction with the desire to gain weight (4) indifference to weight. Multinomial logistic regression was conducted to analyze the association of routine and compensatory restraints with weight perception and attitude to weight status with adjustments made for sociodemographic factors, body weight, and emotional and external eating. Subgroup analyses examined these associations across males, females, underweight, normal weight and overweight/obese participants.

Results: In total, we included 949 participants (73.6% females, mean age=33 years, SD=14, 14.6% underweight, 53.5% normal weight, 31.8% overweight/obese). Participants who overestimated their body weight were more likely to report higher routine restraint levels than those with accurate body weight perception (adjusted Odds Ratio (OR) = 1.315, 95% Confidence Interval (CI) = 1.107, 1.563). Participants with weight dissatisfaction and the desire to lose weight were more likely to have higher routine restraint levels than those with weight satisfaction (adjusted OR=1.411, 95%CI=1.148, 1.734). However, there were no significant relationships between compensatory restraint levels and overestimation nor dissatisfaction of body weight. The subgroup analysis results indicate that the association between routine restraint levels and body weight overestimation was observed in males, females, and underweight and normal-weight participants, but not in overweight/obese participants. Furthermore, the association between routine restraint levels and body dissatisfaction with the desire to lose weight was only observed in females and normal-weight participants.

Conclusions: Negative body image was related to higher routine restraint levels but not compensatory restraint levels. Future studies are needed to assess the impact of routine and compensatory restraints on weight management.

Ripple Effects demonstrating the impacts of urban South African adolescent citizen scientists in advocating for safe, healthy and active lifestyles and environments.

Dr. Fevisayo Wayas^{1,2}, Ms Namhla Matwa³, Dr Sacha West³, Prof Abby King^{4,5}, Prof Estelle Lambert¹

¹Research Centre for Health through Physical Activity, Lifestyle and Sports, Faculty of Health Sciences, University of Cape Town, , South Africa, ²University of Michigan School of Social Work, Ann Arbor, United States, ³Department of Sport Management, Cape Peninsula University of Technology, , South Africa, ⁴Stanford Prevention Research Center, Department of Medicine, Stanford University School of Medicine, Stanford, United States, ⁵Epidemiology & Population Health Department, Stanford University School of Medicine, Stanford, United States

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Purpose: The adolescent stage represents a critical developmental period for behavioral changes and the promotion of agency and empowerment, particularly concerning safe, healthy, and active lifestyles and environments. The objective of this study was to conduct ripple effects mapping (assessing intended and unintended impacts) to evaluate the influence of adolescent citizen scientists (non-professional researchers involved in conducting research) to promote a safe, healthy, and active environment in their schools.

Methods: This study constituted a sub-study of a larger project in which we recruited thirty-nine adolescents (Grade 9-11 learners) from 3 high schools in low-income communities in Cape Town, South Africa for an initial citizen science (CS) project using the “Our Voice” method to Discover, Discuss, Activate, and Change their local environments to foster healthy living. The adolescents identified factors impacting on physical activity, a healthy diet, hygiene, and safety in schools. They also proposed feasible solutions. In two of the schools, an environmental feature (i.e., a barrier) was selected for specific actions and implementation. Twenty of the citizen scientists (aged 13-18; 80% were girls) representing the 3 high schools participated in the ripple effects mapping (REM) at least a year after their initial CS project participation. REM, a qualitative participatory method, involved a 4-stage process: appreciative inquiry, mind mapping, facilitated discussion, and qualitative data analysis. In a facilitated workshop in the schools, citizen scientists were paired to interview each other using guided questions about the impacts of the CS project. In a group mapping session, citizen scientists reported on their interviews, discussed them further, and mapped the project ripple effects. The research team collated the data for thematic qualitative data analysis and mapping.

Results: The CS project resulted in multi-level intended and unintended positive impacts across a year that occurred within the citizen scientists' schools, their home environments, and their personal and social behaviors. These impacts included improved confidence, mental health, family togetherness, safety in school and sports participation, and healthy eating.

Conclusion: The study empowered the citizen scientists and led to behavior and lifestyle changes at the individual, family, and organizational levels that extended beyond the initial CS project.

Psychosocial factors associated with dietary patterns in middle-aged multiethnic Asian women: the GUSTO study

Mr Jason Loh¹, Ms Marjorelee Colega¹, Prof Keith Godfrey², Prof Fabian Yap^{3,4}, Prof Yap Seng Chong^{1,5}, Prof Johan Eriksson^{1,5,6}, A/Prof Mary Chong⁷, **Dr. Jun Shi Lai**¹

¹Singapore Institute For Clinical Sciences, ASTAR, , Singapore, ²MRC Lifecourse Epidemiology Centre & NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom, ³Duke-NUS Medical School, , Singapore, ⁴Department of Paediatric Endocrinology, KK Women's and Children's Hospital, , Singapore, ⁵Department of Obstetrics and Gynaecology, Yong Loo Lin School of Medicine, National University of Singapore and National University Health System, , Singapore, ⁶Department of General Practice and Primary Health Care, University of Helsinki and Helsinki University Hospital, & Folkhälsan Research Center, University of Helsinki, Helsinki, Finland, ⁷Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, , Singapore

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Purpose: Middle-aged women are at increased risks of cardiometabolic diseases partly due to adverse body composition changes associated with perimenopause and menopause. Adhering to a healthy diet may reduce this risk but little is known about the psychosocial factors influencing dietary patterns in middle-aged, multiethnic Asian women. This study aimed to examine the psychosocial factors associated with dietary patterns in middle-aged women from the Growing Up in Singapore Towards healthy Outcomes cohort.

Methods: 151 women aged 45-60 years completed a questionnaire based on selected constructs of the Social Cognitive Theory: outcome expectations (e.g., perceived benefits or barriers), behavioural capability (e.g., knowledge and skill), environmental (e.g., healthy foods accessibility), social support (family and friends) and self-efficacy related to meeting dietary guidelines. Dietary intake was measured using a food frequency questionnaire, and dietary patterns were determined using factor analysis. Linear regressions assessed associations between psychosocial factors and dietary patterns adjusted for socio-demographics.

Results: The first two principal factors identified dietary patterns resembling a “healthy” pattern (“Fruit, Vegetables and Fish (FVF)”, characterized by higher intakes of fruit and vegetables, fish and seafood, and dairy), and a “less-healthy” pattern (“Desserts, Fast food and Processed Meat (DFP)”, characterized by higher intakes of desserts, fast food, processed meat and fried snacks). Having the skills to prepare healthy meals [β 0.17, 95% CI (0.02, 0.31)] and liking the taste of healthy foods [0.18 (0.03, 0.34)] were associated with higher adherence to the FVF pattern. Limited accessibility to healthy foods [0.13 (0.01, 0.25)] and perceiving healthy foods as expensive [0.11 (-0.001, 0.21)] were associated with higher adherence to the DFP pattern, whilst following advice from health professionals [-0.14 (-0.27, -0.007)] and perceived risk of chronic diseases [-0.11 (-0.22, 0.001)] were associated with lower adherence to the DFP pattern.

Conclusions: Findings suggest that interventions to improve dietary patterns in middle-aged, multiethnic Asian women could incorporate strategies to improve skills in preparing healthy meals, change perceptions on taste and cost of healthy foods, improve access to healthier foods, and educate about the risks of chronic diseases of a “less-healthy” diet, whilst engaging health professionals to deliver lifestyle advice.

Individual, Psychosocial, and Behavioral Economic Correlates of Fast-Food Purchasing among Jews and Arabs in Israel

Dr. Kerem Shuval¹, Qing Li¹, Prof. Tammy Leonard², Dr. Carolyn E Barlow¹, Dr. Laura F DeFina¹, Prof. Reid Oetjen³, Prof. Mahmoud Qadan⁴, Prof. Ce Shang⁵, Prof. Bob Fennis⁶, Prof. Jeffrey Drope⁷

¹The Cooper Institute, Dallas, USA, ²University of Texas Southwestern Medical Center, Dallas, USA, ³University of Central Florida, Orlando, USA, ⁴University of Haifa, Haifa, Israel, ⁵The Ohio State University, Columbus, USA, ⁶University of Groningen, Groningen, The Netherlands, ⁷Johns Hopkins, Baltimore, USA

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Introduction: Increased consumption of fast-food over the past several decades has led, at least in part, to a higher prevalence of obesity in Israel. The present study seeks to explore individual, psychosocial, and behavioral economic variables related to fast-food consumption among Jewish and Arab adults in Israel.

Method: A cross-sectional sample of 3,379 adults enrolled in the Smoking and Lifestyle in Israel (SALI) study which was conducted in 2020. The study aimed to assess the lifestyle behaviors and policies affecting these practices among adults in Israel. The primary dependent variable was the frequency of purchasing fast-food: 0, 1, 2-3, 4-6, and 7-10 times per week. The following psychological and behavioral economic variables were examined: time preferences (temporal discounting and inconsistent preferences), grit, self-efficacy, and risk-taking. The association between the psychological variables and fast-food purchasing was assessed using an ordered logit regression model adjusting for age, gender, ethnicity, self-reported health, marital status, having children <18 years, college education, COVID-19 pandemic-related hardship, household size, and household income.

Results: Participants' mean age was 39.6 years (SD=13.8), 48.1% were women, and 46.9% were college-educated. Multivariable analysis revealed that higher grit scores were associated with a significantly lower likelihood of fast-food purchasing (Odds ratio (OR) = 0.861, 95% Confidence Interval (CI) 0.744-0.996). Conversely, more risk-taking was related to higher odds for increased fast-food purchasing (OR=1.034, 95% CI 1.003-1.065). Time preferences and self-efficacy were not associated with fast-food purchases. Moreover, no significant relationship was found between fast-food purchasing and the following covariates: sex, ethnicity, marital status, college education, pandemic-related hardship, and household income. Finally, whereas increased age was related to purchasing fast-food less frequently (OR=0.963, 95% CI 0.958-0.968), having children <18 years residing in the household was related to increased purchasing (OR=1.351, 95%CI 1.165- 1.566).

Conclusion: Targeted interventions aimed at decreasing fast-food consumption in Israel should take into account participants' degree of grit, risk preferences, age and children living in the household.

An Observational Overview of the Implementation of Marathon Kids by Nebraska Extension

Mrs. Mariah Newmyer¹, Hannah Guenther¹, Beth Nacke¹, Donnia Behrends¹
¹Nebraska Extension, Lincoln, USA

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Purpose: There is no denying the benefits of physical activity, yet more than 75% of children ages 6-17 do not participate in the recommended 60 minutes of physical activity per day. Marathon Kids is a national running program designed to motivate youth and introduce them to the joy of physical activity. In 2018, Marathon Kids became an approved evidence-based Nebraska Extension curriculum to promote physical activity and reduce childhood obesity. The purpose of this presentation is to provide an observational overview of the implementation of Marathon Kids by Nebraska Extension.

Methods: Nebraska Extension has implemented Marathon Kids in before and after school settings, physical education classes, recesses, and summer camps with a target audience of Pre-K-12th grade youth of all genders. As the demand for the program increased across the state, the Nebraska Extension team developed in-person and virtual Nebraska Extension Marathon Kids (NEMK) Coach trainings to enhance growth, maintain fidelity, and support the sustainability of the program. Self-paced online modules were also created to train coaches on demand. The goal of these trainings is to empower passionate after school directors, teachers, and community members to implement Marathon Kids in their own communities. A pre/post evaluation was developed with the help of a University of Nebraska-Omaha associate professor and the national Marathon Kids team. Some constructs assessed were participants' enjoyment of physical activity, confidence, and ability to set and reach goals. These surveys were administered to participants in 3rd grade or above.

Results: In 2023, the NEMK Team of 16 coaches, delivered 40 Marathon Kids programs in 16 counties to 1,563 Pre-K-12th grade youth. These participants logged a total of 59,537 miles (over 2,272 marathons). Statewide impact data showed that post-program, youth participants reported positive increases in physical activity and goal-setting participation, enjoyment, and self-efficacy. As a result of programming, 71% said physical activity is "definitely important" to them.

Conclusions: The train-the-coach model allows Nebraska Extension to extend its reach while maintaining program fidelity. Improving goal-setting skills and self-efficacy in Nebraska's young people can help support future confidence and physical activity patterns as they become adults.

The Heartbeet Clinic: A Lifestyle Medicine Program to Improve Cardiovascular Health and Well-Being

Dr. Stephanie Hooker¹, Ashley Gustner³, Meghan Krause, Laura Ross²

¹HealthPartners Institute, Minneapolis, USA, ²Park Nicollet, St. Louis Park, USA,

³HealthPartners, Minneapolis, USA

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Purpose: A heart-healthy lifestyle requires optimization of multiple healthy behaviors, including a plant-rich diet, physical activity, sleep, avoiding tobacco and other substances, managing stress, and maintaining social connections. This study examined the feasibility, acceptability, and preliminary efficacy of a virtual, 8-week, group-based lifestyle medicine program (the HeartBeet Clinic) delivered through a partnership between a cardiology clinic and employee wellness program.

Methods: Participants were recruited by email advertisements from an employee wellness program. After confirming interest, participants were offered one group or individual visit with an advanced practice clinician. Vitals (weight and blood pressure), labs (cholesterol and blood glucose), and behavior (diet quality, physical activity, sleep quality, smoking status) and well-being (quality of life and perceived stress) surveys were obtained at the beginning and end of the program. The program was delivered virtually, with eight weekly group coaching sessions with a health coach via Microsoft Teams, a program workbook, online education videos, an online community for participant interaction and support, and bonus live sessions covering special topics and group exercise opportunities. Paired t-tests were used to compare pre-post changes in cardiovascular health (measured using Life's Essential 8), behaviors, well-being, and labs.

Results: Participants (N=47) had an average age of 50.1 years (SD=9.4) and were primarily female (89%) and White (91%). Participants attended on average 4.6 of 8 coaching sessions (SD=2.6) and 33 (70%) completed the post-test survey. Participants were highly satisfied with the program (M=5.1/6.0) and 85% reported at least one positive change in their physical symptoms or well-being. Over the course of the program, there were significant improvements in cardiovascular health ($p=.02$, Cohen's $d=.43$), diet quality ($p=.004$, $d=.61$), vigorous physical activity ($p=.018$, $d=.44$), sleep quality ($p<.001$, $d=.68$), perceived stress ($p=.001$, $d=-.65$), quality of life ($p=.018$, $d=.43$), weight ($p=.03$, $d=-.41$), and diastolic blood pressure ($p=.01$, $d=-.53$). Cholesterol and blood glucose did not significantly change.

Conclusions: The HeartBeet Clinic was highly acceptable to participants, feasible to deliver, and associated with positive changes across a variety of cardiovascular health, well-being and behavioral measures. Future iterations will include a randomized control group and will examine ways to increase engagement across the program.

WIT FITS: A Three-month Follow-up of a Weight Stigma Intervention for Exercise Professionals

Dr. Luciana Zuest¹, Dr. Janaina Fogaça², Dr. Saemi Lee³, Ms. Nikole Squires⁴, Dr. Dawn Clifford⁴

¹Towson University, Towson, USA, ²California State University, Long Beach, Long Beach, USA, ³California State University, Los Angeles, Los Angeles, USA, ⁴Northern Arizona University, Flagstaff, USA

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Purpose: The purpose of this study was to assess if a weight stigma intervention that successfully improved fat attitudes among university recreation center professionals had sustained effects after three months compared to a control group.

Methods: This study is a three-month follow-up to a randomized controlled trial where exercise professionals were randomly assigned to an intervention or control group. Participants were 46 exercise professionals employed at university recreation centers in the United States. The Fat Attitudes Assessment Toolkit (FAAT) measured participants' attitudes towards fatness and fat people before completing a self-paced online intervention or control course, after course completion, and at a three-month follow-up. The intervention consisted of a two-hour, self-paced, interactive online course titled Weight Inclusive Thinking for Fitness Spaces (WIT FITS), informed by attribution theory, the socioecological model, and the Health at Every Size® (HAES®) paradigm. The intervention course aimed to change participants' attributions toward fatness by presenting research on the complex relationship of behavior, social influences, health, and weight. The online course for the control group, titled Motivated2Move, was also a two-hour, self-paced online course addressing communication strategies to increase motivation for physical activity.

Results: At the three-month follow-up, participants in the intervention group showed significant improvement in total fat attitudes [$F(2,88) = 7.94, p < .001, \eta^2p = .15$] and in fat acceptance [$F(2,88) = 4.25, p = .017, \eta^2p = .09$]. The intervention course had a more robust effect on improving participants' attitudes toward fatness, indicating that an intervention using HAES® principles mixed with attribution theory and the socioecological model is a more effective approach to decreasing weight stigma than other general professional development courses for exercise professionals.

Conclusions: This study showed the effectiveness of a 2-hour online intervention in improving fat attitudes among university recreation center professionals, and sustaining the majority of these improvements after three months, compared to a control group. More research is needed to assess the impact of WIT FITS across different samples, such as fitness professionals in commercial and non-profit fitness spaces and exercise students.

The Effects of a 4-Week Group Intervention Focused on a Plant-Based Eating Pattern Among University Staff and Faculty.

Dr. Engy Helal¹, Dr. Sarah Jones¹

¹Dominican University, River Forest, USA

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Purpose: This quasi-experimental study aimed to observe changes and differences in dietary behavior, anthropometrics, and blood pressure between a control group and an intervention group, who participated in a 4-week intervention focused on plant-based eating.

Methods: This study was a mixed-methods quasi-experimental study design. Participants were recruited through advertisements sent to university employees and then were randomized into an intervention and a control group. Those receiving the intervention were asked to attend weekly nutrition education sessions focused on plant-based eating and establishing behavioral changes and a healthy relationship with food. Each session included a topic related to plant-based eating, a cooking demonstration, and a discussion about both psychological and environmental barriers. At the end of each session, participants were given the ingredients for the recipe that was demonstrated and were asked to try it at home within one week. For those in the intervention group, weight, waist circumference, and blood pressure were measured pre- and post-intervention. The control group received weekly emails with handouts and recipes related to the topics and self-reported weight and height. Both groups were also asked to reflect on changes in dietary behaviors made each week that related to the previous session through a short open-ended survey. T-tests were utilized to determine significant differences pre- and post-intervention.

Results/Findings: 24 participants completed the study, 13 in the intervention, and 11 in the control. Participants were primarily female (71%) and ranged from 29 to 76 years old. Results showed a significant improvement between pre- and post-measures with a 15 mmHg +/- 7.605 decrease in systolic blood pressure ($p < 0.001$), 3.1 inch +/- 1.897 decrease in abdominal circumference ($p < 0.001$), and 2.85 pound +/- 1.6 decrease in weight ($p < 0.001$). Through responses to open-ended surveys, participants also showed increases in confidence, enjoyment of eating, cooking skills, and family support.

Conclusion: Findings suggest that receiving weekly nutrition education, support, and resources to incorporate plant-based eating is a behavioral change that can decrease blood pressure, weight, and abdominal circumference in 4 weeks. Working with a health practitioner and group support eased personal and social barriers to help patients achieve their goals.

Self-rated health as an indicator of health behaviors among elementary school teachers: evidence from the Nurturing Healthy Teacher study

Mr. Miao (matt) Tang¹, Dr. Shreela Sharma¹, Dr. Nalini Ranjit¹, Dr. Christine Markham¹
¹Uthealth Houston School Of Public Health, Houston, USA

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Purpose: This study aims to explore the underlying mechanisms of self-rated health (SRH) as a predictor of mortality and overall health status by examining its association with health behaviors, specifically fruit and vegetable (FV) intake and physical activity.

Methods: We used a cross-sectional design to examine the relationship between FV intake, physical activity, and SRH using baseline data from 337 elementary school teachers participating in a parent experimental study in Houston, Texas. Linear models were used for the analysis, with SRH as a continuous outcome, and FV intake (in cup) and physical activity (seldom active, somewhat active, very active) as continuous exposures. SRH was assessed by asking the question “would you say that in general your health is?” and the response options were “poor”, “fair”, “good”, “very good”, “excellent”. The adjusted model controlled for age, gender, race, and food insecurity. Additionally, effect modifiers, including diagnosed diabetes, hypertension, obesity, anxiety, and depression, were considered.

Results: Among the participating teachers, 22 (6.67%) reportedly had diabetes, 68 (20.54%) had hypertension, 171 (50.75%) were obese. At baseline, 174 (53.05%) had mild to severe anxiety, and 148 (44.71%) had mild to severe depression. Mean FV intake was 2.14 (± 0.56) cup, 198 (60.18%) were physically active, and 215 (64.18%) rated themselves with good to excellent health. Results of the regression analysis showed that each increase in cup equivalents of FV intake was associated with a 0.40 unit (95% CI: 0.20, 0.60) increase in SRH score. Similarly, higher level of physical activity was associated with 0.32 unit (95%CI: 0.17, 0.48) increase in SRH score. The association between FV intake and SRH was negatively influenced by the presence of diabetes, hypertension, obesity, anxiety, and depression. Similarly, the association between physical activity and SRH was negatively influenced by obesity, anxiety, and depression.

Conclusions: Elementary school teachers have a high prevalence of food insecurity, less than recommended FV intake, and poor cardiometabolic health. The findings demonstrate a positive association between self-related health and FV intake and physical activity. However, this relationship was influenced by the presence of physical and mental health conditions which warrants immediate attention in future research.

Idiographic Fluctuations of Daily Steps Over a 4-Week Period: Implications for device measured physical activity.

Miss Claire Groves¹, Mr Christopher Huong¹, Dr Denver Brown¹

¹The University of Texas at San Antonio, San Antonio, USA

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Purpose: As temporally dense device-based assessments of physical activity (PA) become increasingly available, two key knowledge gaps have emerged: the day-to-day temporal dynamics of PA, and idiographic (i.e., individual-level) approaches to statistical analysis. The purpose of this study was to demonstrate how an idiographic approach can be implemented using person-specific day-to-day PA data to identify and describe sudden gains and losses of daily steps over a four-week period.

Methods: A total of 134 college students (Mean age = 19 ± 2 years; 77% female) who wore an Apple Watch on a daily basis completed a baseline demographic survey and provided access to four weeks (28 days) of step count data from their Apple Health accounts. Using a regression tree-based recursive partitioning algorithm developed by Chevance et al., (2021), we characterized sudden gains and losses of steps/day for each participant, defined as stable (i.e., lasting seven days) 30% deviations from their median steps/day.

Results: Heterogeneity in patterns of step fluctuations were observed across participants. Almost two-thirds (61.2%; $n = 82$) of the sample had at least one significant sudden change in their daily step count of the course of the study: one significant gain was experienced by 10.1% ($n = 27$) of participants, 26.1% ($n = 35$) experienced one significant loss, 2.2% ($n = 3$) experienced two significant losses, and 12.7% ($n = 17$) experienced one gain and one loss. In contrast, 38.8% ($n = 52$) of participants maintained consistent step counts across the observation period (no sudden gains or losses). Males had 70% lower odds of being maintainers compared to females (OR = 0.30, 95% CI: 0.10, 0.74).

Conclusions: Findings revealed college students – males in particular – commonly experience significant changes in their day-to-day PA levels, which would otherwise be obfuscated by common analytical practices in the field of PA research (e.g., group-level analysis of steps averaged over the assessment window). Given the growing ubiquity of commercial wearables that track behavioral metrics, there is an opportunity to refine current theorizing and behavior change approaches through considering unique information about the dynamic nature of PA behavior at the individual-level.

Reduce and Interrupt Sedentary time by Empowering people at risk (RISE): Rationale and design of the RISE randomised controlled trial to prevent major adverse cardiovascular events in people with stroke.

Dr. Yvonne Hartman^{1,2,3}, Drs. Camille F.M. Biemans^{1,2,3}, Drs. Wendy Hendrickx^{1,2,3}, Prof. dr. Cindy Veenhof^{1,3,4}, Prof. dr. Johanna M.A. Visser-Meily^{1,5}, dr. Martijn F. Pisters^{1,2,3}

¹Department of Rehabilitation, Physiotherapy Science & Sport, UMC Utrecht Brain Center, University Medical Center Utrecht, Utrecht, the Netherlands, ² Department of Health Innovations and Technology, Fontys University of Applied Sciences Physiotherapy School of Health Sciences, Eindhoven, the Netherlands, ³Center for Physiotherapy Research and Innovation in Primary Care, Julius Health Care Centers, Utrecht, the Netherlands, ⁴Research Group Innovation of Human Movement Care, HU University of Applied Sciences, Utrecht, the Netherlands, ⁵Center of Excellence for Rehabilitation Medicine, Brain Center, University Medical Center Utrecht and De Hoogstraat Rehabilitation, Utrecht, the Netherlands

P2.08: Motivation and behavior change, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Annually 1.1 million people are diagnosed with a stroke in Europe. Due to improved acute care, the vast majority returns home after stroke. However, 25% will have another major adverse cardiovascular event (i.e. recurrent stroke, transient ischemic attack (TIA), acute coronary events or cardiovascular death, MACE) within one year. A disturbed balance in 24-hour movement behaviour (24h MB), including high amounts of sedentary behaviour, low levels of physical activity and reduced sleep quality, increases the risk for a new cardiovascular event. However, 78% of people after a stroke have a sedentary and inactive movement behaviour pattern. Therefore, we recently developed and successfully tested the RISE intervention: a blended behaviour change intervention to improve 24h MB. The current study aims to investigate the preventive effect and cost-effectiveness of the RISE intervention on reducing MACE.

Methods: This study is an assessor-blinded, multicenter randomized controlled trial in which 934 people with first-ever stroke will be enrolled within 6 months post-stroke. At baseline, 24h MB will be assessed. Sedentary and inactive participants will be selected and randomly assigned to the experimental group (RISE intervention + usual care) and control (usual care) group. The RISE intervention is a 15-week blended care intervention in which primary care physiotherapists coach people to improve their 24h MB in their home setting using behaviour change techniques and the RISE eCoaching system. This consists of 1) an activity monitor, 2) a smartphone application that provides real-time feedback and contains e-learning modules, and 3) a monitoring dashboard for the physiotherapist. Participants receive participatory support from someone from their social network throughout the intervention.

Results/findings: After one year follow-up, MACE, 24h MB, and cost-effectiveness will be assessed. MACE will be analyzed using survival analysis comparing intervention and control

group. Cost-effectiveness will be assessed for MACE and quality adjusted life years. Compositional data analysis will assess changes in 24h MB over time.

Conclusions: We hope to demonstrate that the RISE intervention, a blended primary care preventive program aiming to improve 24h MB for people returning home after stroke, reduces the risk for new MACE and is cost-effective.

The Impact of Workplace Physical Activity Interventions Upon Occupational Well-Being and/or Work Productivity: A Systematic Review

Mr. JUSTIN MONTNEY¹, Dr. Peter Stoepker¹, Dr. Emily Mailey¹
¹Kansas State University, Topeka, United States

P2.08: Motivation and behavior change, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: B. Motivation and behavior change

Background: A leading cause of chronic disease worldwide is a sedentary lifestyle. Some workplace physical activity interventions (PAIs) have been developed to combat sedentary workplace environments. Improvements in employee well-being and productivity increase the value of a PAI for the employer and employee; however, few PAI studies measure these outcomes. This systematic review aims to identify PAIs that measure employee well-being and productivity and evaluate their effects on employees.

Method: A search following PRISMA guidelines included ten electronic databases. Any US-based PAI study published between 2012 and 2023 measuring employee well-being and/or productivity was included. The intervention type (i.e., educational and/or exercise equipment), physical activity (PA), productivity, and well-being outcomes were extracted and examined for effectiveness. Two experts in the field confirmed article criteria, eligibility, and categorization.

Results/Findings: Of the 3,526 records identified, eight studies met the inclusion criteria. Intervention type varied (educational n = 2, equipment n = 2, both n = 4). Intervention location also varied (within workplace n = 5, hybrid: in-person and over email n = 1, exclusively online n = 1, education provided at local fitness facility n = 1). Common measurements of employee well-being included employee energy, health-related absenteeism, fatigue, pain, social functioning, and non-work satisfaction. Productivity measures included task planning efficiency, concentration, and absenteeism. Five studies reported reduced sedentary time, while three articles had various results including increases in PA but not sedentary time, improvements in both PA and sedentary time, and no PA improvements. Employee well-being and productivity improvements were reported in six and seven studies, respectively. Concentration was the most common reported productivity outcome (n = 3) and health-related absenteeism was the most common wellbeing outcome (n = 3).

CONCLUSION: PAIs can enhance employee well-being and productivity, making employers and employees more likely to implement them. Future research should optimize PAIs to improve well-being and productivity, thus leading to increased adherence and implementation in workplaces. Specifically, within the U.S. there appears to be lacking research on workplace PAIs that improve wellbeing and productivity. Adapting PAIs from other countries may face unique challenges related to differences in U.S. workplace culture.

A Remotely-Delivered, Aerobic and Resistance Exercise Training Program on Cognitive Function in Breast Cancer Patients Following Chemotherapy: A Pilot Study

Dr. Linda Trinh¹, Miss Natalie Cuda¹, Dr. Catherine Sabiston¹, Dr. Ellen Warner², Dr Arthur Kramer³, Dr Jennifer Ryan⁴, Miss Michelle Ha¹, Dr Edward McAuley⁵

¹University Of Toronto, Toronto, Canada, ²Sunnybrook Health Sciences Centre, Toronto, Canada, ³Northeastern University, Boston, USA, ⁴Rotman Research Institute, Baycrest, Toronto, Canada, ⁵University of Illinois at Urbana-Champaign, Urbana, USA

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Cognitive impairments are reported as a chief quality of life (QoL) complaint in breast cancer (BC) patients. Women who have undergone adjuvant chemotherapy are at the highest risk for impairments in memory, attention, and processing speed. Cancer-related cognitive impairment (CRCI) is largely underdiagnosed and there are no proven treatments. Effective interventions are needed to mitigate the debilitating effects of CRCI. One such intervention may be exercise. The purpose of this study was to examine the effects of a remotely-delivered combined exercise regimen (aerobic + resistance training) vs. stretching/toning (active control) on cognitive function in an 8-week, randomized controlled trial (RCT) in BC patients following chemotherapy.

Methods: BC patients who had completed (neo) adjuvant chemotherapy within 48 months were recruited between February-July 2023 through community organizations across Canada. The combined exercise group underwent 30-min of unsupervised aerobic exercise 3x/wk; 30-min supervised, group-based resistance training class 2x/wk via Zoom + 1x/wk recorded class; and four group-based, bi-weekly behavioural counselling sessions (e.g., Multi-process Action Control Framework) via Zoom. The active control group received 30-min balance and flexibility class 2x/wk via Zoom + 1x/wk recorded class. BC patients completed objective cognitive function measures (NIH Toolbox remote cognitive battery) at baseline and post-intervention (i.e., 8 weeks). Separate analyses of covariance examined changes in cognitive function between groups.

Results: Patients (N=18; Mage=51.9±7.4 years) were randomized to the combined exercise (n=9) or active control (n=9) group and had a mean months since treatment of 12.6 ± 13.5. Adherence to the exercise classes and behavioural counselling sessions were 78.7% and 86.1%, respectively. Improvements in the Picture Sequence Memory Task (MDiff=5.33, p=0.53, $\eta^2=0.03$), List Sorting Working Memory Test (MDiff=8.17, p=0.18, $\eta^2=0.12$) and Auditory Verbal Learning (MDiff=3.22, p=0.21, $\eta^2=0.12$) favored the combined exercise group, while the Oral Reading Recognition Test (MDiff= -9.65, p=0.14, $\eta^2=0.14$) and Picture Vocabulary (MDiff= -2.48, p=0.07, $\eta^2=0.20$) favored the active control group.

Conclusions: A supervised, remotely-delivered, combined exercise intervention may be effective for improving CRCI (i.e., memory) in BC patients. Larger RCTs are needed to demonstrate that exercise is an effective intervention strategy to enhance cognitive function and improve the QoL of BC patients.

Facilitators of nutrition and exercise interventions among individuals with a history of breast cancer under the COVID-19 era

Miss Xin Chen^{1,2}, Dr Chungyi Chiu², Miss Helen Hoi Ting Cheung³, Dr Sylvia Crowder⁴, Miss Xi Chen², Dr Linda Trinh⁵, Dr Anna Arthur^{1,2}

¹University of Kansas Medical Center, Kansas City, USA, ²University of Illinois Urbana-Champaign, Urbana-Champaign, USA, ³The Chinese University of Hong Kong, HK, Hong Kong, China, ⁴Moffitt Cancer Center, Tampa, USA, ⁵University of Toronto, Toronto, Canada

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Nutrition and exercise are vital components of breast cancer (BC) care. This study aimed to investigate the facilitators associated with participating in nutrition and exercise intervention programming among people with a history of BC.

Methods: A cross-sectional survey was administered to participants who were 18 years or older and diagnosed with ductal carcinoma in situ (DCIS) or Stage I-IV BC from 2019 to 2021. Participants were recruited during routine oncology appointments at a Midwestern cancer center. Qualitative data from an open-ended question querying facilitators to participating in a combined exercise and nutrition intervention program was extracted and summarized. Descriptive analysis compared pre-COVID-19 (pre-COVID) and post-COVID-19 pandemic (post-COVID, March 2020 or later) subsets using Two-Proportions Z-Test.

Results: A total of 224 participants completed the survey. (pre-COVID: n=130; post-COVID: n=94). Seventy percent of participants responded to the open-ended question regarding facilitators (pre-COVID: 84/130; post-COVID: 72/94). Awareness, timing of being notified, convenience (e.g., location, time of day), customization, program design, peer support, and an encouraging environment were the most stated facilitators. There was a significant increase in a desire for program customization/personalization as a facilitator from pre- to post-COVID ($p < 0.01$). Although not statistically significant, offering peer support and creating an encouraging environment doubled as reported facilitators from pre- to post-COVID. A framework that grouped and summarized the reported facilitators was developed to help visualize program facilitating strategies.

Conclusion: Various facilitators related to participation in nutrition and exercise interventions were reported by a sample of individuals with a BC history, which may guide the development of future nutrition and exercise interventions for the post-COVID-19 era. Future research and intervention planning should incorporate strategies inspired by the reported facilitators, as relevant to basic operations, recruitment, design, participant-centered information, delivery and retention of nutrition and exercise programming. Keywords: participation facilitators, nutrition, exercise, interventions, breast cancer.

A Systematic Review of the Effects of Muscle-Strengthening Exercise on Recurrence and Mortality among Breast Cancer Survivors

Dr. Oliver Wilson¹, Kaitlyn Wojcik¹, Dalya Kamil¹, Jessica Gorzelitz², Gisela Butera³, Charles Matthews⁴, Jinani Jayasekera¹

¹National Institute on Minority Health and Health Disparities, Bethesda, USA, ²University of Iowa, Iowa City, USA, ³National Institutes of Health Library, Bethesda, USA, ⁴National Cancer Institute, Bethesda, USA

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: To collate and critically evaluate empirical literature describing the association of muscle-strengthening exercise (MSE) with recurrence and/or mortality among breast cancer survivors.

Methods: We conducted a systematic review following the established Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines. A search strategy for seven databases (MEDLINE via PubMed, PsycINFO, Embase, Scopus, Web of Science Core Collection, and Cochrane CENTRAL) was developed with the assistance of a librarian. Article quality was appraised using the Mixed Methods Appraisal Tool (MMAT). Data were analyzed and summarized descriptively.

Results: Initial searches retrieved 5,146 sources after removing duplicates. After title and abstract screening, a full-text review of 1,240 remaining sources was conducted. Five articles were identified and proceeded to extraction. All articles included data from North America. Two were cross-sectional, two were prospective, and one was retrospective. MSE measurement differed across articles in relation to the description of the MSE (i.e., muscle-strengthening vs. strength training), examples of activities (e.g., sit ups or push-ups vs. calisthenics vs. circuit training) and exercise frequency (i.e., days vs. times per week). Variations in MSE measurement and analytical approaches prevented a meta-analysis. Four articles measured participation frequency, two measured duration, and one measured type of MSE. Three examined the association of MSE with recurrence, two with breast cancer-specific mortality, and three with all-cause mortality. Collectively, findings offer provisional evidence that suggests some MSE may lower the risk of recurrence and mortality among breast cancer survivors. Evidence was mixed as to whether additional MSE offers further benefits in reducing the risk of mortality. Associations may vary by race, weight status, and menopausal status.

Conclusions: Findings from the limited available evidence tentatively suggest that MSE may lower the risk of recurrence and mortality among breast cancer survivors. Greater consistency in measurement and analyses within MSE research may help generate findings more readily comparable across studies and applicable to inform clinical practice. More research is needed to improve understanding of the strength and differences of these relationships in underserved and underrepresented women.

Understanding the associations between physical activity, receipt of, and interest in, advice from a healthcare professional and quality of life in individuals with a stoma from colorectal cancer: A latent profile analysis

Mr. William Goodman¹, Dr Matthew Allsop¹, Dr Amy Downing¹, Ms Julie Munro², Professor Gill Hubbard³, Dr Rebecca J Beeken¹

¹University Of Leeds, Leeds, United Kingdom, ²University of the Highlands and Islands, Inverness, United Kingdom, ³University of Dundee, Dundee, United Kingdom

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Recent research has identified that there are subgroups of people with a stoma with different patterns of quality of life. Investigating whether factors such as physical activity and receipt or interest in physical activity advice are associated with membership of these groups could help us tailor future interventions. The aim of this study was to explore whether profiles derived from self-reported quality of life were associated with physical activity and receipt of, and interest in, advice from a healthcare professional in people with a stoma from colorectal cancer.

Methods: Secondary analysis of cross-sectional national survey data from England of 4487 people with a stoma from colorectal cancer who were diagnosed in 2010 and 2011 and still alive as of 2013. The survey included assessments of quality of life, and physical activity, and asked whether participants were interested in receiving physical activity advice. A three-step latent profile analysis was conducted to determine the optimum number of profiles. Multinomial regression explored factors associated with profile membership, including physical activity. Logistic regression examined whether profile membership was associated with interest in physical activity advice.

Results: Five profiles were identified; 'consistently good quality of life', 'functional issues', 'functional and financial issues', 'low quality of life' and 'supported but struggling'. Individuals across all profiles with quality of life concerns were less likely to be physically active compared to the 'consistently good quality of life' profile. When compared to the 'consistently good quality of life' profile, all other profiles were more likely to report wanting advice on being physically active, with the strongest associations in the 'low quality of life' (OR=2.6, 95%CI:2.0; 3.5) and 'functional and financial issues' (OR=2.6, 95%CI:2.0; 3.4) profiles, after controlling for physical activity.

Conclusion: People with a stoma from colorectal cancer are not a homogenous group in terms of their quality of life. Participants in profiles with quality of life concerns are less active but more interested in receiving physical activity advice. Varying profiles suggest this advice could be tailored to specific groups.

Comparison of quality of life, fatigue, and depression between survivors of cancer with high and low self-reported physical activity: A cross-sectional analysis

Dr. Ryan Marker¹, Dr. Emily Hill¹, Dr. Danielle Ostendorf¹

¹University Of Colorado Anschutz Medical Campus, Aurora, USA

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Supervised exercise interventions have consistently been shown to improve quality of life (QoL), cancer-related fatigue (CRF), and depressive symptoms (DS) in people living with and beyond cancer. However, controlled research trials of exercise often exclude physically active individuals, possibly based on the assumption that this group has higher QoL and lower CRF and DS, and stands to benefit less from the intervention. The purpose of this study was to test this assumption by comparing QoL, CRF, and DS between survivors with self-reported high and low physical activity.

Methods: A retrospective, cross-sectional analysis was performed on 56 participants initiating a clinical exercise oncology program. No exclusions were made on cancer diagnosis. Demographic information and questionnaires were collected upon enrollment and included measures of QoL (Functional Assessment of Cancer Treatment – General [FACT-G]), CRF (Functional Assessment of Chronic Illness Therapy – Fatigue [FACIT-Fatigue]), and DS (Center for Epidemiological Studies Depression scale [CES-D]). Self-reported moderate-to-vigorous physical activity (MVPA) was assessed by the Godin Leisure-Time Physical Activity questionnaire. An MVPA threshold of 100 min/wk was used to define high and low activity. Questionnaire scores were compared between high- and low-activity groups using Mann-Whitney U tests. Pearson correlation coefficients were calculated between scores and MVPA.

Results: Participants were on average 58 (SD=14) years old and the majority were women (57%). Twenty participants (36%) met the definition of high activity. FACIT-Fatigue scores were significantly greater (less CRF) in participants with high vs low activity (37 ± 11 vs 31 ± 10 , $p=0.04$). Other outcomes did not significantly differ between groups (high vs low activity; FACT-G: 76 ± 21 vs 75 ± 14 , $p=0.38$; CES-D: 17 ± 13 vs 15 ± 8 , $p=0.87$). MVPA was significantly correlated with FACIT-Fatigue ($r=0.31$, $p=0.02$) but not with FACT-G ($r=0.13$, $p=0.34$) or CES-D ($r=-0.01$, $p=0.92$).

Conclusions: QoL and DS did not significantly differ between participants with high and low self-reported physical activity. CRF was significantly lower in participants with high activity and moderately correlated with physical activity. This indicates that both groups have the potential to benefit from supervised exercise interventions and should be included in more clinical trials. Future work should investigate differences in responses to exercise interventions.

Effects of Cancer Treatments on Physical Activity Patterns in Men with Non-Metastatic Prostate Cancer

Dr. Stephen Gonsalves¹, Samuel R. LaMunion², Kimberly A. Clevenger³, Tianxia Wu⁴, Kristin Dickinson⁵, Alex Ross¹, Michael E. Steele¹, Leorey N. Saligan¹

¹National Institute of Nursing Research, National Institutes of Health, Bethesda, USA, ²National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, USA, ³National Cancer Institute, National Institutes of Health, Bethesda, USA, ⁴National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, USA, ⁵The University of Nebraska Medical Center, Omaha, USA

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Physical activity (PA) significantly impacts the well-being of cancer survivors, but most PA research has focused on breast cancer survivors, leaving a significant knowledge gap on survivors of other cancers, such as prostate cancer. This study aims to investigate the effects of cancer treatments, including androgen deprivation therapy (ADT) and external beam radiation therapy (EBRT) on the PA patterns of men with non-metastatic prostate cancer (NMPC).

Methods: PA data from 65 NMPC men undergoing EBRT were analyzed. A cohort of participants (n=46 received prior ADT), while n=19 received EBRT alone (non-ADT group). Actical® devices were worn on the hip for four consecutive days, including one weekend day, during three time periods: Time 1 (pre-EBRT), Time 2 (mid-EBRT, days 16-22), and Time 3 (EBRT completion, days 32-44). Actigraphy data in 5-second epochs were collapsed to 1-minute means and cleaned for non-wear time. Only days with complete records and ≥10 hours wear time were included. PA variables included Total Activity Counts per day (TAC), daily mean Inactive Time (IT, < 100 CPM, including overnight rest), Light-Intensity Physical Activity (LIPA, >100 CPM & < 1535 CPM), and Moderate-to-Vigorous Physical Activity (MVPA, >1535 CPM). Covariates encompassed EBRT dose, age, body mass index (BMI), and demographics.

Results: ADT and non-ADT groups did not significantly differ in general demographic characteristics including age, BMI, race, marital status, and education. LIPA was significantly different between the ADT and non-ADT groups in time period 1 (ADT=11.82±0.55, non-ADT=13.04±0.62, p=0.037), and IT in time period 2 (ADT=1050.08±32.57, non-ADT=988.15±41.11, p=0.039). However, ADT and non-ADT groups did not significantly differ between time periods or overall for MVPA and TAC.

Conclusion: NMPC men on ADT exhibited reduced LIPA, which include activities like walking and low-intensity leisure activities, but engagement in more strenuous activities remained the same for both groups. Additionally, ADT men were more physically inactive with significantly higher IT at Time 2 compared to non-ADT men. These findings suggest potential side effects of ADT on physical functioning of these men. Understanding how cancer treatments impact PA can inform strategies to enhance quality of life and overall health of NMPC men.

Perceived Barriers and Facilitators to Participation in Physical Activity among Cancer Survivors: A Qualitative Study

Dr. Gaurav Kumar¹, Ms. Priyanka Chaudhary², Jungyoon Kim¹, Lynette Smith¹, Apar Ganti¹, Dejun Su¹

¹University of Nebraska Medical Center, Omaha, USA, ²University of Nebraska Omaha, Omaha, USA

P2.09: Cancer prevention and management, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Physical activity (PA) engagement and adherence among cancer survivors is poor despite data demonstrating multiple physical, psychological, and emotional health benefits of PA. Little is known about cancer survivors' perspectives on PA. The present study aims to assess the knowledge and perceived barriers and facilitators of PA among cancer survivors using the Theoretical Domains Framework (TDF).

Methods: A qualitative research design with a phenomenological approach was used. A purposive sample of twelve cancer survivors (two, each with colon, lung, and prostate cancers, and six with breast cancer) across Nebraska, USA, participated in a semi-structured interview conducted via Zoom or phone calls. Interviews were audio recorded, transcribed verbatim, and imported into qualitative software NVivo version 12. The responses were mapped using the TDF, where theory-driven deductive content analysis was used for data analysis.

Results/findings: The semi-structured interviews yielded several themes and subthemes on the perception, barriers, and facilitators of PA among cancer survivors. The first theme was related to beliefs about PA, which included perception and knowledge about PA and PA guidelines. The most commonly identified PA barriers included cancer-related symptoms (e.g., fatigue, pain, balance); psychosocial factors (lack of motivation, lack of confidence/skills, social support); and environmental/organizational barriers (unfavorable weather, lack of community resources, lack of PA information from oncology care providers, time constraints, and cost). Further, the reported facilitators mentioned by cancer survivors were self-efficacy/motivation, social support, perceived health benefits, and access to available resources.

Conclusions: The study findings suggested several barriers and facilitators that influenced the cancer survivors' motivation and capability to engage in PA, which will help inform the future development of evidence-based interventions to increase PA engagement among cancer survivors.

Exploring Social Media Fitness Influencers as a Tool to Promote Physical Activity among College Women

Ms. Hannah Lavoie¹, Ms. Chrishann Walcott¹, Dr. Danielle E. Jake-Schoffman¹

¹University of Florida, Department of Health Education and Behavior, Gainesville, USA

P2.10: E- & mHealth, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: D. E- & mHealth

Purpose: Social media is a promising tool for promoting physical activity (PA) among college women, who engage in less PA than men and frequently use these platforms. “Fitness influencer” content includes free PA advice and motivation which could be helpful, but it is unclear if these benefits outweigh potential issues like unhealthy social comparisons and misinformation. Thus, research is needed to determine how helpful, motivating, and trustworthy fitness influencers and their content are for promoting PA among college women, providing insights for intervention development.

Methods: Women college students (N=12; aged 18 to 24) were eligible if interested in increasing PA, did not meet PA recommendations, and used social media. Semi-structured interviews were conducted to understand their current consumption of, interest in, and perceptions of influencer or fitness content social media, including reactions to real social media posts targeting young adults. Interviews were recorded, transcribed verbatim, and analyzed using an emerging themes approach.

Results: In interviews with college women (Mage=20.7±1.5), participants emphasized the importance of influencers portraying transparency, authenticity, and relatability in representing themselves, their lives, their exercise, and product promotions. However, they also recognized some can be “disingenuous” or manipulate their content. Participants preferred influencer content with realistic, non-idealized, or body types similar to those of the participants. Although educational credentials were considered important in identifying trustworthiness or content quality (i.e., misinformation), this was less crucial as influencers are seen as credible due to their practical PA experience. Further, participants acknowledged the motivational and inspirational impact of influencers and their fitness content. However, they noted that their own emotional response and tendency to be motivated by it depended on whether they were experiencing body dissatisfaction or “feeling down on themselves”.

Conclusions: Interview findings provide insight into preferred content and influencer characteristics that may effectively motivate and impact PA in college women. Study results will be used to develop a social media-based intervention that aims to provide college women with tools to navigate PA content in identifying helpful and accurate content while avoiding possibly demotivating and unsupportive content.

Environmental Influence on mHealth Engagement: Unveiling Pathways to Sustainable Health Behavior Change

Ms. Suzan Evers¹, Dr. Astrid Kemperman¹, Dr. Pieter van Gorp¹
¹Eindhoven University of Technology, Eindhoven, Netherlands

P2.10: E- & mHealth, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: D. E- & mHealth

Purpose: Mobile health (mHealth) tools provide a variety of technical opportunities for supporting health behavior change. Intended changes can range from becoming more physically active (PA) to making healthier dietary choices. mHealth tools are rapidly getting better for data collection and intervention personalization. However, multiple studies have reported that mHealth users' engagement still diminishes over time. This harms both monitoring capabilities as well as intervention reach. Engagement with mHealth and health-related goals is influenced by various variables. Environmental variables have well-documented beneficial effects on physical activity and positive emotions, but the extent users' natural environment has beneficial effects on mHealth engagement levels with health-related goals has received limited attention. To this end, this study explores how environmental factors influence mHealth users' engagement levels in everyday settings.

Methods: We apply the wearable experience sampling method (wESM) to collect self-reported and sensor data for a period of seven consecutive weeks. Participants (N = 60) receive personalized PA goals at the start and are asked, by small surveys, to self-report their momentary behavior via wearable devices (i.e., smartwatches) multiple times per day, using wESM platform called Experiencer. Different subgroups will receive different types of environmental clues showing the aggregate intervention data to study participants. The wESM prompts include questions concerning in-situ environmental characteristics and their momentary emotions. Through compliance with the wESM design, engagement is measured. Via the embedded sensor of the wearable (i.e., accelerometer) which collects physiological data passively, we measure whether or not the PA goals are met. Taking into account the longitudinal nature of ESM, the self-reported data on environmental factors is analyzed using a mixed modeling approach, adjusting for individual effects.

Results: The results will indicate the beneficial effects and patterns of environmental factors on engagement levels with mHealth behavior change interventions.

Conclusions: This study underscores the pivotal role of everyday environments in motivating health behavior change. As context-sensing technology advances, there is an opportunity to improve health behavior change strategies to personalize interventions based on environmental cues. As part of future research, researchers will aim to refine mHealth strategies for context-sensitive (w)ESMs and develop mechanisms to adapt interventions to diverse environmental contexts.

How physical behavior, affective well-being, and social contact are linked in real-life: An ambulatory assessment study

Ms. Irina Timm¹, Ms. Svenja Sers¹, Prof Markus Reichert^{1,2,3}, Prof Ulrich W. Ebner-Priemer^{1,3}, Dr Marco Giurgiu^{1,3}

¹Mental mhealth Lab, Institute of Sports and Sports Science, Karlsruhe Institute of Technology, Karlsruhe, Germany, ²Department of eHealth and Sports Analytics, Faculty of Sport Science, Ruhr University Bochum, Bochum, Germany, ³Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Medical Faculty Mannheim/Heidelberg University, Mannheim, Germany

P2.10: E- & mHealth, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: D. E- & mHealth

Purpose: Previous research indicated that social contact during activities had a positive effect on well-being, as well as emphasized the importance of social contact in promoting calmness during physical activity (Bollenbach et al., 2022; Schwanen & Wang, 2014). The influence of social contact on physical behavior in real life and real-time has not yet been studied in detail. This ambulatory assessment study examines the psychosocial layers within the socio-ecological framework in considering whether the social context (e.g., family, friends) influences the subsequent physical behavior and moderates the association between within-subject affective well-being and physical behavior.

Methods: We recruited a sample of 64 employees during the period from July 2021 to March 2022. The assessment took place over a minimum of five consecutive days. Utilizing ambulatory assessment, participants completed e-diaries about their affective well-being up to six times a day, and their physical behavior was simultaneously recorded via accelerometers at two different positions (i.e., hip and thigh). The participants answered e-diary prompts about their current social environments. The first item asks participants who they are currently surrounded by (i.e., partner, family, friends, colleagues, acquaintances, strangers, others, nobody), while the second item assessed whether the participant would prefer to be alone or with company, and whether they find being with their current social group pleasant or not.

Results: We will conduct multilevel models to examine momentary within-person effects of affective well-being on subsequent physical behavior outcomes. We will add the social contact parameters alone and not alone to our main model as time-variant predictors. In addition, we conducted exploratory analyses for physical activity and sedentary behavior combining interactions between affective well-being and social contact parameters. In these preliminary exploratory analyses, we have found that social context significantly moderated the relationship between valence and physical activity. Furthermore, we observed that the influence of family and friends moderated the association between calmness and physical activity.

Conclusions: Future interventions should include peer relationship-building activities to promote a supportive environment that encourages physical activity and helps individuals overcome barriers to being active. The psychosocial layer reveals as another factor in promoting and maintaining an individual's active lifestyle.

The Implementation of Community-Based Exercise Interventions for Pregnant Women: A Systematic Review

Ms. Audrey Martinez¹, Ms. Jammalamadaka Soujanya², Mr. John Winn³, Dr. Samjhana Shakya³, Dr. Aline Andres⁴, Dr. Elisabet Børshheim⁴, Dr. Taren Swindle¹

¹Arkansas Children's Nutrition Center, Little Rock, USA, ²Columbia University Mailman School of Public Health, New York, USA, ³Department of Family and Preventive Medicine, University of Arkansas for Medical Sciences, Little Rock, USA, ⁴Arkansas Children's Research Institute, Little Rock, USA

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Community-based exercise interventions may help pregnant women reach exercise recommendations. The purpose of this systematic review is to identify implementation and effectiveness outcomes of studies conducting community-based prenatal exercise interventions.

Methods: CINAHL, CENTRAL, and PubMed were searched in May 2021 for structured exercise interventions with pregnant women in freely accessible locations (e.g., parks). PRISMA 2020 guidelines were followed (PROSPERO registration CRD42020171035). Study selection and data extraction occurred in a duplicate and independent manner. Extracted data included study design, population characteristics, intervention type, measurement methods, and results. The Cochrane Risk of Bias 2 (ROB 2) tool was utilized for Randomized Controlled Trials. Data was analyzed using descriptive statistics.

Results/Findings: Fifteen studies were included representing 3,857 participants. Most studies used randomized controlled trial designs (n = 12) and 8 of those had a high risk of bias. The most common intervention was moderate-intensity exercise classes led by a healthcare professional. Recruitment relative to targeted, retention, and adherence rates averaged 49%, 82%, and 73%, respectively. Women found interventions acceptable and appropriate, but reported barriers like pregnancy symptoms, time conflicts, and childcare. No data were collected on fidelity of implementation delivery, penetration, or sustainment. Effectiveness outcomes showed 58% of studies significantly increased exercise quantity, and 80% significantly improved aerobic capacity.

Conclusions: More implementation-focused research is needed on community-based exercise interventions for pregnant women with a high risk of inactivity. A lack of implementation data undermines promising observed impacts because the field has limited information to guide future real-world implementation efforts.

Produce Rx in High Risk Pregnant Mothers at Harris Health

Ms. Naomi Tice¹, Dr. Shreela Sharma¹, Dr. Nalini Ranjit², Ms. Denise LaRue³, Mr. Gregory Bounds⁴, Mr. Brendon Providence, Ms. Azar Gaminian⁴, Ms. Angela Frazier³, Ms. Melissa Melshenker Ackerman⁵, Ms. Millie Anderson⁵

¹UTHealth Houston School Of Public Health, Houston, USA, ²UTHealth Houston School of Public Health in Austin, Austin, USA, ³Harris Health System, Houston, USA, ⁴Brighter Bites, Houston, USA, ⁵Planet Harvest, Chicago, USA

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: We present the overall design and lessons learned from implementation of a comprehensive Produce Prescription Program (PPRx) in improving pregnancy and birth-related outcomes among low-income, ethnically diverse, high risk pregnant women in Harris County, Texas. Using a phased approach over three years (2023-2026), a total of 620 women, <20 weeks of gestation are targeted for recruitment with measures encompassing diet quality, food and nutrition security, pregnancy-related health data, participant satisfaction, and program utilization.

Methods: Phase 1 pilot testing includes partnership building for PPRx, workflow design, training and recruitment of 20 women who are then randomly assigned to either the Prescription Dose group (twice monthly home delivery) or the Maintenance Dose group (once monthly home delivery). Utilization and satisfaction are evaluated through phone calls facilitated by Community Health Workers. Phase 2 expands to 200 women randomly allocated to a 6-month intervention group provided with an AI-based Chatbot smartphone app for interactive nutrition education plus bi-weekly home delivery of produce, while the comparison group receives produce delivery only. Our outcome in Phase 2 is to assess implementation and utilization outcomes of the chatbot and produce delivery. Phase 3 integrates insights from the prior phases, randomly assigning 400 women to differing doses of produce delivery (bi-weekly vs. monthly) plus incorporating the AI Chatbot starting in pregnancy through 2 months post-partum. Data collection includes pregnancy outcomes (gestational weight gain as the primary outcome, blood pressure, HbA1c), and birth outcomes (pre-term birth, gestational week of delivery), mental health outcomes, food security, nutrition security and diet quality at enrollment, 3 and 6 months post-enrollment, and a post-partum survey at 2 months.

Results: Data analysis involves summary statistics, graphical analyses, logistic regression for Excess Gestational Weight Gain (EGWG), and growth curve models for weight trajectories. Mixed effects models estimate changes in selected health, social and behavioral outcomes over time, while considering potential confounders such as age, parity, and socioeconomic status.

Conclusions: The results contribute valuable insights into the design of produce prescription programs for high risk pregnant women, potential benefits and challenges associated with integrating PPRx initiatives into broader healthcare frameworks.

Pilot Testing a College Student Service-Learning Implementation Strategy in a Low-Socioeconomic Rural Middle School

Ms. Megan Kwaiser¹, Mrs. Janette Watkins^{1,2}, Ms. Julia Brunnemer⁴, Mr. Jacob Otile³, Mrs. Janelle Goss⁶, Mr. James Hobson⁵, Dr. Vanessa Martinez Kercher⁴, Dr. Kyle Kercher¹

¹Department of Kinesiology, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ²Program in Neuroscience, College of Arts and Sciences, Indiana University, Bloomington, USA, ³Department of Epidemiology & Biostatistics, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁴Department of Health & Wellness Design, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁵White River Valley Middle School, Lyons, USA, ⁶Logan University, Chesterfield, USA

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Although the benefits of physical activity are well-documented, children's activity levels remain low, and interventions often struggle to extend to community settings or scale up effectively. Our approach involves training college student mentors to implement interventions, leveraging their influential role in modeling behavior for children. This study aimed to assess the feasibility of this strategy in promoting physical activity and a healthy lifestyle among low-socioeconomic rural middle school children. The main goal was to determine if this approach met specific feasibility indicators: recruitment, retention, attendance, cost, acceptability, and treatment fidelity.

Methods: During an 8-week intervention at a rural middle school, we implemented a comprehensive strategy involving 16 team members, including students, faculty, and a school administrator. Our approach encompassed a pre-intervention workshop, staff presentations, equipment provision, pedometer-based monitoring, a college student mentoring program, reflective activities, and consortium meetings. Following Phase 1 of the Obesity-Related Behavioral Intervention Trials (ORBIT) model, this community-engaged approach actively engaged local stakeholders. We gathered both qualitative and quantitative data before, during, and after the intervention.

Results: The study involved 10 college student mentors and 2 faculty specializing in various health-related fields. Findings revealed that most participants strongly supported community volunteering (n = 11), intended to continue such work after the study (n = 10), believed in their ability to create a positive impact (n = 11), and disagreed that the current public health curriculum encourages lifelong healthy behaviors (n = 10). Additionally, the majority strongly agreed that the course enhanced their understanding of how they could contribute to their community through involvement (n = 11). Post-intervention data collection will conclude in December 2023.

Conclusions: The pilot implementation strategy could serve as a blueprint for future initiatives aimed at promoting physical activity and healthy lifestyles in similar communities. The intervention effectively enhanced community engagement and empowered members to take proactive steps toward better health and well-being.

Using small grants to improve health outcomes in community sport clubs

Dr. Erica Randle¹, Dr Alex Donaldson¹

¹La Trobe University Centre For Sport And Social Impact, Bundoora, Australia

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: To explore how community sport clubs (clubs) in Victoria, Australia used small grants to implement health promotion initiatives and deliver physical activity outcomes.

Methods: A realist approach was used to explore what works, for whom, under what conditions. A qualitative survey with ten open-ended questions was sent to 150 clubs funded (up to AU\$3,000) by the Victorian Health Promotion Foundation (VicHealth) Fifty-seven (57) responses were received. Participants were asked to explain: how they generated and implemented initiatives; challenges experienced; what they learned; and health outcomes delivered. Interviews (N=20) were conducted with representatives and participants from six clubs. Data were analysed against the Six VicHealth Doing Sport Differently Principles.

Findings: The club experience aligned to the VicHealth Doing Sport Differently Principles. These have been modified based on results to provide a guide for funded clubs to best ideate and implement health promotion initiatives to realise physical activity outcomes. Principle 1: Gather evidence on the club's target market to understand their barriers and motivations. Where possible, talk to them directly. Principle 2: Consider the total participant experience. Consider how the initiative can promote social connection between participants and a sense of belonging to the club. Principle 3: Club initiatives should be inclusive and cater to different levels of skill, ability, and fitness. Principle 4: The deliverer is critical to the participants' experience and retention. Make sure everyone in the club understands what is trying to be achieved (e.g. health outcomes rather than winning at sport). Principle 5: Participants need a clear pathway for retention or transition as their skill, fitness, or interest changes. Principle 6: Engage in best-practice project management. Have a plan with clear outcomes. Be flexible, patient, and persistent during delivery and ask for help when needed.

Conclusion: Small grants can be successful at supporting community sport clubs to implement interventions to improve physical activity, sport participation, social connection and mental health outcomes. The research findings could guide funding bodies on how to best support community organisations to use small grant funding to ideate, implement, and manage challenges associated with health promotion initiatives.

A modified Beaton Process Facilitated Linguistic and Cultural Translation of a Nutrition Education Program into Spanish

Dr. Barbara Lohse¹, Ms. Hannah Puzio

¹Rochester Institute of Technology, Rochester, USA

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Design a version of the evidence-based online healthful eating program, About Eating, to be culturally and linguistically acceptable for Spanish-speaking audiences in upstate New York.

Methods: The English version of About Eating was translated using a modified Beaton process. The iterative translation, back-translation, language review, re-translation and re-back-translation scheme was followed for each of the six program modules by native Spanish speaking and English-speaking personnel. Images and integral components, e.g., recipes and websites, were reviewed by a bilingual native Spanish speaker for cultural congruence. Cognitive interviews about the translated and culture-informed program were held with native Spanish speakers recruited with flyers, social media posts, and email blasts. A “think aloud” process was used as each module screen was reviewed for comprehension of the translation, appearance, and cultural appropriateness.

Results/Findings: Each of the six modules was translated independently by native Spanish speakers from Puerto Rico. The time from initial translation to final approved version ranged from 76 days (Enjoying Eating) to 114 days (Time to Eat). Each module required eight iterations with four for translation and four for back-translation. Barriers to timely translation activities included coordinating with the schedules of Spanish translators and project Spanish speaking staff, locating culturally appropriate Spanish recipes and weblinks, finding photos more congruent with the target audience, and number of details that required attention in each back-translation iteration. Online cognitive interviews were conducted with four Spanish speakers. Interviewees were mainly from Columbia with one informed in multiple dialects because of work experience. Each reviewed two modules of About Eating, now called Acerca de Comer. These individuals went through each module page by page, sharing their perspective on translation quality, content, photos and images used, and overall perception of the module. Findings from the interviews highlighted the importance of including Spanish translators from more than one country.

Conclusions: Translation of evidence-based healthy eating programs, a vital dissemination activity to reach low-income, health-challenged audiences, is a labor and time-intensive undertaking. Adhering to a modified Beaton process facilitated translation activities. Language dialects and native speaker countries of origin must be considered to develop a translated program with wide dissemination potential.

Participant perspectives of the National Diabetes Prevention Program implemented in rural communities

Mx. Gerit Wagner¹, Ms. Patricia Smith², Ms. MacKenzie Koester³, Dr. Kameron Suire⁴, Dr. Lyndsie Koon⁵, Ms. Christina Holmes⁶, Ms. Mary Hastert¹, Dr. Joseph Donnelly¹, Dr. Anna Gorczyca¹

¹Division of Physical Activity and Weight Management, Department of Internal Medicine, The University of Kansas Medical Center, Kansas City, United States, ²University of Colorado Anschutz Medical Campus, Denver, United States, ³Weitzman Institute, Middletown, United States, ⁴Department of Kinesiology, Berry College, Mount Berry, United States, ⁵Research and Training Center on Independent Living, University of Kansas, Lawrence, United States, ⁶Kansas State University Research & Extension, Manhattan, United States

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: The National Diabetes Prevention Program (NDPP) has not had the population health impact intended, especially in rural counties where the availability of DPP sites is significantly lower compared to urban counties. The U.S. Cooperative Extension (CE) offers a potentially viable and under-examined option for the delivery of the NDPP to rural areas. This study assessed the views and experiences of rural adults with prediabetes participating in the NDPP using the PreventT2 curriculum (0–6 mos.) delivered by CE personnel using Zoom® (CE-Zoom®) or by research staff using Facebook® (FB).

Methods: Two focus groups were conducted with 15 participants (N=5 for FB, N=10 for CE-Zoom®) after participating in the NDPP for 6-months. Participants were asked questions about recruitment, enrollment, dietary information, physical activity (PA), and technology usage in the study. Data analysis included a reflexive thematic analysis in search of themes from focus group responses.

Results/findings: Participants stated that engaging rural health clinics for recruitment and providing physician education on the NDPP components would be helpful for enrollment into the NDPP in rural communities. Health motives were the primary reason for NDPP participation. Regarding dietary information, participants desired a more structured eating plan and material on how to eat healthier. PA changes were more difficult than dietary changes, with walking or housework as the primary mode of PA. Confusion over PA intensity and which intensity to focus on was a reported barrier to achieving the prescribed PA goal. Technology usage, specifically the Fitbit smartwatch and scale provided were helpful for accountability, but participants noted using the diet tracking component within the Fitbit app may have provided additional benefits. The FB group noted that they felt uncomfortable posting content to the group page and lacked social connectedness. CE-Zoom® found Zoom® easily accessible, especially after COVID, and felt they could connect better with participants who had their cameras on during the meetings.

Conclusions: Qualitative findings highlight opportunities for the implementation of the NDPP through CE in rural communities emphasizing recruitment through rural health clinics, additional resources for eating healthy and increasing physical activity, using technology for delivery, and group social support.

Sustainable Strategies in Nutritional Education: A Case Study of 'La Salud es Sabrosa'

Assistant Prof. Maria Romo Palafox¹

¹Saint Louis University, Saint Louis, USA

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: This case study evaluates 'La Salud es Sabrosa,' a nutrition education program, emphasizing its sustainable strategies and impact on Hispanic immigrant caregivers and children. The study aims to illustrate how the program was strategically developed and implemented to ensure long-term efficacy and cultural relevance.

Methods: 'La Salud es Sabrosa' represents a collaboration between Nutrition & Dietetics and Spanish students at a US Midwest university. Funded by the university's community engagement program and in partnership with an immigrant-serving nonprofit agency, this 10-week intervention uses cooking as the primary educational tool. The curriculum, crafted under Dr. Romo-Palafox's guidance, involves bilingual lesson development and culturally sensitive content delivery. Sustainability is integrated into the program design through ongoing community feedback, iterative curriculum development, and the training of student facilitators for future scalability.

Results: Over three years, the program has demonstrated resilience and adaptability, showing positive outcomes in enhancing nutritional knowledge and practices among participants. Preliminary findings, pending IRB approval, suggest a significant improvement in health awareness and cooking skills. Unique to this program is its approach to filling service gaps by providing detailed nutritional information tailored to the community's needs. The evaluation of students' cultural competency and perceptions, scheduled for April 2024, will further inform the program's sustainable and strategic implementation.

Conclusion: 'La Salud es Sabrosa' serves as an exemplary model in sustainable nutritional education, showcasing how strategic planning, community involvement, and educational partnerships can coalesce to foster lasting impact. The program's success underscores the importance of sustainability in educational interventions and its potential for replication in diverse community settings. Future research will focus on long-term program viability and the transferability of its strategies.

Evaluating strategies to maximise adoption of a school-based nutrition program by employing a novel Collaborative Network Trial design

Dr. Courtney Barnes¹, Dr Jannah Jones^{1,2,3,4}, **Prof. Luke Wolfenden**^{1,2,3,4}, Ms. Katie Robertson^{1,2,3,4}, Associate Prof. Rachel Sutherland^{1,2,3,4}

¹University of Newcastle, Callaghan, Australia, ²Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, ³Population Health Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, ⁴National Centre of Implementation Science, University of Newcastle, Callaghan, Australia

P2.11: Implementation and scalability, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: An impediment to the large-scale adoption of evidence-based school nutrition interventions is the lack of evidence on effective strategies to implement them. This study describes a “Collaborative Network Trial” to support the simultaneous testing of strategies undertaken by New South Wales Local Health Districts to facilitate the adoption of a school-based nutrition program (‘SWAP IT’). The primary aim of this study is to assess the effectiveness of different implementation strategies employed by 10 NSW LHDs to increase school adoption of SWAP IT.

Methods: Within a Master Protocol framework, a collaborative network trial was conducted consisting of independent randomised controlled trials in 10 different NSW LHDs. Schools within each LHD were randomly allocated to either intervention or control. Schools allocated to the intervention group received a combination of implementation strategies. Across the LHDs, six strategies were developed and combinations of these strategies were executed over a 9-month period. The primary outcome of the trial was adoption of SWAP IT. Between-group differences at 9-month follow-up was assessed using logistic regression analyses. Individual participant data component network meta-analysis, under a Bayesian framework, was used to explore strategy-covariate interactions; to model additive main effects; two-way and full interactions.

Results: Findings of the analysis will be presented.

Conclusions: The study will provide rigorous evidence of the effects of a variety of implementation strategies, employed in different contexts on the adoption of a school-based nutrition program at scale. It will provide evidence as to whether collaborative research models can rapidly generate new knowledge and yield health service improvements.

Policy, System, and Environmental (PSE) Changes Being Implemented and the Needed Supports to Promote Nutrition PSE Changes in a Rural-Midwestern State

Mrs. Becky Bucklin^{1,3}, Ms. Cathleen Zbylut¹, Ms. Hailey Boudreau², Mrs. Haley Huynh², Mrs. Jill Lange², Ms. Hanh Pham^{1,3}, **Dr. Natoshia Askelson**^{1,3}

¹University of Iowa College of Public Health, Iowa City, USA, ²Iowa Department of Health and Human Services, Des Moines, USA, ³University of Iowa Prevention Research Center for Rural Health, Iowa City, USA

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: This study explored current nutrition-related policy, system, and environmental (PSE) changes being implemented in a rural-midwestern state, as well as the supports needed to facilitate successful implementation and maintenance of these efforts. Though PSE changes are known to increase healthy eating, little is currently known about the facilitators and barriers organizations face to implementing these types of changes, specifically in rural contexts—our study uncovered some of these supports and challenges to advance future implementation of PSE efforts.

Methods: This study used a mixed-methods design of an online survey and interviews. The survey was distributed by email to organizations identified by the state public health department as partners working on nutrition programming. The survey assessed organizations' knowledge, beliefs, resources, and readiness for implementing nutrition PSE changes. Descriptive analyses were conducted for survey responses. Follow-up interviews were conducted with survey respondents. Interviews sought more in-depth responses, including information on the specific PSE changes being implemented and barriers and facilitators. Interviews were recorded, transcribed, coded and a thematic analysis conducted by two coders.

Results/findings: Most survey respondents (n=86) worked on systems (51.4%) or environmental efforts (32.4%), with few reported policy efforts (2.3%). Barriers included not having enough staff (54.6%) and funding (60.5%). Themes emerged from interviews (n=12) which expanded on the survey findings. For example, challenges of staff retention and burnout were highlighted as well as difficulties in using volunteers as program implementers. A lack of long-term and flexible funding was noted. Many survey respondents (86.2%) were involved in partnerships. Themes from interviews highlighted the necessity of longstanding partnerships built on trust, breaking down silos between organizations, and program champions. Survey responses indicated that organizations would benefit from informational supports—such as guidance on the financial impact of nutrition PSE changes (82.1%), toolkits or guides (76.5%), and examples of PSE changes (67.1%).

Conclusions: Findings from this study show the supports and resources that nutrition organizations need from federal, state, and local agencies to ensure PSE interventions can be started, effectively implemented, and sustained; specifically highlighting the need for initiatives that support policy-based approaches for improving nutrition behaviors and outcomes for communities.

Assessment of restaurant beverage offerings and intake with children's meals prior to implementation of a children's meal healthy default beverage ordinance in New Orleans, LA

Dr. Megan Knapp¹, Dr. Melissa Fuster², Lisa Hofmann¹

¹Xavier University of Louisiana, New Orleans, USA, ²Tulane University School of Public Health and Tropical Medicine, New Orleans, USA

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Healthy default beverage (HDB) policies for children's meals (CM) in restaurants hold promise as a population-based approach to encourage healthy choices and address childhood obesity. This research examines restaurant beverages offered to and consumed by children prior to the January 2023 implementation of the first HDB-policy mandated in the Deep South region of the United States [New Orleans, LA (NOLA)], a region disproportionately affected by childhood obesity and health disparities.

Methods: In Fall 2022, our team conducted site visits within NOLA restaurants offering CM (n=138, 12% of NOLA restaurants). Using a modified validated tool, we conducted assessments of restaurant characteristics, food and beverage offerings, facilitators and barriers to healthy eating, and other factors. Beverage consumption data were collected via online surveys among NOLA caregivers of children ages 2-12 who eat restaurant meals at least once a month (n=1,406 child eating occasions). Analysis included the type of beverages offered and consumed by HDB category (water, low/non-fat milk, 100% fruit juice) and non-HDB (sugar-sweetened beverages) and associations between child beverage intake and selected demographics (age, sex, race/ethnicity, household income).

Results/Findings: Of the 138 restaurants, 45 offer beverages with CM. The majority (n=23) offered non-HDB, 18 offered only HDB, and 4 did not list the beverage offerings. Most children consumed CM (57.5%) and non-HDB with their meals (67.5%). The average volume of non-HDB consumed was significantly higher than the amount for HDB (12.9±9.2oz vs. 9.1±9.0oz, respectively, p<0.001). While non-HDB were consumed with 64.4% of CMs, a higher percentage (87.0%) was found for regular meals (p<0.001). HDB intake was associated with younger age (p<0.001), but not with other characteristics examined.

Conclusions: Our study will provide insights on the policy impact and reach. These baseline data allow us to characterize the current beverages offered with CM and consumed by children in NOLA prior to policy implementation. These findings support the need for HDB regulations in restaurants to decrease the frequency of sugar-sweetened beverage consumption among children, but they also suggest the need to push for policies that also address regular combination meals to increase impact.

Effects of bicycle infrastructure interventions on physical activity in the general population: Rapid review

Ms. Lisa Stähler¹, Mr. Leon Bäumer¹, Mr. Ferdinand Breuning¹, Dr. Liane Günther¹, PD Dr. Simone Weyers¹, Prof. Dr. Claudia Ruth Pischke¹

¹Institute of Medical Sociology, Heinrich-Heine University Düsseldorf, Düsseldorf, Germany

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: The main objective of this rapid review was to systematically map the evidence regarding the effects of bicycle infrastructure interventions on physical activity in the general population in high-income countries.

Methods: The rapid review followed the Cochrane guidelines. Pubmed was systematically searched using a predetermined search strategy with the following key words: Bicycle infrastructure, multi-strategic intervention and physical activity. Articles in English published between August 1st, 2013 and August 1st, 2023 were included. A previously piloted data extraction spreadsheet was used to extract and summarise key information from the selected studies.

Results: A total of 827 articles were screened for eligibility by two reviewers. Thirty-one studies met the inclusion criteria and were included in the still ongoing review. Thus far, mixed effects of bicycle infrastructure interventions on physical activity were found: Several studies demonstrated that multi-component (compared to single-component) bicycle infrastructure interventions, as well as short distances to infrastructure sites, were associated with both, increased infrastructure use and physical activity. Other studies, however, reported no intervention effects when comparing intervention and control areas. Possible explanatory factors are differences in the time points chosen for assessments in the studies, ranging from six month to two-year follow-ups, and differences in the assessment tools chosen (subjective measures: surveys, diaries vs. objective measures: GPS trackers, accelerometers).

Conclusions: The preliminary findings of this rapid review suggest that implementation of bicycle infrastructure may positively affect infrastructure use and physical activity at the population level. More detailed results regarding differential intervention effects will be available after the data extraction is completed and will be presented at the conference.

Keywords: public health; bicycle intervention; infrastructure use, physical activity.

Nutritional status, sedentary behaviour and dietary habits among French Guianese children, preliminary results from the Guyaconso project

Dr Edwige Landais¹, Mr Raphaël Pelloquin¹, Mrs Fanny Carey¹, Dr Alexandra Miliu², Mrs Astrid van Melle², Dr Célia Basurko²

¹French national Research Institute for sustainable Development (IRD), Montpellier, France,

²Centre d'Investigation Clinique Antilles Guyane, Cayenne, French Guiana

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: French Guiana, is a French oversea territory, with high rates of overweight/obesity and non-communicable diseases among adults where no large-scale survey has been conducted in children to measure their nutritional status and potential associated risk factors. Therefore, the present study aimed to assess the nutritional status, the sedentary behaviour and dietary habits of French Guianese children.

Methods: A cross sectional survey conducted in 2022-2023. The target population was children 5-14 years. A three-stage random sampling design was applied to select the children. Semi-structured questionnaires, investigating screen time (television, video games, smartphones...) and dietary behaviours (meals, snacks and qualitative food frequency questionnaire) were administrated by trained enumerators. Height and weight were measured to computed Body Mass Index (BMI) for age. Means and proportions were computed, and differences according to gender and age (5-9 years vs. 10-14 years) were investigated using either t-tests or chi2 tests. Additional analyses will be conducting to investigate factors associated with obesity.

Results: A total of 509 children (mean age 9.6 \pm 2.8 years, 50.7% girls) were interviewed. Overall 31.6% were either overweight or obese (17.2% and 14.4%, respectively), with no difference according to gender ($p=0.64$) or age ($p=0.17$). The mean daily screen time was 226 min \pm 144 (122 min for television, 24 min for video games, 80 min for smartphones). There was no difference according to gender ($p=0.12$) but according to age (206 min/day for 5-9 years, 250 min/day for 10-14 years, $p<0.05$). Overall, 16.5% of the children skipped breakfast. This behaviour was more common among girls (21.7%, $p<0.05$) and among the 10-14 years (24.9%, $p<0.001$). On average, children consumed fruit or vegetables less than once a day (0.52 time/day and 0.33 time/day, respectively), and sugar sweetened beverages (SSB) or confectionery almost once a day (0.86 and 0.87, respectively). The eldest tended to drink significantly more SSB compared to the youngest (0.95 vs 0.78, $p<0.05$).

Conclusions: The prevalence of overweight/obesity among French Guianese children is worrying. The preliminary results of the Guyaconso project have highlighted sedentary behaviour and eating habits detrimental to health that need to be addressed by relevant public health policies.

Associations between Adolescent Food Environments and Dietary Intake

Ms. Saira Sarwar¹, Dr. Jennie Hill², Dr. Amy Yaroch³, Dr. Jennifer Nelson¹, Dr. Kimberly Espy⁴, Dr. Timothy Nelson¹

¹University of Nebraska-Lincoln, Omaha, USA, ²University of Utah, Salt Lake City, USA,

³Gretchen Swanson Center for Nutrition, Omaha, USA, ⁴Wayne State University School of Medicine, Detroit, USA

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Food environments presumably influence adolescent diet. However, there is a lack of studies examining the diet and environment relationship utilizing validated measures, examining multiple food contexts and focusing on adolescents. This study advances understanding of this relationship by examining the home and neighborhood food environment as predictors of adolescent diet using well-validated measures. Less home fruit and vegetable and greater fat and sweet availability was hypothesized to be associated with a more obesogenic adolescent diet. Greater counts of convenience and fast-food retailers was hypothesized to be associated with a more obesogenic diet.

Methods: This cross-sectional study used data from the adolescent phase of a larger longitudinal study. Participants included 204 adolescents (Mage = 15.33) and a participating caregiver. Diet was assessed using the ASA-24 dietary recall and the Family Life, Activity, Sun, Health and Eating (FLASHE) screener. Home environment was assessed using the Comprehensive Home Environment Survey. Neighborhood environment was assessed via Geographic Information System methods and audits of food retailers. Dietary variables were examined in individual multiple regression models.

Results: For the ASA-24 dietary variables, home fruit and vegetable availability predicted greater Healthy Eating Index score ($P = .03$). There were no other significant associations between ASA-24 variables and environment variables. For the FLASHE dietary variables, home fruit and vegetable availability predicted greater fruit and vegetable intake ($P = .003$), greater beneficial food consumption ($P = .009$), and less fast-food intake ($P = .02$). Home fat and sweet availability positively predicted detrimental food ($P = .006$), junk food ($P < .001$), and sugary food intake ($P < .001$). Convenience store counts positively predicted beneficial food consumption ($P = .04$). Fast-food counts positively predicted sugary beverage consumption ($P = .01$).

Conclusions and Implications: The home food environment, particularly fruit and vegetable availability, appears especially important for promoting healthier adolescent diet. Further, limiting home fat and sweet availability and the availability of fast-food establishments around the home may protect against adolescent sugary food intake. Targeting these aspects of the environment may act as a systems-level intervention to promote healthier diet in adolescence, a critical period for health trajectories.

Building evidence for innovative food bank interventions: The Rooted in Evidence grant program

Dr. Betsy Anderson Steeves¹, Tony Gargano¹, Laura Flournoy¹, Courtney Freitag¹, Dr. Amy Yaroch¹

¹Gretchen Swanson Center for Nutrition, Omaha, USA

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Food banks provide innovative programming but often lack the capacity and funding to assess the impact of their work. The Rooted in Evidence (RIE) grant program, led by the Gretchen Swanson Center for Nutrition (GSCN), provides funding and evaluation support to expand the evidence-base for food bank interventions.

Methods: To date, 16 food banks across three cohorts have or are currently receiving up to \$25,000 in funding and participating in a 16-month Learning Collaborative as part of RIE. Grantees receive training in the form of eight interactive group education classes on multiple evaluation topic areas (e.g. evaluation designs, survey development, best practices for qualitative data collection); three peer-to-peer group sharing/learning sessions, including a two-day in-person retreat and two virtual sharing sessions; proactive (planned) technical assistance through four one-on-one sessions between each grantee team and GSCN, and additional reactive (real-time) technical assistance as needed by grantees. With the support of the GSCN scientific evaluation team, grantees identified evaluation questions and corresponding data collection methods (i.e. surveys, interviews), while also identifying validated measures, assessing the timing of data collection, and balancing the scientific rigor of their evaluation with what was feasible for their food bank team and partners. In addition to grantee evaluations, GSCN sought feedback from grantees through interviews and focus groups with grantees representatives at the mid-point or end of their grant period. This allowed GSCN to capture grantees' perceptions of the RIE grant program, and identify lessons learned and best practices for successful completion of RIE projects.

Results/findings: As expected, the evaluation that each grantee designed varied. Grantee evaluations have included implementation (n=8) and outcome measures (n=12); quantitative (n=2), qualitative (n=5), and mixed methods approaches (n=7); pre-post (n=9) and cross-sectional designs (n=7); and data collection from various priority populations including food bank volunteers (n=1); food bank agencies (food pantries, soup kitchens, n=7), and food bank clients (n=13). Grantees identified evaluation planning support, capacity building, peer-networking, and marketing and communication as key benefits of the RIE model.

Conclusions: This work strengthens food banks' abilities to address nutrition security and builds evidence on how to better service clients/neighbors.

Neighbourhood Walkability and Differences in Leisure and Transportation Physical Activity by Residency Status in Canada: A Cross-sectional Study

Dr. Hasti Masihay Akbar¹, Dr. Turin Tanvir Chowdhury², Dr. Dana Lee Olstad¹, **Dr. Gavin R. McCormack¹**

¹Department of Community Health Sciences, Cumming School of Medicine, University of Calgary, Calgary, Canada, ²Department of Family Medicine, Cumming School of Medicine, University of Calgary, Calgary, Canada

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Immigrants in Canada undertake less physical activity (PA) compared to their Canadian-born counterparts. However, studies have yet to examine differences in domain-specific PA between these populations. Despite evidence linking the neighbourhood built environment (BE) with PA, whether these associations differ by residency status remains unknown. Our study aims to: 1) estimate the differences in transportation and leisure PA (i.e., participation and duration) between Canadian-born and immigrant adults, and; 2) determine if neighbourhood BE-PA associations differ between these populations.

Methods: We used cross-sectional data from the Canadian Community Health Survey (CCHS; 2017/2018), linked with Canadian Active Living Environment data (Can-ALE; 2016). Eligible participants were urban adults (age ≥ 18 years), either Canada-born or immigrants. We classified immigrants by their residency duration (recent: < 10 years or established: ≥ 10 years). Participants reported their weekly transportation or leisure PA (i.e., participation and duration). A walkability index was calculated using Can-ALE data from GIS, census, and open-source information. Walkability was estimated from intersection, dwelling, and destination counts within a one-kilometer radius of a Dissemination Area's center.

Anticipated Findings: We selected relevant covariates for our analysis using Direct Acyclic Graphs (i.e., age, sex, marital status, race, education, income, employment, language proficiency, children living at home, and disability status). We have cleaned and checked these data (e.g., missing data, outliers, and statistical assumptions) and begun descriptive and inferential analyses. We will use covariate-adjusted Generalized Linear Models (GLMs) to estimate differences in participation (binomial distribution/log link; odds ratios) and duration (gamma distribution/identity link; beta coefficients) in the PA outcomes by residency status (recent immigrant, established immigrant, and Canadian-born). We will rerun the GLMs with walkability and its interaction with residency status, conducting stratified analyses for specific associations if statistically significant interactions emerge. We will apply sampling and bootstrap weights to the analysis.

Conclusion: Our findings will garner novel insights into the relationships between the neighbourhood BE and domain-specific PA among recent and established immigrants in Canada. Our findings could highlight whether there is a need for PA interventions that specifically target adults according to residency status and neighbourhood walkability. Our findings could also have implication for urban planning.

Corporate social responsibility statements in top selling restaurant chains between 2012-2018

Dr. Megan Mueller¹, Alyssa Leib¹, Dr. Deborah Glik², Dr. Sara Bleich³, Dr. Jason Wang⁴, Dr. Catherine Crespi², Dr. May Wang²

¹Colorado State University, FORT COLLINS, United States, ²Fielding School of Public Health, University of California Los Angeles, Los Angeles, United States, ³Harvard T.H. Chan School of Public Health, Harvard University, Boston, United States, ⁴Amazon, Inc. , Seattle, United States

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Objective: To understand the prevalence and content of corporate social responsibility (CSR) statements in the top selling chain restaurants between 2012 and 2018 to inform the ways restaurants can impact population health.

Methods: We used a web scraping technique to abstract relevant text information (n= 6369 text sections that contained possible CSR statements, or thematically coded portions of the text section) from the archived web pages of the 96 top selling chain restaurants. Content analysis was used to identify key themes in CSR statements across restaurants and over time. All data was abstracted and analyses were completed between November 2019 and November 2023.

Results: The majority of restaurants (68.8%) included a CSR statement on their web pages between 2012-2018, and almost half of the restaurants included a health-related CSR (49.0%). There were increases in CSR statements by chain restaurants over the study period from 186 CSR statements in 2012 to 1218 CSR statements in 2018, with most statements focused on philanthropy (37.1% of coded CSR statements), community activities that were not health-related (18.4% of coded CSR statements), and sustainability initiatives (18.3% of coded CSR statements). Only one quarter (24.4%) of these statements were health-related and many were vague in nature (only 52% of the eligible statements could be coded by theme).

Conclusions: There is a need for more actionable health-focused initiatives in the CSR statements for chain restaurants. Public health initiatives that engage with the restaurant industry should work to promote CSR statements that are in line with other collective positions around improving health and reducing diet-related disease.

The comparative impact of health-promoting interventions on consideration of products, information, and food choice

Dr. Christopher Gustafson¹

¹University Of Nebraska-Lincoln, Lincoln, USA

P2.12: Policies and environments, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Information and fiscal tools—taxes and/or subsidies—are increasingly used to address diet-related health problems. However, limited attention in complex food retail environments may limit the effectiveness of these policies if individuals restrict their attention to nutritionally similar subsets of available products. Previous research suggests that prompts encountered before individuals limit their attention to a subset of products promotes healthier choices by changing multiple behaviors. In the context of dietary fiber, an under-consumed nutrient of public health concern, we examine the comparative impact of a subsidy to a prompt message, as well as a reminder paired with a subsidy, on attention to products and information, and the dietary fiber content of foods selected.

Methods: 1,005 adult US residents completed an online experiment on choices of foods in three categories (breads, ready-to-eat breakfast cereals, crackers), with significant intra-category variation in nutritional quality. Participants were randomized to one four conditions: 1) control, 2) subsidy, 3) reminder, and 4) reminder+subsidy. Each food category had 33 product categories, and participants could choose to view all 33 products in each category or could select a subset of products to view during the choice process. The set of products viewed was documented. After selecting the set of products to view, participants selected a product from the set (or indicated that they would not select any of the products). After choices were made, participants indicated whether they had used nutrition information that was available in the choice environment during the choice process.

Results: Both the prompt (0.36g/serving) and prompt+subsidy (0.61g/serving) conditions significantly increased fiber content of foods chosen. All three interventions affected the set of products that respondents considered, with the subsidy condition increasing attention to medium-healthy foods, while prompt and prompt+subsidy conditions significantly increased attention to healthiest foods. Prompt and prompt+subsidy conditions also led to greater use of fiber information. A multiple mediation analysis illustrates that both direct and indirect pathways lead to the significant overall increase in fiber content of selected foods.

Conclusions: Studying the interaction of limited, self-directed attention to products/information and interventions may provide opportunities to design more effective health promotion strategies.

Advancing Equity, Diversity, and Inclusion in United States Nutrition Programs: A Scoping Review

Dr. Mayra Crespo-Bellido¹, Dr. Bailey Houghtaling^{1,2}, Ms. Shelly Palmer¹, Ms. Emily Shaw¹, Mrs. Randa Morgan¹, Dr. Carmen Byker Shanks¹

¹Gretchen Swanson Center for Nutrition, Omaha, United States, ²Department of Human Nutrition, Foods, and Exercise, Virginia Tech, Blacksburg, United States

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Promoting food and nutrition security is a shared objective for nutrition programs across the United States (U.S.). Still, prior scholarship has established disparities in food insecurity and diet-related chronic disease within specific sociodemographic groups. As such, this scoping review aimed to identify the strategies implemented within U.S. nutrition programs to promote equity, diversity, and inclusion (EDI) and explore how they addressed intersectional stigma.

Methods: Included articles needed to be published in English, during or after 1990, and to detail intentional EDI strategies applied within U.S. nutrition programs (including federal and local programming). The search strategy was created in collaboration with a research librarian. Five databases—Academic Search Complete, Agricola, CABDirect, PubMed, and SocINDEX--were selected to locate peer-reviewed literature, and grey literature searches were also carried out among relevant websites. Data extracted included author; publication year; source type; objective; study design; location; funder; EDI strategy components; outcomes; priority population information; alignment with principles to address intersectional stigma; and EDI strategy results and lessons learned.

Results/findings: Of the 46 included sources, 24 concentrated on federal programs, 20 on local programs, and two presented EDI strategies applicable to both. EDI strategies were grouped and synthesized into eight strategy types to improve the relevance, appropriateness, and/or access within nutrition programming for priority populations [e.g., program design or adaptation (n=18); food justice/anti-racism training (n=11); increase access to federal nutrition program services (n=8); hire or develop staff to better serve priority populations (n=6); expand nutrition program partnerships (n=5); increase accessibility of healthy and culturally preferred foods (n=5); implement nutrition-associated policies to mitigate disparities (n=4); and organizational change strategies (n=3)]. Principles to address intersectional stigma regarding the approach to EDI strategies were found in 39 sources.

Conclusions: Review findings add to the current discourse on advancing EDI, specifically within the context of U.S. policies and programs that influence food and nutrition security and health equity and can be used as a platform to build on in similar countries. Practitioners and researchers working to address EDI in nutrition programs are encouraged to use the categories and strategies identified by this review as examples for moving EDI forward.

Harvesting Health: Unveiling Innovations in Produce Prescription Programs through Qualitative Inquiry in the United States

Dr. Courtney Parks¹, Dr. Patricia Rodriguez Espinosa², Ms. Megan Reynolds¹, Dr. Wei-ting Chen², Dr. Amy Yaroch¹, Dr. Lisa Goldman Rosas²

¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Stanford University, Stanford, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: To identify innovations and lessons learned from produce prescription programs (PPR) implemented across the United States (U.S.).

Methods: We conducted qualitative interviews with key informants from a purposeful sample (n=13) of produce prescription (PPR) programs funded through the U.S. Department of Agriculture's Gus Schumacher Nutrition Incentive Program (GusNIP). PPR programs were selected to be representative of important contextual characteristics like geography and populations served. Key informants (n=33), such as clinicians, nutrition educators, and food retailers were interviewed about a myriad of topics including their role, characteristics of their program, implementation challenges and successes, and perspectives on evidence and scalability. Interviews were 45-60 minutes long, audio recorded, and transcribed verbatim. Using a content analysis approach, two team members independently coded each transcript to identify emergent themes using NVivo software.

Results/findings: Key themes emerged around innovations in nutrition education, the role of technology, and implementation challenges. Nutrition education was a core component of PPR programs; interviewees described a wide variety of delivery formats, for example: recording online cooking tutorial videos; supplying healthcare providers with messaging/materials; using social media to foster social support; linking nutrition education with complementary services (e.g., accessing food assistance); and garden-based nutrition education -- including food waste and composting. Interviewees described how technology is necessary to scaling programs efficiently, yet there remain many opportunities for growth and innovation. Key functions of technology included enrollment and patient screening, administration of vouchers (e.g., point-of-sale systems at food retailers), reporting and evaluation, and leveraging electronic health records. Implementation challenges highlighted include healthcare organizations burdened with COVID-19 and inability to focus on PPR delivery; challenges in conducting evaluations including limitations in obtaining healthcare metrics; limited capacity and bandwidth across organizations and teams; and participants' transportation barriers.

Conclusions: PPR programs in the U.S. vary greatly across settings (e.g., geographic context, population density, healthcare involvement) and implement many innovative components as part of their program. This study illuminated these innovative components as well as barriers and facilitators to inform implementation and adoption of PPR programs. Given this variation, as PPR programs are adopted internationally, nuances in settings should be considered.

Serving Up FLAN: Promoting Food Literacy to Prevent Food Insecurity among U.S. Latinx Adults

Dr. Michael Royer¹, Dr. Michelle Hauser¹, Dr. Astrid Zamora¹, Mrs. Ines Campero¹, Mrs. Dulce Garcia¹, Dr. Jylana Sheats², Dr. Abby King¹

¹Stanford University, Palo Alto, USA, ²Tulane University, New Orleans, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Food insecurity involves unreliable access to enough nutritionally adequate food. In 2022, food insecurity impacted over one-in-five Latinx U.S. adults, who were at an increased risk of food insecurity compared to White adults. There is thus an urgent need to identify sustainable strategies to prevent food insecurity in the Latinx population. Promoting food literacy, the understanding of how food choices impact health outcomes, could improve food security but has seldom been studied among Latinx adults.

Methods: A secondary data analysis was conducted using data from the Computerized Physical Activity Support for Seniors (COMPASS) Trial to determine if two different nutrition interventions impacted the food security status of older, low-income Latinx U.S. adults. Participants were assigned to one of the two interventions: 1) the culturally tailored Food Literacy and Nutrition (FLAN) curriculum, or 2) a Nutrition Information only control. The U.S. Household Food Security Survey Module: Six-Item Short Form was used to collect self-reported data on food security. Longitudinal general linear models were analyzed to determine if either intervention improved food security.

Results: On average, participants (n=39) were 61.5 years of age (SD=6.7), mostly female (69%), and reported Spanish as their primary language (69%). No between-group differences in food security status existed at baseline (b=-0.15, SE=0.17, p=0.37). Across all participants, food insecurity at baseline was associated with an increased odds of food insecurity at 6 months (OR=1.45, 95% CI=1.06, 1.99; p=0.03) but not at 12 months. While there were no between-group differences in the odds of food insecurity at 6 months, latter estimates indicated that the FLAN group had 29% lower odds of food insecurity at 12 months (AOR=0.71, 95% CI=0.54, 0.95; p=0.03) compared to the Nutrition Information only control group.

Conclusions: The FLAN curriculum, a bilingual and culturally tailored food literacy course, aimed to increase food literacy by teaching concepts involving budgeting, food choices, and healthful cooking. Evidence from this investigation demonstrates the potential longer-term effects of using the FLAN curriculum to prevent food insecurity among older, low-income Latinx adults. Further investigation into the utility of food literacy as an intervention component to address food insecurity is warranted.

Self-Perception of Health and Physical Activity Levels among the Youth and Adults Before and Amidst the COVID-19 Pandemic

Ms. Vida Korleki Nyawornota¹, Dr Clement Adamba¹, Doris Akosua Tay¹, Prof Reginald Ocansey¹, Prof Leapetswe Malete
¹University Of Ghana, Accra, Ghana

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: This study assessed self-perceived health status and physical activity among the youth and adult in Ghana before, during, and after the COVID-19 restrictions. The study seeks to answer questions like; what is your perception about your health status during the covid-19 pandemic, and associated restrictions? How often do you engage in physical activity like walking/jogging/play /sports in a week? How did the covid-19 pandemic and the associated restrictions affect your physical activity behaviour of respondent?

Methods: The study was a cross-sectional survey that used on-line data collection method (surveylex link). The Surveylex package includes demographic information items, a non-linguistic speech analyses, international physical activity questionnaire (IPAQ), general anxiety disorder-7 (GAD-7), and patient health questionnaire-9 (PHQ9). The Statistical Package for Social Sciences (SPSS) version 25 use for data analysis. Descriptive Statistics of demographic characteristics were reported in percentages using tables, bar chart and graphs. A multinomial regression analyses was employed to establish the association between perceived health status and physical activity levels of participants during the pandemic period in Ghana.

Results/findings: Out of the 937 participants involved in the study, 56.5 % were males and 43% females. Fifty-eight percent (58%) of respondent have not been vaccinated against the Covid-19 pandemic as at the time of the study. Most participants perceived their health status to be excellent and very good conditions. About 3 out of 4 participants were within the normal weight category, and 9.5% of them been overweight. Responding to place where participants perform physical activity about 30% indicated no physical activity, whereas almost half of them said they do it at home. Places where participants engaged in physical activity during the COVID-19 pandemic, and gender showed significant association with levels of PA. However, how individuals perceived their health status did not show significant association with physical activity in this study.

Conclusion: A high proportion of participants reported performing physical activity in their homes during the pandemic. The home is a convenient place to engage in physical activity and must be encouraged especially during pandemic restrictions.

Centering a National Evaluation on Diversity, Equity, Inclusion, and Accessibility: Perspectives on Weight Bias

Ms. Megan Reynolds¹, Dr Carmen Byker Shanks¹, Mrs. Morgan Szczepaniak¹, Tessa Lasswell¹, Melissa Richert Brown¹, Dr. Courtney Parks¹

¹Gretchen Swanson Center for Nutrition, Fort Collins, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: The impact of food insecurity on diet quality, fruit and vegetable (FV) intake, weight, and health outcomes has been heavily documented. Despite concerted efforts to address health disparities related to food insecurity through policy, systems, and environmental approaches, weight bias – a significant driver of these disparities – is often left out of the conversation. The purpose of this presentation is to describe lessons learned about weight stigma from a national evaluation of healthy food incentives. Recommendations will address weight stigma in future public health research.

Methods: The authors are members of the Gus Schumacher Nutrition Incentive Program's (GusNIP) National Training, Technical Assistance, Evaluation, and Information Center (NTAE), which supports implementation and evaluation of healthy food incentive programs across the U.S. The NTAE is working to center diversity, equity, and inclusion (DEI) in their work. Specific to the measurement of diet-related interventions, DEI approaches may include disaggregated sociodemographic metrics, culturally tailored dietary assessments, and considerations for weight bias. The NTAE recently developed a public-facing resource that provides validated methods to understand weight bias within healthy food incentive interventions and may help to better understand health-related inequities. Weight bias assessment within healthy food incentive projects will be described as a strategy that can also provide insight into existing population health.

Findings: In the literature, food insecurity is associated with a higher risk of obesity, cardiovascular disease, type 2 diabetes, hypertension, asthma, depression, and mental illness. Interventions with food insecure populations, including healthy food incentives, have focused on obesity prevention. There is an existing knowledge gap regarding how the effects of weight stigma impact evaluation and effectiveness of nutrition programming. Weight bias evaluation approaches will be explored, including measuring implicit and explicit bias, perceptions on overweight and obesity, and internalized stigma.

Conclusions: Programs that provide healthy food incentives are promising regarding reducing health-related disparities amongst individuals with food insecurity, but it is imperative that this evidence captures and controls for other known influences including weight stigma, especially when overweight and obesity are an intervention focus. More broadly, accounting for weight stigma could improve and sharpen the evidence surrounding nutrition programming internationally.

Nutrition Incentive Program Customer Survey Results: Exploring Differences in Rural vs. Urban Supplemental Nutrition Assistance Program Respondents

Dr. Lisa Franzen-Castle¹, Ms. Vanessa Wielenga¹

¹University of Nebraska-Lincoln, Lincoln, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Examine Supplemental Nutrition Assistance Program (SNAP) Nutrition Incentive Program customer survey respondent differences by rural vs. urban status, focused on nutrition-related issues.

Methods: Survey recruitment occurred in person at program sites. Survey options included in-person (paper copy; electronic device) or off-site (research team called or they took the survey online). Data were collected from June-August 2023. Participants were ≥19 years old, able to read and/or speak English, Spanish or Arabic, and SNAP and Nebraska Double Up Food Bucks participants. Respondents received a \$10 stipend for completion. Survey data were recorded in Qualtrics and exported into SPSS with distributions, frequencies and percentages calculated for nutrition-related survey components of rural vs. urban responses (determined by ZIP Code).

Results/findings: There were 120 surveys completed, 117 with ZIP Codes (n=37 rural; n=80 urban). Overall, half or more reported low to very low food security (50%), SNAP benefits >1 year (65%), and positive program experiences (81%). Rural participants reported higher percentages for planning meals ahead of time (15% difference) and making a list before shopping (11% difference) most of the time to almost always. Compared to urban, rural agreed more that they had easy access to fruits and vegetables (FV) of high quality in their neighborhood (17% difference) but disagreed more regarding access to a large selection of FV (13% difference). Urban respondents reported higher percentages (one or more times/day) for fruit (14% difference) and vegetable (18% difference) consumption and most of the time to almost always thinking about healthy choices when deciding what to eat (10% difference), cooking meals at home using healthy ingredients (13% difference), and feeling confident about cooking healthy meals (10% difference).

Conclusions: Findings suggest urban respondents were consuming more and had access to larger selections of FV than rural, with rural reporting higher percentages regarding ease of access to and quality of FV. Since nutrition education is a program component, these findings suggest more efforts should be made in rural sites to increase efficacy of healthy ingredient selection and meal preparation confidence. Working with retailers to increase the selection of FV may help increase FV consumption in rural areas.

Characterizing Cultural Food Security among Latinx Families in the Willamette Valley, Oregon: A Mixed-Methods Community Assessment.

Dr. Megan Patton-lopez¹

¹University Of Massachusetts Amherst, Amherst, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Understanding the social and economic factors influencing the availability and accessibility of culturally preferred foods is central to developing policy, systems, and environmental (PSE) changes that expand food security. Building on a decades-long community-university partnership and using a community-engaged research approach, this study examined Latinx household food preferences for and accessibility to culturally preferred foods in two counties in Oregon (USA) in 2022-2023.

Participants: Participants were mothers aged 18 years and older (M=39.2yrs SD=9.5), identified as Latina (73% Mexican origin; 17%; Central/South American origin; 89% Spanish-speaking) and had lived in the United States for an average of 18.8 (SD=10.5) years.

Methods: A mixed methods study with a convenience sample was conducted. Participants (n=101) completed an online survey containing standardized scales examining household dietary practices, food security status, and sociodemographic characteristics. In-depth interviews with a subset of 31 participants explored participants' cultural food preferences and practices. Qualitative data (using NVivo 14) were analyzed using a combination of inductive and deductive approaches to explore cultural food preferences, food security experiences, and food access. Multivariable logistic regression analyses (using Stata SE 18) will examine the associations between household dietary practices and food security, adjusting for sociodemographic characteristics.

Results/Findings: On average, participants prepared meals at home 5.9 (1.9) days within the last week, and the majority (83.2%) had vegetables all or most of the time in the home. 35.5% experienced high food security; however, 54.5% reported being unable to afford nutritious meals in the last 12 months. Qualitative data indicated a strong preference for fresh, local, and organic foods (compared to a general mistrust of conventional and packaged foods). Cultural, health, and cost reasons guided their food choices.

Conclusions: Latinx families value cultural foods despite challenges in accessing healthy, fresh foods. They remain focused on providing home-prepared meals that meet health needs. Collaboration between safety-net programs, local food producers, and nutrition education programs to create PSE change for greater access to fresh foods could increase cultural food security among Latinx households.

Echando una Mano: Community Food and Nutrition Assistance Providers' Perceptions of their Ability to Adequately Serve Low-Income and non-English speaking Latino adults in the U.S.

Dr. Miguel Angel Lopez¹, Dr. Pia Chaparro², Dr. Julia Fleckman³, Mr. Joseph Molloy³, Dr. Amy George³, Dr. Melissa Fuster³

¹Gretchen Swanson Center for Nutrition, New Orleans, USA, ²University of Washington, Seattle, USA, ³Tulane University, New Orleans, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: To examine community food and nutrition assistance providers' (CFNAPs) perceptions of low-income, non-English-speaking Latino adults in the U.S., and CFNAPs' ability to provide adequate food and nutrition assistance to them.

Methods: Semi-structured interviews were conducted with CFNAPs (n=20) in the U.S. from August to November 2022. CFNAPs who participated in the interviews were employed in community healthcare centers, community gardens, public health departments, food banks or pantries, and teaching kitchens. Interviews were transcribed verbatim. Transcripts were analyzed inductively using a thematic content analysis, and guided by a theoretical framework on language use, social power, and health care. Following the analysis, randomly selected interviewees (n=8) were asked to return for member checking. In the member checking, CFNAPs were presented with the results of the research study and given the opportunity to provide feedback on the results.

Results: While linguistically adapting food and nutrition assistance (e.g., using a translation service) can be beneficial, it fails to address pervasive social structures that may limit the adequacy of food and nutrition assistance provided to low-income, non-English speaking Latino adults. Social structures identified were categorized into three themes; the themes include perceived: 1) presence of social authority when clients seek food and nutrition assistance; 2) lack of clients' adequation (i.e., similar social standing) when seeking food and nutrition assistance; and 3) diminished clients' authentication (i.e., ability to verify information) of food and nutrition assistance. These factors were perceived as barriers for non-English-speaking Latino adults to participate in, and receive adequate services from, community food and nutrition assistance programs.

Conclusion: Presence of social authority, lack of adequation, and diminished authentication when seeking food and nutrition assistance from CFNAPs were identified as social structures in the U.S. that may disparage linguistically isolated individuals. To equitably serve non-English-speaking Latino adults, a paradigm shift that recognizes biases against non-English speakers and Latino people is warranted. The relationship between language discordance and inadequate food and nutrition assistance programming among low-income, non-English speaking Latino adults begs for the continued conceptualization and understanding of the paths inequities across language groups influence disparate access to, and adequacy of, food and nutrition assistance.

Sociodemographic Variables Associated with Food insecurity in Puerto Rico

Ms. Sabrina Lonth¹, Ms. Natalia Guerra Uccelli¹, Mr. Cesar Ostolaza², Ms. Carla Rosas², Mrs. Lisa Poirier³, Ms. Crystal Díaz⁴, Dr. Joel Gittelsohn³, Dr. Uriyoán Colón-Ramos¹, Mr. Francisco Tirado⁴, Dr. Ana Maria Garcia Blanco², Mr. Oscar Melendez Colón⁵

¹GEORGE WASHINGTON UNIVERSITY, Washington DC, USA, ²Instituto Nueva Escuela, San Juan, USA, ³Johns Hopkins University, Baltimore, USA, ⁴Puerto Rico PProduce, Carolina, USA, ⁵Trito AgroIndustrial Services (TAIS), San Juan, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Food insecurity (FI) in Puerto Rico (PR) reached as high as 40% after the COVID-19 pandemic. Our purpose was to describe the current FI status and its association with sociodemographic variables and participation in the Nutrition Assistance Program (NAP) which exists instead of SNAP in most US territories.

Methods: An online survey was distributed between June-August 2023 to adults living in PR via public school networks. The survey captured sociodemographics and FI (6-item USDA). A poverty variable was created by comparing household annual income to the 2022 USA poverty threshold for their household size. Only participants who responded to all food security questions were included in the analysis (n=681 out of n=993 for total survey). Respondents were considered food insecure if they had low or very low food security. Logistic regression modeled FI dependent on variables that were significantly associated with FI. All analyses were conducted in SPSS V27 and SAS 9.4.

Results: The majority of the sample was female (76.5%), ages 25-54 (68%), had completed ≤two years of college (60.6%), were employed (62%) and had an annual household income ≤\$30,000 (65.9%). Nearly 43% of respondents participated in NAP. The majority of the sample (76.5%) was food insecure: 35.2% (n=240) had very low food security and 41.3% (n=281) had low food security. In logistic regressions, FI was associated with NAP (OR 1.40, 95% CI:0.9-2.1 p=0.13), Education- Two years of college (OR 1.17,0.68-2.01 p=0.02), Bachelors (OR 0.62 95% CI 0.36-1.05, p=0.08), Masters or Above (OR 0.58 95%CI: 0.30-1.11 p=0.11), poverty (OR 1.46 95% CI:0.95-2.25 p=0.08).

Conclusion: Our results show a large proportion of the sample, which is similar in sociodemographics to the general PR population, experienced FI. The rates were higher than previously reported (40%) using similar sampling methods. These findings warrant further study and emphasizes the heightened need to address FI through effective multi-sectoral policies in the archipelago.

A socioeconomic disadvantage index for informing policy, systems, and environmental change interventions for senior nutrition programs

Dr. Shadi Maleki¹, **Dr. Cassandra Johnson**², Dr. Francis Méndez Mediavilla³, Dr. Paula Stigler Granados^{4,5}, Dr. Lesli Biediger-Friedman²

¹Translational Health Research Center, Texas State University, San Marcos, USA, ²Nutrition, Texas State University, San Marcos, USA, ³Statistics, Texas State University, San Marcos, USA, ⁴School of Health Administration, Texas State University, San Marcos, USA, ⁵Environmental Health, San Diego State University, San Diego, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: This cross-sectional study aimed to characterize the need for supporting nutrition among older adults or seniors 60 years or older living in Central Texas. With two of the largest cities in the U.S. – Austin and San Antonio, rapidly growing populations, and increasing socioeconomic disparities, policy stakeholders require evidence for deciding about senior nutrition programs. We hypothesized that the two policy regions would differ in socioeconomic disadvantage and resources. This study is part of the first asset mapping effort for senior nutrition in this large region.

Methods: We defined a policy-relevant study area of 23 rural and urban counties, comprised of 857 Census Tracts (CTs), based on the two local council of government (COG) regions for the Austin and San Antonio, Texas Metro areas (21,083 square miles). Data came from the U.S. Census. The index included seven indicators of unmet need: income, transportation, food, government assistance, health insurance, physical disability, and household composition. We used quintiles to rank each factor and calculated an index score based on the sum. Statistics were used to determine index characteristics. Wilcoxon test determined statistically significant differences between the two regions. R language and ArcGIS Pro were used for statistics and mapping.

Results/findings: The index showed a nearly symmetric distribution with a median value of 18, and range of 7 to 35 (least to most disadvantage). Based on this index, socioeconomic disadvantage was greater for the San Antonio compared to the Austin region (Wilcoxon $W = 119212$; $p < 0.0001$). Visual analysis of the map showed that CTs located near the Interstate 35 transportation corridor had relatively less disadvantage, while counties and CTs located farther away had more disadvantage. Four outliers were identified within the Austin region, or smaller areas with extreme disadvantage, which were confirmed through member checking.

Conclusions: Findings will be used for an asset mapping study identifying grocery and meal sites, both federally funded and non-profit organizations, and integrated into a project to design a new, multi-functional app for senior nutrition programs; launch health interventions addressing food insecurity and social isolation; and advocate for strengthening senior nutrition programs in Central Texas.

Pathway for Produce Prescriptions in Diabetes Management (PPPT2D): A Multi-site, Multiple Method Evaluation

Ms. Elise Mitchell¹, **Mr. James Marriott¹**, Dr. Sarah Stotz^{1,2}, Dr. Christopher R. Long¹, Dr. Nadine Budd Nugent¹, Dr. Carmen Byker Shanks¹

¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Colorado State University, Fort Collins, USA

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Produce prescription programs (PPRs) provide prescriptions for fruits and vegetables in clinical settings. This study involves five diverse PPRs operating across the United States (US) and serving individuals with low incomes and type 2 diabetes (T2D). PPPT2D tests the hypothesis that PPR participants will see greater improvements in HbA1c and other related health outcomes compared to control participants.

Methods: The study is enrolling ~500 participants. Intervention participants receive PPR plus Standard of Care and control participants receive Standard of Care only. Survey and electronic health record (EHR) data are collected from both groups at enrollment and at 4 to 6 months. The primary outcome of interest is HbA1c. Secondary outcomes include fruit and vegetable intake, food security, and healthcare utilization. Adjusted linear mixed-effect models accounting for clustering will test for differences in HbA1c trajectories between intervention and control participants. Costs to administer a PPR during a 6-month period of implementation will be used in a preliminary within-trial horizon cost-effectiveness analysis using incremental cost-effectiveness ratios and acceptability curves. To understand participating site's implementing staff and PPR participant experiences, semi-structured interviews are collected pre/post PPR intervention. The transcribed interviews will be coded using thematic content analysis methods to understand concepts such as program feasibility and emergent best practices.

Results: Baseline descriptive data will be available by early 2024 to show characteristics of intervention and Standard of Care participant population. Other results to be presented include preliminary qualitative and cost-effectiveness results.

Conclusions: This study uses a multiple methods research design to simultaneously evaluate the impact of PPR programs on health outcomes, cost-effectiveness, and program feasibility across clinics serving diverse populations in five US states. Baseline data will describe similarities and differences in demographics and health status of PPR program participants across sites. PPPT2D will address gaps in diabetes translational science related to the effectiveness, cost-effectiveness, and implementation challenges and opportunities for Food Is Medicine programs in improving diabetes management. The intervention is aligned with current trends in public policy and public health programming, which can be applied across settings and geographies.

Promoting physical activity and equity among vulnerable adults: The Run for Health (RUNfH) study protocol

Miss Mabliny Thuany¹, Miss Mayara Silva¹, Miss Ellen Caroline Mendes Silva², Mr Micael Deivisson Alves³, Professor Luciana Oliveira Santos⁴, **Professor Thayse Natacha Gomes³**
¹University Of Porto, Porto, Portugal, ²Londrina State University, Londrina, Brazil, ³Federal University of Sergipe, São Cristóvão, Brazil, ⁴Tocantins State University, Augustinópolis, Brazil

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: to present the protocol of the RUNfH study, that intends to promote physical activity (PA) among Brazilian vulnerable adults.

Methods: This is a quasi-experimental design project, which will be conducted in two steps. Firstly, barriers and facilitators for PA will be mapped using the concept mapping approach. Following the findings of the first step, a 16-week intervention program, using running/walking, will be implemented. The project will target adults with low socio-economic status who are users of the local Basic Health Units in three Brazilian cities, situated in the North (Tucuruí, Pará; Augustinópolis, Tocantins) and Northeast (Paulo Afonso, Bahia) regions. Eligible participants will include adults aged ≥ 30 years, physically inactive according to national guidelines, not engaged in PA programs over the last three months, and interested in taking part in a walking/running program. Sociodemographic variables (age, sex, perception of health), PA (IPAQ and the number of steps), quality of life (Euroqol 5 Dimensions), sleep quality (Pittsburg Sleep Inventory), well-being (WHO-5), blood pressure, glucose, HDL and total cholesterol, triglycerides, anthropometric variables (height, body mass, waist, and hip circumferences), mental health (Level 1 Cross-Sectional Symptom Scale), and cardiovascular risk (Framingham score) will be assessed before and immediately after intervention. Statistical analysis will include mean comparison, regression analysis, and effect size estimation.

Conclusion: Given the higher prevalence of physical inactivity and increased risk for non-communicable diseases among individuals from low socioeconomic classes in Brazil, the RUNfH project seeks to offer a possible scalable strategy at a national level, to reduce inequities in PA among adults, with possible positive impacts on their health.

Perceived built environment and physical activity in Ghana

Ms. Vida Korleki Nyawornota¹, Dr Fidelia Dake¹, Prof Reginald Ocansey¹

¹University Of Ghana, Accra, Ghana

P2.13: Socio-economic inequalities, Ballroom C, May 22, 2024, 11:00 AM - 11:55 AM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: This study examines the association between neighbourhood environment attributes and physical activity in Ghana. The study seeks to answer the following research questions 1. What is people's perception about the neighbourhood environment in Ghana? 2. What proportion of Ghanaians are meeting the WHO physical activity (PA) guidelines, and what are their socio-demographic characteristics? 3. Which perceived neighbourhood environment attributes are associated with physical activity in Ghana?

Methods: The International Physical Activity Questionnaire (IPAQ) and the Neighbourhood Environment Walkability Scale (NEWS)-Africa instrument were used in a cross-sectional study to gather data from 1075 people aged 17 years and above selected from diverse communities (by socioeconomic status (SES) and residential density in three regions of Ghana). Physical activity was the dependent variable for the study, and it was measured using two indicators: (1) active transportation and (2) leisure physical activity.

Results/findings: Approximately 53% of the respondents were female. Most roads in respondents' immediate neighbourhoods in Ghana have no sidewalk, pedestrian crossing bicycle lanes and lighting. However, there are many alternative roads, footpaths and short cuts for moving from one destination to another and easily accessible. About one out of four respondents meets the WHO PA guidelines, more males met the WHO physical activity recommendation than females in the study. Respondents aged 17-19 years (21.2%) and 30-39 years (20.6%) recorded the highest level of high PA. Surprisingly, participants who perceived their neighbourhood to be characterized by very densely packed small houses including informal settlement reported low overall physical activity in this study. Five neighbourhood environment attributes, residential density ($p < 0.001$), proximity to service facilities/places ($p < 0.001$), access to service facilities/places ($p < 0.001$), place for walking/cycling/playing ($p < 0.01$), and crime safety ($p < 0.01$), showed significant associations with overall PA.

Conclusion: Findings from this study will help create awareness about the link between neighbourhood environment and PA in Ghana. Strategies to promote and increase PA in Ghana should consider built environmental attributes as an important factor to consider. Further studies on the neighbourhood environment and physical activity in Ghana is recommended, possibly a multidisciplinary study.

Demographic and Socioeconomic Factors Associated with Changes in Body Mass Index Among School-Aged Children from pre-, mid-, and late-COVID-19 Pandemic: A Longitudinal Analysis

Dr. Nan Dou¹, Dr. Alysse Kowalski¹, Dr. Yan Wang², Dr. Farah Qureshi¹, Dr. Maureen Black³, Dr. Erin Hager¹

¹Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, ²The George Washington University, Milken Institute School of Public Health, Washington DC, USA, ³University of Maryland School of Medicine, Baltimore, USA

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The COVID-19 pandemic adversely impacted children's health behaviors and exacerbated health disparities. To inform timely obesity-prevention interventions, this longitudinal cohort study aims to investigate pandemic-related changes in weight status and identify associated risk factors among school-age children from pre-, mid- (Fall 2021), and late-pandemic (Fall 2022).

Methods: The study included 367 children (mean age at pandemic onset: 8.6y, range 3.4-15.5y). At pre-pandemic, we collected demographics (child sex, age, race and ethnicity, and parental education). At pre-, mid-, and late-pandemic, we measured children's weight and height to calculate BMI-for-age z-scores (BMIz), and collected family socioeconomic variables, including food insecurity, poverty, and federal assistance services and benefits. We used linear mixed models to examine changes in BMIz over time and identify demographic and socioeconomic risk factors.

Results: Children's BMIz increased from pre- to mid-pandemic ($\beta = 0.09$; 95% CI: 0.02, 0.16; $p < 0.01$) and decreased from mid- to late-pandemic ($\beta = -0.12$; 95% CI: -0.20, -0.05; $p < 0.01$), with no significant difference between BMIz at pre- and late-pandemic. After accounting for child sex, age, pre-pandemic weight status, race and ethnicity, and study follow-up time, we found an association between food insecurity and BMIz change, such that children experiencing food insecurity had a greater BMIz increase from pre- to mid-pandemic compared to children experiencing food security ($\beta = 0.20$; 95% CI: 0.04, 0.36; $p = 0.013$). Other demographic and socioeconomic factors were not associated with BMIz change.

Conclusion: School-aged children experienced increased weight gain at mid-pandemic, while pandemic control policies were in place (including school closures) but returned to pre-pandemic weight status upon the lifting of these restrictions. Pre- to mid-pandemic changes were more evident in the context of food insecurity. Leveraging longitudinal data spanning from pre-pandemic through two years post-pandemic, our study suggests that rapid and early interventions are needed to prevent children's weight gain during such crises, particularly tailored to children in food insecure families. Future studies are needed to identify underlying

mechanisms (e.g. change in family routines and health behaviors) that trigger child weight change and that monitor the impact of short-term weight gain on future health.

Planning for expansion of nutrition education for expectant and primary caregivers of infants and toddlers eligible for food assistance programs

Dr. Courtney Luecking¹, Paula Plonski², Brooke Jenkins², Anna Cason¹, Dr. Olumuyiwa Desmennu²

¹Department of Dietetics and Human Nutrition, University of Kentucky, Lexington, USA,

²Nutrition Education Program, University of Kentucky, Lexington, USA

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The Supplemental Nutrition Assistance Program–Education (SNAP-Ed) is the largest community nutrition education program in the United States. Yet there is a notable gap in programming for expectant families and primary caregivers of infants and toddlers (caregivers). The purpose of this study was to conduct formative work for SNAP-Ed programming for caregivers in Kentucky.

Methods: From fall 2021 through winter 2023, we conducted three focus groups with SNAP-Ed educators (n=19), eight groups with caregivers (n=44), and 16 semi-structured interviews with community partners who serve caregivers. Each guide included questions about access to nutrition information, format for interactions, and priority topics. Discussions were recorded and transcribed. Codebooks aligning with interview guides were developed a priori. Thematic analysis was conducted in NVivo software.

Results: Many partners indicated they provide basic nutrition information but unanimously agreed more nutrition services are needed. Caregivers acknowledged receiving nutrition information from several partner agencies but noted their top three sources were mothers, doctors, and the internet. Most caregivers said they want to attend a class. Educators conveyed willingness to offer virtual classes; however, caregivers and partners mostly communicated preference for in-person, interactive sessions to build relationships and encourage engagement. Inclusion of other caregivers (e.g., grandparent) in programming was viewed important by caregivers and educators. Partners and educators perceived the greatest need for education for meal planning, budgeting, and cooking skills. Some partners perceived needs regarding knowledge about benefits of breastfeeding and introducing complementary foods. Caregivers noted many questions about introducing complementary foods but felt they understood the benefits of breastfeeding. Rather, they had more questions about milk supply, formula, and hunger and satiety cues. Some topics of interest extended beyond the scope of SNAP-Ed content (e.g., hygiene, child development).

Conclusions: To meet the needs of expectant and primary caregivers of infants and toddlers eligible for food assistance, educational content needs to build on SNAP-Ed foundations (e.g., diet quality, food resource management, food safety) to include infant feeding topics. Designing programs that include other caregivers and collaborations between educators and community programs could help expand social support and access to education and community resources for priority topics.

Validation and Refinement of the Family Feeding Checklist

Dr. Eleanor Shonkoff¹, Dr. Sara C. Folta², Dr. Kenneth Chui²

¹Merrimack College, North Andover, USA, ²Tufts University, Friedman School of Nutrition, Boston, USA

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Families experiencing both food insecurity and pediatric obesity face unique stressors that impact parental feeding practices. Certain parental feeding practices are known to help improve children's diets and prevent excess weight gain. Checklists have been used successfully as minimal behavioral interventions in other contexts; it has potential to support parental development of adopting evidence-based feeding practices while minimizing stress. This study tested the convergent and predictive validity of the Family Feeding Checklist-Long Form and two versions of the Checklist-Short Form.

Methods: This observational study used a sample of Mechanical Turk (MTurk) users residing in the U.S. (N=600) who: were the parent of a child aged 6–11 years; had at least one child with overweight/obesity; had experienced food insecurity in the 12 months prior to the time of survey; and spoke English or Spanish. Families of children with major psychiatric or eating disorders, or children participating in a weight loss program at the time of survey were excluded. Participants received one of the three versions of the FFC (Long Form, Short Form A, Short Form B) and completed measures of perceived value, uniqueness of checklist items, likelihood of usage, social support, parental feeding (Child Feeding Questionnaire [CFQ], Caregiver Feeding Styles Questionnaire [CFSQ], Food Parenting Inventory [FPI]); and a Food Frequency Questionnaire (REAPS) assessing selected food groups including fruits/vegetables and sugar-sweetened beverages.

Results/findings: Descriptive summary will be derived from parent age, gender, income, education, and caregiver status (primarily responsible for meals, Y/N) of the sample. Correlations will be used to establish (a) convergent validity using the Checklist scores (A&B versions) with scores on the CFQ, CFSQ, and FPI, and (b) predictive validity using the Checklist scores with dietary patterns. Differences in perceived value, uniqueness, etc. between versions will be examined using linear regression model, both unadjusted and then adjusted salient confounding variables.

Conclusions: Results will examine validity of each version of the Family Feeding Checklist, help determine which version to proceed with in future studies and inform a larger randomized trial of the novel Checklist program for families experiencing both food insecurity and pediatric obesity.

The effects of Project DAIRE, a school-based food intervention study, on diet diversity and diet quality of children in Northern Ireland

Ms. Dilara Olgacher¹, Ms. Ciara Wallace¹, Dr Sarah F Brennan^{1,2}, Dr Fiona Lavelle, Dr Sarah E Moore^{1,2}, Prof Moira Dean², Prof Michelle McKinley^{1,2}, Prof Patrick McCole³, Prof Ruth F Hunter¹, Dr Laura Dunne⁴, Prof Niamh E O'Connell², Prof Chris R Cardwell¹, Prof Chris T Elliot², Dr Danielle McCarthy², Prof Jayne V Woodside^{1,2}

¹Centre for Public Health, Queen's University Belfast, Belfast, United Kingdom, ²Institute for Global Food Security, Queen's University Belfast, Belfast, United Kingdom, ³Queen's Management School, Queen's University Belfast, Belfast, United Kingdom, ⁴Centre for Evidence and Social Innovation, Queen's University Belfast, Belfast, United Kingdom

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: This study aimed to evaluate the effects of Project Daire, a school-based food intervention study, on the diet diversity and diet quality of 6-7 and 10-11 year old children in Northern Ireland.

Methods: Fifteen primary schools were randomly assigned to one of four intervention arms over 6-months: Nourish, Engage, Nourish and Engage or Control (Delayed) in a randomized-controlled factorial trial. The 'Nourish' intervention modified the whole-school food environment and provided food-related experiences and exposure to locally-sourced foods. The 'Engage' intervention involved age-appropriate educational activities on nutrition, food and agriculture. Dietary information was collected at baseline and 6-months using age-appropriate food frequency questionnaires considering foods consumed at home, school and/or in total during a 24-hour period. Diet diversity score (DDS) and diet quality score (DQS) were determined based on adherence to the Eatwell Guide, the UK's food-based dietary guidelines. Linear regression models were used to test the intervention effects, adjusting for baseline scores and accounting for school clustering.

Results: A total of 903 (n=445 aged 6-7 years and n=458 aged 10-11 years) children completed the study. 10-11 year old children who received the Nourish intervention had higher school DDS (adjusted mean difference=2.79, 95% CI 1.40 – 4.19; p=0.001) and total DDS (adjusted mean difference=1.55, 95% CI 0.66 – 2.43, p=0.002) compared to those who did not receive the Nourish intervention. Gender-specific analysis confirmed that the increases in school DDS in 10-11 year old children randomized to the Nourish intervention were maintained in both boys and girls (Boys: adjusted mean difference=2.4 95% CI 0.1 – 4.7, p=0.04; Girls: adjusted mean difference=3.1 95% CI 1.6 – 4.6, p=0.001). The increase in total DDS was, however, remained significant only among girls, with an adjusted mean difference of 1.9 (95% CI 1.1-2.7, p<0.0001). No other statistically significant differences were found.

Conclusions: This study highlights the potential of the multi-component approach employed in the Nourish intervention, which modified both food provision and environment, to promote diet diversity. Further research is required to develop sustainable implementation strategies for Daire and evaluate its long-term effectiveness. Trial registration number: NCT04277312

Use of Heart Rate Zones to Target Moderate- to Vigorous-Intensity Physical Activity in Children: An Exploratory Study

Dr. Danielle E. Jake-Schoffman¹, Dr. Lincoln Lu, Dr. Kristy Boyer, Wesly Menard, Hannah Lavoie, Dr. Maedeh Agharazidermani

¹University Of Florida, Gainesville, USA

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: While heart rate (HR) has been used in studies for the surveillance of physical activity (PA) in children, less is known about its utility as an intervention tool to target moderate- to vigorous- physical (MVPA) activity in this population. Strategies are needed to inform how best to educate children about their HR and HR zones, and how to use these data to adjust their effort during MVPA to reach their exercise goals.

Methods: We aimed to help children learn about their HR and HR zones (5-zone model), explore the impact of exercise on their HR, and attempt to keep their HR in a target zone during exercise. During an interactive session, children (n=11, 9-12 years old, English speaking, no limitations to PA) wore an HR chest strap and used our custom smartwatch app to monitor their HR during two short exercise trials. During exercise, the child used our smartwatch app to view their real-time HR and HR zone. In a semi-structured interview, we explored their understanding of the HR concepts and comfort with targeting HR zones during MVPA, and provided feedback on exercise intervention materials. Interviews were recorded, transcribed verbatim, and analyzed with an emerging themes approach.

Results: Children were on average 10.4 years old, 55% male, and 82% Non-Hispanic White. Most had never learned about HR previously. Children responded well to the HR and HR zone educational materials, including grasping the concepts of intensity and effort during MVPA. Most were able to promptly implement this knowledge by managing their HR during the exercise trials to stay in a zone, adapting quickly to wearing the chest strap and using the smartwatch app. Most children preferred the 5-zone model of HR used during the study as opposed to a hypothetical 3-zone model that was offered as an alternative.

Conclusions: Overall, findings suggest children were able to understand HR concepts with simple instruction and visuals. The use of HR zones may be a feasible approach to target MVPA among children. Results of the study will inform intervention materials to be tested in a trial targeting increased MVPA via HR in children.

Associations among cardiorespiratory fitness, socioeconomic status, and weight status in 9–17-year-old children and adolescents in Zimbabwe

Dr. Taru Manyanga¹, Ms Khanyile Dlamini², Ms Anesuishe Madondo³, Dr Paul Makoni², Mr Stonard Mapfumo⁴, Mr Dzikamai Mandaza⁴, Dr. Daga Makaza²

¹University Of Northern British Columbia, Prince George, Canada, ²National University of Science and Technology, Bulawayo, Zimbabwe, ³National Star College, Cheltenham, United Kingdom, ⁴Ministry of Primary and Secondary Education, Harare, Zimbabwe

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Cardiorespiratory fitness (CRF) is associated with better health outcomes. Socioeconomic status (SES) and weight status may influence CRF. We examined associations among CRF, directly measured weight status, and self-reported SES.

Methods: Data were obtained from a cross-sectional study in which participants were recruited from thirty-nine primary schools in twenty administrative districts, across all ten provinces in Zimbabwe. After obtaining parental consent, participants were asked for assent before completing a self-administered survey which collected socio-demographic and other relevant data. We used Body Mass Index (kg/m²) z-scores derived from directly measured body weight and height to categorize participants as thin, healthy weight, overweight, or obese, using the WHO recommended cut-offs. We measured CRF using the 20-meter shuttle run test and the Leger equation to estimate VO₂max. The 13-item Family Affluence Scale (collapsed into three categories: low, medium, high) was used to categorize SES. One-Way ANOVA with Tukey post-hoc-tests (multiple group) and independent t-tests (two group) comparisons were used to assess associations between CRF, SES and weight status. Statistical analyses were performed in SAS 9.4 with the alpha level set at 0.05.

Results: The mean age (sample n= 1825; 55% female) was 12.02 ± 0.94 years. The average estimated VO₂max for the whole sample was 46.6 ± 4.78 mL/kg/min. Approximately 6%, 81%, 9%, and 4% of the participants were categorized as being thin, healthy weight, overweight, and obese respectively. Most participants (86%) had low, while 10%, and 4% had medium and high SES respectively. Participants with low SES had significantly higher VO₂max compared to medium and high SES, (Mean difference in VO₂max: 2.6; 3.2 mL/kg/min) respectively. We found significantly higher mean VO₂max (p <.0001) with each increasing weight category, except between the overweight and obese categories. Males (48.0 ± 4.8 mL/kg/min) had significantly higher VO₂max (p<.0001) compared to females (45.3 ± 4.4 mL/kg/min) as were participants from rural areas (48.0 ± 4.8 mL/kg/min) compared to their urban counterparts (45.9 ± 4.6 mL/kg/min) (p<.0001).

Conclusion: Our findings demonstrate that SES, weight status, residence, and sex may be important to consider when designing interventions for improving CRF in children and adolescents in Zimbabwe.

Psychometric Properties of a Virtual Physical Literacy Assessment for Preschool-aged Children

Mr. Joshua Li¹, Ms. Morgan Potter¹, Ms. Madison Boyd¹, Miss Ramiah Moldenhauer¹, Mr. Yeongho Hwang¹, Ms. Jayleen Hills¹, Dr. Patti-Jean Naylor², Dr. Ryan Rhodes², Dr. Sam Liu², **Dr. E. Jean Buckler²**, Prof. Valerie Carson¹

¹Faculty of Kinesiology, Sport, and Recreation, University of Alberta, Edmonton, Canada,

²Department of Exercise Science, Physical & Health Education, Faculty of Education, University of Victoria, Victoria, Canada

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: The PLAYshop program is a parent-focused physical literacy intervention for early childhood. A virtual protocol to assess physical literacy (i.e., fundamental movement skills (FMS) and motivation and enjoyment) in preschool-aged children during COVID-19 was developed. The primary objective of the study was to examine the psychometric properties of the virtual physical literacy assessment.

Methods: Baseline data from the PLAYshop randomized control design was used. Participants included 130 preschool-aged children (3-5 years) and their parents from British Columbia and Alberta. At baseline, five FMS (overhand throw, underhand throw, horizontal jump, hop, one leg balance) were measured via a recorded virtual Zoom meeting using the Test of Gross Motor Development – Third Edition (TGMD-3) and the Movement Assessment Battery for Children-Second Edition (MABC-2) tools. All TGMD-3 skill videos were scored by one rater and 10% (n=13) of videos were scored by a second rater. Motivation and enjoyment was assessed via parental-report using four items from the Preschool Physical Literacy Assessment (PrePLAY) and self-report using an adapted Five Degrees of Happiness single-item Likert scale for children. Additionally, children's accelerometer-derived physical activity and age were measured. Intraclass Correlation Coefficients (ICCs), Cronbach's alphas (α), and Spearman's rank correlation coefficients (rs) were calculated.

Result/findings: Inter-rater reliability for TGMD-3 FMS ranged from ICC=0.96-0.99. Internal consistency reliability for TGMD-3 FMS was $\alpha=0.59$ and for parental-reported motivation and enjoyment was $\alpha=0.71$. For convergent validity, total physical activity was significantly positively correlated with all FMS (rs0.20-0.24), except horizontal jump. For motivation and enjoyment, a significant positive correlation was also observed between moderate- to vigorous-intensity physical activity (MVPA) and the parental-report measure (rs=0.23). For construct validity, age was significantly positively correlated with all FMS (rs=0.27-0.62) but not motivation and enjoyment.

Conclusions: Findings indicate initial support for the PLAYshop program physical literacy assessment tool. Though FMS should not be combined into a total FMS score and the self-report motivation and enjoyment score should be interpreted with caution. Keywords: Physical literacy, pre-school, fundamental movement skill.

Navigating Adversity: Understanding its Influence on Adolescent Sleep and Cognitive Performance.

Dr. Ethan Hunt¹, Dr. Keith Brazendale², Dr. Augusto Cesar Ferreira De Moraes¹, Dr. Christopher D. Pfladderer¹, Dr. Erin E. Dooley³, Dr. Baojiang Chen¹, Dr. Alejandra Fernandez⁴, Dr. Deanna M. Hoelscher¹, Dr. Susan Tapert⁵

¹Uthealth-Austin, Austin, United States, ²University of Central Florida, Orlando , United States,

³University of Alabama Birmingham , Birmingham , United States, ⁴Uthealth-Dallas, Dallas ,

United States, ⁵University of California San Diego , San Diego , United States

SOLB1: Latest findings in behavioral nutrition and physical activity: from children in early care and education to young adults, Room 211, May 21, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: G. Children and families

Purpose: Little is known regarding the sleep habits of youth who have experienced trauma. Further, less is known about how sleep and adversity impact neurocognition throughout adolescence. The purpose of this study was to examine the association between adversity, sleep quality (via social jetlag), and neurocognitive performance within the Adolescent Brain Cognitive Development (ABCD) study.

Methods: Data comes from five (2016/2018 – 2020/2022) waves of the longitudinal cohort ABCD study dataset. Social Jetlag was captured through the Munich Chronotype Questionnaire (MCTQ), and a threshold of greater than one hour was identified for logistic regressions. Adversity was identified by compiling sixteen available questions from the Pediatric Early Adversity and Related Life Events (PEARLS) scale. Neurocognition was measured by the NIH Flanker task. Mixed-effects linear and logistic regressions were used to examine odds of greater than one hour of social jetlag (a measure of poor sleep quality) given adversity (>3 PEARLS) and neurocognitive performance via the Flanker task given previous adversity. Finally, we tested whether sleep quality moderated the relationship between adversity and cognitive performance. Sex, age, race/ethnicity, and income were included in models as covariates.

Results: The analytical sample included N=8,273 adolescents (12.56 years, SD= 1.16 years, 47.43% female). Of the sample, %71.70 reported having greater than one hour of social jetlag per week. %50.80 reported more than one PEARL. Logistic regression analysis revealed that greater adversity was associated with increased odds of experiencing greater social jetlag (OR=1.91, 95%CI= 1.48, 2.47). Upon stratification by sex, girls who had experienced more than three pearls were more than twice as likely (OR=2.15, 95%CI= 1.48, 3.11) to experience greater than one hour of social jetlag. The moderation analysis revealed a trending association in that individuals who had experienced adversity and greater social jetlag performed worse on the cognitive test, albeit the association did not reach statistical significance (Coef. -0.73, 95%CI= -1.95, 0.48).

Conclusions: Findings highlight the association between early adversity and sleep quality during adolescence. Addressing early adversity may be crucial in promoting healthy sleep in adolescents. More studies using objective measures are needed to understand the relationship between sleep, adversity, and cognitive function.

“Treatment finished, the world stopped...you’re on your own”: A qualitative investigation of physical activity and dietary behaviour among adolescent and young adult survivors of cancer

Ms. Jennifer Fitzpatrick^{1,2,3}, Dr Kieran Dowd^{1,3}, Professor Niall Moyna⁴, Ms Cliona Godwin⁵, Dr Mairéad Cantwell^{1,3}

¹Department of Sport and Health Sciences, Technological University of the Shannon, Athlone, Ireland, ²Irish Cancer Society, , Ireland, ³SHE Research Group, Athlone,, Ireland, ⁴Dublin City University, , Ireland, ⁵Children’s Health Ireland at Crumlin, , Ireland

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: This qualitative investigation explored physical activity (PA) and dietary behaviour before, during and after cancer treatment from the perspectives of young people who have had cancer, their parents and the healthcare professionals (HCPs) who deliver their care.

Methods: Young people who have had cancer (aged 12-25 years), their parents and HCPs were recruited. Interviews were guided by semi-structured interview guides, that focused on PA and dietary behaviour i) before, during and after cancer treatment, ii) barriers and facilitators to engaging in these behaviours, and iii) recommendations for a PA and dietary behaviour change intervention. Interviews were audio-recorded, transcribed verbatim and analysed using a thematic analysis approach.

Results/Findings: Interviews (n=31) were completed with HCPs (n=9), young people (n=10) and parents (n=12). Four key themes were identified and are denoted by T in this abstract. Changes in ‘PA across the cancer journey’(T1) were reported, with a sharp decline in PA occurring upon treatment commencement. Following treatment completion, PA levels were closely related to the number, and severity, of the treatment-related side-effects being experienced. ‘The complexity of dietary behavior’(T2) was emphasised, with many young people developing negative food associations or aversions both during and after treatment. ‘The dearth of PA and dietary support after treatment’(T3) was reported by all participants. Families who had accessed community physiotherapy services reported a lack of expertise among such providers with regard to the management of treatment-related side-effects which negatively influenced physical function. All participants expressed ‘the urgent need for PA and dietary support after treatment’(T4). All participants agreed that a multi-component intervention which is practical, educational, fun, and age-appropriate, that adopts an individualised approach, would be suitable for, and appealing to, young people who have had cancer.

Conclusions: This novel investigation is the first to i) simultaneously present and synthesise the views of young people who have had cancer, their parents and HCPs, and ii) qualitatively explore PA and dietary behavior among young people who have had cancer in Ireland. The results emphasise the urgent need for PA and dietary support for this community to increase their health, well-being and quality of life.

Changes in physical activity are associated with improvements in quality of life and psychological well-being in breast cancer survivors on aromatase inhibitors enrolled in the PAC-WOMAN trial

Prof. Eliana Carraça^{1,2}, MSc Bruno Rodrigues^{3,5}, MSc Inês Nobre⁴, MSc Sofia Franco¹, MSc Vitor Ilharco¹, MSc Flávio Jerónimo¹, Prof António Palmeira^{1,2}, Prof Marlene Silva^{1,2,5}

¹Universidade Lusófona, Cidefes, Lisboa, Portugal, ²CIFI2S, Universidade do Porto, Porto, Portugal, ³CIAFEL, Faculdade de Desporto da Universidade do Porto, Porto, Portugal,

⁴Faculdade de Motricidade Humana, Universidade de Lisboa, Lisboa, Portugal, ⁵Programa Nacional para a Promoção da Atividade Física, Direção-Geral da Saúde, , Portugal

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: C. Cancer prevention and management

Purpose: Physical activity (PA) can attenuate the adverse effects of aromatase inhibitor (AI) hormonal therapy in women diagnosed with hormone-receptor positive breast cancer, and subsequently improve cancer-related quality of life (QoL) and psychological well-being (PWB). But many survivors do not meet PA guidelines. The PAC-WOMAN trial was designed to promote sustained changes in PA and QoL in this population. This study aimed to test associations of 4-month changes in PA with improvements in cancer-related QoL and PBW in PAC-WOMAN's participants.

Methods: A total of 110 women on AI therapy (age: 56.1±7.6 yr; BMI: 28.1±5.9 kg/m²; AI therapy length: 23.4±20.1 months) were randomly assigned to a brief PA counseling group, a structured exercise group, or a waitlist control. They completed measures of PA (IPAQ and Activity Choice Index), QoL (EORTC QLQ-C30 and BR23) and psychological well-being (HADS depression subscale and general indicators of PBW) at baseline and intervention's end (4 months). Residualized change scores, regressed on baseline scores, were created. Spearman correlations tested associations between change scores for the overall sample and per group. Mann-Whitney tests explored differences between participants who met (vs not) PA guidelines at 4 months.

Results: Positive changes in PA showed small-medium associations with improvements in several domains of cancer-related QoL, namely global health status, role functioning, fatigue, pain, body image, sexual functioning, breast symptoms, and musculoskeletal symptoms ($r=0.26-0.41$; $p's<0.05$). Increases in lifestyle PA (i.e., physically active choices) was the only PA measure correlated with improvements in psychological well-being ($r=0.29$; $p=0.021$) and depressive symptoms ($r=-0.39$; $p=0.002$). Correlations were repeated for each trial group and showed similar trends. Participants meeting PA guidelines at 4 months revealed greater improvement in global health status, physical functioning, role functioning, and body image than those who did not meet ($p's<0.05$; Cohen's $d=0.46-0.78$).

Conclusions: These findings provide further support for the beneficial effects of PA in breast cancer survivors, indicating that increasing either structured or lifestyle PA can result in improvements in several domains of QoL and PWB in women undergoing AI hormonal therapy. Future research should explore for whom these benefits might be more pronounced, by identifying pretreatment moderators (e.g., therapy length).

Evaluation of 24 hour lifestyle patterns with linked monitor and report-based data: Findings from FLASH.

Mr. Jimmy Duhamahoro¹, Dr Gregory Welk¹
¹Iowa State University, Ames, USA

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: D. E- & mHealth

Background: There is considerable interest in evaluating 24-hour activity cycles; however, the ideal tools and measures for doing so have yet to be identified. Considerable emphasis has been placed on monitor-based methods, but these provide limited information about the context of behaviors. The present study uses temporally linked monitor-based and report-based data from the Free-Living Activity Study for Health (FLASH) to understand the context of physical activity, sedentary behavior, and sleep during a 24-hour period. The study also provides novel insights about a promising new device called the Move 4 (movisens GmbH, Karlsruhe, Germany), a multi-sensor device with features that combine research-grade and consumer-devices functionalities.

Methods: 19 participants concurrently worn Move 4 and activPAL for 36 hours and completed an online recall using the online ACT24. Analyses focused on the use of equivalence tests to examine agreement between the Move 4 and the activPAL. The linked Act24 data was used to understand reasons for variability in the profiles.

Findings: With flexible equivalence zones ($\pm 25\%$), the two devices produced equivalent estimates in all the 24-hour behavior categories with an exception of the time spent doing light intensity physical activity with sedentary p-value: 0.0013, 95 %CI (-83.76, 52.09), MVPA p-value: 0.004, 95 %CI (-7.57, 4.17) sleep p-value: 0.022, 95 %CI (-3.23, -4.76), Steps p-value: 0.032, 95 %CI (-413.10, 970.05), and LIPA p-value: 0.5720, 95 %CI (-1.21, 2.65). Contextual comparisons corroborated the equivalence findings and altogether suggested that Move 4 is a suitable tool to incorporate into physical activity assessments protocols, especially in MVPA and sedentary research although further research with bigger and diverse samples are warranted.

Physical Activity Security: Changing the Conversation for Environmental Justice in Lower- and Middle-Income Country Settings

Prof. Estelle Lambert^{1,2}, Prof. Tracy Kolbe-Alexander^{1,2}

¹Research Centre For Health Through Physical Activity, Lifestyle And Sport (HPALS), University Of Cape Town, Newlands, South Africa, ²School of Health and Medical Sciences, Faculty of Health, Engineering & Sciences, University of Southern Queensland, Australia, Ipswich, Australia

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Introduction: While the relationship between physical activity (PA), health and well-being has been well-established, the link between PA and sustainable development is a more recent phenomenon. PA has been described as “choice-based” or “necessity-driven”, and environmental justice is needed for PA security to be achieved. We explored these relationships across high- and low-income country settings using publicly available data.

Methods: Data from 143 countries (LMIC/UMIC, N=99, HIC, N=44) were gathered (WHO Global Health Observatory, OurWorldinData and Worldometer), including: GINI coefficient, World Bank classification, %urbanised, % living in slums, life expectancy, %food insecure, obesity, diabetes prevalences, deaths due to cardiovascular disease (CVD), road incidents, personal violence, pollution, access to public transport, public open space (POS), human rights index, national PA plans and physical inactivity prevalence (PiA). Regression and mediation analyses were conducted on factors related to environmental justice that may explain differences in PiA in HIC vs LMIC/UMIC settings.

Results: PiA prevalence was higher in HIC (32.7%) vs LMIC/UMIC (25.4%, $P < 0.001$), despite more national PA plans (89% vs 59%). Urbanisation, access to public transport and POS, obesity, diabetes, CVD deaths%, and life expectancy were also significantly higher in HIC. Slum dwelling and food insecurity were 10-20 fold higher in LMIC/UMIC vs HIC ($P < 0.001$). Deaths from air pollution, violence and road incidents were also higher in LMIC/UMIC. In LMIC/UMIC, PiA was inversely correlated to food insecurity, %slum dwelling ($P < 0.001$) and positively correlated to %urbanisation. PiA was inversely associated with access to POS in HIC ($r = -0.46$) and positively associated with POS in LMIC/UMIC ($r = 0.37$, $P < 0.001$). Mediation analyses demonstrated the link between PiA and HIC was positively mediated by %urbanisation, whereas, the path between HIC vs LMIC/UMIC and PiA was inversely mediated by %slum dwelling, and personal violence ($P < 0.001$).

Conclusion: Results suggest that urban, built environment attributes impact on PiA differently in HIC vs LMIC/UMIC settings. Slum dwelling persons from vulnerable communities in LMIC/UMIC settings are more physically active, which reflects “necessity-based” vs “choice-based” PA. Further, POS may not address environmental equity in LMIC/UMICs. PA security should be considered as a rights-based issue for urban planners and policy makers to level the urban playing fields.

Examining Disparities in the Association of Obesity with Sociodemographic Factors along the Rural-Urban Continuum

Ms. Roopan Miriam George¹, Dr. Dipti Dev¹, Ms. Amelia Miramonti¹, Dr. Changmin Yan¹, Dr. Michelle Hughes¹

¹University of Nebraska-Lincoln, Lincoln, United States of America

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: Obesity represents a critical public health concern, demanding tailored solutions across urban and rural landscapes. While disparities in obesity and sociodemographic factors between rural and urban settings are individually recognized, tailored prevention strategies require a nuanced understanding of how these factors interact across these settings. This study aimed to examine differences in the association of obesity with sociodemographic factors between rural, non-metropolitan, and metropolitan areas.

Methods: We conducted secondary analysis on data for the 3144 counties of the United States collected from the 2023 County Health Rankings. Type of county was classified as rural, non-metropolitan, and metropolitan using the United States Department of Agriculture Economic Research Service 2023 Rural-Urban Continuum Codes. The sociodemographic factors considered were type of county, age (operationalized as percentage of adults over 65 years of age), gender (percentage of population who were female), ethnic minority (percentage of population who were not non-Hispanic whites), and food insecurity (percentage of population who did not have access to a reliable source of food during the past year). The outcome was obesity (percentage of adults living with obesity). Median household income (in dollars) was included as a covariate. Multilevel regression was conducted with the focal predictor as the interaction between type of county and each sociodemographic factor, holding the remaining factors constant.

Results: In rural and non-metropolitan counties, a higher percentage of ethnic minority and food insecurity is associated with a higher prevalence of obesity, and this association is significantly stronger than in metropolitan counties ($\beta_{\text{rural} \times \text{ethnic minority}} = 0.03$, $p < 0.001$, $\beta_{\text{nonmetro} \times \text{ethnic minority}} = 0.03$, $p < 0.001$; $\beta_{\text{rural} \times \text{food insecurity}} = 0.06$, $p = 0.03$, $\beta_{\text{nonmetro} \times \text{food insecurity}} = 0.08$, $p = 0.008$). In metropolitan counties, a higher percentage of adults over 65 years of age and a lower proportion of female population is associated with a higher prevalence of obesity, and this association is significantly different from rural and non-metropolitan counties ($\beta_{\text{rural} \times \text{age}} = -0.10$, $p < 0.001$, $\beta_{\text{nonmetro} \times \text{age}} = -0.09$, $p < 0.001$; $\beta_{\text{rural} \times \text{gender}} = 0.26$, $p < 0.001$, $\beta_{\text{nonmetro} \times \text{gender}} = 0.24$, $p < 0.001$).

Conclusions: Ethnicity and food insecurity were strong predictors of obesity in rural and non-metropolitan counties. The direction of association for age and gender were different for metropolitan counties. These findings highlight the importance of identifying county-specific risk factors to tailor obesity prevention interventions for the county, optimizing their effectiveness.

Assessing the longitudinal association between sleep, diet quality, and BMI z-score among Black adolescent girls

Dr. Angela Trude¹, **Dr. Bridget Armstrong²**, Dr. Lauren Covington³, Dr. Gabriela Vedovato⁴, Dr. Maureen Black⁵

¹New York University, New York, USA, ²University of South Carolina, Columbia, USA,

³University of Delaware, Newark, USA, ⁴Federal University of São Paulo, Sao Paulo, Brazil,

⁵University of Maryland School of Medicine, Baltimore, USA

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: I. Socio-economic inequalities

Purpose: In the U.S., Black adolescent girls living in low-income communities experience disproportionately high rates of obesity, low diet quality, and short sleep duration. Although cross-sectional research has suggested associations between diet, sleep, and obesity, longitudinal research is sparse. In a sample of Black adolescent girls, we aimed to identify longitudinal mechanistic associations between sleep, diet, and obesity.

Methods: We used longitudinal data from a sample of Black adolescent girls. Nocturnal sleep (total sleep duration, sleep quality) was measured using accelerometers worn > 7 days at T1 (enrollment, n = 441), T2 (6-month follow-up, n = 326), and T3 (18-month follow-up, n = 259). Using an adolescent-validated Food Frequency Questionnaire (FFQ), we estimated diet quality with the Healthy Eating Index (HEI-2020). We measured height and weight at all 3-times (calculated z-scores for body mass index, zBMI). We conducted longitudinal mediation using structural equation models (SEM) to examine the mechanistic roles of sleep, diet quality, and zBMI.

Results: At enrollment, girls were mean age 12.2 years (+ 0.71), 48.3% had overweight or obesity, and mean HEI of 55.8 (+ 7.49). Model 1 included sleep duration and Model 2 sleep quality; both had a good fit with RMSEA < 0.5 and CFI > 0.99. Sleep duration at T1 was not associated with diet quality at T2 (a1 path: b 0.14 [95% CI: -0.53;0.82]), nor was diet associated with zBMI at T3 (b1 path: b -0.01 [-0.01;0.01]). The bootstrapped indirect effect was not significant [95% CI: -0.01;0.01]. Likewise, sleep quality at T1 was not associated with diet quality at T2 (a2 path: b 0.01 [-0.08; 0.11]), nor was diet associated with zBMI at T3 (b2 path: b -0.001 [-0.01; 0.01]). The bootstrapped indirect effect was not significant [95% CI: -0.01;0.01].

Conclusions: Diet was not a mediator between sleep and obesity among this sample of Black adolescent girls from low-income communities. The longitudinal design and direct measures of sleep and zBMI in a vulnerable group are strengths. Although diet may be a plausible mediator, other environmental, behavioral, and biological factors were not accounted for and should be further explored.

Understanding Nutritional and Food Insecurity Among Diverse University Students: Implications for Academic Achievement and Equity Interventions

Ms. Angelica Tutasi-Lozada, Dr. Lucia Leone, Leah Vermont
¹*University at Buffalo, Buffalo, USA*

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: J. Young Adults

Purpose: Food insecurity (FI) rates on US university campuses have surged alongside shifting student demographics. Despite perceptions of privilege, campuses today accommodate a diverse student body, including historically marginalized groups. This study aims to evaluate students' nutritional and food security, elucidating disparities among sociodemographic segments to guide the development and adaptation of interventions.

Methods: Using a mixed methods design, we conducted a cross-sectional online survey among undergraduate students at a large public university in Fall 2023 (n=662). Measures encompassed Food Security (USDA Adult FS Module) and Nutritional Security (NS) (using a novel set of metrics). Participants self-reported their GPAs and college food experiences. Demographic data were obtained from institutional records. Chi-square tests and logistic regression models evaluated group variations. Semi-structured interviews (n=20) were conducted with students reporting FI, with qualitative data analysis (inductive and deductive) scheduled for completion in March 2024.

Results: 58% of students reported experiencing FI, while 55% reported low NS, indicating their lack of confidence in accessing healthy foods without constraints or worry. Racial minority groups, including Hispanic/Latino (FI OR=5.4, 95%CI:2.5–11.8; NS OR=3.2, 95%CI:1.7–6.3), Black/African American (FI OR=2.8, 95%CI:1.4–5.4; NS OR=2.6, 95%CI:1.3–4.9), and international students (FI OR=2.5, 95%CI:1.1–5.3; NS OR=3.7, 95%CI:1.6–8.4) had significantly higher odds of experiencing FI and low NS compared to their White American counterparts. Seeking employment vs. not needing one showed increased odds for FI (OR=5.1, 95%CI:3.1–8.5) and low NS (OR=3.0, 95%CI:1.9–4.9). Pell Grant eligibility and independent living arrangements (on or off-campus) were associated with higher odds of FI and low NS. Enrollment in campus meal plans showed no associations. Multivariate logistic regression, adjusting for sociodemographic variables, housing, meal plans, and employment, revealed that students facing FI had significantly higher odds of achieving GPAs below three (OR=1.6, 95%CI:1.04–2.48) than food-secure students.

Conclusion: FI is associated with lower educational attainment. Race/ethnicity/origin and job-seeking status emerged as crucial food and nutrition security predictors. Integrating qualitative insights will provide essential context that differentiates nutritional and food security. Addressing FI could mitigate racial disparities in academic achievement, underscoring the urgency of targeted interventions.

Embracing Indigenous Knowledge and Traditional Practices in Community Health Promotion Programs

Ms. Brittany Mcbeath¹, Dr. Martine Lévesque², Ms. Sonia Perillat-Amédée³, Dr. Lucie Lévesque¹, Ms. Revathi Sahajpal³, Dr. Marie-Claude Tremblay⁴, Dr. Treena Delormier³
¹Queen's University, Kingston, Canada, ²Université de Montréal, Montreal, Canada, ³McGill University, Montreal, Canada, ⁴Université Laval, Québec, Canada

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: L. Indigenous Research

Purpose: This study addresses the persistent reliance on conventional health promotion approaches within Indigenous communities, despite ongoing decolonization efforts. The primary aim is to explore the concept of culturally grounded health promotion - what it looks like and how it is implemented - from the perspectives of diverse First Nations communities participating in the Kahnawà:ke Schools Diabetes Prevention Program (KSDPP) Community Mobilization Training.

Methods: Employing a community-engaged research approach, this study utilized talking circles to better understand the concept of culturally grounded health promotion, as part of the KSDPP Community Mobilization Training. Talking circles are an Indigenous method of sharing stories; participants typically sit in a circle and take turns speaking while holding a sacred object such as a feather, stone or a talking stick. Thirty-six participants from five communities participated in the audio-recorded talking circles. Inductive thematic analysis was used to analyse the data.

Results: The findings reveal rich insights into culturally grounded health promotion in Indigenous communities. The research captured salient themes such as traditional foods, land-based activities, ceremony, Indigenous language, and traditional knowledge. Distinct processes for cultural knowledge translation were also identified including educational, social collaborative, adaptative, and individual-level processes. Communities emphasized the need for a paradigm shift, advocating for Indigenous-led initiatives grounded in culture and challenging the relevance of Western frameworks.

Conclusions: Health promotion programs grounded in Indigenous culture encompass a broad spectrum of activities, ranging from incorporating traditional foods into diets to learning ancestral languages and engaging in land-based activities. Unfortunately, access to such traditional knowledge has diminished within our communities due to historical colonial influences and legislation. Nevertheless, there is a growing resurgence in the adoption of Indigenous knowledge translation methods to facilitate the transmission of health promoting knowledge aligned with Indigenous knowledge and traditional practices. Advocating for initiatives grounded in Indigenous culture and leadership is crucial for community health promotion efforts. Revitalizing this knowledge base and establishing sustainable methods for intergenerational transmission is imperative to the health and wellbeing of Indigenous peoples.

Influence of political orientation on trust in agri-food related sciences

Ms. Nicole Kling¹, Dr. Katie Dentzman², Dr. Lorraine Lanningham-Foster¹

¹Department of Food Science and Human Nutrition, Iowa State University, Ames, United States,

²Department of Sociology and Criminal Justice, Iowa State University, Ames, United States

SOLB3: Latest findings in behavior change science, Room 211, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Conservatives are more trusting in science that promotes economic growth (“production science”) than liberals but are less trusting of science that explores the health and environmental impacts of development (“impact science”). Similarly, climate communication literature demonstrates that environmentally-framed information is less widely accepted compared to public health-framed information. We hypothesized that conservatives would be more trusting in production and human-focused impact science than environmentally focused-impact science when evaluating food-related scientific fields.

Methods: We sampled 400 people living in the U.S. through Prolific. Participants answered 5-point Likert scale questions (1 = completely distrust, 5 = completely trust) about their trust towards the specific fields (nutrition, food, agriculture, and environment). For each scientific field, trust was assessed for each type of science: (1) production, (2) impact on human health, (3) impact on environment, and (4) production that considers concerns of impact (“in-between”). Lastly, participants answered questions about their political beliefs. Preliminary statistical analyses include descriptive statistics (mean + SD) and Cronbach alpha to assess the internal consistency of the trust scales.

Results/findings: Overall, production science (3.60 ± 0.87) was less trusted than impact on human (4.07 ± 0.77), impact on environment (3.98 ± 0.96), and in-between (4.05 ± 0.82) sciences. The most conservative individuals placed the lowest trust in impact on environment science (2.25 ± 0.90) but still placed the highest trust in impact on human science (3.07 ± 0.86). Although conservatives place more trust in production science than impact on environment science, the most conservative (2.48 ± 1.03) are still less trusting of production science than the most liberal (4.05 ± 0.70). Our scales of trust in science have good internal consistency based on Cronbach’s alpha scores which ranged from 0.80 to 0.93.

Conclusions: These findings contradict previous research showing that conservatives trust production science more than liberals. In fact, our results show that conservatives are more trusting of impact science, when it pertains to human health, than production science. This may suggest that Americans trust science regarding the food system differently to other scientific fields. It may also suggest that trust in science is changing amongst certain groups.

Can an intervention designed to reduce sedentary behavior serve as a catalyst for improving eating-related habits/behaviors?

Assistant Prof. Inês Santos^{1,2,3}, Assistant Professor Eliana V. Carraça³, Associate Professor Marlene N. Silva^{3,4}, Associate Professor António L. Palmeira³, Sabrina C. Teno³, Hélio Silva³, Assistant Professor Pedro B. Júdice³

¹Laboratório de Nutrição, Faculdade de Medicina, Centro Académico de Medicina de Lisboa, Universidade de Lisboa, Lisbon, Portugal, ²ISAMB, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, ³CIDEFES, Universidade Lusófona & CIFI2D Universidade do Porto, Lisbon, Portugal, ⁴Direção-Geral da Saúde – Programa Nacional de Promoção da Atividade Física, Lisbon, Portugal

SOLB3: Latest findings in behavior change science, Room 211, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Several sit-stand desk-based interventions have proved to be effective in reducing sedentary behavior (SB), and in addition improving other health behaviors. Recognizing the intricate interplay between health behaviors, we aimed to test if the Stand Up for Healthy Aging (SUFHA) intervention – a 6-month cluster randomized controlled trial designed to reduce and break up SB – induced a concurrent positive shift in eating-related habits/behaviors of office-based workers.

Methods: Thirty-eight office-based workers (76.3% women; 43.8±8.0years; mean BMI 28.8±6.9kg/m²; 71.6% highly educated) were randomized into an intervention vs. control group. Both groups attended an initial educational session on the independent benefits of reducing and interrupting sitting time with standing and other activities. The intervention group was provided with sit-stand desks plus motivational nudges (e.g., animated short videos containing simple tips on different forms of breaking SB) during 6 months; the control group was a waiting-list. Eating-related habits/behaviors were assessed with the MedDietScore plus other specific indicators. Differences between groups were examined using independent sample t-tests/Mann-Whitney U-test. To evaluate the effects of the intervention on eating-related outcomes, adjusted for clustering, sex, age, and BMI, repeated measures ANCOVA were conducted, where time (baseline and 6-month follow-up) was the within-subjects factor and intervention group was the between-subjects factor.

Results: No differences were found between the intervention and control groups regarding study variables at baseline ($p > 0.05$). Differences between groups were found at intervention-end for vegetables (raw or cooked) and fish (and fisheries) consumption, favoring the intervention group (~7-12 portions/week vs. 1-6 portions/week in the control group, $p = 0.019$; and ~3-4 portions/week vs. 1-2 portions/week in the control group, $p = 0.020$; respectively), and also for adherence to the Mediterranean diet, also favoring the intervention group (31.84±4.6 vs. 28.47±3.2, $p = 0.032$). A time*group interaction was observed for vegetables consumption, i.e., there were changes in vegetables consumption over time for both the intervention and control groups, in different directions: slightly increased from baseline to 6 months in the intervention group and decreased in the control group.

Conclusions: An intervention designed to reduce SB also promoted eating-related changes, highlighting the potential of these type of interventions to serve as a catalyst for broader health-related behavioral changes.

Perceived influences of fruit and vegetable consumption among Indian adolescents – A qualitative study

Dr. Neha Rathi¹, Prof Anthony Worsley², Dr. Meg Bruening³

¹Department of Home Science, Mahila Mahavidyalaya, Banaras Hindu University, Varanasi, India, ²School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia,

³Department of Nutritional Sciences, College of Health and Human Development, The Pennsylvania State University, University Park, United States of America

SOLB3: Latest findings in behavior change science, Room 211, May 22, 2024, 3:00 PM - 4:15 PM

SIG - Primary Choice: M. Other

Purpose: Fruits and vegetables are primary sources of vitamins and minerals that may alleviate the risk of chronic illnesses. Indian adolescents consume inadequate amounts of fruits and vegetables, with less than 10% meeting recommendations. Micronutrient deficiencies are a major public health problem in India. To promote fruit and vegetable consumption among adolescents, we need to identify the factors which may influence the consumption of fruit and vegetables among Indian adolescents. The aim of this qualitative inquiry was to explore perceived influences of fruit and vegetable consumption among Indian adolescents.

Methods: Using purposive sampling, adolescents aged 10-19 years were recruited from two public and two private schools in Varanasi, India. Face-to-face interviews along with the 'draw and tell' technique were used to examine barriers and facilitators to fruit and vegetable consumption. Interviews were conducted in Hindi/English, per the preference of the participants. The conversations were digitally recorded, transcribed verbatim, and translated to English (where necessary) for analysis. The transcribed data were subjected to thematic analysis informed by Template Analysis technique. Themes were extracted using NVivo software program. This study received ethical approval from the Institutional Ethics Committee of Banaras Hindu University (Dean/2022/EC/2817).

Results: A total of 58 adolescents (53% female; 74% urban) with mean age 13.6 years completed the interviews. Ten themes emerged, including: (i) Sensory properties of fruits and vegetables (i.e., taste, color, flavor, texture); (ii) Fruit and vegetable allergies; (iii) Fruits and vegetables are good for health and immunity; (iv) Peer influence; (v) Parental influence (e.g. parents provide nutrition education); (vi) Cost of fruits and vegetables; (vii) Food preparation (e.g. fruits preferred in shakes and juices); (viii) School food environment (e.g. non-availability of fruits in private schools); (ix) Home food environment (e.g. vegetables grown in kitchen gardens); (x) Liking for energy-dense, nutrient-poor foods.

Conclusions: The results show that multiple factors are likely to affect fruit and vegetable consumption in adolescents, aligning with literature on adolescent fruit and vegetable consumption in international settings. Behavioral interventions should be designed to create enabling environments to encourage fruit and vegetable consumption in adolescents by removing barriers at the individual, household, and community levels.

Understanding the Factors and Social Determinants of Health in the Islands to Promote Effective Implementation of Chronic Disease Prevention and Control Programs

Mrs. Amy Wieczorek Basl², Beverly Otwori¹

¹Centers for Disease Control and Prevention, Atlanta, USA, ²Totally Joined for Achieving Collaborative Techniques, Atlanta, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: The Centers for Disease Control and Prevention's (CDC) National Center for Chronic Disease Prevention and Health Promotion's, Islands Program currently funds a 6-year cooperative agreement (DP19-1901) to prevent and control tobacco use, diabetes, and cardiovascular disease in the US Affiliated Pacific Islands, the US Virgin Islands, and Puerto Rico. The Islands Program conducted an evaluation to identify perceived social determinants of health (SDOH) addressed by the cooperative agreement, factors that affected the implementation of the cooperative agreement, and suggestions for working with the islands. These are critical to understanding and improving health outcomes of island populations. Culturally responsive, community-based participatory research methods were used.

Methods: The Islands Program conducted a process/implementation evaluation using the Participatory Action Research framework. Telephone interviews were conducted between November 2022-January 2024. A total of 23 individuals completed interviews. These individuals included representation from all eight islands awarded cooperative agreement funds and all CDC staff that have served as part of the Islands Program. Transcripts were coded using thematic analysis in NVivo. Inter-rater agreement reached Kappa \geq .80.

Results: Over half of respondents (n=12) stated that diabetes, diseases caused by tobacco and betel nut use, and obesity were the biggest health issues in the islands. The top SDOHs were related to quality, affordable healthcare/insurance (n=15), food (15), transportation (n=14), and education (n=9). Implementation was affected by 15 internal or external factors. Respondents reported that staff recruitment/hiring/maintenance (n=15), capacity (n=14), funding (n=12), COVID-19/disease outbreaks (n=11), funder-specific policies (n=9), and infrastructure (n=9) impacted implementation effectiveness. In addition to funding and training, technical support from funders/partners is critical to overcoming these challenges. Designing program strategies that build on the current work and partnerships in the islands, focus on policy approaches, and aim at root causes of chronic disease will yield more positive impacts on the islands' program and health outcomes (n=13).

Conclusions: Researchers and funders should use collaborative approaches with key stakeholders to understand underlying factors that facilitate and impede implementation effectiveness of program activities. Tailored approaches that incorporate these factors yield more impactful outcomes among island populations.

Implementation of a Medically Tailored Meals Program: A Qualitative Study

Dr. Sara Folta¹, Dr. Oyedolapo Anyanwu, Ms. Zhongyu Li

¹Tufts University, Boston, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Increasing evidence supports the benefits of “Food is Medicine” intervention strategies that integrate food and nutrition into healthcare delivery. Among such strategies, medically tailored meal (MTM) interventions are particularly promising. MTMs are fully prepared, nutritionally tailored, home-delivered healthy meals for individuals living with diet-sensitive conditions, such as diabetes, heart failure, end-stage renal disease, HIV, and cancer. In Massachusetts, USA, a new policy resulted in the implementation of novel nutrition programs, including MTMs for high-risk patients, through Medicaid Accountable Care Organizations. The purpose of this study was to qualitatively assess the implementation of the MTM program to facilitate future uptake of these programs.

Methods: We interviewed 19 staff affiliated with four Accountable Care Organizations in Massachusetts, USA that had implemented an MTM intervention. Interviews were conducted in February-August 2023. The semi-structured interview guide was informed by the Health Equity Implementation Framework, and questions were about barriers to and facilitators of implementation, including the screening, referral, and enrollment process; perceptions about program logistics and sustainability; and perceptions about program impact. Interviews were conducted online via the Zoom videoconferencing app and lasted 50 minutes on average. The interviews were recorded, transcribed, and then coded using NVivo software. We used a directed qualitative content analysis approach.

Results: Staff perceived the MTM program as helping to improve the overall quality of care and appreciated the ability to provide tangible support to patients. Challenges to the screening and referral process were related to the food security criterion and included staff discomfort with discussing this issue as well as a mismatch between patient language and cultural factors and the screening tool. Logistical barriers included staff knowledge gaps about the MTM program and the time needed for recruitment and referral. Staff were concerned that patients would be unable to sustain benefits when the program ended.

Conclusions: Staff perceived many positive impacts of MTMs. In future programming, implementation may be improved by providing additional staff training. Language and culture may need to be better addressed, especially in the screening process, to help ensure that MTM programs are equitably implemented.

Use of Nutrition Security Measures in “Food As Medicine” Program Evaluation Offers Novel Insights on the Impact of the Intervention

Dr. Laura Fischer^{1,2}, Kofi Essel^{1,2,3}, Noah Kim¹, Erynn Richards¹, Emily Minkah-Premo⁴, Alicia Tucker^{1,2}, Qadira Ali^{1,2}

¹Children's National Hospital, Washington, USA, ²George Washington University School of Medicine and Health Sciences, Washington, USA, ³Elevance Health, Indianapolis, USA, ⁴George Washington University Milken Institute School of Public Health, Washington, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Poor diet quality is associated with elevated chronic disease risk and the rising cost of US healthcare. Having enough healthy food, or “Nutrition Security” (NS), is cited as a barrier to eating healthy in families experiencing food insecurity (FI). Recently, the Gretchen Swanson Center for Nutrition (GSCN) has developed a tool to measure NS. This tool presents a promising evaluation approach for “Food As Medicine” (FAM) interventions, which aim to improve healthy food access, diet quality, and diet-related chronic disease risk. The objective of this research is to report on the feasibility of the GSCN NS tool and explore the impact of a FAM intervention on NS and FI.

Methods: Data were collected from a cohort of participants enrolled in an ongoing longitudinal Produce Prescription intervention (PRx) between February 2023 and February 2024. Adult caregivers who screened positive for FI were recruited by clinicians during clinic visits for their children aged 0-18 years old. Enrolled families received 8 pounds of produce and virtual nutrition education twice-monthly for 6 months. Adults completed self-report surveys at baseline and post-intervention, including GSCN measures of NS, Healthfulness Choice (HC), Dietary Choice (DC), and the 6-item USDA Household Food Security Survey (FI). We report the relationship between NS, HC, DC, and FS scores at pre- and post-intervention and the pre-post change in scores. Correlations were tested with Spearman Rank, and longitudinal change in scores was tested by paired T-tests.

Results: One-hundred twenty-six adults provided baseline data and 53 provided post-intervention data. At baseline, NS and DC were correlated with FI ($R=-0.60$ and $R=-0.50$, respectively, $p<0.001$) and at post-intervention, NS was correlated with FI ($R=-0.60$, $p<0.001$). There was a significant pre-post increase in NS scores ($t=-0.27$, $p<0.05$) and decrease in FI scores ($t=3.15$, $p<0.01$). There was also a significant relationship between change in NS and change in FI ($R=-0.36$, $p<0.05$).

Conclusions: Participation in a PRx was associated with an increase in NS and reduction in FI severity and these changes were significantly correlated. Use of the NS tool in FAM program evaluation was feasible and provided novel insight into the impact of a FAM intervention.

“Let's get busy getting the work done”: Co-designing a family-based physical activity intervention for an underserved population with community leaders

Dr. Deirdre Dlugonski¹, Abby Cecil¹, Elisabeth Ohrnberger¹, Randi Osborne¹, Dr. Brandi White¹, Rebecca Mabson¹, Dr. Johanna Hoch¹
¹University of Kentucky, Lexington, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Family physical activity may improve health outcomes and kindergarten readiness in young children from economically disadvantaged backgrounds to promote health equity. The purpose of this abstract is to describe the process and outcomes of engaging with community leaders to develop the Families Moving Together intervention for female caregivers and their preschool-aged children who receive housing assistance.

Methods: Five action planning meetings (one hybrid and 4 virtual) were held with community leaders who had expertise in physical activity, early learning, or family engagement. The PRACTical planning for Implementation and Scale-up (PRACTIS) Guide provided a framework for each meeting to consider implementation and sustainability barriers and facilitators during the design process. The Framework Analysis method was used to analyze qualitative data using inductive and deductive coding to describe participant perspectives and action planning processes. Two research team members coded each transcript and the final themes were discussed by four research team members who were involved in the analysis.

Results/Findings: Action planning participants (N=19) were aged 50 ± 13.4 years, primarily female (89%), and worked across several community organizations in an urban city in Central Kentucky. There were three core themes identified from analyzing the transcripts. First, participants approached the action planning process with shared values, such as respect, access, and equity. Second, these core values provided a foundation for creating coordinated, collaborative, and sustainable solutions to address community challenges. Finally, participants described program design elements to remove barriers and increase facilitators for participation and impact. The final outcome, a community-based family physical activity intervention, Families Moving Together, was co-developed with action planning meeting participants. During this process, community leaders identified other partners and resources to support the design and implementation of the intervention.

Conclusions: Community leaders engaged with the research team in an iterative process using the PRACTIS guide to design strategies to increase physical activity and kindergarten readiness that could be implemented and sustained in the community. Participants prioritized the voice of community members and collaborative approaches to design and sustain programs. This process could be replicated in other under resourced settings to create sustainable partnerships that facilitate community health.

Identifying National Diabetes Prevention Program Implementation Strategies based on Barriers and Facilitators of Nutrition and Physical Activity Programming in Cooperative Extension

Dr. Anna Gorczyca¹, Ms. Patricia Smith², Mx. Gerit Wagner¹, Dr. Lyndsie Koon³, Ms. Christina Holmes⁴, Dr. Elaine Johannes⁴, Dr. Kameron Suire⁵, Ms. MacKenzie Koester⁶

¹University Of Kansas Medical Center, Kansas City, USA, ²University of Colorado Anschutz Medical Campus, Denver, USA, ³University of Kansas , Lawrence , USA, ⁴Kansas State University Research & Extension , Manhattan, USA, ⁵Berry College, Mount Berry, USA, ⁶Weitzman Institute , Middletown, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Despite the existence and effectiveness of the National Diabetes Prevention Program (NDPP), rural populations that experience disparities in diabetes risk also have inequitable access to evidence-based diabetes prevention programs. A potential challenge for adoption and implementation of the NDPP in rural communities is that the intensity and content of the NDPP may not be compatible with rural community resources and capacity. The Cooperative Extension System (Extension), available in every state in the U.S., employs Family and Consumer Science (FCS) professionals to deliver health promotion programs and presents an opportunity for NDPP delivery in rural settings. The purpose of this exploratory study was to identify strategies to support the adoption and implementation of the NDPP based on potential barriers and facilitators to delivery within Extension.

Methods: Guided by the Consolidated Framework for Implementation Research (CFIR), individual semi-structured interviews were conducted in the Fall of 2022 with Kansas State Research and Extension (KSRE) FCS agents (n = 11) to acquire information on nutrition and physical activity program implementation experience in rural communities that could be applied to NDPP adoption and implementation. Data were analyzed thematically using a deductive and inductive approach.

Findings: Identified strategies—development of a formal implementation blueprint for participant recruitment and tailoring implementation for remote delivery—addressed specific barriers related to the CFIR implementation process domain of engaging with the innovation (i.e., NDPP) or program reach. Specifically, two primary barriers emerged from the interviews: 1.) difficulty in engaging participants due to a lack of systematic recruitment processes and 2.) difficulties for participants related to the time/location of program, program relevance, and competing family demands.

Conclusions: These results led to the design of a type II hybrid-effectiveness trial where two remote delivery methods of the NDPP will be assessed for reach, retention, and effectiveness (weight loss) when delivered through KSRE. Further, a formal implementation blueprint for participant recruitment, including a population health management approach through rural medical clinics where potential participants are identified through electronic health records (active), will be compared to traditional recruitment methods such as flyers, media, word of mouth, etc. (passive) on participant yield, retention, and participant demographics.

Screening Patients for Physical Inactivity Helps Identify Patients at risk for Cardiometabolic and Chronic Diseases

Dr. Cole Chapman¹, Dr. Mary Schroeder¹, Dr. Britt Marcussen², **Ms. Jenna Springer**³, Dr. Lucas Carr³

¹Department of Pharmacy Practice and Science, University of Iowa, Iowa City, United States,

²Department of Family Medicine, University of Iowa Healthcare, Iowa City, United States,

³Department of Health and Human Physiology, University of Iowa, Iowa City, United States

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Physical inactivity is a major health risk factor for multiple chronic diseases and early death but is rarely measured or promoted in primary care. Few studies have taken a comprehensive look at the relations between patient's physical inactivity and health outcomes commonly included in patient's electronic medical records (EMR). The purposes of this study were to: 1) compare EMR health outcomes between patients screened and not-screened for physical inactivity; and 2) to compare EMR health outcomes among screened patients identified as inactive, insufficiently active, and active. We hypothesized screened patients and unscreened patients would have similar health profiles but active patients would have superior health profiles compared to insufficiently active patients.

Methods: We conducted a cross-sectional study that included 40,706 adult patients treated at a large midwestern hospital between 11/1/2017 and 12/1/2022. Demographics, vital signs, visits and encounters, and disease diagnoses, were extracted from patient EMRs using the PCORnet Common Data Model (version 6.1). Chronic disease burden was calculated using the Elixhauser comorbidity index. Physical inactivity was measured among 7,261 adults coming in for annual wellness visits using the two-item Exercise Vital Sign (EVS) questionnaire. Screened patients were characterized as inactive (0 minutes/week), insufficiently active (1-149 minutes/week) and active (150+ minutes/week of moderate-vigorous of physical activity). Welch two sample t-tests were used to compare EMR health outcomes between screened and unscreened patients (N=33,445). Kruskal-Wallis rank sum test, Fisher's exact test, or Pearson's Chi-squared tests were conducted to compare EMR health outcomes between active, insufficiently active, and inactive patients.

Results: Patients screened for inactivity were younger (-1.7 years; $p < 0.001$) and healthier than unscreened patients, presenting with superior cardiometabolic risk profiles and lower chronic disease burden (-0.27; $p < 0.001$). Among patients screened for inactivity, active patients presented with superior cardiometabolic risk profiles and lower chronic disease burden ($p < 0.001$). Active patients had a lower risk of 20 inactivity-related comorbid conditions compared to insufficiently active patients.

Conclusions: These findings illustrate the value of treating physical inactivity as a vital sign by screening patients for inactivity. Additional study is needed to identify best practice for providing inactive patients with effective resources to promote physical activity.

Restaurant corporate social responsibility commitments are not associated with nutritional changes to menu offerings that impact health

Alyssa Leib¹, [Dr. Megan Mueller](#)¹, Dr. Jason Wang², Dr. Catherine Crespi³, Dr. May Wang³, Deborah Glik³, Dr. Sara Bleich⁴

¹Colorado State University, Fort Collins, United States, ²Amazon, Inc. , Seattle, United States,

³UCLA Fielding School of Public Health, Los Angeles, United States, ⁴Harvard T.H. Chan School of Public Health, Boston, United States

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: To evaluate associations between corporate social responsibility (CSR) commitments and the nutritional quality of menu offerings in 66 top-selling restaurant chains from 2012 to 2018.

Methods: Data on restaurant CSR commitments and the nutrition content of menu offerings were abstracted from the Internet Archive database of restaurant websites and the New York City Department of Health's MenuStat database, respectively. Nutritional quality scores of restaurant menu offerings were determined via a modified Nutrition Environment Measures Study-Restaurants (NEMS-R) tool. Generalized linear mixed models with a random effect for restaurant were used to evaluate differences in NEMS-R score and in the nutrition content of menu items (kcal, total fat, saturated fat, sugar, fiber) between restaurants with and without CSR commitments. For all models, the effect of CSR overall and by year was tested. Sensitivity analyses were conducted using health-related CSR commitments identified by qualitative coding in a random subsample of web text sections ($n=4,096$) versus CSR commitments identified by keywords (health and non-health-related) in all the web text sections ($n=10,615$).

Results: Almost one fifth of restaurants (19%) in 2012 had CSR commitments; and just under one half of restaurants (48%) in 2018 had CSR commitments. There were no differences in the nutritional quality of menus (NEMS-R score) or the nutrition content of menu items in restaurants with versus without CSR commitments, overall or over time. Sensitivity analyses suggest modest changes in the nutrition content of menu items at restaurants with CSR commitments both overall and by year. Specifically, there was a modest decline in per-item calories offered each year (-3.4 kcal per year 95%CI: -7.0, -0.4) but a slightly higher amount of total fat and saturated fat overall by restaurants with CSR commitments vs. those without (0.09 g of fat 95%CI: 0.0, 2.1 and 0.4 g saturated fat 95%CI: 0.0, 1.1, respectively). There were small declines in saturated fat over time (-0.1 g saturated fat per year 95%CI: -0.2, 0.0) in restaurants with CSR commitments vs. those without.

Conclusions: CSR commitments did not translate into nutritional changes to restaurant menus that would meaningfully impact health.

Perceptions of the Neighborhood Environment and Physical Activity among Mexican Americans on the Texas-Mexico Border

Dr. Natalia Heredia¹, Ms. Soo Kyung Park¹, Dr. MinJae Lee², Ms. Lisa Mitchell-Bennett⁴, Dr. Paul Yeh¹, Dr. Rose Gowen³, Mr. Art Rodriguez³, Dr. Miryoung Lee⁴, Dr. Belinda Reininger⁴
¹UTHealth Houston School Of Public Health, Houston, USA, ²UT Southwestern, Dallas, USA, ³City of Brownsville, Brownsville, USA, ⁴UTHealth Houston School of Public Health, Brownsville Regional Campus, Brownsville, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Little research on the association of neighborhood environment with physical activity in resource-poor communities has been done. This study assessed changes in perceptions of the neighborhood environment and the association between the neighborhood environment and physical activity in a population-based Mexican American cohort from the U.S.-Mexico border in a community that embarked on enhancing pedestrian and cycling infrastructure and programming.

Methods: We analyzed data from a population-based sample of Mexican American individuals on the Texas-Mexico border. Longitudinal questionnaires were interviewer-administered. Heat map analysis assessed changes in the positive response rate reflecting perceptions of the neighborhood environment over time, and multivariate-adjusted logistic regression assessed how perceptions of neighborhood environment elements predicted meeting physical activity guidelines.

Results/findings: The sample (n=1036) was mostly female (71%), born in Mexico (70%), had no health insurance (69%). We saw improvements in the perceptions of several neighborhood environment attributes from 2008-2018, though we saw different longitudinal trajectories in these perceptions based on an individual's longitudinal physical activity patterns. By 2014-2018, we saw significantly higher positive perceptions of the neighborhood environment for those who consistently met physical activity guidelines compared to those who did not (Adjusted Rate Ratio=1.12, p=0.049).

Conclusions: We found that perceptions of many neighborhood environment attributes improved between 2008 to 2018, and that overall positive perceptions were associated with consistently meeting physical activity guidelines over time.

Rural-Urban Differences in Dietary Intake during Pregnancy

Dr. Kara Whitaker¹, Dr. Jacob Gallagher¹, Dr. Katrina Wilhite², Dr. Bethany Barone Gibbs²
¹University Of Iowa, Iowa City, USA, ²West Virginia University, Morgantown, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Women who reside in rural areas are at higher risk for maternal morbidity and mortality compared to women residing in urban areas. Emerging evidence indicates that differences in dietary intake may contribute to rural health disparities in the general population; however, less is known about rural-urban dietary differences during pregnancy. The purpose of this study is to characterize differences in dietary intake between rural and urban women during pregnancy. We hypothesize that rural women will have worse diet quality across pregnancy compared to urban women.

Methods: Women (N=333) participating in the ongoing Pregnancy 24/7 cohort study from Iowa and West Virginia were included in analyses. The study includes three assessments, one each trimester of pregnancy. Participants provided their home address and completed a diet screener at each assessment. Rural status was determined using the rural-urban commuting area (RUCA) code based on the participant's address, with RUCA codes of 4-10 considered rural and 1-3 considered urban. Diet was assessed using the National Cancer Institute's Diet Screener Questionnaire (DSQ), providing estimated dietary intakes for fruits and vegetables, whole grains, dairy, fiber, calcium, and added sugars. Mixed effects models analyzed the association between rural status and dietary intake, after adjustment for study site, age, race and ethnicity, education, income, trimester, relationship status, and parity.

Results: We included 91 pregnant women from rural areas and 242 from urban areas. Fruit/vegetable and fiber intakes were lower in rural women vs. urban women (2.2 vs. 2.4 cups/day, $p=0.006$ and 14.3 vs. 15.2 grams/day, $p=0.002$). Rural participants also consumed more added sugar (18.4 vs. 17.3 tsp/day, $p=0.025$) and greater grams of sugar from sugar-sweetened beverages (9.2 vs. 7.8 tsp/day, $p=0.004$), than urban participants. No other significant differences were observed.

Conclusions: Dietary differences were observed across pregnancy in our sample, with those residing in rural areas consuming less fruits, vegetables, and fiber and more added sugars compared to those in urban areas. These findings illustrate a need for dietary interventions in rural populations during pregnancy. In subsequent analyses, we plan to examine if the observed differences in dietary intake partly explain rural disparities in maternal-child health outcomes.

Impacts of a citywide zero-fare public bus transit policy on bus ridership in Kansas City, Missouri USA

Dr. Jordan Carlson¹, Chelsea Steel, Maddy Pilla, Amanda Grimes, Joseph Lightner, Brent Never, Keith Feldman, Emily Cramer, Jenifer Allsworth, Betty Drees, Brian Saelens, Tiffany Powell-Wiley, Donna Ginther, Jannette Berkley-Patton

¹Children's Mercy Hospital, Kansas City, USA

SOLB4: Policies, systems, environments and implementation science, Room 211, May 23, 2024, 8:25 AM - 9:40 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Policies aiming to increase reach and use of public transit have promise for improving population health by supporting active transportation and access to affordable, healthy food and other healthy opportunities. This quasi-experimental study evaluated the impact of a citywide zero-fare (free) bus transit policy on bus ridership relative to comparison cities with no fare changes.

Methods: Bus ridership data were collected from the transit agency in Kansas City, Missouri USA (486K residents, 40K monthly riders) and seven non-zero-fare comparison USA cities with similar population and transit characteristics (mean=665K±206K residents, mean=46K±25K monthly riders). Data spanned 2018-2022, reflecting two years before and three years after Kansas City's zero-fare policy started in March 2020, coinciding with the start of the COVID-19 pandemic. Ridership was computed for the early (January-June) and late (July-December) half of each year and standardized relative to ridership in the first half of 2018 in each respective city. Changes in ridership in Kansas City were compared to average changes in ridership across the comparison cities.

Results/findings: In late 2019, just before the start of zero-fare, ridership levels were similar to early 2018 levels in Kansas City and on average across the comparison cities (within cities, changes were -9% to +16%). Ridership decreased dramatically in early 2020 when the pandemic and zero-fare started, by 22% in Kansas City and 41% across the comparison cities (within cities, decreases were 30% to 56%). In early 2021, many cities reached their lowest ridership levels, down 31% in Kansas City and 55% across the comparison cities. By late 2022, Kansas City ridership was back within 11% of early 2018 levels, whereas ridership in the comparison cities was only within 37% of early 2018 levels (ranging from within 18% to within 50%). 2023 data are still being collected.

Conclusions: Although the pandemic led to reduced bus ridership in all cities, ridership decreased much less in the zero-fare city, Kansas City, than in the comparison cities. Future research is needed to evaluate whether the higher ridership levels associated with free public bus transit translate to increases in active transportation, healthy eating, and related health markers.

EAT for Prevention: Preliminary Preschool Children's Dietary Intake Effectiveness- Implementation Outcomes Due to a Responsive Feeding and Multilevel Engagement Intervention in Family Child Care Homes

Dr. Dipti Dev¹, Dr. Saima Hasnin², Ms Carly Hillburn¹, Dr. Alison Tovar³, Dr. Susan Sisson⁴, Virginia Stage⁵, Natalie Koizol¹, David A. Dzewaltowski⁶

¹University of Nebraska Lincoln, Nebraska Extension, Lincoln, USA, ²University of Illinois Urbana- Champaign, ³Brown University, ⁴Oklahoma University, ⁵North Carolina State, ⁶University of Nebraska Medical Center,

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: F. Early care and education

Purpose: Determine preliminary effectiveness of the Ecological Approach To Prevention (EAT for Prevention) intervention that includes two components: 1) Provider training on Responsive Feeding Evidence-Based Practices (RF-EBPs) through seven interactive online modules and 2) a continuous multilevel (Extension coach, childcare provider, and child) feedback engagement process. Despite global recommendations for RF-EBPs in childcare settings, no published studies have determined their effectiveness specifically in Family Child Care Homes (FCCHs).

Methods: Seventeen FCCH settings in Nebraska were randomly assigned to either a intervention (n=8) or the attention control condition (n=9). FCCH providers self-reported the primary implementation outcome of feeding practices, including responsive (e.g., modeling) and controlling (e.g., pressure) behaviors. Research assistants utilized the Dietary Observation in Child Care protocol to assess the primary effectiveness outcome of child dietary intake during lunch time. Average dietary intake for whole grains, proteins, vegetables, fruits, and dairy was calculated for 48 children (Control= 24; Intervention= 24). Preliminary analyses were conducted with paired and independent sample t-tests were conducted to identify mean differences.

Results/Findings: Post-intervention, intervention providers reported significantly reduced use of controlling feeding practices compared to control providers (Cohen's $d = -1.5$, $CI = [-2.58, -.39]$, $p = .007$). Intervention providers also demonstrated significantly higher levels of role modeling ($d = 1.3$, $CI = [.22, 2.33]$, $p = .026$) and lower pressure ($d = 1.3$, $CI = [-2.33, -.22]$, $p = .018$) in their feeding practices. Conversely, control providers exhibited significantly higher pressure ($d = 7.7$, $SE = 1.6$, $p < .001$) and more non-supportive verbal comments ($d = 16.7$, $SE = 4.4$, $p = .002$) post-intervention. Intervention children showed significantly increased vegetable ($d = .9$, $CI = [.31, 1.5]$, $p = .003$) and dairy ($d = .3$, $CI = [.15, 1.3]$, $p = .014$) intake compared to control children. Moreover, intervention children experienced a significant increase in vegetable consumption ($d = .7$, $CI = [.27, 1.17]$, $p = .002$) post-intervention, while control children's vegetable consumption remained unchanged from pre to post.

Conclusions: This study paves the way for a properly powered clustered RCT by demonstrating the promise of RF-EBPs in improving children's dietary outcomes in FCCHs.

Family Style Meal Service is Associated with Reduced Plate Waste in Nebraska Family Child Care Homes

Ms. Roopan Miriam George¹, Dr. Dipti Dev¹, Ms Amelia Miramonti¹, Dr. Saima Hasnin², Ms Carly Hillburn¹, Ms. Jasmin Smith¹, Dr. Susan Sisson³, Dr. Alison Tovar⁴

¹University of Nebraska-Lincoln, Lincoln, United States of America, ²University of Illinois Urbana-Champaign, Champaign, United States of America, ³University of Oklahoma Health Sciences Center, Oklahoma City, United States of America, ⁴Brown University, Providence, United States of America

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: F. Early care and education

Purpose: With family style meal service (FSMS) providers allow and encourage children to serve themselves. Research indicates that FSMS significantly influences children's eating behavior and is nationally endorsed to promote healthy eating habits among children aged 2-5 years. Given that eating behavior plays a crucial role in determining plate waste, this study aims to investigate the association between FSMS and plate waste in childcare homes in Nebraska.

Methods: In this cross-sectional study, the participants included 46 providers from family childcare homes (FCCH) enrolled in the Child and Adult Care Food Program in Nebraska, along with 146 3-5-year-old children who were attending these FCCH settings. One lunch meal was video-recorded and later coded using the Mealtime Observation in Child Care (MOCC) tool. FSMS is one of the MOCC constructs and consists of 18 items (of which 7 were excluded since recordings were used rather than live observations). Some examples of the items retained include whether the provider used developmentally appropriate food units and allowed children to serve themselves. Scores on the 11 items were averaged to obtain an FSMS score. Children's plate waste data over the observed lunchtime were collected using the Dietary Observation in Child Care (DOCC) method. We conducted a multivariate, multilevel regression in SAS (version 9.4) to assess the relationship between FSMS score and children's plate waste for whole grains, vegetables, fruits, dairy, and protein, while controlling for children's age, gender, body mass index, and ethnicity and accounting for FCCH setting-level effects (ICCs 11.3-31.2%).

Results: Median waste for vegetables was the highest (28.2%, IQR: 0-70.9%), followed by dairy (4.9%, IQR: 0-39.3%). Increase in FSMS score was associated with a decrease in vegetable waste (B= -5.3, p= 0.009), fruit waste (B= -3.7, p= 0.01), dairy waste (B= -3.8, p= 0.04), and protein waste (B= -4.3, p=0.003). Grain waste was not associated with FSMS (p>0.05).

Conclusions: A higher FSMS score was associated with a 3 to 5% reduction in plate waste for four food groups. Results from this study warrant further research studying the effect of interventions promoting FSMS in childcare on improving children's dietary intake and reducing plate waste.

Evaluating the sustainment of healthy eating policies in British Columbian Childcare Centres over time

Dr. E. Jean Buckler¹, Dr. Patti-Jean Naylor¹, Ms Sophie Marshall-Beaucoup², Dr. Olivia De-Jongh Gonzalez^{2,3}, Dr. Louise Masse^{2,3}

¹University of Victoria, Victoria, Canada, ²University of British Columbia, Vancouver, Canada,

³BC Children's Hospital Research Institute, Vancouver, Canada

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: F. Early care and education

Background: In 2017, the Government of British Columbia (BC) released the Appetite to Play (ATP) capacity building initiative which aimed, among others, to influence Healthy Eating (HE) in licensed childcare settings, amid limited mandatory HE regulations. Significant improvements in HE policies were noted in 2019 following the implementation of ATP.

Purpose: This study investigated whether the improvements observed in HE policies after the implementation of ATP were sustained post-pandemic.

Methods: Self-report healthy living policy and practice surveys were conducted among managers and staff of licensed childcare centers in BC caring for children aged 2-5 at three different time points: pre-ATP (2016-17, N=910), post-ATP (2018-19, N=549), and post-pandemic (2022-23, N=1048). Hierarchical mixed-effect models were used to assess post-pandemic changes in 11 HE policies.

Results: Post-pandemic, the most prevalent HE policies addressed managing fruit juice intake (88%), educating children about HE (78%) and type of milk served/type of foods and beverages brought from home (74%). Compared to baseline (pre-ATP), post-pandemic self-reported HE written policy implementation was higher for 10 of the 11 policies examined (i.e., educating children, staff training, encouragement of new foods, providing family-style meals, offering water/milk only, managing fruit juice intake, staff modeling eating behaviors, promoting fruit/vegetable inclusion, limiting foods brought for celebrations and regulating foods brought from home). Compared to post-ATP, post-pandemic HE written policies further improved for 4 of the 11 policies (i.e., staff training, providing family-style meals, managing fruit juice intake and limiting food brought for celebrations). Only the HE policy related to type of milk served did not change at all over time.

Conclusion: HE related policy implementation in BC childcare centers was improved after the release of ATP and sustained or further improved even in the face of the pandemic. These sustained policy enhancements are promising steps in creating healthier environments for children. Further examination of the influencing factors and comparison with other policy implementation will help to illuminate critical drivers of implementation and sustainability.

Associations of early life feeding factors with child's eating in the absence of hunger in early adolescence

Miss Catherine Savard¹, Amy Nichols^{2,3}, Sheryl L. Rifas-Shiman², Karen M. Switkowski², Emily Oken^{2,3}, Véronique Gingras^{1,4}, Marie-France Hivert^{2,5}

¹Department of Nutrition, University of Montreal, Montreal, Canada, ²Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, USA,

³Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, USA, ⁴Research Center of the Centre Hospitalier Universitaire Sainte-Justine, Montreal, Canada, ⁵Diabetes Unit, Massachusetts General Hospital, Boston, USA

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Eating in the absence of hunger (EAH) is a behavior that has been observed in children as young as 3 years old and has been associated with higher obesity risk in prospective studies. Parental feeding practices during infancy and early childhood may influence children's eating behaviors later in life; yet associations of early life feeding factors with EAH remain unclear.

Methods: We studied 1004 mother-child pairs from the US pre-birth cohort Project Viva to determine the extent to which parental feeding practices in early life were associated with EAH in early adolescence (mean age (SD): 13.2 (1.0) years old). The exposures were: 1) timing of complementary food introduction (dichotomized as <4 months vs. ≥4 months); 2) maternal use of pressure to eat and restrictive feeding practices at 3 years old (each dichotomized as yes vs. no); and 3) breastfeeding practices at 6 months, in 4 categories (Formula only (never breastfed); Weaned (from breastmilk to formula before 6 months); Mixed feeding (breastmilk + formula); and Breastmilk only (never introduced formula)). We used 2 questions from the Eating in the Absence of Hunger questionnaire for Children and Adolescents to derive the outcome EAH (range 2-10 points, a higher score indicates more EAH). We used multivariable linear regression models adjusted for child's age at outcome, child's sex, child's race/ethnicity, maternal age, maternal education, marital status, maternal parity, median household income, pre-pregnancy body mass index and infant birthweight for gestational age z-score.

Results: Mean (SD) EAH score was 4.4 (1.4) points and 50% were girls. Compared to those who received breastmilk only at 6 months, adolescents who received formula only or mixed feeding at 6 months had higher EAH scores (0.34 points; 95%CI [0.01–0.67] and 0.26 points; 95%CI [0.02–0.50], respectively). No associations were found for timing of complementary feeding, maternal use of pressure to eat and restrictive feeding practices.

Conclusions: These results suggest that breastfeeding practices may have a modest association with EAH in early adolescence.

Examining the Relationship between Home Food Availability, Variety of Food Consumed, and Dietary Intake in Children with Overweight or Obesity: Secondary Data Analysis of the Families Becoming Healthy Together Study

Ms. Emilie Holloway¹, Dr. Kristoffer Berlin², Dr. Scott Crouter³, Dr. Leonard Epstein⁴, Dr. J Graham Thomas⁵, Dr. Hollie Raynor^{1,6}

¹Department of Nutrition, University of Tennessee, Knoxville, Knoxville, USA, ²Department of Psychology, University of Memphis, Memphis, USA, ³Kinesiology, Recreation and Sports Studies, University of Tennessee, Knoxville, Knoxville, USA, ⁴Department of Pediatrics, Jacobs School of Medicine & Biomedical Sciences, University at Buffalo, Williamsville, USA, ⁵Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence, USA, ⁶College of Education, Health, and Human Sciences, University of Tennessee, Knoxville, Knoxville, USA

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Home food availability (HFA) and variety of foods consumed influences dietary intake. Few studies have assessed how variety of fruits and vegetables (FV) and high-energy-dense (HED) foods available in the home and variety of these foods consumed are related to FV and HED food intake in children.

Methods: This is a secondary data analysis on baseline data from the Families Becoming Healthy Together study, which implemented a childhood obesity intervention. Children (n=92) aged 8-12 years with overweight/obesity were included. Participants self-identified as 50.5% female, 74.2% White, with a mean body-mass-index percentile of 97.6+2.7. Number of different FV and HED foods available in the home was assessed using the Home Food Inventory (HFI). Variety of FV and HED foods consumed and intake of these foods was assessed using 3, 24-hour dietary recalls (24HR). Hierarchical multiple regression, controlling for demographic variables, examined if the total number of different FV or HED foods from the HFI or 24HR were related to daily servings and energy of FV or HED foods consumed.

Results: Home food availability was 20.9+6.8 different FV and 62.0+9.2 different HED foods. Over three days, children consumed 4.7+3.0 different FV and 15.0+4.3 different HED foods. Children consumed 2.5+1.5 servings/d and 148+120 kcal/d from FV, and 8.4+2.6 servings/d and 1,416+509 kcal/d from HED foods. Variety, or number of different FV consumed, was positively associated with servings ($R^2=0.49$, R^2 change=0.43, $p<0.001$) and energy ($R^2=0.12$, R^2 change=0.09, $p=0.005$) from FV. Similarly, the number of different HED consumed was positively associated with servings ($R^2=0.45$, R^2 change=0.43, $p<0.001$) and energy ($R^2=0.46$, R^2 change=0.43, $p<0.001$) of HED foods. No significant associations between HFA of different FV or HED foods and servings or energy consumed were found (all p values >0.05).

Conclusions: Results, similar to research conducted with adults, suggest that variety of FV and HED foods consumed influences dietary intake in children. Future research should explore interventions that address increasing variety of FV and reducing variety of HED to influence dietary intake among children.

Exploring Diet Qualities among Nebraska's Young Children: A Comparative Analysis by Race, Ethnicity, and Immigration Status

Ms. Naveta Bhatti¹, Dr. Dipti Dev¹, Dr. Saima Hasnin², Ms. Tirna Purkait¹, Dr. Natalie Koziol¹, Ms. Jean Ann Fischer¹, Ms. Natalie Sehi¹, Ms. Donnia Behrends¹, Dr. Lisa Franzen-Castle¹
¹University of Nebraska-Lincoln, Lincoln, USA, ²University of Illinois Urbana-Champaign, Urbana-Champaign, USA

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Racial and ethnic minorities face health disparities and need targeted programs to prevent diet-related chronic health conditions. Thus, the current study evaluates and compares 2–6-year-old children's diet quality from following households- first-generation immigrants, Hispanics, non-Hispanic Whites, non-Hispanic Blacks and non-Hispanic American Indians and Native Hawaiians.

Methods: Self-reported survey data from Nebraska households with at least one 2-6-year-old child (n=1277) was collected using Qualtrics. Participants were categorized into five distinct groups: first-generation immigrants (n=61), non-immigrant Hispanics (n=538), non-immigrant non-Hispanic Whites (n=509), non-immigrant non-Hispanic African American (n=120) and non-Hispanic American Indians and Native Hawaiians (n=49). Children's diet quality score was measured using the short Healthy Eating Index (sHEI). Assuming equal variances checked with Levene's test ($p = .1$), ANCOVA was conducted to compare children's total sHEI score and 13 sHEI sub-component scores among these four groups, while controlling for their household income, education, geographical location and federal program participation using IBM SPSS v.27.0. Benjamini-Hochberg correction was used for running multiple tests.

Results: Participating children's diet quality was sub-optimal with an overall score of 47.7 out of 100 (range from 0-100). Children from the immigrant group (44.3, SE= ± 1.3) have significantly lower mean sHEI score as compared to non-Hispanic White (47.3, SE= $\pm .55$), non-Hispanic African American (50.4, SE= $\pm .92$) and non-Hispanic American Indian (49.2, SE= ± 1.35) but not from Hispanic group (46.8, SE= $\pm .6$), $F(4,973) = 5.21$, $p < .001$. Children from the Immigrant group had higher added sugar consumption than non-Hispanic White ($p=0.017$) and non-Hispanic American Indian and Native Hawaiian ($p=0.012$) groups. Children from non-Immigrant Hispanic group had lower scores for total fruit compared to Immigrant ($p=0.001$), non-Hispanic African American ($p<0.001$), and non-Hispanic American Indian and Native Hawaiian ($p=0.018$) groups. They also had lower whole fruit and dairy scores than Immigrant ($p<0.001$ and $p=0.015$, respectively) and non-Hispanic African American ($p<0.001$) groups.

Conclusion: Immigrant and Hispanic children having the lower diet quality scores emphasize the need for culturally supportive multi-level nutrition interventions in households and educational settings. Future research is suggested to explore the association of child diet quality with culturally appropriate healthy food access in families with diverse backgrounds.

Diet Quality and Metabolic Risk Factors among Emerging Adults

Assistant Prof. Katelin Alfaro Hudak¹, Dr. Lilian Ademu^{1,2}, Dr. Julie Hess³, Dr. Jane Lankes Smith^{2,3}, Dr. Elizabeth Racine¹

¹Texas A&M AgriLife Research Center at El Paso, El Paso, USA, ²Texas A&M Institute for Advancing Health Through Agriculture, College Station, USA, ³US Department of Agriculture Agricultural Research Service, Grand Forks, USA

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: J. Young Adults

Purpose: Little is known about the prevalence of the metabolic syndrome (MetS) during emerging adulthood (18-23y). This is important because health status at this stage affects later life outcomes. Diet quality is a key contributor to metabolic risk factors, and the diet quality of emerging adults is less optimal when compared to other adults. The objective of this study is to explore the prevalence of metabolic risk factors and examine the association between diet quality and risk factors among emerging adults.

Methods: We use NHANES 2015-2018 data (N=502) to explore the prevalence of MetS in emerging adults aged 18-23y. We estimate the prevalence of five risk factors that comprise MetS: abdominal obesity, high blood pressure, elevated plasma glucose, high triglycerides, and low levels of HDL cholesterol. We operationalize MetS according to the National Cholesterol Education Program-Adult Treatment Panel III criteria. We use the Healthy Eating Index (HEI) 2020 to measure diet quality (range: 0-100, with higher numbers indicating better diet quality). We use unadjusted logistic regression to estimate the association between the HEI 2020 and metabolic risk factors.

Results: The mean age of our sample was 20.7y (standard error [SE]: 0.1). The majority were non-Hispanic White (55.1% [SE: 4.7]) and had a high school degree (37.8% [SE:3.8]) or some college (37.8% [SE: 3.5]). Among emerging adults, 33.8% (SE: 2.1) had abdominal obesity, 29.4% (SE: 2.7) had elevated fasting plasma glucose, and 26.9% (SE: 2.6) had low HDL cholesterol. Even in this young sample, 10.3% (SE: 2.2) met criteria for MetS. The mean HEI 2020 was 46.9 (SE: 0.9). A higher HEI 2020 was significantly associated with reduced odds of having elevated fasting plasma glucose ($p<0.05$) and marginally lower odds of having abdominal obesity ($p=0.052$).

Conclusions: Emerging adulthood is characterized by the formation of enduring health behavior patterns and presents heightened risks for excessive weight gain, diminished physical activity, and a decline in diet quality – all of which can contribute to increased risk for cardiometabolic disease. Our study findings indicate that MetS risk factors occur even at young ages, warranting increased public health attention in the emerging adult age group.

Cross-age mentoring to promote health and wellness in an afterschool program for adolescents: A formative mixed-methods evaluation

Dr. Katie Arlinghaus¹, Ms Kali Starin¹, Ms Marjorie Colindres², Ms Adrianna Bell³, Ms Lenora Goodman¹, Dr Nancy Sherwood¹, Dr Barbara McMorris³

¹University of Minnesota School of Public Health, Minneapolis, United States, ²University of Minnesota Medical School, Minneapolis, United States, ³University of Minnesota School of Nursing, Minneapolis, United States

SOLB5: Latest findings in behavioral nutrition and physical activity: From early care to young adults, Room 211, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: J. Young Adults

Purpose: Cross-age mentoring (i.e., mentoring from an older peer) is gaining popularity as a strategy to promote youth health. While outcomes typically focus on youth mentee health, cross-age mentoring programs may also benefit older peer mentors. We developed an adolescent afterschool program, “DiscoverU,” that uses cross-age mentoring to promote social-emotional learning, nutrition, and physical activity. This study aims to 1.) evaluate the feasibility of the DiscoverU mentoring component and 2.) explore initial quantitative and qualitative outcomes for mentors.

Methods: In the Fall of 2022, we recruited and trained mentors (N=14, primarily college students, 21.7±2.43 years, 57% female, 43% White). DiscoverU was implemented twice: September-December 2022 and January-March 2023. We recorded mentor attendance and measured self-reported quantitative outcomes in September, December, and March, which we analyzed using Friedman’s ANOVA. Outcomes included youth and mentoring skills, civic attitudes and actions, mindful eating, and days with an hour of moderate-vigorous physical activity. Following each program implementation, we conducted focus groups with mentors, mentees, and afterschool staff. We analyzed qualitative data using thematic analysis. Consistent with convergent parallel mixed methods study design, we analyzed qualitative and quantitative data separately and integrated findings through discussion.

Results: Mentoring was acceptable (e.g., 73-100% of mentors were satisfied/very satisfied). Mentors reported enjoying activities, developing relationships, and viewed mentoring as beneficial for professional development. A supportive supervisor, extensive training, and mentor enjoyment were factors related to the high retention across the two program implementations (79% retention; 93% average attendance). Mentors improved skills working with youth ($p < .001$) and mentoring ($p = .001$). We observed increases in awareness-based metrics over time, but no changes in behavioral measures (e.g., increase in civic attitudes ($p = .02$), but no change in civic actions ($p = .92$); increase in Awareness of Eating Triggers and Motives ($p = .03$), but no change Eating in Response to Awareness of Fullness ($p = .85$); and qualitative reports of increased motivation to be active, but no change in the number of days reported being physically active ($p = .13$).

Conclusions: DiscoverU’s mentoring component was feasible, highly acceptable, and raised mentor self-awareness of health behaviors. However, additional research is needed on program augmentations to incite health behavior change among mentors themselves

SHORT ORAL PRESENTATIONS

Dietary intake, physical activity and gestational weight gain (GWG) during pregnancy, and associations with maternal characteristics

Dr. Jenna Hollis^{1,2,3}, Dr Miaobing Zheng⁴, Ms Kristine Deroover³, Dr Olivia Wynne^{1,2}, Ms Eva Farragher^{1,2,3}, Dr Justine Daly^{1,2,3}, Mr Christophe Lecathelinais¹, Ms Michelle Foster⁵, Dr Craig Pennell³, Professor John Wiggers^{1,2,3}, Professor Karen Campbell⁴, Dr Melanie Kingsland^{1,2,3}
¹Hunter New England Population Health, Newcastle, Australia, ²Population Health Research Group, Hunter Medical Research Institute, Newcastle, Australia, ³School of Medicine and Public Health, College of Health, Medicine and Wellbeing, University of Newcastle, Newcastle, Australia, ⁴Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia, ⁵Hunter New England Local Health District Nursing and Midwifery Services, Newcastle, Australia

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: During pregnancy, consuming a healthy diet, participating in physical activity and GWG within guideline ranges are recommended to improve health outcomes for mothers and children. There is limited data on adherence to these recommendations and whether there are differences between groups of women. This study reports the proportion of pregnant women meeting dietary, physical activity and GWG recommendations, and associations with maternal characteristics.

Methods: We conducted telephone/online surveys with pregnant women receiving antenatal care from public maternity services in one health district in Australia (August 2020-August 2022). Women's self-reported dietary intake (food frequency questionnaire), physical activity (International Physical Activity Questionnaire) and GWG were examined using descriptive statistics, and associations with maternal characteristics analysed through multi-variable linear and logistic regression.

Results/findings: From 5062 surveys, 33% of women reported GWG within the guidelines, while 25% reported GWG below and 42% above the guidelines. Only 0.1% met all five food group recommendations (lowest=0.3% met breads/cereals recommendation; highest=63% met fruit recommendation). The mean dietary guideline index score was 62 (SD:10) out of 90. Thirty-four percent of women met the physical activity guidelines. Women with a pre-pregnancy BMI outside of recommended ranges had higher odds of not meeting their GWG recommendations. Women who were married/living with partner had higher diet quality and lower odds of GWG above recommendations, but lower odds of meeting physical activity recommendations. Women in full/part time employment had higher diet quality and higher odds of meeting physical activity recommendations. Women with tertiary education had higher diet quality and lower odds of meeting physical activity recommendations. Younger women had higher odds of meeting physical activity recommendations however higher odds of GWG below recommendations. Women with gestational diabetes had higher diet quality, but higher odds of GWG below the

guidelines. GWG below recommendations and physical activity below recommendations were associated with lower diet quality, however GWG and physical activity were not associated.

Conclusions: Most pregnant women did not meet dietary, physical activity or GWG recommendations. Interventions to improve these preventive health risks during pregnancy, and that address the wider determinants of health, are needed to optimise health outcomes and reduce health inequalities.

Summer meal program participation is not associated with child nutrition-related outcomes

Dr. Jiwoo Lee¹, Ziou Jiang¹, Dr. Weihua Guan¹, Dr. Lisa Harnack¹, Dr. Nancy Sherwood¹, Dr. Jayne Fulkerson¹

¹University of Minnesota, Minneapolis, USA

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Summer meal programs offered through schools and non-profit organizations provide children with free meals during the summer months to address increased summer food insecurity in the United States (US). We aimed to 1) compare demographic characteristics of summer meal program participants and non-participants, and 2) examine the association between summer meal participation and child nutrition-related outcomes, including food security, diet quality and body mass index (BMI) z-scores.

Methods: This secondary analysis used the 2017-2018 US National Health and Nutrition Examination Survey. We included data of children ages 5 to 18 without missing values on variables of interest, including children's summer meal participation (yes vs. no; question asked of those eligible for free or reduced-price school meals), food security at the household and child level (secure vs. insecure), the Healthy Eating Index-2015, and BMI z-scores (n=500). Demographic characteristics included child age, sex, race/ethnicity, and family income. For aim 1, chi-square (categorical) and t-tests (continuous) were used. For aim 2, logistic (food security), linear (BMI z-scores) regressions, and gamma regression with log link (HEI-2015) were conducted.

Results/findings: In this sample of children eligible for free or reduced-price school meals, 36% participated in a summer meal program. Child mean age was 11(SD 3.7) with 56% female, 64% non-White, and 62% from low-income households. No demographic differences by summer meal participation were found. Summer meal participation was not significantly associated with household food security (OR 0.97, 95% CI: 0.63-1.49), child food security (OR 1.26, 95% CI: 0.69-2.27), diet quality (percent change 0.99, 95% CI 0.94-1.05) and BMI z-scores (mean difference 0.28, 95% CI: -0.05-0.60).

Conclusions: Our findings do not support the positive impacts of summer meal programs on child nutrition-related outcomes. However, this cross-sectional study did not capture potential reverse causality (ie. those with severe food insecurity, poorer diet quality or overweight may be more likely to participate). The summer meal program impacts might also be diluted as the outcomes were assessed throughout the year, not immediately after the program. Longitudinal and experimental studies are warranted to better evaluate summer meal programs' impact on child nutrition-related outcomes.

Infancy Food Responsiveness is Associated with Exclusive Breastfeeding at One Month

Dr. Charles Wood¹, Valery Arevalo¹, Dr. Melissa Kay¹

¹Duke University, Durham, USA

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Infant appetite predicts weight gain, yet whether appetite affects infant feeding choices remains underexplored. We explored how measures of infant appetite were associated with early infancy feeding type and changes in feeding type across infancy.

Methods: We followed 80 term infants (55% female, parents 48% Hispanic, 32% Black, 33% Spanish speaking), from 1-2 months through 6 months. At enrollment, parents completed the Baby Eating Behavior Questionnaire (BEBQ), a widely used and validated scale measuring core appetite traits. At enrollment and 6 months, we collected feeding type: exclusive breastmilk; mixed – predominant breastmilk; mixed – predominant formula; and exclusive formula. We defined breastmilk decrease as moving from a more predominant breastmilk category to a less predominant category. We used Fisher's exact tests, t-tests, and ANOVA to explore bivariate associations and logistic regression to assess odds of feeding type and feeding changes by BEBQ domains.

Results: 91% of infants were followed for the entire study period and had a mean birth weight and gestational age of 3.39 kg and 39 weeks, respectively. A third (35%) were fed exclusively breastmilk at 1 month, 13% predominantly breastmilk, 11% predominantly formula, and 28% exclusively formula. Exclusive breastmilk, predominant breastmilk, and predominant formula reduced by 6%, 7%, and 8%, respectively, with most (56%) fed exclusively formula at 6 months. Mean BEBQ scores were similar to other populations: General Appetite 4.3; Food Responsiveness 2.6; Enjoyment of Food 4.7; Satiety Responsiveness 2.1; Slowness of Eating 2.6. Race, but not ethnicity or birth weight, was associated with feeding type. General Appetite scores were 0.43 higher for Hispanic infants. Higher Food Responsiveness score was associated with lower odds of exclusive breastmilk at baseline (OR 0.53, 95%CI: 0.29-0.95) and remained after adjusting for race and ethnicity. We did not find associations between Food Responsiveness at feeding type at 6 months or other BEBQ domains and feeding type at any time. Decreasing the predominance of breastmilk was not associated with significant differences in appetite.

Conclusion: Food responsiveness was associated with odds of breastmilk exclusivity and could be used for screening to identify potential need for breastfeeding support in early infancy.

School nutrition environment, household food security, child diet quality and dental caries among kindergarteners from low-income communities: Baseline data from CATCH Healthy Smiles cluster-RCT

Dr. Shreela Sharma¹, Dr Ru-Jye Chuang, Dr Jose Miguel Yamal, Dr Steven Kelder, Dr Kila Johnson, Dr Courtney Byrd-Williams

¹University Of Texas School of Public Health, Houston, USA

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Dental caries is a major public health issue in the United States among children. This paper describes the design and results of baseline analysis of a cluster-randomized controlled trial to determine the effectiveness of an oral health intervention in reducing incidence of dental caries among children in grades K-2. Inclusion criteria at the school level was if >75% of the children were enrolled in the free/reduced lunch program. Our overall project goal is to clinically evaluate the effects of a school-based behavioral intervention to reduce the risk of dental caries, and improve dietary habits in a cohort of kindergarten through 2nd grade (K-2) children. Coordinated Approach to Child Health (CATCH) is an evidence-based, theoretically-grounded coordinated school health program, and has undergone several cluster-randomized controlled trials (CRCT) demonstrating sustainable long-term effectiveness in improving eating and physical activity behaviors, and reductions in obesity prevalence among low-income, diverse children.

Methods and results: Our primary aim is to conduct a school-based CRCT to determine the efficacy of CATCH Healthy Smiles in reducing child incidence of dental caries at the tooth surface level in the primary teeth (dfs) as measured using International Caries Detection and Assessment System. A total of 1083 children were recruited in kindergarten and following through 2nd grade enrolled across 34 schools serving low-income, ethnically-diverse children in Houston, Texas, USA. Baseline data was collected among participating children across two school years in 2022-2023 and 2023-2024 to measure prevalence of dental caries in the primary teeth at the tooth level (dft), and permanent teeth at the tooth and tooth surface level (DFT and DFS respectively). Parent surveys were used to collect data on child oral health behaviors, dietary intake, household food security, and teachers completed surveys on school nutrition environment. We will present the results of the baseline data, data collection for which was completed in December 2023.

Conclusion: These data will provide important insights on dental caries prevalence, dietary behaviors, household food insecurity and school nutrition environment among young children from low-income communities.

Healthy Family Practices are Protective of the Impact of Weight on Functioning Among Children with Obesity

Dr. Alyssa Button¹, Dr. Robert Newton¹, Dr. Amanda Staiano¹, Dr. Robbie Beyl¹, Dr. Shaelise Tor², Dr. Richard Stein³, Dr. Stephen Cook², Dr. Denise Wilfley³

¹Pennington Biomedical Research Center, Baton Rouge, USA, ²University of Rochester Medical Center, Rochester, USA, ³Washington University in St. Louis, St. Louis, USA

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Children with obesity experience poorer weight-related quality of life (WRQoL), a subjective measure of their perspective of the impact of health on social, physical, and mental well-being. Family practices (physical activity and diet) and the home environment (chaos) have been associated with child weight. However, the interplay among family nutrition and physical activity practices, household chaos, and child WRQoL is poorly understood. The purpose of this sub-study within the TEAM UP pragmatic clinical trial was to examine the associations and interactions of these variables among intensive health behavior and lifestyle treatment-seeking youth with obesity ages 6 to 15 years.

Methods: This observational study tested the effects of family health practices as reported by parents using the Family Nutrition and Physical Activity Questionnaire and household environment using the Confusion, Hubbub, and Order Scale on WRQoL measured by the Sizing Them Up questionnaire of n=739 youth. The bivariate relationships were evaluated using linear regression models. Two-way interactions assessed whether family health practices moderated the relationship between household chaos and child WRQoL.

Results/findings: The mean WRQoL score was 59.0 ± 13.6 (range: 21 to 80). Household chaos ($M=13.0 \pm 3.7$) negatively predicted overall WRQoL, $p < .0001$. Overall positive family nutrition and physical activity practices ($M=50.8 \pm 6.2$) positively predicted overall WRQoL, $p=0.023$. Household chaos was a moderator of family nutrition and physical activity practices and WRQoL such that children with households high in chaos in conjunction with low scores in positive nutrition and physical activity practices experienced poorer WRQoL on the physical scale, $p=0.013$. No other interactions were observed.

Conclusions: Greater household chaos predicted poorer WRQoL, while positive family nutrition and physical activity practices, like eating meals at home with family, refraining from drinking sweetened beverages, and refraining from excessive screen time, were predictive of improved overall WRQoL. Regarding weight-related physical quality of life, youth with high levels of household chaos and poorer family nutrition and physical activity habits were at greatest risk. Understanding factors that contribute to household chaos to support families in reducing chaos and improving family health practices are important modifiable targets for improving subjective well-being in youth with obesity.

Time Trends of Step-Determined Physical Activity Among Adolescents with Different Activity Levels in Czech Republic

Prof. Josef Mitáš¹, Prof. Karel Frömel¹, Prof. Catrine Tudor-Locke
¹Palacký University Olomouc, Olomouc, Czech Republic

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: J. Young Adults

Purpose: This study presents step-determined physical activity trends in Czech adolescents with different activity levels over a period of ten years.

Methods: This was a ten-year cross-sectional randomized study of PA data collected by wearable devices in Czech adolescents recruited from secondary schools between 2009 and 2018. Pedometers Yamax Digiwalker SW-700 were used to monitor weekly PA in 1,855 boys and 2,648 girls 15–19 years of age recruited from 155 schools in the Czech Republic. Trends for average steps/day and percent of accumulating various levels of steps/day (< 10,000, 10,000 – 13,000, > 13,000 steps/day) were analyzed by sex. Valid daily data were limited to 1,000 – 30,000 steps/day. Participants were classified as low-active (< 10,000 steps/day), moderately active (10,000 – 13,000 steps/day), and high active (> 13,000 steps/day).

Results/findings: There was a statistically significant decrease in average steps/day between 2009–2010 and 2017–2018 in boys from $12,355 \pm 3,936$ steps/day to $10,054 \pm 3,730$ steps/day and girls from $11,501 \pm 3,278$ steps/day to $10,216 \pm 3,288$ steps/day. The percent accumulating <10,000 steps/day increased by 21% in boys and by 12% in girls. The percent achieving > 13,000 steps/day decreased by 17% in boys and by 10% in girls. The most active weekday was Friday, and the least active day overall was Sunday.

Conclusions: This study confirms a temporal decrease in average steps/day of adolescent Czech boys and girls over the ten-year monitoring period. Objectively collected evidence indicates an overall decrease in Czech adolescents' steps/day over a ten-year period concurrent with an increase in the percent of boys and girls accumulating <10,000 steps/day. The results point to small differences in the structure of weekly steps/day of adolescents with different overall activity level. These trends are concerning as they portend a decline in physical activity as adolescents transition to adulthood and continue to age, which also may have major health implications.

Concurrent validity of the Adaptive Eating Scale

Dr. Tracey Ledoux¹, Dr. Margit Wiesner¹, Dr. Craig Johnston¹, Dr. Randi Betts¹, Dr. Cynthia Yoon¹

¹University Of Houston, Houston, USA

SO.3.1: Identifying novel determinants of nutrition, physical activity, and sleep across the life course, Ballroom B, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: J. Young Adults

Purpose: The Adaptive Eating Scale (AES) assesses a multidimensional construct representing gentle nutrition (GN), infrequent food cravings (IFC), enjoyment of food (EF), and hunger responsiveness (HR). This study tested concurrent validity of the AES with measures of health, diet, and eating behaviors.

Methods: This is a secondary analysis of data from a cross-sectional study of eating behaviors among college students who received course credit to complete validated web-based and physical measures. Body mass index (BMI) was calculated from researcher measured height and weight. Mental health was assessed with the Center for Epidemiological Studies on Depression scale (CESD) and the Rosenberg Self-Esteem Scale (RSES). Diet quality was assessed with Start the Conversation (STC), a brief food frequency screener. Dietary intake of carotenoid rich food (i.e., fruit and vegetables) was assessed with reflection spectroscopy of skin tissue (Veggie Meter®, Longevity Link Corp, Salt Lake City, UT). Eating behaviors were assessed with the Emotional Eating Subscale (EES) of the Motivation to Eat measure and the Reliance on Hunger and Satiety (RHS) subscale of the Intuitive Eating Scale 2. AES total and subscale scores were correlated (Pearsons) with BMI, CESD, RSES, STC, Veggie Meter scores, EES, and RHS.

Results: Participants included 849 students (M age=21 years, SD=2.6; 55% females, 33% Hispanic, 15% African American, 36% Asian). AES total was significantly (p 's < .05) associated with BMI ($r = -.08$), mental health [CESD ($r = -.41$), RSES ($r = .35$)], diet quality [carotenoid intake ($r = -.07$)] and eating behaviors [RHS ($r = .33$), and EES ($r = -.42$)]. All subscales were significantly (p 's < .05) positively (r 's ranged from .10 to .35) associated with RSES and RHS and negatively (r 's ranged from -.12 to -.42) associated with CESD and EES. Associations between subscales and BMI and diet were mixed.

Conclusion: The AES total demonstrated concurrent validity with valid measures of physical and mental health, diet quality, and eating behaviors. Validity of subscales was mixed. The AES may be used to study adaptive eating. However, more research is needed on the validity of the AES in different samples and populations.

Evaluation of the Chef Ann Foundation's Tompkins County School Food Reboot Program: Phase 1

Ms. Grace Stott¹, Ms. Leah Carpenter¹, Mr. Byron Batchelor², Ms. Lori Nelson²

¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Chef Ann Foundation, Boulder, USA

SO.3.2: Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management, Room 212, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: F. Early care and education

Purpose: Since children consume one-half to one-third of their daily calories at school, it is crucial for school food service departments participating in the United States National School Lunch Program to offer meals that contribute to a high diet quality. One way to do this is through the practice of scratch cooking: cooking their own meals while incorporating fresh ingredients. The Tompkins County, New York school districts have a unique opportunity to transition to scratch cooking through their participation in a county-level learning collaborative model, called the Tompkins County School Food Reboot Program (TCSFRP), an intervention led by the Chef Ann Foundation (CAF) and evaluated by the Gretchen Swanson Center for Nutrition (GSCN), through funding by the Park Foundation.

Methods: School districts in Tompkins County, NY (n=6) with a total enrollment of 9,000 students, engaged with CAF to increase their scratch cooking. GSCN led the evaluation of the TCSFRP, which included: 1) a key document review, 2) semi-structured interviews with Food Service Directors (Directors) and other key staff to inquire about progress completing program recommendations, overall impact, and 3) a descriptive analysis of recommendation progress to produce an implementation score. Data collection occurred at early implementation (6 months into the intervention).

Results: At early implementation, 22 recommendations have been completed (12%), 106 are in progress (57%), and 57 are incomplete (31%). This progress is in alignment with expectations, due to the amount of time and effort needed to transition a meal program. The Directors shared major facilitators and challenges to implementing the recommendations in each category and attributed their success thus far to CAF's technical assistance and robust resources.

Conclusions: Results indicate, though early, that the county-level collaborative model is an effective strategy in conducting trainings, providing technical assistance (TA), and building relationships. Additionally, the TA content provided by CAF was key in addressing upstream factors and infrastructure necessary to strengthen a scratch cooking model. The findings from this evaluation have also helped inform CAF's programming and TA model. The lessons learned from this initial phase can be applied to school food authorities in other regions throughout the United States.

Leveraging Social Connectedness to Improve Outcomes for Adolescent Girls in Summer Care Programs

Dr. Tyler Prochnow¹, Deja Jackson¹, Laurel Curran¹, Jeong-Hui Park¹, Emily Howell¹, Sara Flores, Meg Patterson¹, Stewart Trost²

¹Texas A&M University, Bryan, United States, ²University of Queensland, Brisbane, Australia

SO.3.2: Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management, Room 212, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Summer is a critical time for youth physical activity (PA) as structured opportunities may decline. Additionally, many studies report that girls are often less physically active than boys. Previous research shows that adolescent self-reported PA levels and friendships at summer care programs are related. This study examines one program that aimed to leverage social connectedness to promote PA and mental health among girls at a summer care program.

Methods: Youth (n=47) ages 10-14 years old attending a summer care program (i.e., Boys & Girls Club) completed researcher-administered surveys and wore accelerometers (ActiGraph GT9X) in May 2023 and August 2023 – the start and end of the summer programming. Surveys recorded mental health (i.e., Kessler-10; K10) and the names of peers they spent time with at the program. Moderate-to-vigorous PA (MVPA) was derived using a machine-learned random forest classifier specifically designed and validated for assessing PA in school-aged youth. A subsample of girls (n=11) participated in an eight-session program designed to improve PA and social-emotional learning. Preliminary associations between PA, mental health, and social networks have been determined. Continued modeling procedures are being conducted to determine significant changes in MVPA and mental health for girls participating in the program and potential social ripple effects based on social network analysis.

Results: MVPA was significantly higher at the end of summer (M=62.7, SD=26.6) compared to the start of summer (M=53.7, SD=17.0; $F(1,46)=4.92, p=.03, \text{partial } \eta^2=.06$). Adolescents were significantly more likely to receive new friendship nominations over time if they reported greater K10 scores (higher scores indicate greater psychological distress); however, greater K10 scores reduced odds of sending new nominations. Adolescents with higher MVPA were significantly more likely to send new friendship nominations. Additional analysis will be conducted on program participation and their social connections.

Conclusions: While more analysis is still needed, the findings thus far underscore the importance of leveraging both PA promotion and peer relationships in summer care programming for adolescent girls. The planned additional analyses on the small group intervention will further elucidate the role that targeted programming, grounded in social-emotional learning, and building social connections can potentially play in improving outcomes.

Development of a video-based cooking intervention and its preliminary impact on low-income participants' self-efficacy in basic cooking skills.

Dr. Ru-ye Chuang¹, Ms. Diana Guevara¹, Mr. Martin Bombase¹, Ms. Monica Sanchez², Mr. Miao (Matt) Tang¹, Ms. Mallika Mathur¹, Ms. Megan Hall³, Mr. Mike Pomeroy³, Dr. Shreela Sharma¹

¹UTHealth Houston, Houston, USA, ²Suvida Healthcare, ³Brighter Bites

SO.3.2: Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management, Room 212, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Cooking demonstrations are a widely used strategy among community-based programs for building culinary skills and promoting home-cooked meals. Cooking videos have gained popularity as a nutrition education method addressing commonly reported barriers of time and transportation and increasing accessibility. However, evidence assessing the impact of cooking videos on self-efficacy to prepare healthy meals among low-income families is lacking. This study aims to describe the development of a cooking video series, and its impact on improving families' self-efficacy in cooking skills and the families' cooking-related activities.

Methods: Brighter Bites (BB) is a non-profit co-op nutrition education program distributing donated produce to schools serving low-income families. Rooted in Social Cognitive Theory, twenty cooking videos featuring ten BB recipes were developed and distributed to BB participants via text message. Using a natural experimental design, we gathered preliminary data self-reported by participants. Descriptive analysis and Fisher's Exact test were used to assess respondents' characteristics and association between utilization of cooking videos and self-efficacy on basic cooking skills and at-home-meal preparation behaviors.

Results: Out of 715 survey respondents, 84% are Hispanic, and 9% are Black; 54 % are stay-at-home parents; 85.2% reported household food insecurity. Out of the 10 recipes, 81% participants reportedly watched 1-5 videos, and 19% watched 6-10 videos. Fisher's Exact Test showed significant positive associations between number of videos watched and number of times participants: tried making the recipes at home, tried making recipes with children, and visiting the BB website to access recipes. On average, participants reportedly increased in self-efficacy in cooking skills pre-to-post, where the greatest increase was seen in preparing root vegetables (mean=.3 level increase), and the least increase seen in knife skills (mean=.14 level increase). When asked about the reasons for not trying the recipes, the most common responses reported were lack of access to the space/ingredients/equipment followed by lack of time.

Conclusion: The results from this study showed a change in the desired direction in cooking related self-efficacy, indicating video as a delivery method helped engage low-income families in nutrition education. Future research should continue to explore facilitators and barriers to video utilization for cooking self-efficacy.

Parent perspectives on play and their experiences of using take-home loose parts play kits.

Prof. Gavin McCormack¹, Calli Naish¹, Meghan Ingstrup¹, Prof. Patricia Doyle-Baker¹
¹University Of Calgary, Calgary, Canada

SO.3.2: Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management, Room 212, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: Unstructured play – child-led spontaneous play that has no or few rules and limited adult involvement – can contribute to the accumulation of physical activity, improve social and emotional wellbeing, improve academic performance, and provide opportunities for social interactions and risk-taking. Loose parts play, an approach to encouraging unstructured play, involves providing children with a collection of non-traditional natural or human-made play materials with which children for themselves decide what to use and how to use them. Loose parts play interventions have been successfully implemented in parks and playgrounds, schools, and childcare settings, but their implementation in home environments has yet to be investigated. We undertook a study to explore parent perspectives on unstructured play and use of take-home loose parts play kits. Take-home play kits were offered to the public during the COVID-19 pandemic by Vivo for Healthier Generations (“Vivo”), a local recreational facility situated in north central Calgary (Alberta, Canada). From May 2021 to March 2022, 201 take-home play kits were signed out, with 37 different households borrowing a play kit on at least one occasion.

Methods: A convenience sample of caregivers (9 parents and 1 grandparent) who had borrowed a take home play kit participated in semi-structured interviews via telephone or videoconferencing. The interviews captured parents’ experiences of the take-home play kits, their perspectives on unstructured play, and their perceived impacts of the pandemic on their children’s play. Using Thematic Analysis, we identified emerging themes and subthemes from the interviews.

Results/findings: Three themes emerged: (1) A forced renaissance of play; (2) Bringing unstructured play home, and; (3) Parenting is child’s play. Parents described the importance of encouraging unstructured play. They shared how the pandemic negatively affected children’s play and physical activity and opportunities for social interaction with peers. Parents perceived the play kits as a useful resource for encouraging their children to participate in unstructured indoor and outdoor play within the home environment.

Conclusions: Given the growing environmental and societal constraints that can inhibit children’s play, loose parts interventions implemented in the home environment have the potential to promote unstructured play in children.

Moderation of Obesity-Related Hypertension Risk in Youth by Healthy Home Environments: Evaluation of the Family Nutrition and Physical Activity (FNPA) screening tool

Dr. Lisa Bailey Davis¹, Mr. Chengpeng Zeng², Dr. Carolyn McCabe¹, Dr. Karissa Peter³, Mr. Benjamin Potts¹, Dr. Gregory J. Welk²

¹Geisinger Health System, Danville, USA, ²Iowa State University, Ames, USA, ³University of Tennessee at Chattanooga, Chattanooga, USA

SO.3.2: Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management, Room 212, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: G. Children and families

Purpose: The Family Nutrition and Physical Activity (FNPA) screening tool has been widely used as a clinical assessment to identify youth at risk for unhealthy weight gain. The FNPA assesses home environmental factors and the FNPA summary score is inversely associated with obesity risk. The purpose of this study is to evaluate the potential moderating influence of FNPA in reducing incidence of hypertension associated with weight gain in youth.

Methods: Data were obtained from annual well-child visits collected within the Geisinger Health System (Pennsylvania, USA). The sample was restricted to participants ages 3 to 9 with no record of hypertension, at least one FNPA completion, two independent assessments of BMI, and at least one blood pressure measure after the age of 9 years. Participants were classified into subgroups in a 3 by 3 manner using the 25th and 75th percentiles of the total FNPA scores and the continuous BMI85 score (a relative indicator of BMI change that reflects the relative movement to or from the age- and sex-specific 85th percentile; CDC growth charts). Cox proportional hazards models were used to estimate the hazard ratios of hypertension development with the reference groups denoted as the moderate FNPA score group and the BMI85 stable group.

Results: The final sample comprised 3808 participants. The BMI85 gain group exhibited a higher rate (41.7%) of hypertension development compared to the BMI85 stable group (29.9%) and the BMI85 loss group (27.7%). After accounting for confounders (sex, race, ethnicity, and income), the BMI85 gain group was associated with 2.01 times higher hypertension risk compared to the BMI85 stable group. Participants with high FNPA score displayed the lowest rate (29.3%) of hypertension development, compared to those with moderate FNPA score (32.1%) and low FNPA score (35.2%). Among the BMI85 gain group, the hazard ratios of low, moderate, and high FNPA score groups were estimated at 1.99, 2.01, 1.54, respectively.

Conclusion: Promoting healthy home environments may reduce hypertension risk among youth experiencing weight gain. A healthy home environment, as assessed by the FNPA, effectively moderated the elevated risk of hypertension resulting from BMI85 gain by approximately 25%.

Diet and physical activity preferences for young adult cancer survivors

Dr. Sylvia Crowder¹, Ms. Nathaly Irizarry-Arroyo¹, Ms. Yvelise Rodriguez¹, Dr Brian Gonzalez¹, Dr. Brent Small², Dr. Andrew Galligan², Dr. Heather Jim¹, Dr. Marilyn Stern²
¹Moffitt Cancer Center, Tampa, USA, ²University of South Florida, Tampa, USA

SO.3.2: Health, Nutrition, and Lifestyle: Multidimensional Approaches to Prevention and Management, Room 212, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: J. Young Adults

Purpose: Preference for diet and physical activity interventions vary by cancer type and age. To date, only two published young adult cancer survivor studies incorporated a multimodal diet and physical activity health behavior approach. Each study followed different dietary guidelines and were conducted in young adult breast cancer survivors, who may have different needs because of treatment and gender differences. Efficacious multiple health behavior interventions to improve diet and physical activity in diverse groups of young adult cancer survivors are needed. The goal of this study was to collect quantitative data to inform the basis of a diet and physical activity intervention for young adult cancer survivors of diverse cancer types.

Methods: Young adult cancer survivors between 20 to 30 years of age participated in a cross-sectional study to determine preferences for diet and physical activity interventions. Descriptive statistics (means and frequencies) were generated for multiple choice question responses. Responses to open-ended questions were recorded and grouped based on themes, and verified by quality assurance checks by a second study team member.

Results: Study participants N=81 had a mean age of 26 years, 68% were female, 31% were from a racial/ethnic minority, and common cancer types included thyroid, brain, breast, sarcoma, and leukemia. All were at least one-year post-treatment completion (range 1-8 years). For dietary counseling, most participants reported a preference for remote based (e.g., ZOOM), one-on-one, counseling from a registered dietitian beginning before treatment with enthusiasm for free dietary coaching and cooking classes, such as eating healthy on a budget. For physical activity, most participants reported a preference for one-on-one, face-to-face sessions beginning before treatment, ideally within 1-15 miles from their home that were free. Participants reported interest for a variety of physical activities including running, swimming/water fitness, dancing, weightlifting, and yoga.

Conclusions: Future diet and physical activity intervention planning for young adult cancer survivors should focus on strategies to promote in-person fitness training with telehealth dietary counseling beginning before treatment. Sessions should incorporate topics important for this age group such as eating healthy on a budget and utilizing, free, local parks for physical activity sessions such as yoga.

Community-based interventions to increase physical activity in adults in Spanish-speaking Latin America: a systematic review

Ms. Alyssa Comfort¹, Dr. Karla I. Galavíz², Julia Lapeña¹, Laura Guzmán Caballero¹, Dr. Rebecca E. Lee³, Dr. Juan Ricardo López y Taylor⁴, Dr. Edtna Jáuregui Ulloa⁴, Dr. Lucie Lévesque¹

¹School Of Kinesiology and Health Studies, Queen's University, Kingston, Canada, ²Department of Applied Health Science, Indiana University School of Public Health-Bloomington, Bloomington, USA, ³Edson College of Nursing & Health Innovation, Arizona State University, Phoenix, USA, ⁴Instituto de Ciencias Aplicadas a la Actividad Física y al Deporte, Universidad de Guadalajara, Guadalajara, México

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: To synthesize the effectiveness of physical activity (PA) interventions for adults in Spanish-speaking Latin America.

Methods: This systematic review was registered in PROSPERO (CRD42021268804). A search was conducted in SPORTDiscus, MEDLINE, Web of Science, Google Scholar, Biblioteca Virtual de Salud, and Redalyc (up to August 2022). Studies included community-based PA interventions in Spanish-speaking Latin America measuring any PA outcome among adults (18+). Cross-sectional and in-patient studies were excluded. Study quality was assessed with the Effective Public Health Practice Project tool. Data were included from moderate to high-quality studies. Vote counting and binomial probability tests synthesized effectiveness outcomes by intervention strategy. Chi-square and Fisher's exact tests were used to compare direction of effect based on prior testing and adaptation of intervention, use of theoretical framework, duration, subjective vs. objective measures, and study quality (weak vs. moderate/high).

Results: Of the 30 studies retained (n=16,617 participants), 12 (40%) of moderate and two (6.7%) of high quality were included in the main analysis of 33 PA outcomes. Improvements were seen in 2/3 of PA outcomes (66%, p=1) after individually-adapted behaviour change programs (n=789); 9/11 outcomes (82%, p=0.065) after group health education (n=835); 1/5 outcomes (20%, p=0.375) after health education plus additional strategies (n=280); and 6/6 outcomes (100%, p=0.031) after environmental and policy approaches (n=8409). PA improvements were seen in only 20% of outcomes from studies that mentioned the use of a theoretical framework compared to 78% of outcomes from studies that did not (p=0.005), and in only 20% of outcomes from studies that mentioned prior testing compared to 78% of outcomes from studies that did not (p=0.005). No differences were found in the direction of effect of outcomes in relation to adaptation, duration, self-report vs. objective measures, or study quality (weak vs. moderate/high).

Conclusions: Although our analyses did not take into account magnitude of effect, this systematic review highlights general patterns of intervention effectiveness that warrant further exploration, such as the finding that studies that did not report using a theoretical framework seemed to be more effective. Future research should explore whether widely used frameworks are applicable in a Latin American setting.

Examining Relationships among Obese Adult's 24-Hour Movement Behaviors, Blood Pressure, and Metabolic Outcomes

Prof. Zan Gao¹, Mr. John Oginni¹, Suryeon Ryu², Lisa S. Chow²

¹The University of Tennessee, Knoxville, Knoxville, USA, ²University of Minnesota - Twin Cities, Minneapolis, USA

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: The relationship between the daily movements of obese adults, their blood pressure, and metabolic health has not yet been thoroughly studied. This research focuses on understanding how physical activity (PA), sedentary behavior (SB), and sleep (S) are associated with cardiovascular and metabolic health in obese adults in the U.S.

Methods: A total of 78 obese adults (BMI ≥ 30 kg/m²) who were otherwise healthy wore an ActiGraph GT9X monitor for an average of at least 20 hours a day for 2 weeks. We quantified the raw actigraphy data into light PA, moderate-to-vigorous PA (MVPA), SB and Sleep duration using GGIR. Body composition (percentage of body fat [PBF], percentage of visceral fat [PVF]) were assessed via DEXA. BMI (kg/m²) and metabolic outcomes (glucose, HDL, LDL, and triglycerides) were also measured. We used a compositional analysis (CODA) approach to understand how these factors are interrelated.

Results: Linear regression models utilizing CODA indicated significant associations between the outcomes and the relative time spent in the four movement behaviors, $F(3,74) = 3.127$, $p = 0.03$. The models accounted for a substantial proportion of the variance ($R^2 = 0.113$). In brief, MVPA showed a strong relationship with lower systolic blood pressure ($p=0.01$), LDL, and PVF ($p=0.01$). Light PA was associated with higher PBF ($t=1.97$, $p = 0.05$). More sedentary behavior was associated with higher systolic and diastolic blood pressures ($p < 0.01$). Lastly, longer sleep duration was associated with lower systolic and diastolic blood pressures ($p < 0.01$), and lower PBF and PVF ($p < 0.01$). No other significant relationships were identified.

Conclusions: In US adults with obesity, engaging in MVPA is especially beneficial for improving blood pressure and reducing LDL and visceral fat. Light PA also helps in reducing body fat. However, spending too much time sitting can have adverse effects on blood pressure. Moreover, getting enough sleep is good for maintaining healthy blood pressure and body composition. Future health programs for obese adults might focus on encouraging more MVPA, reducing sedentary behavior, and promoting proper sleep duration.

The BRIGHT (Building Resources by Investing in Growth and Health for Tomorrow) Study: A Pilot and Feasibility Study Evaluating a Resource Planning Intervention

Dr. Christina Kasprzak¹, **Dr. Lucia Leone**, Dr. Leonard Epstein, Dr. Jennifer Temple
¹University At Buffalo, Buffalo, USA

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: As of 2022, 12.8% (17 million) of US households were food insecure, putting these households at an increased risk for numerous chronic diseases. Interventions aimed at improving financial planning skills have been found to positively influence delay discounting, defined as the tendency to place less value on rewards that are delayed in time, among vulnerable populations. In addition, lower-income individuals with good financial planning skills have been found to have lower levels of food insecurity. The aim of this research is to determine the feasibility and acceptability of a financial planning intervention to reduce food insecurity, delay discounting, and increase financial literacy among lower-income and food insecure households.

Methods: We conducted a pilot randomized controlled trial including financial planning lessons, one-on-one counseling, and weekly vignettes designed to prompt episodic future thinking. The control arm included nutrition education modeled after the Supplemental Nutrition Assistance Program Education Program. Eligible participants were lower-income, had at least one child in the home, and had marginal or low food security status. Our primary outcomes were food security and delay discounting. Focus groups assessed acceptability of the intervention and study activities.

Results/findings: We recruited two cohorts of adults with a total of 13 participants in the intervention arm and 9 in the control arm. Preliminary analyses indicate a trend of reduced food insecurity in the intervention group (1.4-point change in raw food security score) over time while the control group remained the same. We also found a trend toward a difference in delay discounting with the intervention group having lower delay discounting (Control group mean score = 5.68; Intervention group mean score = .24). Focus groups revealed positive perceptions of the intervention and control arm sessions; however, study activities (e.g., daily prompts) were viewed as tedious.

Conclusions: Our findings on feasibility, acceptability, and preliminary outcomes are encouraging. This pilot study was focused on the design phase and allows us to further refine the intervention and improve study protocols. Future work will involve further refinement of the intervention with input from community members and stakeholders and subsequent evaluation of the revised intervention through an efficacy study.

Who's 'at risk' for adopting gender-based patterns in eating and is it a problem? A phenomenological exploration of adolescents' dietary behaviours in the context of their gender and sport identities.

Miss Alysha Deslippe^{1,2}, Miss Coralie Bergeron^{2,3}, Miss Olivia Wu^{1,2}, Dr Tamara Cohen^{2,4}

¹Human Nutrition, Land and Food Systems, University of British Columbia, Vancouver, Canada,

²Healthy Starts, British Columbia Children's Hospital Research Institute, Vancouver, Canada,

³Women and Children's Health Sciences, Faculty of Medicine, University of British Columbia, Vancouver, Canada, ⁴Food, Nutrition and Health, Faculty of Land and Food Systems, University of British Columbia, Vancouver, Canada

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Gender norms can impact dietary habits in harmful ways (e.g., eating for body shape instead of health). These pressures may be elevated among adolescents (13–18 years), as they are forming their identities and often lean on social acceptance. Gender pressures have been shown to be greater for adolescent athletes who participate in club or high performance teams due to performance pressure over body shape and eating. However, these relationships fail to capture the experiences of athletes in high school sport spaces or those with more diverse gender identities. To fill this gap, this study explores how adolescents attending high school navigate their dietary habits in the context of their personal identities (i.e., gender and sport) and understanding of gender norms.

Methods: Thirty-three semi-structured interviews were conducted with adolescents (13-18 years; 55% athletes). Adolescents were recruited for an even split based on biological sex and self-identified their gender (i.e., boy, girl, non-binary, trans or other). Adolescents indicated how masculine or feminine they felt using a scale of one to 10 to provide deeper insights into how traditional norms were perceived to fit personal identities. Using a phenomenological approach, trends in adolescents' reflections navigating their dietary habits were analyzed thematically based on gender and sport involvement.

Results: Six different themes emerged. The first two themes encompassed adolescents' understanding of gender norms (i.e., behaviours, personality and appearance attributes) and experiences navigating them (i.e., tension and structure). Recognition of gender norms and dietary behaviours were overtly identified with being feminine but not masculine. The remaining themes outline adolescents' experiences embodying or rejecting gender norms in eating as they attempted to appease socially acceptable standards over their body shapes (i.e., ideal body, quantity and quality matters, multi-factorial nature, and combating pressures). Eating for body shape occurred despite recognition of gender norms and was higher among athletes.

Conclusion: Our work suggests that dietary interventions targeting adolescents in schools should be tailored for gender and sport involvement. More inclusive designs could better support all adolescents in adopting health protective dietary habits and may be particularly important among athletes in school settings.

Country comparison of how mental well-being and sex impacts practice of health behaviours during the COVID-19 pandemic among adults.

Miss Alysha Deslippe^{1,2}, iCARE Study Team, Dr Tamara Cohen^{2,4}

¹Human Nutrition, Land and Food Systems, University Of British Columbia, Vancouver, Canada,

²Healthy Starts, British Columbia Children's Hospital Research Institute, Vancouver, Canada,

³Montreal Behavioural Medicine Centre, Montreal, Canada, ⁴Food, Nutrition and Health, Faculty of Land and Food Systems, University of British Columbia, Vancouver, Canada

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: COVID-19 negatively impacted mental well-being and health behaviours globally. Research suggests intersections between mental-wellbeing and health behaviours differs by sex, but this is under explored. To address this, we explored how changes in males' and females' mental well-being (i.e., anxiety, depression or worry) attributed to COVID-19 impacted unfavorable changes in health behaviours (i.e., decreased physical activity, healthy eating and increased alcohol intake).

Methods: Using self-reported, representative data from Canada, Columbia and Ireland the associations between mental well-being and health behaviours were explored by logistic regression. Participants were recruited through web-based panels. All models controlled for age and clinical diagnosis of anxiety or depression. Models were stratified by sex and country.

Results: Sex and country trends arose. Depression was associated ($p < .05$) with alcohol intake in all three countries among males and females (OR's 1.4 to 1.7). It was also associated with physical activity in Canadian and Irish males (OR 1.2 and 1.5, respectively) and Canadian females (OR 1.1). Depression was further associated with males' and females' healthy eating in Canada and Ireland (OR's 1.4 to 1.7). Anxiety was associated with all three health behaviours among Canadian males (OR's 1.2). It was also associated with Canadian females' healthy eating (OR 1.2) and alcohol intake (OR 1.3) as well as Irish females' physical activity (OR 1.3). Worry was associated with Columbian males' physical activity (OR 1.3) and females' healthy eating (OR 1.4). Canadian females' physical activity (OR 1.2) and alcohol intake (OR 1.2) were additionally associated with worry. Changes in mental well-being were associated most with changes in health behaviours among Canadians. Regardless of country, males expressed more changes on physical activity whereas females reported more changes on healthy eating. No sex-differences in alcohol intake arose across countries.

Conclusion: The relationships between mental well-being and health behaviours differed by sex and country. Males were vulnerable to physical activity changes whereas females were vulnerable to healthy eating. Country specific interventions that are tailored towards sex may better support all adults in maintaining proactive health behaviours during future pandemics. Greater research is needed to parse out how country context ultimately impacts these associations.

Changes in physical activity in subjects with different weight status: results from the Health Benefits of Outdoor Physical Activity (HOPA) study

Dr. Thayse Natacha Gomes¹, Dr Adam Sullivan¹, Dr Sara Suikkanen², Dr Triin Rääsk³, Dr Saima Kuu³, Dr Ilkka Väänänen², Professor Alan Donnelly¹

¹Department of Physical Education and Sport Sciences, Health Research Institute, Physical Activity for Health Research Cluster, University of Limerick, Limerick, Limerick, Ireland,

²Physical Activity and Functional Capacity Research Group, Faculty of Health Care and Social Services, LAB University of Applied Sciences, Lahti, Finland, ³Institute of Natural and Health Sciences, Tallinna University, Tallinn, Estonia

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: Increasing physical activity (PA) levels can reduce health risks associated with excess weight, underscoring the necessity of designing strategies easy for participants to adhere to. This study aims to explore changes in PA among physically inactive subjects with different weight status as a result of an intervention focusing on increasing PA through the use of outdoor spaces.

Methods: This is a multi-centre parallel-group randomised control trial, carried out in three European cities (Lahti, Limerick, Tallinn). The sample comprised 100 adults, aged between 25-65 years, enrolled in the HOPA study (ISRCTN64480977). During the intervention, participants were instructed to engage in outdoor PA (walking/running), at least three times/week, at least 30min/sessions, during eight weeks. Body mass index (BMI) was computed through the standardized formula, and participants were classified as either “normal-weight” (BMI<25kg/m²) or “overweight” (BMI≥25kg/m²) at baseline. Total weekly Light PA (LPA) and moderate-to-vigorous PA (MVPA), as well as weekly average sedentary time (SED) were measured at baseline and during week-8 of the intervention, over 9-consecutive days, using activPAL accelerometers. Changes in PA and SED, within- and between-groups, were estimated using the General Linear Model, with a significance level of 95%.

Results: At baseline, 62% of the sample was classified as overweight; from those, two participants changed their weight status at the end of the intervention. BMI groups differed at baseline only for SED ($p=0.031$), with the overweight group spending more time in SED (7.4h vs 6.7h). A significant time-effect was observed for LPA ($p=0.007$; $\eta^2=0.072$) and MVPA ($p<0.001$; $\eta^2=0.129$), but not for SED ($p=0.170$). A decrease in LPA (normal-weight group, from 568.2min to 514.6min; overweight group, from 502.3min to 484.3min), and an increase in MVPA (normal-weight group, from 240.8min to 289.7min; overweight group, from 212.8min to 252.4min) were noted for both groups. No significant group-time interaction effect was observed, indicating that changes were not related to the initial participants' weight status.

Conclusions: Increases in MVPA were observed regardless of participants' weight status. Findings highlight the role of outdoor spaces for enhancing PA, regardless of individuals' weight status, with potential health benefits related to increases in PA.

Device-measured sitting time and musculoskeletal pain in adults with normal glucose metabolism, prediabetes and type 2 diabetes–The Maastricht Study

Dr. Francis Q. S. Dzakpasu^{1,2}, A/Prof. Annemarie Koster^{3,4}, Prof. Neville Owen^{2,5}, Prof. Bastiaan E. de Galan^{6,7,8}, Dr. Alison Carver⁹, Dr. Christian J. Brakenridge^{2,10}, Prof. Annelies Boonen^{4,11}, Prof. Hans Bosma^{3,4}, Prof. Pieter C. Dagnelie^{6,7}, Prof. Simone J. P. M. Eussen^{4,7,12}, Ms. Parneet Sethi², Prof. Coen D. A. Stehouwer^{6,7}, Prof. Nicolaas C. Schaper^{4,6,7}, Prof. David W. Dunstan^{2,13}

¹Mary MacKillop Institute of Health Research, Australian Catholic University, Melbourne, Australia, ²Physical Activity Laboratory, Baker Heart and Diabetes Institute, Melbourne, Australia, ³Department of Social Medicine, Maastricht University, Maastricht, The Netherlands, ⁴CAPHRI Care and Public Health Research Institute, Maastricht University, Maastricht, The Netherlands, ⁵Centre for Urban Transitions, Swinburne University of Technology, Melbourne, Australia, ⁶Department of Internal Medicine, Maastricht University Medical Centre, Maastricht, The Netherlands, ⁷CARIM School for Cardiovascular Diseases, Maastricht University, Maastricht, The Netherlands, ⁸Department of Internal Medicine, Radboud University Medical Centre, Nijmegen, The Netherlands, ⁹National Centre for Healthy Ageing, Peninsula Clinical School, Monash University, Frankston, Australia, ¹⁰Active Life Lab, South-Eastern Finland University of Applied Sciences, Mikkeli, Finland, ¹¹Division of Rheumatology, Department of Internal Medicine, Maastricht University Medical Centre+, Maastricht, The Netherlands, ¹²Department of Epidemiology, Maastricht University, Maastricht, The Netherlands, ¹³13. Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Background: Detrimental associations of sedentary behaviour (time spent sitting) with musculoskeletal pain (MSP) conditions have been observed. However, findings on those with, or at risk of, type 2 diabetes (T2D) have not been reported. We examined the linear and non-linear associations of device-measured daily sitting time with MSP outcomes according to glucose metabolism status (GMS).

Methods: Cross-sectional data from 2827 participants aged 40–75 years in the Maastricht Study (1728 with normal glucose metabolism (NGM); 441 with prediabetes; 658 with T2D), for whom valid data were available on activPAL-derived daily sitting time, MSP [neck, shoulder, low back, and knee pain], and GMS. Associations were examined by logistic regression analyses, adjusted serially for relevant confounders, including moderate-to-vigorous intensity physical activity (MVPA) and body mass index (BMI). Restricted cubic splines were used to further examine non-linear relationships.

Results: The fully adjusted model (including BMI, MVPA, and history of cardiovascular disease) showed daily sitting time to be significantly associated with knee pain in the overall sample (OR

= 1.07, 95%CI: 1.01–1.12) and in those with T2D (OR = 1.11, 95%CI: 1.00–1.22); this was not statistically significant in those with prediabetes (OR = 1.04, 95%CI: 0.91–1.18) or NGM (OR = 1.05, 95%CI: 0.98–1.13). There were no statistically significant associations between daily sitting time and neck, shoulder, or low back pain in any of the models. Furthermore, the non-linear relationships were statistically non-significant.

Conclusion: Among middle-aged and older adults with T2D, daily sitting time was significantly associated with higher odds of knee pain, but not with neck, shoulder, or low back pain. No significant association was observed in those without T2D for neck, shoulder, low back, or knee pain. Future studies, preferably those utilising prospective designs, could examine additional attributes of daily sitting (e.g., sitting bouts and domain-specific sitting time) and the potential relationships of knee pain with mobility limitations.

Attitudes and Behaviors of Pregnant Nepali Women Regarding Antenatal Iron Supplements and Related Iron Status

Dr. Douglas Taren¹, Dr. Zeina Makhoul², Dr. Ram Shrestha³, Ms. Julie Long¹

¹University Of Colorado School of Medicine, Aurora, USA, ²SPOON Foundation, Portland, USA,

³College of Applied Food and Dairy Technology, Kumaripati, Nepal

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

Purpose: This study focused on what attitudes and behaviors Nepali pregnant women had about taking iron supplements and how they were associated with their iron status.

Methods: A total of 3,534 women in their 2nd or 3rd trimester of pregnancy, from the Nepal Terai, participated in a trial on administering vitamin A supplements to night-blind pregnant women. At baseline, they were asked if they were taking iron pills during their pregnancy, if so, when, and how they took their pills, and if they felt better after taking iron supplements. Hemoglobin status was assessed using a Hemocue.

Results: A total of 1,439 women (40.7%) stated taking iron supplements. Of these women, 99.7% stated they took their iron pills after consuming a meal. However, only 2.4% of the women reported consuming food high in vitamin C with meals. Additionally, 33.6% reported drinking tea, of which 97.8% had their tea before a meal, and only 1 woman reported having tea with their meal. 79.2% stated that the iron pills made them feel better. 41.9% of women who stated the pills made them feel worse stopped taking iron pills, 10.2% who stated they were not sure how the pills made them feel stopped taking them, and none of the women who stated that they made them feel better stopped taking iron pills. Hemoglobin values were significantly greater ($p < 0.001$) in women who stated that the iron pills made them feel better (11.2 +/- 1.5 g/dl) compared with those who stated the iron pills made them feel worse (10.1 +/- 2.0 g/dl). In comparison, those who were unsure had a mean hemoglobin concentration between these two groups (11.0 +/- 1.5 g/dl).

Discussion: In conclusion, these results reinforce the concept that it is important to ask women how they feel when they take iron pills to find a better method for increasing iron status and to develop iron supplement protocols that decrease the side effects of iron supplementation.

Feasibility and Effectiveness of a Novel Workplace Physical Activity Program in Sedentary Office Employees: A Pilot Study

Mr. Justin Montney¹, Dr. Emily Mailey¹

¹*Kansas State University, Manhattan, United States*

SO.3.3: Latest findings in motivation and behavior change, Room 213, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: B. Motivation and behavior change

BACKGROUND/PURPOSE: Inactivity is a leading contributor to the primary chronic diseases that cause most premature deaths in the US (80%). In the U.S., over 80% of jobs are predominantly sedentary and most Americans (75.8%) do not meet physical activity (PA) guidelines. Meanwhile, other countries frequently integrate PA into the societal work culture. Japan has implemented an effective music-synchronized exercise routine (Radio Taiso [RT]), but this program has not been tested in the U.S. The purpose of this study is to explore the feasibility and effectiveness of implementing RT among U.S. employees. **METHODS:** Sedentary employees (n=31) were randomized into one of two PA break conditions (Walking or RT). Employees were asked to complete weekly educational PA lessons online and attempt to take three 10-minute PA breaks each workday. Surveys were administered pre-program and post-program measuring PA, workplace PA enjoyment (PACES), pain, and workplace wellbeing (HWQ). **RESULTS/FINDINGS:** Combined, both groups reported double PA energy expenditure from participation in the study (339.3 METS to 675.6 METS, p=0.011). The walking group reported significantly greater improvements in workplace productivity (p=0.025) while the RT group reported significantly greater improvements in focus (p=0.007) (HWQ) from pre to post. There were no significant changes in reported PA enjoyment, work-related pain, or work satisfaction in either group. Participants gave valuable qualitative feedback through a program evaluation survey to enhance future adaptation of RT programs for U.S. workplaces. Five RT participants reported less pain during/outside of work. Eight RT participants reported the RT regimen being their least favorite part of the study with five recommending more variety and three recommending RT be more adaptable for other fitness levels or time constraints. The walking group participants reported the weather as a facilitator to motivate walking breaks. Coworker support was more frequently reported as a facilitator for completing exercise among walking participants (n=4 vs. RT n=2). Both groups reported work commitments as the main barrier to their breaks (21 reports). One RT participant reported that coworkers would derogate them when they completed RT while at work. **CONCLUSION:** Results give researchers/worksite wellness coordinators insight into ways to improve future workplace PA programming.

The implementation of an extended recess policy in racially and geographically diverse schools in Arkansas

Dr. Erin Howie¹, Dr. Daheia Barr-Anderson², Dr. Christopher Long³, Dr. Michael Thomsen⁴, Dr. Samantha Harden⁵

¹University of Arkansas, Fayetteville, USA, ²University of Minnesota, Minneapolis, United States, ³Gretchen Swanson Center for Nutrition, Omaha, United States, ⁴University of Arkansas for Medical Sciences, Little Rock, United States, ⁵Virginia Tech, Blacksburg, United States

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Recess, unstructured play typically outdoors, is a key physical activity opportunity, and access to quality recess has been advocated as a social justice issue. In 2019, Arkansas implemented a state law that extended required recess from 20 to 40 daily minutes in elementary schools, currently the longest required recess in the US. However, there has been little statewide evaluation of this potentially impactful legislation, especially among geographically and racially diverse schools. Purpose: To compare current implementation of Extended Recess Policy in geographically and racially diverse schools. Implementation measures will include the duration of recess and quality metrics such as number and timing of recess periods and withholding policies. Methods: A cross-sectional, observational study of the implementation of Arkansas's Extended Recess requirement. This study will utilize two methods to collect recess implementation data to ensure both completeness of data through a school audit, as well as stakeholder perceptions through a school survey. Implementation will be defined as the total daily amount of recess with additional variables for the duration and frequency of recess periods. Research staff will audit each school in Arkansas (n=523) for published recess schedules and phone and email contact with school administrative staff. School principals will also be surveyed with additional questions on the quality of recess which, including indoor recess policies, playground space and equipment available, and recess withholding policies. In two pilots with 25 and 34 schools respectively, 9 respondents reported schools not meeting minimum recess durations indicating potential variation in implementation. Results/Findings: Recess duration and quality metrics will be summarized with comparisons made between rural/urban location, school demographic characteristics, using ANOVAs, linear regressions, or the appropriate non-parametric test. Conclusions: This will contribute scientific knowledge on how the implementation of a state school physical activity policy varies across diverse schools. By determining minutes of daily recess in all schools in Arkansas and comparing daily recess duration between urban and rural and high and low Black enrollment, we will identify potential inequitable access to recess. Future efforts can be focused on schools with poor implementation to increase physical activity opportunities and to help inform future recess policies.

Self-Reported Exposure to Violence and Stress as Barriers to Healthy Eating Intentions among Black Adults

Ms. Danielle Gartner¹, Dr. Fikriyah Winata², Dr. Diego Rose¹, Dr. Karen Sheehan³, Dr. Sara McLafferty⁴, Dr. Chelsea Singleton¹

¹Department of Social, Behavioral, and Population Sciences, Tulane University School of Public Health and Tropical Medicine, New Orleans, USA, ²Department of Geosciences, Mississippi State University, Starkville, USA, ³Departments of Pediatrics, Medical Education, and Preventive Medicine, Northwestern Feinberg School of Medicine, Chicago, USA, ⁴Department of Geography and Geographic Information Sciences, University of Illinois at Urbana-Champaign, Urbana, USA

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Intentions to eat healthy have been found to be strong predictors of healthy diet. Few studies have examined how exposure to community violence and stress impact intentions. Pervasive racial disparities in rates of diet-related diseases underscores the need to improve understanding of barriers to healthy eating intentions among racially marginalized populations. This study addresses these gaps in knowledge by examining associations between self-reported exposure to violence, stress, and intention to eat healthy among Black adults in the U.S.

Method: A cross-sectional survey was completed online by 502 Black adults (mean age: 47.23; 39.64% male) in the U.S. Participants reported their socio-demographic information and responded to two validated screeners: Self-Reported Exposure to Community Violence (SECV) and Perceived Stress Scale (PSS). Logistic regression models were used to evaluate associations between SECV and PSS scores and having intentions to eat healthy in the next two months while controlling for covariates: age, gender, income, marital status, education level. Interaction terms were generated to understand how the interaction of violence exposure and stress influence odds of reporting intention to eat healthy.

Results: Descriptive analysis revealed that 295 (58.76%) participants reported having intentions to eat healthy in the next two months. Adjusted models indicated that individuals in the highest quartile of SECV score were less likely to report having intentions to eat healthy than those in the lowest quartile (OR: 0.46; 95% CI:0.26-0.80). Individuals in the highest stress tertial were less likely to report having intentions to eat healthy compared to those in the lowest (OR: 0.53; 95% CI: 0.31-0.90). Among all the SEVC x PSS combinations, individuals with the highest scores for exposure to community violence and stress were the least likely to report having intentions to eat healthy (OR: 0.19; 95% CI: 0.07-0.49).

Conclusion: Living in a violent community and experiencing great stress may put individuals at a disadvantage when engaging in health promoting behaviors such as healthy eating. Future studies should examine how stressors influence dietary behaviors, particularly in communities with chronic disinvestment as these areas often have high rates of crime and fewer economic opportunities which may contribute to increased stress.

Using nutrition labels to make food choices is associated with healthier eating among a statewide representative sample of ethnically diverse 8th and 11th grade students in Texas, USA

Dr. Christopher D. Pfledder^{1,2}, Dr. Nalini Ranjit^{1,2}, Dr. Ethan T. Hunt^{1,2}, Mr. Raja I. Malkani², Dr. Adriana Perez^{1,2}, Ms. Carolyn Smith¹, Dr. Deanna M. Hoelscher^{1,2}

¹University of Texas Health Science Center (Houston), School of Public Health (Austin), Austin, USA, ²Michael and Susan Dell Center for Healthy Living, Austin, USA

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Using nutrition labels can encourage healthier dietary choices among adolescents. The purpose of this study was to examine associations between nutrition label usage and eating behaviors among a statewide representative sample of 8th and 11th grade students in Texas, USA.

Methods: We analyzed associations between nutrition label use and eating behaviors from a statewide sample of 8th and 11th grade students in Texas (N=4,730, Weighted N=710,731, age = 14.7±1.6 years; 49% female, 51% Hispanic) who completed the 2019-2020 Texas School Physical Activity and Nutrition (Texas SPAN) survey. Students self-reported nutrition label usage to make food choices (5-point Likert scale from “Never to Always”) and consumption of 26 food items. Food items were used to calculate a Healthy Eating Index (HEI) score (0-100), a Healthy Foods Index (HFI) score (0-100), and an Unhealthy Foods Index (UFI) score (0-100). Weighted linear regression models were employed to examine associations between nutrition label usage and HEI, HFI, and UFI scores. The odds of consuming individual food items for nutrition label usage were also calculated from weighted logistic regression models.

Results: A total of 11.0% of students reported always/almost always using nutrition labels to make food choices, 48.6% reported sometimes using them, and 41.4% indicated they never used nutrition labels. Nutrition label usage was positively associated with HEI (b=5.79, 95%CI:4.45,7.12) and HFI (b=7.28, 95%CI:4.48,10.07), and negatively associated with UFI (b=-4.30, 95%CI:-6.25,-2.34). A dose-response relationship was observed between nutrition label usage and HEI, HFI, and UFI scores, such that the strength of these associations increased with each one-point increase in nutrition label usage. Students who used nutrition labels had higher odds of consuming healthy foods including baked meat, nuts, brown bread, vegetables, whole fruit, and yogurt (ORrange=1.32-3.07), and lower odds of consuming unhealthy foods including chips, cake, candy, and soda (ORrange=0.48-0.68).

Conclusion: Using nutrition labels to make food choices is associated with healthy eating among 8th-11th grade students, although the proportion using nutrition labels is low. Nutrition education efforts in U.S. secondary schools should be strengthened and focus on teaching students how to effectively use nutrition labels to make food choices.

Associations between neighbourhood environment, and health-related fitness, using accelerometer-measured physical activity as a potential mediator.

Mr. Levi Frehlich¹, Dr. Tanvir Turin¹, Dr. Patricia Doyle-Baker¹, Dr. Justin Lang², Dr. Gavin McCormack¹

¹University Of Calgary, Calgary, Canada, ²Public Health Agency of Canada, Canada

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: To estimate covariate adjusted sex-specific mediation pathways (total, direct, and indirect effects) between objective measures of neighbourhood walkability and neighbourhood greenness, on objective measures of cardiorespiratory and muscular fitness, using accelerometer measured physical activity as a potential mediator.

Methods: Utilizing multiple databases, we conducted a secondary analysis using a cross-sectional design. Our objectively measured neighborhood walkability variable came from the Canadian Active Living Environment Database and included an overall walkability index (i.e., the standardized sum of street connectivity, residential density, points of interest, and transit density, in a one km circular buffer from the center of participants postal code). Our objectively measured greenness variable included the Normalized Difference Vegetation Index (NDVI) dataset estimated within one km around residential postal codes. Muscular fitness and cardiorespiratory variables were also objectively measured and came from the Canadian Health Measures Survey (CHMS) (Cycles 4-6) and included both grip strength and submaximal V_O₂ step tests. Physical activity accelerometer data came from the CHMS and included light- (LPA), moderate- (MPA), and vigorous-intensity (VPA) cut-points. Mediation analysis was completed using the PROCESS macro and samples sizes ranged from 987 to 2796 for males and 989 to 2835 for females.

Results/findings: We found sex-specific effects. Males had indirect effects between neighbourhood walkability and cardiorespiratory fitness through the LPA (negative) and VPA (positive) pathways. Further, we found a total effect (negative) between neighbourhood walkability and grip strength, as well as an indirect effects between neighbourhood walkability and grip strength through LPA (negative) and MPA (negative) pathways, in males. For females, we found a total (positive) and direct effect (positive) between neighbourhood walkability and cardiorespiratory fitness. For females, we also found an indirect effect for walkability and cardiorespiratory fitness through the LPA pathway. All mediation estimates were small in magnitude and neighbourhood greenness did not show evidence of mediation from any pathways.

Conclusions: Neighbourhood walkability may positively influence your cardiorespiratory fitness and negatively influence muscular fitness. However, this influence is small in application and, therefore, needs to be weighed against the evidence indicating that neighbourhood walkability supports other health outcomes.

A Policies, Systems, and Environment Based Scoping Review of Barriers to College Student Food Access

Dr. Rebecca Hagedorn-Hatfield², Dr. Matthew Landry³, **Dr. Victoria Zigmont¹**

¹Department of Health, Exercise Science and Recreation Management, University of Mississippi, Oxford, USA, ²Department of Nutrition, Health and Human Performance, Meredith College, Raleigh, USA, ³Department of Population Health and Disease Prevention, Program in Public Health, University of California, Irvine, USA

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Programming and policies to support food insecure college students have expanded but utilization is often limited. This scoping review aimed to summarize the barriers to accessing college student food insecurity programming guided by the social ecological model (SEM) framework.

Methods: Literature Search: An electronic search was conducted in MEDLINE, ERIC, and PubMed databases, with a secondary search in Google Scholar. Inclusion Criteria: College students at all levels attending an institution of higher education in the United States were the target population. The concept of interest was college student barriers when accessing food assistance programming or resources, and articles needed to include the perspective of the student. Articles had to be published between January 2009 and December 2022. Of the 137 articles identified, 18 articles met eligibility criteria and were included. Methods of Analysis: Authors used a three-step process to review the articles; title review, abstract review, and full-text review. Authors met to discuss any discrepancies between articles that should be kept or removed during the title and abstract review phases. Barriers to college student food security were organized by level of the SEM framework.

Results: Articles primarily encompassed organizational (17/18) level barriers, followed by individual (15/18), relationship (15/18), community (9/18), and policy (6/18) levels. Individual barriers included seven themes: Knowledge of Process, Awareness, Limited Time/Schedules, Personal Transportation, Internal Stigma, Perception of Need, and Type of Student. Four relationship barriers were identified: External Stigma, Comparing Need, Limited Availability Causes Negative Perceptions, and Staff. Ten barrier themes comprised the organizational level: Application Process, Operational Process, Location, Hours of Operation, Food Quality, Food Quantity, Food Desirability/Variety of Food, Marketing Materials, Awareness of the Program, and COVID-19 Restrictions. Two barrier themes were identified at the community level, Public Transportation and Awareness of SNAP, while one barrier theme, SNAP Eligibility and Process, encompassed the policy level.

Conclusions: Higher education stakeholders should seek to overcome these barriers to the use of food programs as a means to address college student food insecurity. This review offers recommendations to overcome these barriers at each SEM level.

Associations between Self-Reported Exposure to Community Violence, Food Security, and Obesity among Black Adults in the U.S.

Ms. Danielle Gartner¹, Dr. Fikriyah Winata², Dr. Diego Rose¹, Dr. Karen Sheehan³, Dr. Sara McLafferty⁴, Dr. Chelsea Singleton¹

¹Department of Social, Behavioral, and Population Sciences, Tulane School of Public Health & Tropical Medicine, New Orleans, USA, ²Department of Geosciences, Mississippi State University, Starkville, USA, ³Departments of Pediatrics, Medical Education, and Preventive Medicine, Northwestern Feinberg School of Medicine, Chicago, USA, ⁴Department of Geography and Geographic Information Sciences, University of Illinois at Urbana-Champaign, Urbana, USA

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Violence is widely considered to be a public health concern that can negatively affect health and wellbeing. Individuals who live in communities with high rates of violence experience increased risk of depression and addiction. Furthermore, they are less likely to be physically active. There continues to be gaps in knowledge regarding the health and nutritional consequences of being exposed to violence. This study aimed to examine associations between self-reported exposure to community violence, food security status, and obesity among Black adults in the U.S.

Methods: Data used in this study is from a 2023 cross-sectional survey administered to 502 Black-identifying adults (age >18 years) living in the U.S. To screen for exposure to community violence and food security status, they completed the validated Survey of Exposure to Community Violence (SECV) and 6-item U.S. Household Food Security Model (30 days). Obesity status (body mass index >30) was computed using self-reported height and weight estimates provided by 432 participants. Logistic regression models were used to examine associations between self-reported exposure to community violence, low food security status, and obesity status controlling for age, gender, annual family income, and education level.

Results: Findings revealed that 247 (49.20%) of participants experienced low food security in the past 30 days. Of the participants who provided height and weight data, 144 (33.33%) were obese according to their BMI. The multivariable-adjusted model revealed that participants in the highest quartile of SECV score had significantly higher odds of low food security status compared to individuals in the lowest quartile (OR: 2.63; 95% CI: 1.51 – 4.58). Relatedly, the adjusted model indicated that individuals in the highest quartile of SECV score had greater odds of obesity compared to those in the lowest quartile (OR: 2.25; 95% CI: 1.19 – 4.26).

Conclusions: Exposure to community violence is associated with food insecurity and obesity among Black adults in the U.S. These findings add to the literature that demonstrates the health consequences of violence. Future studies should explore how exposure impacts relevant mediating factors such as dietary practices, food shopping behaviors, and access to food and safety-net resources.

Can water beliefs predict preferred drinking water source? A cross-sectional study in Virginia, USA

Miss Jasmine Kaidbey¹, Hannah Robbins², Dr. Uriyoán Colón-Ramos¹, Dr. Marinella Temprosa¹, Dr. Allison Sylvetsky¹

¹The George Washington University, Washington, USA, ²Virginia Foundation for Healthy Youth, Richmond, USA

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Approximately half of Americans do not drink water from the tap. Even in the absence of water quality violations, members of the public may not readily trust their tap water. A variety of factors, including perception of water quality and trust in water, may contribute to avoiding tap water. The present analysis used cross-sectional data to investigate the extent to which beliefs about water predict the preferred source of drinking water among 817 adults living in the state of Virginia, USA. Using logistic regression, the odds of drinking water directly from the faucet compared to filtered or bottled water were compared across four water beliefs that are hypothesized predictors of preferred drinking water source: quality of the water from the faucet, trust in the water from the faucet, trust in the water utility provider, and awareness that the water utility frequently test water – measured on a Likert scale. Models were adjusted for relevant covariates including region in Virginia, recruitment method, age, race/ethnicity, gender, education, and housing status. Respondents were mostly homeowners (60%) and white (72%), and many were college graduates (49%), and 15.8% indicated that their preferred source of water was the water from their faucet. In the adjusted regression, trust in the water at the faucet was the only water belief that significantly increased the odds of choosing tap as the preferred source of water, where levels of trust were “not at all”, “not too much”, “some”, “a lot”, or “I don't have an opinion”. Compared to those that reported no trust at all, those that had a lot of trust (OR: 19.4; 95% CI upper, lower: 13.6, 27.8; p= 0.003) as well as those that had no opinion (OR: 9.8; 95% CI upper, lower: 2.6-17.8; p= 0.03) had significantly higher odds of preferring water directly from the faucet. The finding that neither tap water quality rating nor the beliefs associated with the water utility increased the odds of preferring water directly from the faucet highlights the need to identify factors that can be targeted, in conjunction with trust, to develop interventions to increase tap water consumption.

Assessment of Dietary Behaviors Among West African Immigrants in Relation to Acculturation Level and Length of Time in the U.S.

Mr. Oluwafikayo Adeyemi-Benson¹, Mr Isa Adamu¹, Dr Susan Aguiñaga¹, Dr Naiman Khan¹, Dr Andiara Schwingel¹, Dr. Chelsea Singleton²

¹University Of Illinois at Urbana-Champaign, Springfield, United States, ²Tulane School of Public Health & Tropical Medicine, New Orleans, United States

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Acculturation and length of time in the U.S. have been linked to adverse changes in dietary behavior among immigrant populations. Information on the dietary behaviors of African immigrants is scarce. This study aimed to evaluate the dietary behaviors (e.g., intake of fruits, vegetables, whole grains, and added sugar) of West African immigrants to determine if they vary by the acculturation level and length of time in the U.S.

Methods: A cross-sectional survey was conducted among 354 adults (28.3% ≥45 years old; 53.4% female) who self-identified as West African immigrants living in Chicago, IL. Participants self-reported their socio-demographic information and length of time in U.S. They completed validated screeners for acculturation level and dietary intake in the past 30 days. Logistic regression was used to determine if the odds of consuming a high volume of fruit (cups), vegetables (cups), whole grains (ounces) and added sugar (teaspoons) varied by acculturation level or length of time in the U.S.

Results: Findings indicated that fruit, vegetable, and whole grain consumption was low among survey respondents with few meeting daily recommended amounts. After adjusting for age, sex, marital status, annual income, and number of household members, those who have lived in the U.S. ≤5 years (OR: 2.56; 95% CI: 1.03-6.42) and between 6 to 10 years (OR: 3.22; 95% CI: 1.52 - 6.84) had greater odds of consuming >1 cup of fruit/day compared to the reference group (>10 years). In addition, those with a low acculturation level had lower odds of consuming >12 teaspoons of added sugar per day compared to those with a high acculturation level (OR: 0.46; 95% CI: 0.22-0.93). There were no differences in consumption of whole grains or vegetables detected by acculturation level or length of time in the U.S.

Conclusion: It appears that acculturation level and length of time in the U.S. may influence some dietary behaviors of West African immigrants, but not all behaviors. These findings highlight the importance of studying the differential effects of acculturation on immigrant populations. Future studies should evaluate how indicators of acculturation influence dietary intake across the African diaspora in the U.S.

The policymaking dynamics of adopting speed limit reductions: a system mapping effort based on key informant interviews

Dr. Nicole den Braver¹, Dr. Cedric Middel¹, Dr. Famke Mölenberg², Ana Jimenez Garcia¹, Dr. Carel-Peter van Erpecum³, Dr. Luc Hagenaars¹, Anna Bornioli⁴

¹Amsterdam University Medical Centres, Amsterdam, Netherlands, ²Erasmus Medical Centre, Rotterdam, Netherlands, ³Erasmus University, Rotterdam, Netherlands, ⁴University of Surrey, Guildford, United Kingdom

SO.3.4: Beyond Boundaries: Investigating Individual and Environmental Influences on Diet and Physical Activity, Room 214, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: H. Policies and environments

Purpose: Efforts such as Health-for-All Policies, acknowledge that including health in policies improves public health and has important co-benefits. Transport policy is an opportunity to include a health perspective and promote public health as well as reduce car dependency to facilitate environments for safe active transport, and pleasant and safe neighborhoods for social interactions. Whether or not such measures are enacted, however, is a matter of political decision making, but the specific policy dynamics that precede these decisions are not well understood. Therefore, this study aimed to identify the dynamics and factors involved in decision making, using the case of 20 miles per hour (mph) speed limits, and the role of dynamics and factors as being facilitative and/or obstructive. Since policy making and agenda setting are multilayered processes, involving various stakeholders and perspectives, we adopted a systems dynamics approach.

Methods: In this qualitative study, 13 semi-structured interviews were carried out among 5 policy makers, 5 researchers and 3 advocates from five European countries (i.e. UK, Switzerland, Spain, Ireland and Austria) in cities that successfully implemented 20mph. Data was coded in MAXQDA according to barriers and facilitators of policy dynamics. We created a causal loop diagram (CLD) to identify reinforcing and balancing feedback loops in order to understand policy dynamics of successful policy enactment.

Results: Data saturation was reached after 9 interviews. The CLD provided insight in balancing dynamics including measurement and evaluation and political leadership. For example, a balancing feedback loop around measurement and evaluation suggested that data collection and evaluation during incremental policy implementation might decrease the fear of unwanted outcomes among opposition groups, which in turn could decrease the policy makers fear of the public's reaction and has the potential to increase the political leadership to implement these policies. Moreover, reinforcing feedback loops were identified around public acceptance and topic normalization. This suggested that incremental policy implementation could lead to higher public acceptance, reducing policy makers fear and potentially increase their leadership to implement policies.

Conclusions: These insights help to understand the dynamics underlying successful policy enactment and helps to identify key stakeholder groups to enhance policy enactment.

Opportunities for physical activity research, policy, and practice: A conceptual framework

Dr. Laura Balis¹, Dr. David R. Brown², Dr. Daniel P. Hatfield³, Ms. Paloma Lima Dos Santos¹, Ms. Grace Stott¹, Dr. Melissa Green Parker⁴, Dr. Jennifer L. Matjasko², Dr. Jennifer Baumgartner⁴, Ms. Norma Minkoff⁴, Dr. Heather Bowles⁴, Ms. Meher Din³, Ms. Amanda Sharfman³, Ms. Bramaramba Kowtha⁴

¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Division of Nutrition, Physical Activity, and Obesity, Centers for Disease Control and Prevention, Atlanta, USA, ³FHI 360, Durham, USA, ⁴National Institutes of Health, Bethesda, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Physical activity (PA) confers benefits across the lifespan, but most Americans do not meet PA Guidelines. Multiple consensus documents, reports, and guidelines exist that identify research, policy, and practice knowledge gaps (we define as opportunities). Several of the opportunities to address knowledge gaps may be important considerations for communities experiencing health inequities. The goal of this study was to synthesize and categorize opportunities into a conceptual framework for potential use by funders, researchers, policymakers, and practitioners to advance PA promotion.

Methods: The National Collaborative on Childhood Obesity Research convened subject matter experts to 1) identify source documents published by government or national non-profit organizations related to PA promotion, 2) review documents to extract research, policy and practice opportunities, 3) code the opportunities by translational phase, intervention level, setting, and priority population, 4) synthesize data on similar opportunities, and 5) review the list of condensed opportunities, including those with a health equity focus, to develop the framework.

Results: Opportunities (n=431) were extracted from sources (n=11) and combined into condensed opportunity statements (n=96) that called for effectiveness research (n=47, 49%) and dissemination/implementation research and practice (n=21, 22%). Forty-three percent were related to policy, systems, or environment (PSE) interventions (n=41) and 69% mentioned community settings (n=66). Additionally, 76% mentioned populations across the lifespan (n=73) and twenty-two statements (23%) included health equity considerations. The resultant outcome was a framework detailing opportunities by translational research phase (measure development, etiology, efficacy, effectiveness, dissemination and implementation, and surveillance) and intervention level (individual or interpersonal, PSE, and crosscutting), including health equity considerations.

Conclusions: The resultant framework reveals opportunities for PA funders, researchers, policymakers, and practitioners to strategically advance their work. The results also highlight gaps in current evidence. There are opportunities for work across translational science phases (beyond effectiveness) to use community- and practitioner-engaged approaches, establish efficacious interventions while designing for dissemination and implementation, and develop strategies for improving dissemination and implementation. Opportunities also exist to address health equity by tailoring interventions, enhancing reach to priority populations, and improving social determinants of health. Disclaimer: This abstract does not represent the official position of the CDC.

Exploring Associations Between Outer and Inner setting Determinants in a Community Setting

Dr. Rachel Tabak¹, Alejandra Munoz-Rivera¹, Cindy Schwarz¹, Allison Kemner², Dr. Debra Haire-Joshu¹

¹Washington University In St. Louis, St. Louis, USA, ²Parents as Teachers National Center, St. Louis, 63141

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Healthy Eating and Active Living Taught at Home (HEALTH) embeds healthy eating and activity content within Parents as Teachers (PAT), a national home visiting program. This secondary analysis aims to understand the factors that predict intention to deliver HEALTH and the self-efficacy of parent educators (home visiting program providers) to deliver HEALTH.

Methods: This is a cross-sectional, analysis of baseline data from a trial evaluating the effectiveness of HEALTH when delivered by parent educators as part of usual practice. Parent educators completed surveys following training in the HEALTH intervention; demographic characteristics (including self-reported body mass index) were collected in a baseline survey (pre-training). Surveys were based on two implementation science frameworks: Consolidated Framework for Implementation Research (CFIR, implementation context) and Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM, implementation outcomes). Associations between intent to deliver HEALTH (intent) and self-efficacy (SE) to deliver HEALTH, implementation context constructs and demographic characteristics were explored using Pearson correlations (continuous variables) and t-tests (binary variable). Relationships were considered significant if the p value was less than 0.05.

Results/findings: Among the 149 parent educators who completed the survey, just over half identified as white/non-Hispanic (53%), while just over a third identified as Hispanic. Participants reported having worked at their site for a mean of 4.7 years (standard deviation, SD=5.85), and the mean body mass index was 30.43 kg/m² (SD=7.35). There was a significant correlation between intent and SE, $r=0.46$ ($<.0001$). Most demographic characteristics (e.g., body mass index, age) were not significantly correlated with either variable, however, intent and SE were both significantly lower among white non-Hispanic parent educators than among those identifying as another race/ethnicity. Several other implementation context constructs such as evidence strength and quality, fit, appeal, openness, and relative advantage were positively correlated with both intent and SE; complexity was negatively correlated.

Conclusions: When implementing healthy eating and activity content within community settings, it is important to consider what factors may be related to provider intent and provider self-efficacy to deliver the content.

Lessons Learned and Future Directions for Technical Assistance within Financial Incentive Programs Designed to Increase Fruit and Vegetable Intake across the United States

Ms. Hollyanne Fricke¹, Ms. Gretchen Groves¹, Ms. Ka Her¹, Dr Carmen Byker Shanks¹, Dr. Bailey Houghtaling¹, Dr. Amy Yaroch¹

¹Gretchen Swanson Center for Nutrition, Omaha, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Since 2019, the Gus Schumacher Nutrition Incentive Program (GusNIP) NTAE Center (Nutrition Incentive Program Training, Technical Assistance, Evaluation, and Information Center) has served as a coordinating center to provide implementation and evaluation technical assistance (TA) to projects designed to provide financial incentives aimed at increasing fruit and vegetable intake among populations with low income throughout the United States (US). These nutrition incentive and produce prescription projects are required to contribute to a dataset of shared measures so that the NTAE Center can report aggregate impacts.

Methods: The NTAE Center has taken an iterative and responsive approach to the provision of technical assistance within GusNIP, driven predominantly by expressed project needs. Specific to evaluation, the NTAE Center has developed a suite of 1:1, group, and centralized advising opportunities to aid projects in meeting robust requirements. Further, those looking to apply for a GusNIP grant are given a unique opportunity to interface with the NTAE Center during the application process, such that they are familiar with requirements up front, thereby increasing competitiveness of their application.

Results/Findings: Comprehensive evaluation technical assistance builds GusNIP project capacity to better understand and fulfill grant requirements and ultimately produces higher-quality data to demonstrate project and overall program impacts to grow the financial incentives field and sustain funding. From 2019-2023, the NTAE Center identified best practices for evaluation technical assistance including: creating a TA model with a dynamic menu of options; tailoring TA by project type and organizational capacity for evaluation; and designing evaluation approaches that balance grant requirements, scientific rigor, project capacity, and overlay diversity, equity, and inclusion practices. In its next four years and beyond, the NTAE Center's TA model will be guided by a "learning circle" advisory group (including projects, as well representatives from the intended low-income population across diverse US geographic regions) and aligned with implementation science theories, models, and frameworks.

Conclusions: Lessons learned from the GusNIP NTAE Center can be applied by other organizations or coordinating centers providing evaluation-related technical assistance within large-scale, multi-year, and/or multi-site programs across the US or potentially as translated to other countries.

A workflow analysis of the Team Thrive diabetes prevention program to increase adoption by Utah high school health teachers.

Mx. Mickey Bolyard¹, Shannon Jones¹, Amy Loverin¹, Madeleine French¹, Joshua Christensen¹, Dr. Paul Estabrooks
¹University Of Utah, Salt Lake City, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: There is limited information on the dissemination of evidence-based type 2 diabetes prevention interventions focusing on youth. The purpose of this presentation is to describe changes in workflow and potential intervention adaptation to support the dissemination of Team Thrive—an effective type 2 diabetes risk reduction intervention for high school students.

Methods: We initiated a workflow analysis of Team Thrive to determine intervention adaptation and dissemination across phases of (1) researcher implementation within a cluster randomized controlled trial, (2) initial dissemination to local schools, and (3) current dissemination to local schools. Specifically, we completed the first two steps of workflow analysis that included orientation through group (n=3) and individual interviews (n=4) with Team Thrive developers and managers, as well as observation of current dissemination strategies.

Findings: Components of Team Thrive that were consistent across the RCT and dissemination phases included (1) 6 lessons delivered over 2 to 3 weeks that focused on physical activity, fruits and vegetables, and added sugars, (2) student goal selection, (3) team activities with students of like goals, and (4) friendly competition. Transitioning from research to teacher implementation resulted in changes to Team Thrive technology components (i.e., step counters and objective carotenoid screening were not provided), and peer mentoring with university students was not proactively facilitated. The initial dissemination workflow included partnership with the state board of education, use of teacher list serves, teacher request for the curriculum, access to the curriculum and a teacher implementation manual on Google Drive, and printed copies of the curriculum. Workflow was changed to include teacher registration and teacher training videos. Across these phases, Team Thrive was delivered to 6 schools as part of the RCT and disseminated to 72 and 57 new schools during the initial and current phases. Reflection with dissemination staff indicated that the optimal workflow would include changes to data collection protocol, recordkeeping, and program metrics to improve program evaluation and adaptation.

Conclusions: Team Thrive appears to be a highly scalable approach for high school diabetes prevention, though assessment of implementation quality and effectiveness with reported adaptations is needed.

Developing community capacity to implement a family healthy weight program through direct observation in medically underserved areas

Dr. Caitlin Golden¹, Dr. Jennie Hill¹, Dr. Kate Heelan², Dr. Gwenndolyn Porter³, Dr. Emiliane Periera³, Ms. Ann Koehler³, Mr. Robert Siegmann³, Dr. R. Todd Bartee², Dr. Bryce Abbey², Dr. Tzeyu Michaud³, Dr. Paul Estabrooks¹

¹University Of Utah, Salt Lake City, USA, ²University of Nebraska Kearney, Kearney, USA,

³University of Nebraska Medical Center, Omaha, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Measuring implementation fidelity is crucial, yet it proves challenging. While observational methods are considered the gold standard, their practicality in community settings is restricted by resource constraints. The purpose of this study is to report on a capacity building initiative that trained direct observers from local communities to conduct fidelity assessments of an evidence-based, family healthy weight program (FHWP), Building Healthy Families (BHF).

Methods: We developed an implementation fidelity assessment for a hybrid type III implementation effectiveness pilot to translate a FHWP into medically underserved areas. Community direct observers were recruited locally and trained by an expert observer to assess weekly BHF sessions. Trainings occurred virtually to familiarize observers with the fidelity assessment process and tools by reviewing previously recorded community sessions. Training fidelity assessments were scored against the expert observer, with >85% agreement required for independent observation. Weekly research meetings were attended by community direct observers to provide an overview of sessions and unique components of fidelity not captured by the assessments. Percent agreement was assessed quantitatively while community direct observer perceptions were gathered qualitatively through meeting notes.

Results/Findings: Community direct observers (n=5) were hired and trained to conduct fidelity assessments across 7 communities. All observers reached >85% agreement with the expert observer by their second session and were able to observe community BHF sessions independently. Community direct observers were able to complete all assigned assessments that included 42 sessions in Cohort 1 (n=7 communities), 17 sessions in Cohort 2 (n=5 communities), and 3 sessions in Cohort 3 (n=1 community). The collaborative involvement of local observers with the research team fostered community engagement and provided key insights into implementation of a FHWP which otherwise would have been unknown to researchers. Local direct observers were also successful at gathering information on BHF adaptations, both positive and negative, across program sessions.

Conclusions: Building local capacity for direct observation was successful in this study. This approach not only enhances the feasibility of measuring implementation fidelity, but also establishes a model for ongoing assessments, contributing to the effective translation of FHWP into diverse settings and potential impact of BHF.

Development of a Registry to Explore How Eating Competence is Associated with Life Course Changes and Daily Hassles

Dr. Cristen Harris¹, Dr. Michelle Averill¹, Mr. Khang Ho¹

¹University of Washington, Seattle, United States

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Eating Competence (EC) is an adaptive and inclusive eating style defined by the Satter Eating Competence Model (ecSatter) and described by four domains: food management/contextual skills, internal cues, food acceptance, and eating attitudes. Higher EC is associated with higher quality diets and physical activity levels, and better biomedical and psychosocial indicators. Daily Hassles are small nuisances of daily living, and when they occur frequently, they can impair health outcomes. It is unknown how life course events (i.e., pregnancy, child-rearing) and daily hassles predict EC across the life course. The aim of this study is to create a registry of individuals that can be used in future longitudinal studies to assess the relationship between EC, life course events, and daily hassles. No such registry exists, and no previous studies have examined EC longitudinally.

Methods: This study is being completed in three phases, and the project is currently in Phase II. For Phase I, a ~100-item survey was developed that includes the EC Satter Inventory (ecSI 2.0™), the Daily Hassles and Uplifts Scale (DHUS); and demographics, social identities, caregiving status, and other reasons people may tailor their diets. Focus groups were used to refine questions and pilot-test survey completion. Phase I results informed Phase II, which is to recruit a convenience sample of undergraduate students in various nutrition courses offered in 2023-2024 at the researchers' university, allowing for further survey refinement. Phase III will be to recruit a registry of participants from college courses across the U.S. and follow-up with repeated surveys every two years. All survey data is collected using REDCap™ software and will be analyzed using SPSS.

Results/Findings: Phase II recruitment is underway. To date, we have demonstrated the ability to enroll 479 undergraduate students in the Lifecourse Eating and Feeding Registry.

Conclusions: A registry of participants is the first step to exploring how EC changes over time and how life course events and daily hassles influence these changes. Results will help better predict changes in eating behaviors and identify factors for future intervention.

A qualitative study to understand underlying contextual factors related to under-served community members' enrollment in available diabetes prevention programs.

Miss Alejandra Huerta Hernandez¹, Dr. Joshua Christensen, Dr. Caitlin Golden, Megan Miller, Miss Linnea Horvath, Mickey Boylard, Miss Sujata Gandhi, Dr. Jennie Hill, Justin Jackson, Alexandra Hernandez, Dr. Paul Estabrooks

¹University Of Utah, Heber City, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: The Wellness Bus (WB) is a mobile health unit that provides screening, health coaching, and referral to community resources for underserved communities in the Salt Lake Valley. As part of the Connect Diabetes Prevention Program (DPP) Pilot Study, the purpose of this presentation is to document themes and actions to support increased participation of future visitors to the WB.

Methods: We conducted 10 qualitative interviews with visitors (80% Hispanic/Latino) to the WB who screened in the pre-diabetes range. All interviews were transcribed, reduced to meaning units, and then inductively coded by two research team members to identify themes, subthemes, and valence (i.e., positive or negative influence on enrollment) related to DPP enrollment. Themes and subthemes were reported based on their relationship with potential enrollment.

Results: Across interviews, four primary themes were identified—accessibility, experiences with WB staff, participant characteristics, and strategies to improve WB services. Accessibility included subthemes related to affordability (positive, if insured; negative if not), program delivery location (positive when completed on the WB; negative otherwise), Spanish health education materials (positive for spoken language; negative for overall signage), program structure and schedule (positive for virtual; negative for work hour programs), and awareness of available programming (variable awareness of available programs). WB visitor experience with the WB staff indicated positive perceptions of the information provided, motivational support, languages spoken, and referrals to resources (though this was variable across interviewees). Factors related to the WB visitor included motivation to change (high for those that enrolled in DPPs; low for those that did not), perceptions of risk (high for those that enrolled in DPPs; low for those that did not) and competing demands (lower for those that enrolled in DPPs; higher for those that did not). Finally, participants identified partnering with community organizations to improve marketing of WB resources, more consistent referrals to local resources, outreach and follow-up from WB staff, and co-location of DPPs with the WB as ways to improve WB impact.

Conclusions: Novel ideas for better outreach, co-location of programming, and other participant-identified strategies to improve WB outcomes were identified.

Process and Implementation Evaluation of the Brighter Bites/UT Physicians Produce Rx - a Community-Academic-Healthcare Partnership

Assistant Prof. Allison Marshall¹, Mallika Mathur², Ru-Jye Chuang², Mike Pomeroy³, Azar Gaminian³, Sandra McKay⁴, Prajakta Yeragi⁴, Vinay Prabhu⁴, Christine Markham², Shreela Sharma^{2,5}

¹Tulane University Translational Science Institute, New Orleans, USA, ²University of Texas Health Science Center School of Public Health, Houston, USA, ³Brighter Bites, Houston, USA, ⁴McGovern Medical School, University of Texas Health Science Center, Houston, USA, ⁵Center for Health Equity, Houston, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: Produce prescription programs show promise for improving dietary intake and health but there is a lack of detailed process and implementation evaluation data available. We will present process and implementation evaluation of the Brighter Bites/UT Physicians Produce Rx.

Methods: The Brighter Bites/UT Physicians Produce Prescription Program uses a comparative effectiveness RCT design to evaluate two produce prescription strategies to improve obesity-related health outcomes and dietary behaviors among 150 low-income children aged 5-12 years with overweight/obesity from two pediatric clinics in Houston, Texas. Participants are randomized into one of three arms: 1) Bi-weekly \$25 produce vouchers to local grocery stores (n=50), 2) Bi-weekly produce delivery (n=50), or 3) waitlist controls (n=50). Process and implementation evaluation data are collected through pre-/post-program surveys, pulse surveys (participants), implementation surveys, qualitative interviews, EHR review, and program administrative review.

Results/Findings: A total of 150 children participated in the CE-RCT; mean age 9.0 years, 47.9% Hispanic, 45.3% African American. Process evaluation measures include produce variety and quantity; nutrition education distributions; enrollment; acceptability/satisfaction regarding access to produce, nutrition education, cultural appropriateness; clinic staff satisfaction; and produce/voucher value costs. Using the RE-AIM framework, we are assessing Reach (demographics of eligible patients at clinics, demographics of patients prescribed to program, demographics of patients consented and enrolled); Effectiveness (food security, nutrition security, diet quality, changes in biomarkers: BMI, weight, blood pressure, hemoglobin A1c, AST ALT, and lipid panels are presented elsewhere); Adoption (number of physicians trained in prescribing program, number and percentage of physicians who prescribe program); Implementation (program level - number of boxes delivered, pounds of FV delivered, number vouchers delivered, vouchers reissued, number families not receiving weekly distributions; participant level - number vouchers received, % vouchers activated, % vouchers redeemed, dollar amount vouchers redeemed, date vouchers redeemed, number patients who receive nutrition education tips). All analysis will be complete in Spring 2024.

Conclusions: Process and implementation data on produce prescription programs is critical for replicability and scalability of produce prescription programming. These types of studies are also critical for establishing value and return on investment to justify funding for produce prescription programs, and to inform future programming and research.

Risk Thresholds for Childhood Overweight/Obesity with the Family Nutrition and Physical Activity (FNPA) Screening Tool:

Dr. Greg Welk¹, Chengpeng Zheng¹, Carolyn McCabe², Dr. Karissa Peyer³, Benjamin Potts², Dr. Lisa Bailey-Davis²

¹Iowa State University, Ames, USA, ²Geisinger Center for Obesity and Metabolic Research, Danville, USA, ³University of Tennessee - Chattanooga, Chattanooga, USA

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: This study extends previous research on the Family Nutrition and Physical Activity (FNPA) screening tool by developing and testing threshold values that may provide clinical risk zones to identify youth at greater risk for overweight.

Methods: Clinical data were obtained from annual well-child visits within the Geisinger Health System spanning the years 1999 to 2022. The sample was restricted to individuals with at least one record of FNPA in early childhood (2 – 5 years old); no record of being overweight/obese before the age of 5 (i.e., BMI < 85th percentile); and at least one record of BMI within the follow-up period (6 – 12 years old). Weight status was classified as normal weight if the recorded BMI values remained below the 85th percentile or overweight/obese if BMI was ever recorded to be greater than the 85th percentile. An ordinal logistic regression model was built for the weight status variable with factors including gender, race, ethnicity, early childhood BMI group (<5%, 5-50%, 50-85%), insurance status (public/private), and FNPA score. The Weight of Evidence method was employed to derive thresholds of FNPA scores that differentiated risk of becoming overweight during the 6-year follow-up period. ROC analysis and Hosmer-Lemeshow tests assessed the goodness of fit and the predictive utility of the thresholds.

Results/Findings: The final sample included 7226 participants (51.3% male, 81.4% white, and 40.8% with private insurance). The average length of follow-up from baseline was 3.04 (± 1.91) years with 23.4% of the males and 20.6% of females classified as overweight or obese in the follow-up period. A significant negative coefficient in the regression model confirmed that a higher FNPA score was associated with a lower probability of developing overweight or obesity. The prevalence of being overweight or obese was highest in the low FNPA group (FNPA < 63) and lowest in the high FNPA group (FNPA > 67). The ROC analyses demonstrated utility of the thresholds for discriminating risk of overweight with area under the curve (AUC) values > 0.66.

Conclusion: The results support the predictive utility of the FNPA for identifying potential risk of overweight/obesity during childhood.

What predicts physical activity promotion in clinical practice? A cross-sectional study among medical doctors

Dr. Catarina Silva^{1,2}, Professor Romeu Mendes^{2,3,4,5}, Professor Cristina Godinho^{2,6}, Dr. Ana Monteiro-Pereira^{4,7,8}, Dr. Jaime Pimenta-Ribeiro⁵, Dr. Helena Martins⁹, Dr. João Brito⁴, Professor José Themudo-Barata^{10,11}, Professor Carlos Fontes-Ribeiro¹², Professor Pedro Teixeira¹, Dr. Graça Freitas¹³, Professor Marlene Silva^{2,14}
1CIPER, Faculdade de Motricidade Humana, Universidade de Lisboa, Lisbon, Portugal, 2Programa Nacional para a Promoção da Atividade Física, Direção-Geral da Saúde, Lisbon, Portugal, 3EPIUnit – Instituto de Saúde Pública, ITR, Universidade do Porto, Porto, Portugal, 4Portugal Football School, Portuguese Football Federation, Cruz Quebrada, Portugal, 5ACES Douro I - Marão e Douro Norte, Administração Regional de Saúde do Norte, Vila Real, Portugal, 6Católica Research Centre for Psychological, Family and Social Wellbeing, Universidade Católica Portuguesa, Lisbon, Portugal, 7CIDESD, University Institute of Maia, Maia, Portugal, 8ACES Loures-Odivelas, Administração Regional de Saúde de Lisboa e Vale do Tejo, Lisbon, Portugal, 9ACES Baixo Vouga, Administração Regional de Saúde do Centro, Aveiro, Portugal, 10Serviço de Nutrição e Atividade Física do Centro Hospitalar Universitário da Cova da Beira, Covilhã, Portugal, 11Faculdade de Ciências da Saúde da Universidade da Beira Interior, Covilhã, Portugal, 12Instituto de Farmacologia e Terapêutica Experimental, Subunidade 1, Faculdade de Medicina, Universidade de Coimbra, Coimbra, Portugal, 13Direção-Geral da Saúde, Lisbon, Portugal, 14CIDEFES, Faculdade de Educação Física e Desporto, Universidade Lusófona, Lisbon, Portugal

SO.3.5: Short oral presentations in implementation science and scalability, Room 215, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: E. Implementation and scalability

Purpose: International recommendations identify health professionals as pivotal agents to tackle physical inactivity. This study aimed to characterize medical doctors' clinical practices concerning the promotion of patients' physical activity and explored potential predictors of the frequency and content of these practices.

Methods: A cross-sectional study assessed physical activity promotion in clinical practice with a self-report questionnaire delivered through the national medical prescription software (naturalistic survey). Medical doctors' physical activity and sedentary behaviours were estimated using the International Physical Activity Questionnaire (short form). Indicators of their attitudes, knowledge, confidence, barriers, and previous training concerning physical activity promotion targeting their patients were also assessed. Multiple regression analysis was performed to identify predictors of physical activity promotion frequency by medical doctors, including sociodemographic, attitudes and knowledge-related variables, and physical activity behaviours as independent variables.

Results/findings: A total of 961 medical doctors working in the Portuguese National Health System participated (59% women, mean age 44 ± 13 years) in the study. The majority of the participants (84.6%) reported to frequently promote patients' physical activity. Five predictors of physical activity promotion frequency emerged from the multiple regression analysis, explaining

17.4% of the dependent variable ($p < 0.001$): working in primary healthcare settings ($p = 0.037$), having a medical specialty ($p = 0.030$), attributing a high degree of relevance to patients' physical activity promotion in healthcare settings ($p < 0.001$), being approached by patients to address physical activity ($p < 0.001$), and having higher levels of physical activity ($p = 0.001$).

Conclusions: The sample of medical doctors approached reported a high level of engagement with physical activity promotion. Physical activity promotion frequency among medical doctors seems to be higher when working in primary care setting, having a medical specialty, having positive attitudes towards physical activity, when perceiving patients' interest on the topic, and when having higher physical activity levels.

Trail Use, Physical Activity, and Public Health on a College-based, Community Accessible Trail

Dr. Jeremy Steeves¹, Trevor Gaines-Perry², Douglas Gregory³

¹Xavier University, Cincinnati, USA, ²Maryville College, Maryville, USA, ³Tennessee Wesleyan University, Athens, USA

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: As sedentary lifestyles and physical inactivity continue to increase, there is need for physical activity promotion and ensuring accessibility of locations to recreate. One way to encourage being physically active is to spend more time outside using trails. The community accessible 140-acre Maryville College Woods, with trails for running, walking, biking, disc golf and bird watching, is listed as one of the top outdoor things to do in Maryville, TN; however, trail use has never been monitored. This study aims to describe how many, when, how, who, and why the trails are used.

Methods: Multimethod data collection included 33 days of counts from three TRAFx infrared trail counters placed throughout the 2.5+ miles of trail network, direct observations of trail use at the main trailhead, a 36-question trail-use intercept survey completed in-person at the trailhead for 6 days (3 weekdays and 3 weekend days; for 2-hr intervals: morning, noon, and evening) between February and March or online accessed via QR codes posted at trailheads measuring sociodemographics and trail use behaviors.

Results: The TRAFx counters recorded a total of 12,446 counts; 5510 passes on the main Perimeter Trail, 3750 at the Perimeter trail extension, and 3186 at a bridge deeper in the woods. Trail use started around 5 am and ended around 8 pm, peaking between 3-5:00 pm. Direct observations tallied 508 users, mostly adults (71%), in the evenings (49%), and on the weekends (62%). The most observed activities were walking (70%), disc golf (16%), running (11%), and biking (3%). Surveys of 189 trail users showed they were predominantly female (50.3%), white (92.7%), college graduates (60.3%), with an average age of 41.1 ± 17.9 years. Users traveled an average of 5 miles to use the trails, twice per week, for 60 minutes/visit. Most felt safe in the woods (95.5%), and 72.8% said being active in the woods made them enjoy life more.

Conclusions: The establishment of a trail monitoring program provides valuable baseline information to justify future investment and strategic planning to ensure the sustainability of the trails and the promotion of physical activity in the community and on campus.

Developing the Mountain West Family Healthy Weight Collaborative

Mrs. Megan Miller¹, Dr. Caitlin Golden¹, Dr. Jennie Hill¹, Dr. Paul Estabrooks¹

¹University Of Utah, Salt Lake City, USA

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Addressing childhood obesity across lower-income, rural communities may benefit from a collaborative approach that includes state and local level community partners that prioritize family health. The purpose of this presentation is to describe the formation and initial priorities of the Mountain West Family Healthy Weight Collaborative (MW-FHWC) designed to leverage and enhance community capacity to address inequities in childhood obesity prevention and treatment.

Methods: Representatives from regional and local public health networks, federally qualified community health centers, and cooperative extension across Idaho, Montana, New Mexico, Nevada, Utah, Wyoming were invited to participate in the MW-FHWC (n=49 representatives). The invitation included a survey that assessed organizational priorities as they related to childhood obesity and family health. Survey results were presented and discussed during an initial virtual collaborative meeting that focused on determining the need for, and potential function of, the MW-FHWC.

Results/Findings: Twenty-three organizational representatives (47%), with representation across all 6 states, responded to the invitation to engage with the MW-FHWC. Respondents represented 17 unique organizations with responsibilities related to decision-making on which programs can be delivered within their organization (n=17), program delivery (n=16), policy development (n=14), program funding support (n=6), reaching and engaging families in obesity prevention and treatment efforts (n=11), and networking across the organization to advocate for obesity treatment and prevention activities (n=22). The highest organizational priorities indicated by participants were engaging in cross-sectoral partnerships, addressing social determinants of health, and physical activity promotion. Participants (n=19) in the virtual meeting identified funding, staff support, outcome measures, collaboration, and local resources to be able to refer families to as resources they need to be more effective in addressing the needs of the populations they serve. Participants valued the opportunity to learn from cross-state collaboration and networking, building awareness of health promotion programs, involvement in research, and increasing resources.

Conclusions: Initial results from the partnership survey and initial meeting also suggest that the MW-FHWC collaborative includes, but moves beyond, a focus on childhood obesity to also become a resource for intervention sharing, capacity building, and strategies to address social determinants of health.

Participatory action research and citizen science to advance physical activity security among female athletes in Peru

Dr. Maja Pedersen¹, Thalia Simich², Macarena Scarafia², Francisco Borges², Daniel Cino⁴, Ann Banchoff³, Maria Ines Campero³, Alex Vera Szawrankyyj³, Zakaria Nadeem Doueiri³, Dr. Abby C. King³

¹University Of Montana, Missoula, USA, ²Fundación Deporte en Igualdad, Lima, Peru, ³Stanford University, Stanford, USA, ⁴Universidad Peruana de Ciencias Aplicadas, Lima, Peru

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Physical activity (PA) is a basic human right central to sustainable development, yet globally, girls and women attain disproportionately lower levels of PA than male peers, indicating gender-based barriers. In Peru, insufficient PA is twice as common among women than men, and issues related to social determinants of health, such as high rates of gender-based violence, may exert an impactful role on PA engagement. The purpose of this study was to examine factors influencing PA access and participation among female athletes in Peru.

Methods: Leveraging a citizen science-based participatory action research method (Our Voice), this study incorporated mixed methods and was rooted in the theoretical foundations of PA security and the socio-ecological model. Research partners included the Fundación Deporte en Igualdad and Instituto Peruano del Deporte in Peru, and USA-based Stanford University. We present the results of the interpretive focus groups applied to identify factors across socio-ecological domains impacting PA among female athletes in Peru. Research oversight was provided by the Stanford Institutional Review Board.

Results: Study participants (N=19) identified as female and averaged 17 years old (range=15-22 years). All were elite athletes on a Peruvian national sports team that trained at a facility in Lima, Peru. Community-based research facilitators were trained coaches who lived in Lima and were not affiliated with the sports team, including a leadership specialist, a sports psychologist, and a psychotherapist. Participants used the Our Voice Discovery Tool mobile app to collect 55 geotagged audiovisual data points and participated in five interpretive focus groups to collaboratively review data and identify themes related to PA security across socio-ecological domains. Themes characterizing barriers to PA security were safety; infrastructure; street harassment; sanitation; transportation; and outreach. Participants developed recommended solutions for each theme, using a strength-based approach to recognize existing supports. Findings were presented by the participants to stakeholders via an advocacy presentation.

Conclusions: Investigation of PA security among girls and women yielded important findings linked to social determinants of health. The results provide opportunities for meaningful change toward health equity in and through sport which currently are being addressed with local decision-makers.

Engaging students as agents of change for local sustainability and health equity: a pilot study among undergraduates at George Mason University, USA

Mr. Cesar Lopez¹, Mr. Gustavo Rodriguez⁴, Mr. Vignesh Kumar³, Mr. Zakaria Doueiri¹, Dr. Michael F. Royer², Mrs. Ann W. Banchoff¹, Dr. Abby C. King^{1,2}, Mr. Ben Auger⁵, Dr. K.L. Akerlof⁴

¹Department of Epidemiology and Population Health, School of Medicine, Stanford University, Stanford, USA, ²Stanford Prevention Research Center, School of Medicine, Stanford University, Stanford, USA, ³Department of Human Biology, School of Humanities and Sciences, Stanford University, Stanford, USA, ⁴Department of Environmental Science and Policy, George Mason University, Fairfax, USA, ⁵Communications and Marketing, Facilities, George Mason University, Fairfax, USA

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Universities are increasingly incorporating civic engagement learning goals into course curricula to generate knowledge that contributes to the public good and prepares students to be participatory members of a democratic society. In this case study, George Mason University (GMU) students used the Stanford Our Voice research-to-action citizen science method to identify issues on their college campus related to sustainability, food access, and health equity and convey them to the university to improve current programs.

Methods: GMU undergraduate students participated during Fall Semester 2023. The instructor separated students into groups, each focusing on one of four challenges faced by GMU's campus: addressing food insecurity, reducing waste, mitigating extreme heat exposure, and redistributing reusable items at academic year-end. Using Our Voice's Discovery Tool mobile application, students documented barriers to health and food access, equity, and justice relevant to their specific challenge. Virtual community meetings featured collaborative online whiteboards for group-based data discussions, theme identification, and formulation of ideas for change. Groups prioritized their ideas for change based on feasibility and defined action steps to propose to relevant stakeholders. Pre and post surveys evaluating students' civic attitudes and behaviors were analyzed with a Wilcoxon signed-rank test.

Results: During a two-week period, students captured 199 photos and 185 text comments concerning their assigned topics. Facilitated community meetings produced 45 themes and 26 ideas for change. Themes identified by groups included issues of awareness, accessibility (e.g., dining hall meal donations; affordable meal plans), sustainability, and absence of campus resources addressing these challenges. Each group presented their ideas for change to the GMU Facilities' Engagement Coordinator. Pre-post surveys indicated that after participating in this project, students felt more responsible for their community ($p=.006$), helping poor/hungry residents ($p=.05$), participating in discussions around social issues ($p=.0001$), and they more

strongly believed, when working with others, that they would make positive community changes ($p=.025$).

Conclusions: By conducting student-engaged participatory action lessons as a tool for civic learning, young adults can be empowered and activated as agents of local change, which may continue in the future and is worthy of further investigation.

Assessing Change in Resistance Training Skills in Individuals with Serious Mental Illness: Findings from the PARCS Clinical Trial

Mr. Andrew Argie¹, Mr. Andre Soares², Mr. Morgan Wan², Mrs. Cristina Alamos¹, Ms. Tiffany Oberther², Dr. Catherine Davis², Dr. Gina Besenyi¹

¹Kansas State University, Manhattan, United States, ²Augusta University, Augusta, United States

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Adults suffering from serious mental illness (SMI) have a higher likelihood of chronic health conditions, which may impact functional ability. Resistance and aerobic training are associated with physical and mental health improvements in individuals affected by SMI. Yet, adults with SMI have poor functional capacity and physical competence. As part of the Physical Activity to Reduce Cardiometabolic risk in adults with SMI (PARCS) clinical trial, functional movements were assessed to understand intervention effects on resistance training skills.

Methods: Data were collected in 2022-2023 as part of an NIH-funded multi-site randomized control trial (NCT05457179) conducted in the Midwest (36 sessions, 2 waves) and the South (24 sessions, 2 waves). The PARCS intervention included instructor-led small group sessions 2-3 times a week for 12 weeks in a local park. Sessions included a warm-up, resistance training focusing on fundamental movements using body weight or bands, walking, and a cool-down. Sessions were video recorded and analyzed by trained individuals at each site using a modified version of the Resistance Training Skills Battery (RTSB; Lubans et al., 2015). Four fundamental movements (squat, lunge, overhead press, row) were evaluated (1 = Not met, 2 = partially met, 3 = Fully met) using the best set and repetition during the first and last 4 weeks of the intervention. Scores from each movement were averaged to develop a total quotient score (RTSBQ) for each participant.

Results: Participants' (n=15 ; 9 Midwest, 6 South) RTSBQ improved between first instance (8.0±0.6) and last instance (8.6±1.4; p=0.03). Individual movements did not significantly increase scores at post-testing across sites (p=0.06, 0.1, 0.6, 0.2). The Midwest site exhibited improvement in row (p=0.01), lunge (p=0.03), and RTSBQ (p=0.01). No significant changes were observed on individual movements or the RTSBQ at the South site."

Conclusion: The PARCS intervention significantly increased RTSBQ scores overall, and on row and lunge movements at the Midwest site. Findings will guide refinement and standardization of movement instruction across sites to improve outcomes. Results will be reevaluated at the end of the 3-year clinical trial once all waves of the intervention data become available.

Human-Centered Participatory Co-Design to Develop a Multi-Level Physical Activity Intervention for Rural Children

Mrs. Janette Watkins^{1,2}, Ms. Sarah Greeven¹, Ms. Kathleen Heeter³, Ms. Julia Brunnemer⁴, Mr. James Hobson⁵, Dr. Cassandra Coble¹, Dr. Nicole Werner⁴, Dr. Vanessa Martinez Kercher⁴, Dr. Kyle Kercher¹

¹Department of Kinesiology, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ²Program in Neuroscience, College of Arts and Sciences, Indiana University, Bloomington, USA, ³Department of Applied Health Science, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁴Department of Health & Wellness Design, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁵White River Valley Middle School, Lyons, USA

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Regular participation in physical activity (PA) is a well-recognized modifiable behavior effective in reducing the risk of CVD. Children in rural areas face distinct barriers to engaging in PA compared to their urban counterparts. The present study utilizes human-centered participatory co-design, a technique that puts community stakeholders at the center of the intervention development, to engage a group of children and adults from the target middle school community. The present study aimed to develop a prototype multi-level PA intervention and implementation protocol called Hoosier Sport. Our primary hypothesis is that the co-design sessions will result in the development of a testable intervention protocol.

Methods: We formed two co-design teams, one with six children and another with six adults, using human-centered participatory co-design facilitated by research faculty and graduate students. Five co-design sessions were conducted, addressing (1) problem identification, (2) solution generation, (3) solution evaluation, (4) operationalization, and (5) prototype evaluation. Themes and intervention components were identified using thematic analysis.

Results: Child co-designers were in 6th-8th grade ($n = 9$), with an average age of 12.6 years ($SD = 1.8$), while adult co-designers ($n = 12$) had an average age of 43.3 years ($SD = 8.08$). The deductive thematic analysis revealed that children emphasized autonomy, valuing the freedom to choose physical and non-physical activities, and highlighted the significance of relatedness through building peer relationships during PA. Similarly, in adult interviews, autonomy was a prominent theme, underscoring the importance of choice in both physical and non-physical activities. Adults also frequently discussed relatedness, particularly emphasizing leadership through positive role modeling.

Conclusions: The prototype intervention and implementation strategies developed yielded a testable intervention and implementation strategy in line with Phase 1 of the ORBIT model. The testable prototype intervention and implementation strategy provides a foundation for building a mutually beneficial campus-community partnership between the university and local community.

A Protocol for Mapping Local Youth Physical Activity Opportunities in Rural Communities

Dr. Carrie Mershon¹, Ms. Mary Von Seggern², Dr. David Dzewaltowski^{1,2}

¹Kansas State University, Manhattan, USA, ²University of Nebraska Medical Center, Omaha, USA

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: Many community studies have examined free-play settings, with parks being a particular focus of physical activity (PA) mapping. However, as adults increasingly structure children's lives, there is a gap in how to map youth PA organizational opportunities, like youth sports. This study aims to develop a protocol for mapping local youth PA opportunities in rural communities.

Methods: As part of the Wellscapes randomized rural community trial (ClinicalTrials.gov Identifier: NCT03380143), a protocol for mapping youth PA opportunities in concentrated Hispanic/Latino rural U.S. Midwest communities (n=2) was implemented. During Spring 2023, an outside researcher used internet scraping to generate a list of community youth PA opportunities. Search terms included: "[town] youth sports," "[town] public schools," "[town] recreation," and "[town] public recreation." Local stakeholders (e.g., parents, city officials) were purposefully recruited for interviews (n=8; Community A, n=5; Community B, n=3) and focus groups (n=1/community; Community A, n=3 individuals; Community B, n=5) to assess protocol results. The research team used Cohen's kappa (κ) to measure reliability between protocol and member checking.

Results: A 1-hour search of Community A generated a list of 17 youth PA opportunities; 8/17 were recreation-based found using "[town] youth sports;" 9/17 were school-sponsored found using "[town] public schools;" the other search terms did not produce any novel opportunities. Local stakeholders confirmed 16/17 opportunities. A similar search of Community B generated a list of 13 opportunities; 3/13 were recreation-based, found using "[town] youth sports;" 10/13 opportunities were school-sponsored, found using "[town] public schools." Community A reliability reflected a substantial agreement ($\kappa=0.76$), and Community B, a near perfect agreement ($\kappa=0.94$). Collectively, the protocol's reliability was near perfect ($\kappa=0.9$).

Conclusions: The protocol presented in this study may provide a simple, efficient tool for communities to investigate youth PA at an organizational level. Further, the communities' opportunity variability provides a rationale for the importance of local investigation. Future research is necessary to test the protocol within additional communities.

Hoosier Sport: Pilot testing a co-designed physical activity intervention for rural middle school children

Mrs. Janette Watkins^{1,2}, Ms. Sarah Greeven¹, Ms. Kathleen Heeter³, Ms. Julia Brunnemer⁴, Mr. Jacob Otile⁵, Ms. Paola Fernández Solá⁵, Dr. Sandeep Dutta⁶, Mr. James Hobson⁷, Dr. Justin Evanovich⁶, Dr. Cassandra Coble¹, Dr. Nicole Werner⁴, Dr. Vanessa Martinez Kercher⁴, Dr. Kyle Kercher¹

¹Department of Kinesiology, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ²Program in Neuroscience, College of Arts and Sciences, Indiana University, Bloomington, USA, ³Department of Applied Health Science, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁴Department of Health & Wellness Design, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁵Department of Epidemiology & Biostatistics, School of Public Health-Bloomington, Indiana University, Bloomington, USA, ⁶Neag School of Education, University of Connecticut, Storrs, USA, ⁷White River Valley Middle School, Lyons, USA

SO.3.6: Latest research on participatory research designs in health promotion, Room 216, May 23, 2024, 9:50 AM - 11:05 AM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: This study aimed to test a physical activity intervention developed through human-centered participatory co-design in a rural community. The innovative intervention, conducted through a campus-community partnership, integrated children into the design process through the facilitation of child and adult co-design meetings. The study sought to determine its feasibility in a middle school student sample, addressing declining physical activity levels. The intervention is innovative in that it (1) was developed by co-design teams comprised of children and adults from the target community; (2) included children in the intervention design process; and (3) is conducted as part of a campus-community partnership with an under-resourced community.

Methods: In this study, 29 rural middle school students participated in a mixed-methods pre-post intervention, primarily during PE class. Intervention components included: sport-based youth development during PE class, individualized goal setting, physical activity monitoring, pedometer usage, and health education. Data were collected at baseline (T1) and post-intervention (T3), with some measures during the intervention (T2). Analyses included descriptive statistics, correlations, repeated measures ANOVA, retention ratios, and thematic analysis.

Results: Preliminary findings from 24 participants (6th and 7th graders) show they engaged in an average of 4.52 (\pm 1.83) days of MVPA weekly (assessed by CAPL-2). Participant physical activity knowledge placed them in the 'Achieving' category (65th to 85th percentile). Participants demonstrated strong autonomy in physical activity (mean of 4.03 \pm 0.96) and moderate relatedness to peers in physical activity pursuits (mean of 3.62 \pm 1.30, measured by BPNES). Pedometer compliance averaged 3.7 days per week with a 100% retention rate. Post-intervention data collection (T3) is pending.

Conclusion: This study pioneers Phase 1 of the ORBIT model, collaborating with an under-resourced rural community, advancing physical activity methods. It offers valuable insights, innovative techniques, and a practical template for future community-based research.

Active Communities: Effect of linking municipal rehabilitation programs with civil society engagement for active living

Ida K. Thorsen¹, Anders B.G. Hansen², Marie Lønberg¹, Thomas P. Almdal^{3,4}, Julie Midtgaard^{5,6}, Janne K. Lorenzen⁷, Mathias Ried-Larsen^{1,8}

¹Centre For Physical Activity Research, Copenhagen University Hospital - Rigshospitalet, Copenhagen, Denmark, ²Centre for Clinical Research and Prevention, The Intersectoral Prevention Laboratory, Bispebjerg and Frederiksberg Hospital, Copenhagen, Denmark, ³Department of Endocrinology, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark, ⁴Department of Immunology and Microbiology, Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark, ⁵Centre for Applied Research in Mental Health Care (CARMEN), Copenhagen University Hospital - Mental Health Services Copenhagen, Copenhagen, Denmark, ⁶Department of Clinical Medicine, Faculty of Health and Medical Science, University of Copenhagen, Copenhagen, Denmark, ⁷Steno Diabetes Center Sjælland, Holbæk, Denmark, ⁸Department of Sports Sciences and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark

SOLB2: Latest findings in behavior change science, part 1, Room 211, May 22, 2024, 12:00 PM - 1:15 PM

SIG - Primary Choice: K. Participatory Research in Health Promotion

Purpose: In a co-creation process, we identified four interventions to link citizens with type 2 diabetes (T2D), cardiovascular disease (CVD), and/or obesity with physical activities in civil society organizations when ending a municipal rehabilitation program. This process included citizens in the target group, civil society organizations, municipal stakeholders (including politicians), and researchers. The aim of this study is to investigate the effect of these interventions on physical activity engagement following a municipal rehabilitation program.

Methods: In this pilot study, four co-created interventions were implemented in T2D, CVD, and obesity rehabilitation programs in a Danish municipality: 1. A link worker; 2. A visiting program; 3. A digital platform; and 4. Co-created physical activities. Data from citizens participating in these programs were collected 0 and 6 months after the rehabilitation program. Outcomes included changes in physical activity engagement in civil society organizations; objectively measured physical activity (i.e., light, moderate, and vigorous intensities) and sitting time; 6-minute walk distance; body composition; health-related quality of life (the 12-item short-form health survey); and mental well-being (the WHO-5 well-being index). All outcomes were analyzed using repeated measures mixed linear models with random effects (participant ID).

Results: Among the 33 included citizens (58% women, median (25th; 75th percentile) age of 67.6 (63.9; 74.1) years), six were diagnosed with T2D; nine with CVD; and 18 were obese. Of the 21 citizens (64%) who were not engaged in physical activities in civil society organizations before entering the rehabilitation program, 67% started and remained active in an organization at 6-month follow-up. Physical activity increased by a mean (95% confidence interval) of 18.5 (2.8; 34.1) min/day from 0 to 6 months after the rehabilitation program. This was mainly explained by an increase in light intensity physical activity of 15.6 (2.4; 28.8) min/day. The other outcomes remained unchanged from 0 to 6 months after the rehabilitation program.

Conclusion: This study suggests that the co-created interventions led to increased physical activity engagement in civil society organizations and increased physical activity time. This supports co-creation of interventions as a method to link municipal rehabilitation programs with physical activities in civil society organizations.

Children's health, wellbeing and academic outcomes over the summer holidays: a scoping review.

Ms. Emily Eglitis¹, Mr. Aaron Miatke^{1,2}, Dr. Rosa Virgara¹, Dr. Amanda Watson¹, Prof. Timothy Olds¹, Ms. Mandy Richardson³, Prof. Carol Maher¹

¹Alliance for Research in Exercise, Nutrition and Activity, University of South Australia, Adelaide, Australia, ²Centre for Adolescent Health, Murdoch Children's Research Institute, Parkville, Australia, ³Department for Education, Adelaide, Australia

S.1.01: Do we need summer holiday interventions for high-risk populations? Ballroom B, May 21, 2024, 8:25 AM - 9:40 AM

Purpose:

To explore summertime changes in children's health and wellbeing using a holistic lens. This is the first interdisciplinary review that synthesized educational, health, behavioural and psychological research to examine summertime changes in academic, health, and wellbeing outcomes and the role of disadvantage. The research questions were:

1. What are the geographical and historical trends in the literature?
2. How do children's academic, health and wellbeing outcomes change over the summer holidays?
3. Do these changes differ for disadvantaged children?

Methods:

A scoping review was conducted: six electronic databases were searched for peer-reviewed studies. To be eligible, studies were required to specifically track changes over summer. Data extraction used a standardized template. The PICO elements were:

Population: school aged children and adolescents (five to 18 years old)

Concept: health (health, behaviour, wellbeing) or academic outcomes

Context: specific to the summer holiday period.

Results:

76 studies were included, involving 14,231,111 children. Outcomes were categorized based on summertime change (significant or suggestive decline/increase, or mixed/neutral). Outcomes were also compared against the school term and assessed for disparities related to socioeconomic status or race/ethnicity. Some distinct patterns emerged: academic outcomes, particularly in numeracy, declined over summer with only disadvantaged children showing decline in literacy. Physical health declined over summer, with increases in adiposity and decreases in cardiovascular fitness. Data on muscular fitness, sleep, diet, and mental wellbeing were sparse. For health behaviours, sedentary and screen time increased with mixed patterns in physical activity and a lack of data regarding sleep and diet.

Health behaviours were worse for disadvantaged children and there were sharper declines in academic outcomes. Disadvantaged children seem to be impacted to a greater extent by the change in routine and environment over summer which influences their behaviours.

Summer provides an opportunity to intervene in complex problems like childhood obesity and the inequity in health and achievement outcomes experienced by disadvantaged children.

Targeted interventions during summer could mitigate overall declines and address inequity while future research could investigate mental, social and emotional wellbeing.

Dietary patterns of children with autism spectrum disorders during summer versus school months: Preliminary Findings

Dr. Keith Brazendale¹, Dr. Shanté Jeune¹, Dr. Jeanette Garcia², Dr. Susan Quelly³, Dr. Shawn Lawrence¹, Dr. Shilpa Gurnurkar⁴, Dr. Ethan T. Hunt⁵

¹College of Health Professions and Sciences, University of Central Florida, Orlando, Orlando, USA, ²College of Applied Human Sciences, West Virginia University, Morgantown, USA,

³College of Nursing, University of Central Florida, Orlando, USA, ⁴Nemours Children's Hospital, Orlando, USA, ⁵University of Texas Health Science Center at Houston School of Public Health in Austin, Austin, USA

S.1.01: Do we need summer holiday interventions for high-risk populations? Ballroom B, May 21, 2024, 8:25 AM - 9:40 AM

Background: Children with autism spectrum disorder (ASD) can have strong preferences for processed, energy-dense foods with low nutritional value that can contribute toward obesity. Previous research has reported poorer dietary patterns during summer versus school months in neurotypical children may be a result of reduced access to structured settings where the food and beverages served are restricted. Despite the increased risk of obesity in children with ASD, little is known about dietary patterns during summer versus school months in this population.

Methods: A within-subjects observational study compared dietary patterns during a school month versus a summer month in children with ASD. Dietary patterns over a 14-day period were captured via the Beverage and Snack Questionnaire (BSQ) completed by a caregiver and child at school and summer timepoints. T-tests explored within-subject differences in dietary patterns during school versus summer, and by age and weight-status (between-subjects). Outcomes were expressed as percent of days (%days) for each BSQ item.

Results: Thirteen child/caregiver dyads provided 332 completed daily BSQs (174 summer, 158 school). There were no observed differences in dietary patterns of children with ASD (range 4-to-9 years old, 9 males, 6 race/ethnicity minority, 5 overweight/obese) during school versus summer. Younger children (4-to-5-year-olds) reported consumption of potato chips on 69%days (summer) versus 42%days (school) ($p<0.05$). Older children (7-to-9-year-olds) reported a higher %days consuming vegetables and orange juice during both summer and school timepoints compared to younger children ($p<0.05$). Children with ASD and with overweight/obesity consumed salty snacks on +18%days more during summer versus school ($p<0.05$). During the school months, children with ASD and with overweight/obesity reported higher %days consuming potato chips, salty snacks, and cookies compared to their counterparts ($p<0.05$). During the summer month, children with ASD with OWOB had higher %days consuming salty snacks and fast food versus their counterparts ($p<0.05$).

Discussion: Preliminary evidence suggests different dietary patterns among children with ASD during school versus summer months by age and weight status subgroups. Larger studies in diverse samples that incorporate additional measures of diet are needed to further explore dietary patterns of children with ASD.

Effectiveness of Free Summer Day Camp on Preventing Accelerated Body Mass Index Among Elementary-age Children from Low-Income Households: A Randomized Clinical Trial

Dr. Michael W Beets¹, Dr. Sarah Burkart¹, Dr. Christopher Pfladderer², Associate Professor R. Glenn Weavie¹, Dr. Xuanxuan Zhu¹, Dr. Layne Reesor-Oyer³, Dr. Keith Brazendale⁴, Dr. Bridget Armstrong¹, Dr. Elizabeth Adams¹

¹University of South Carolina, Columbia, USA, ²University of Texas Health Science Center at Houston School of Public Health, Houston, USA, ³University of Florida, Gainesville, USA, ⁴College of Health Professions and Sciences, University of Central Florida, Orlando, USA

S.1.01: Do we need summer holiday interventions for high-risk populations? Ballroom B, May 21, 2024, 8:25 AM - 9:40 AM

Background: In the US, children gain 2-3 times more weight during their 3-month summer vacation compared to the entire 9-month school year. Children from low-income households and historically marginalized populations are most susceptible. According to the Structured Days Hypothesis, accelerated BMI gain during the summer may be due to the removal of health-promoting structure, specifically school. During summer, a common form of health-promoting structure are summer day camps (SDC). Summer day camps are predominately fee-for-service, which creates a financial barrier for children from low-income households. One solution to address accelerated BMI gain is providing free access to existing summer programming.

Methods: In summers 2021-2023, we randomized 422 children (8.2±1.5yrs, 48% female, 51% Black, 69% at or below 200% Federal Poverty Level, 30% food insecure) from 7 elementary schools to one of two conditions: summer as usual (control, n=199) or free SDC for 8-10wks (intervention, n=223). The SDC was operated by a local parks and recreation commission and offered every weekday 8AM-5PM (except holidays), provided breakfast, lunch, and snacks, and opportunities for physical activity. Children's height/weight were measured before school ended (May) and upon return from summer (late August). Intent-to-treat analysis examined changes in BMI z-scores (zBMI) from beginning to end of summer. Dose-response models examined differences in changes in zBMI over the summer as a function of attending any summer program in both invention and control children.

Results: Intent-to-treat analysis indicated children in the control group exhibited increases in zBMI during the summer (+0.04) while children in the intervention group reduced zBMI (-0.05) (group-x-time difference -0.09, -0.17 to -0.01). Dose response indicated for every one day/week increase in attending SDC resulted in a -0.03 zBMI reduction, for a difference in zBMI between children not attending summer programming vs. children attending summer programming every weekday of -0.17 (-0.27 to -0.7).

Discussion: Policies targeting upstream structural factors, such as universal access to existing community programming, could lead to reductions in accelerated summer BMI gain among children from low-income households. Because these programs can be cost-prohibitive, providing access to SDC could fill an important gap in obesity prevention efforts outside the school year.

Design and integration of a survivorship nutrition intervention into an established exercise oncology program: BfedBwell program development

Dr. Emily Hill¹, Ms. Chloe Simpson¹, Dr. Danielle Ostendorf¹, Dr. Ryan Marker¹, Dr. Paul MacLean¹, Dr. Victoria Catenacci¹

¹University of Colorado Anschutz Medical Campus, Aurora, CO, USA

S.1.02: The Missing Piece of the Puzzle: Integrating Cancer Survivorship Nutrition Interventions into Existing Clinical Care Delivery Models and Community Outreach Programs, Room 212, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Among individuals with a history of cancer, overweight and obesity (ow/ob) increases risk of recurrence, second primary cancers, and cardiometabolic disease. While multiple health behavior change interventions have demonstrated efficacy in improving lifestyle behaviors and achieving weight loss, the majority of survivorship programs focus on singular aspects of behavior change. Further, translation to clinical practice is sparse, and few individuals have access to survivorship programming as part of standard of care in real-world settings. Adapting existing programs to incorporate multiple health behaviors may be an effective strategy to increase access to sustainable comprehensive survivorship programs.

Methods: We partnered with potential program adopters from multiple levels to co-design a survivorship nutrition program, *BfedBwell*, for integration within an existing 12-week clinical exercise oncology program, *BfitBwell*. Co-designers included: (1) content experts with knowledge of survivorship guidelines and practices; (2) program delivery staff with experience providing nutrition and/or exercise interventions; and (3) individuals with a history of cancer and ow/ob. The Practical Robust Implementation and Sustainability Model framework guided intervention planning and evaluation. Semi-structured interview guides were created to collect information on factors affecting the organization and individuals to be served. One-on-one “think aloud” interviews were completed during several human-centered design cycles. Interviews were recorded for audio transcription, and rapid qualitative analysis was conducted to create a summary matrix to guide program development.

Results: Fifteen co-designers completed two rounds of interviews. Individuals identified key messaging and topics desired for inclusion in the program curriculum and provided feedback on mode of delivery, dose, frequency, wanted features, and perceived facilitators and barriers to participation and clinical implementation. Individuals requested content related to both nutrition (e.g., recipe development, label reading) and social/mental wellbeing (e.g., fostering resilience, acceptance of change, stress reduction). Most preferred weekly touchpoints delivered in a hybrid fashion combining remote and in-person sessions.

Conclusions: Rapid qualitative analysis informed intervention development, ensuring relevant content creation and encouraging co-designer buy-in. *BfedBwell* will undergo proof-of-concept testing to evaluate feasibility and acceptability of the integrated intervention. Results will inform delivery of a pilot trial to determine a set of optimal intervention components prior to advancing to efficacy testing.

Diet, lifestyle, and health for Survivors via COoPerative Extension: curriculum development for the SCOPE study

Dr. Ashlea Braun^{1,2}, Miss Olivia Pitasi¹, Dr. Jill Joyce¹, Dr. Rachel Liebe¹, Dr. Deana Hildebrand^{1,2}

¹Oklahoma State University Department of Nutritional Sciences, Stillwater, USA, ²Oklahoma State University Cooperative Extension Service, Stillwater, USA

S.1.02: The Missing Piece of the Puzzle: Integrating Cancer Survivorship Nutrition Interventions into Existing Clinical Care Delivery Models and Community Outreach Programs, Room 212, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Rural-urban disparities exist in cancer-related outcomes across the United States. Central to many rural states' community infrastructure is the Cooperative Extension Service ("Extension"), a long-standing conduit between agriculture experts and rural communities. This has been expanded via the Family and Consumer Sciences (FCS) arm of Extension (e.g., obesity and diabetes prevention). No current program exists for FCS to support individuals living with and beyond cancer (LWBC). The purpose of this study was to co-design a diet- and lifestyle-focused survivorship program for Extension, while identifying barriers to and facilitators of implementation.

Methods: Using purposive sampling, 10 post-active treatment adults LWBC and 10 FCS Oklahoma State Extension Educators were identified in counties within the top quartile of cancer incidence. Participants completed a survey and semi-structured interview to assess preferences and ideas for an Extension survivorship program. Survey data were analyzed using descriptive statistics. Interviews were transcribed verbatim, reviewed, and triangulated with evidence regarding the needs of survivors to identify program priorities. Deductive coding was done using the Consolidated Framework for Implementation Research (CFIR) to identify barriers to and facilitators of program implementation.

Results: Adults LWBC included 80% women and 20% men, aged 32-72 years. Extension Educators were all women across 10 counties, aged 30-67 years. Curriculum foci include diet, exercise, mental health, and social support; these are in line with current evidence focused on lifestyle (e.g., fruit/vegetable intake) and mental health (e.g., loneliness). Across CFIR domains, barriers identified by adults LWBC included scant familiarity with Extension and concerns regarding incompatibility of personal views with other community members' (e.g., religion). Barriers per Extension Educators included disconnects between Extension and healthcare providers, and program attendance. Facilitators identified by adults LWBC included a desire for diet and exercise-related information and a current lack of support programs. Facilitators identified by Extension Educators included existing infrastructure and high-quality training to support implementation.

Conclusion: Adults LWBC reported a desire for continued support post-active treatment, emphasizing diet, exercise, and mental health. Extension Educators endorsed strong compatibility between the needs of adults LWBC and the infrastructure and expertise of Extension, with several opportunities to ensure effective implementation.

Adapting an established weight management programme to support women with breast cancer to lose weight: Experiences from the WEight loss to SUPpoRt brEAsT CANcer survival (WE SURE CAN) pilot trial

Associate Professor Rebecca Beeken¹, Dr. Louise Hall¹, Prof. Samuel Smith¹

¹University of Leeds, Leeds, United Kingdom

S.1.02: The Missing Piece of the Puzzle: Integrating Cancer Survivorship Nutrition Interventions into Existing Clinical Care Delivery Models and Community Outreach Programs, Room 212, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Women diagnosed with breast cancer who are affected by excess weight are at increased risk of recurrence and mortality. The Diabetes Remission Clinical Trial demonstrated that Total Diet Replacement (TDR) within a behavioural weight management programme could support people with type 2 diabetes to lose weight and achieve remission. In the UK, the National Health Service now offers primary care referrals to this programme for people with type 2 diabetes. If similar weight losses could be achieved for women with breast cancer affected by excess weight, it could mitigate breast cancer recurrence risk. However, definitive evidence is needed. We worked with a commercial provider to explore if this programme could be adapted for women diagnosed with breast cancer with a high body mass index (BMI ≥ 27) as part of the WE SURE CAN pilot trial.

Methods: During the trial set-up for WE SURE CAN a series of meetings were held with the commercial provider to identify where adaptations may be needed to ensure suitability for the target population. Input from the wider trial management group including patient representatives was provided as required. Key considerations included the safety of participants, referral to the programme outside of the primary care context, Covid-19, the geographical spread of potential participants, and staff knowledge around breast cancer.

Results: Several adaptations were made to the standard delivery of the weight management programme. These included 1) amended eligibility criteria, which were adapted as the trial progressed; 2) a two-stage screening process including communication with primary care to enable GPs to flag relevant concerns and support additional monitoring for pre-existing conditions; 3) remote delivery of the programme; and 4) development and provision of a brief training session on breast cancer for dietitians involved in the delivery of the intervention including information on common symptoms and red flags for recurrence.

Conclusions: It was possible to adapt a weight management programme incorporating TDR for women with breast cancer. Qualitative interviews are exploring experiences of delivering and receiving the programme. Pilot trial results will indicate adherence and if observed weight losses are similar to those in chronic-disease populations.

Developing a Shared Evaluation Protocol to Assess Food is Medicine Programs Across the US

Dr. Eliza Short¹, Dr. Elizabeth Anderson Steeves¹, Ms. Elise August², Ms. Angela Berry², Dr. Eric Calloway¹, Ms. Nicole Cawrse¹, Dr. Bailey Houghtaling¹, Dr. Christopher Long¹
¹Gretchen Swanson Center for Nutrition, Omaha, USA, ²Feeding America, Chicago, USA

S.1.03: Designing and Evaluating “Food is Medicine” Nutrition Interventions to Inform Policy and Scale for Impact, Room 213, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Feeding America (FA) and Elevance Health Foundation partnered with the Gretchen Swanson Center for Nutrition (GSCN) to conduct a mixed-methods assessment of a national Food is Medicine (FIM) initiative including 21 regional partnerships between Feeding America partner food banks and healthcare providers. An evaluation protocol was co-created with all partners to study changes in food and nutrition security, health-related outcomes, and factors influencing FIM program implementation, accounting for between-program heterogeneity.

Methods: A learning collaborative was used to support shared decision-making through a series of interactive virtual meetings with food banks and health care partners (e.g., group learning sessions with all 21 partnerships, 1:1 meetings between each partnership and GSCN/FA). Topics for collaboration included the development and administration of data collection tools, data sharing (i.e., program records, electronic health records – EHRs, claims data), and approaches to strengthening partnerships between food banks and healthcare organizations. Descriptive data for each partnership’s program (e.g., dose/duration, inclusion criteria) were captured through meeting notes and integrated into the study protocol.

Results: The result of this process was an initiative-wide study protocol to measure the impact of FIM programs on participant-reported outcomes (e.g., fruit/vegetable intake, quality of life), healthcare utilization (e.g., EHR, claims data), lived experiences (e.g., qualitative interviews), and barriers and facilitators to FIM program implementation. Site-specific evaluation plans were developed to integrate data collection procedures into each program’s workflow, develop data-sharing procedures, and add tailored survey/interview questions to support local evaluation goals. The heterogeneity of the partnerships’ programs, including program model (e.g., clinic-based food pantry, mobile food pantry), amount of food (e.g., one-time food box, biweekly food distribution), inclusion of nutrition education (e.g., group class, 1:1 dietitian visit), and referral to federal nutrition assistance programs, informed all aspects of protocol development.

Conclusions: This co-developed evaluation balances shared measures and heterogeneity across programs to understand FIM impacts on nutrition and health-related outcomes and implementation best practices. Given the global rise in FIM programs, this approach may be used to develop collaborative evaluations across many countries. Forthcoming results will advance the FIM field by illustrating the varying impacts of FIM across diverse programs and contexts.

Developing, implementing, and evaluating a Food as Medicine program to address food insecurity and chronic conditions in community health centers

Dr. Lisa Goldman Rosas¹, Dr. Steven Chen², Dr. Lan Xiao¹, Dr. Mike Baiocchi¹, Dr. Wei-ting Chen¹, Mr. Benjamin Emmert-Aronson³, Mr. Elliot Ng⁴, Dr. Erica Martinez⁵, Dr. Ariana Thompson-Lastad⁶, Ms. Elizabeth Markle³, Dr. June Tester⁶

¹Department of Epidemiology and Population Health Department of Medicine, Division of Primary Care and Population Health Stanford School of Medicine, Stanford, USA, ²Alameda County Healthcare Services Agency, Alameda, USA, ³Open Source Wellness, Oakland, USA, ⁴Community Health Center Network, San Leandro, USA, ⁵University of California, Irvine, USA, ⁶University of California, San Francisco, USA

S.1.03: Designing and Evaluating “Food is Medicine” Nutrition Interventions to Inform Policy and Scale for Impact, Room 213, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Food as Medicine is increasingly implemented to address the dual challenge of nutrition insecurity and chronic disease. Food as Medicine refers to integration of food-based nutrition interventions into healthcare to prevent and treat disease. Partnering with healthcare, food, and community-based organizations is critical for developing, implementing, and evaluating effective Food as Medicine interventions.

Methods: A community-university partnership was formed to develop, implement, and evaluate Recipe4Health, a Food as Medicine program in Alameda County, California. The partnership included healthcare organizations, an urban farm, community-based organizations, and academic institutions. Recipe4Health includes a Food Farmacy that provides 12 weekly home deliveries of produce with or without a Behavioral Pharmacy that offers personalized health coaching or 12 weekly group medical visits. The partnership has implemented the program in 5 Federally Qualified Health Centers to date and examined pre/post changes over 4 months in outcomes assessed by surveys (e.g., produce intake, physical activity, food insecurity). We also compared health outcomes (e.g., lipids, HbA1c) in the Electronic Health Record (EHR) between Recipe4Health patients and controls over 12 months. Control patients were identified using propensity score matching with patients from similar clinics that had not implemented Recipe4Health. We used linear mixed effects models with repeated measures, adjusting for baseline of each outcome.

Results: Study participants (n=5,286) were middle-aged (mean age 51.2 SD [13.9]) primarily women (68%), and from diverse racial/ethnic backgrounds with 51% Latinx, 21% Black, and 8% Asian American/Pacific Islander. Based on pre/post surveys, Recipe4Health participants significantly increased their produce consumption (0.41 servings [0.11, 0.72], p=007) and physical activity (41.98 minutes/week [22.33, 61.63], p<.001). Recipe4Health participants also experienced statistically significant improvements in food insecurity with 59% reporting food insecurity at baseline and 48% reporting food security at follow-up (p<.001). Based on EHR data, Recipe4Health participants significantly decreased their non-HDL cholesterol (-17.1 [-26.9, -7.2], p<.001) and HbA1c (-0.37%, 95% CI [-0.65, -0.08]; p=0.01) compared to propensity score-matched controls at 12 months.

Conclusion: A community-university partners successfully developed, implemented, and evaluated Recipe4Health. Our partnership demonstrated that Recipe4Health improved outcomes related to chronic conditions among diverse patients in Federally Qualified Health Centers.

Impact evaluation of No Money No Time, a culinary nutrition website targeting underserved population groups

Dr. Lee Ashton^{1,2}, Dr. Shanthy Ramanathan^{1,2}, Ms. Melanie Rao², Prof. Tracy Burrows^{1,2}, Associate Professor Marc Adam^{1,2}, **Prof. Clare Collins**^{1,2}

¹School of Health Sciences, College of Health Medicine & Wellbeing, University of Newcastle, Callaghan, Australia, ²Food and Nutrition Research Program, Hunter Medical Research Institute, New Lambton, Australia

S.1.03: Designing and Evaluating “Food is Medicine” Nutrition Interventions to Inform Policy and Scale for Impact, Room 213, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Poor diet impacts one in five deaths globally, while over 40% of the global population can't afford a healthy diet. Improving population eating patterns to align with national nutrition recommendations could facilitate a major reduction in global disease burden but need to consider personal resources. Given potential reach and scale of online technologies, web-based programs offer an ideal opportunity to ensure evidence-based nutrition information is widely accessible. The presentation covers the impact evaluation of the No Money No Time (NMNT) program, an online web-based resource targeted at people with time and financial constraints by providing evidence-based nutrition information and resources (e.g., recipes and blog articles) to support healthy eating. NMNT (<https://nomoneynotime.com.au/>) was developed in consultation with a young adult target audience.

Methods: The Framework to Assess Impact of Translation research (FAIT) was used to evaluate the impact of NMNT using quantified metrics, an assessment of costs against monetized consequences, and narratives to describe the impact of NMNT. Data were gathered via online surveys, in-depth interviews, Google analytics and document analysis,

Results: Since its inception in 2020, the reach of NMNT was extensive with over 28K direct users and over 78K registered through the eating quiz, with an increase from 44K visitors in 2020 to over 125K in the first 4 months of 2023. There have been over 1.6M recipe views and over 22K blog views. Of the 238,445 who completed the health eating quiz offered through the website, there has been an increase of 2.3 points (SD 6.9) (range 0-73 points) in their healthy eating score, some of which can be attributed to the NMNT resource.

Conclusions: This impact assessment case example using NMNT illustrates how researchers can use evidence to demonstrate and report the impact and reach of web-based nutrition promotion programs. The application of FAIT demonstrated impact in terms of knowledge-gain, capacity-building, infrastructure, and reach, particularly in under-served and disadvantaged groups in the community. More needs to be done to obtain feedback from users on changes in behaviour as a consequence of NMNT, to fully capture the return on investment in web-based nutrition programs.

Strengthening the Evidence Base for Community Gardening as a Nature-based Social Intervention to Improve Health: Results from the CAPS Randomized Controlled Trial

Dr. Jill Litt^{1,2}, Mr. Angel Villalobos³

¹University of Colorado, Boulder, USA, ²ISI Global, Barvelona, Spain, ³Change Matrix, LLC, Las Vegas, USA

S.1.04: Gardening Interventions for Individual and Community Health across the Life Course, Room 214, May 21, 2024, 8:25 AM - 9:40 AM

Background: Chronic diseases and mental health disorders are among the most important public health challenges worldwide. We tested whether community gardening, as a multicomponent and synergistic lifestyle intervention, could improve health behaviours and reduce psychosocial risk factors, including stress and anxiety, which are critical for reducing risks for chronic diseases and mental health among age- and ethnically diverse healthy adults.

Methods: We conducted a randomised controlled trial among adults over 18 years old who had not gardened in the past two years. Participants were randomised within waitlists for community gardens in Denver, Colorado. Primary outcomes were diet, physical activity, and anthropometry; secondary outcomes were perceived stress (PSS-10) and anxiety (GAD7). Analysis used intent-to-treat. Difference score models evaluated secondary outcomes.

Findings: From 2017-2019, 291 adults participated in the study. Significant time-by-intervention effects were observed for fibre ($p=0.034$) and moderate-to-vigorous physical activity ($p=0.012$). There were no significant time-by-intervention interactions for combined fruit and vegetable intake, healthy eating index, sedentary time, body mass index, and waist circumference (all $p>0.04$). Difference score models showed greater reductions among intervention participants (T2-T1) in perceived stress ($p=0.025$) and anxiety ($p=0.044$).

Interpretation: Community gardening improved fibre intake and moderate-to-vigorous physical activity but not combined fruit and vegetable intake, healthy eating index, sedentary time, body mass index or waist circumference. Moreover, community gardening reduced perceived stress and anxiety. These data, drawing from a robust randomized controlled trial, suggest that gardening can improve key health behaviours and psychosocial health outcomes that are critical for reducing risk for chronic diseases and mental health disorders.

Harvest for Health: A Randomized Controlled Trial of a Home-Based, Vegetable Gardening Intervention among Older Cancer Survivors across Alabama

Dr. Wendy Demark-Wahnefried¹, Dr. Robert Oster¹, Ms. Kerry P. Smith², Ms. Harleen Kaur¹, Dr. Andrew D. Fruge², Mr. W. Walker Cole¹, Dr. Julie L. Locher¹, Dr. Gabrielle Rocque¹, Dr. Maria Pisu¹, Dr. Jennifer R. Bail³, Dr. Harvey Jay Cohen⁴, Dr. Cindy K. Blair⁵
¹University of Alabama, Birmingham, USA, ²Auburn University, Auburn, USA, ³University of Alabama, Huntsville, USA, ⁴Duke University Medical Center, Durham, USA, ⁵University of New Mexico, Albuquerque, USA

S.1.04: Gardening Interventions for Individual and Community Health across the Life Course, Room 214, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Cancer survivors experience high comorbidity and accelerated aging. A healthier diet and increased physical activity (PA) could resolve these complex problems, and favorably influence other outcomes, e.g., adiposity. Harvest for Health, a single-blinded, 2-arm, crossover-designed randomized controlled trial (NCT02985411) assessed outcomes of a 1-year, home-based vegetable gardening intervention among 381 cancer survivors across Alabama.

Methods: Harvest for Health was a partnership between the University of Alabama at Birmingham and the Cooperative Extension Service at Auburn University. Survivors of cancers with >60% 5-year survival who self-reported suboptimal vegetable and fruit (V&F) consumption, PA, and physical functioning (PF) were randomly-assigned to waitlist vs. vegetable gardening arms. Trained Extension-certified Master Gardeners were paired with survivors to deliver the intervention, consisting of monthly home visits (with mid-month telephone contact) to oversee the planning, planting, and maintaining of a spring, summer, and fall garden. Supplies included a 4x8' raised bed or four grow boxes, soil, fertilizer, mulch, seeds and transplants, and gardening tools. Baseline, 1- and 2-year follow-up assessments were conducted (in-person or Zoom-assisted). Primary outcomes included self-reported V&F intake, PA and PF (corroborated by plasma carotenoids, accelerometry and physical performance assessments). Secondary outcomes included body adiposity, stress, sleep, quality-of-life, social support, self-efficacy, gut alpha diversity, and lipid and inflammatory biomarkers.

Results/Findings: Participants were diagnosed with a wide variety of cancers, with time from diagnosis averaging 7.5 years. Most were female (69%), non-Hispanic white (77%), married (61%), urban dwelling (88%), and retired/unemployed (73%). While few were current smokers, most had BMI's ≥ 25 and ate <2.5 servings of V&Fs/day. At 1-year follow-up, retention averaged 92.9% and adverse events were minimal (no between-arm differences). Improved scores across outcomes were observed in intervention vs. control arms, though statistically significant results were detected only for the 2-minute step test, 30-second chair stand, perceived health, and 3-of-4 microbiome alpha diversity measures (time x arm interaction p-values <0.01). Highly significant within and between-arm differences and time x arm interactions were found for gardening social support (p-values <0.001).

Conclusions: Analyses on Harvest for Health continue; however, results indicate that vegetable gardening interventions are safe, well-accepted, and produce broad benefits.

TX Sprouts: The effects of a school-based gardening, nutrition, and cooking program on health and academic outcomes in primarily Hispanic low-income elementary school children

Dr. Jaimie N Davis¹, Dr. Matthew J Landry^{1,2}, Dr. Sarvenaz Vandyousefi^{1,3}, Dr. Matthew R Jeans^{1,4}, Ms. Erin A Hudson¹, Dr. Deanna M Hoelscher⁵, Prof. Alexandra E. van den Berg⁵, Dr. Adriana Perez⁶

¹Department of Nutritional Sciences, College of Natural Sciences, University of Texas at Austin, Austin, USA, ²Stanford Prevention Research Center, School of Medicine, Stanford University, Palo Alto, USA, ³New York University School of Medicine, Department of Pediatrics, Division of General Pediatrics, Bellevue Hospital Center, New York, USA, ⁴Health Equity Alliance, The Health Management Academy, Arlington, USA, ⁵Michael & Susan Dell Center for Healthy Living - Department of Health Promotion and Behavioral Sciences – The University of Texas Health Science Center at Houston (UTHealth), School of Public Health, Austin, USA, ⁶Michael & Susan Dell Center for Healthy Living - Department of Biostatistics and Data Science – The University of Texas Health Science Center at Houston (UTHealth), School of Public Health, Austin Campus, Austin, USA

S.1.04: Gardening Interventions for Individual and Community Health across the Life Course, Room 214, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Although school garden programs have been shown to improve dietary behaviors, there has not been a cluster-randomized controlled trial (cRCT) conducted to examine the effects of school garden programs on obesity or metabolic outcomes. The goal of this study was to evaluate the effects of a one-year school-based gardening, nutrition, and cooking intervention (called TX Sprouts) on dietary intake, obesity outcomes, metabolic outcomes, and academic performance in elementary school children.

Methods: This cRCT randomly assigned 16 elementary schools to either TX Sprouts intervention (n=8 schools) or to delayed intervention (control, n=8 schools). The intervention included: a) formation of a Garden Leadership Committee, b) building an outdoor teaching garden, c) 18 student gardening, nutrition and cooking lessons through the school-year taught by trained educators, and d) nine monthly parent lessons. Outcomes were obtained at baseline and post-intervention follow-up (9-months): demographics, anthropometrics (i.e., BMI parameters, waist circumference, and body fat percentage via bioelectrical impedance), blood pressure, dietary intake via diet screener and 24-hr recalls (subsample), standardized test scores, and metabolic outcomes (glucose, lipids, HbA1c) via fasting blood sample (subsample).

Results: A total of 3135 children (7-12 y) were enrolled in study and completed baseline survey and clinical measures; 64% Hispanic, 69% eligible for free and reduced lunch, and 47% male. Eighty seven percent (n=2721) of children completed 9-month follow-up clinical measures. Fasting blood samples were obtained from 1104 children at baseline and 695 children at follow-up. Dietary recalls were obtained in 738 children at baseline and 468 at follow-up. Participants in TX Sprouts compared to control increased vegetable intake (+0.5 vs. 0.01 serv/d, p=0.046), increased unprocessed foods (2.3% vs. -1.8% g, p<0.01), reduced ultra-processed food intake (-2.4% vs. 1.4% g, p=0.04), reduced HbA1c (-0.03 vs. +0.05%, p=0.035), reduced LDL

cholesterol (-8.4 vs. -3.5 mg/dL, $p=0.05$), increased reading scores (+5.3% vs. -1.3%, $p=0.047$), and increased availability of healthy foods in the home ($p=0.01$).

Conclusions: Our findings suggest that elementary schools can incorporate garden-based interventions to improve dietary behaviors, academics, and subsequent metabolic parameters in children. Further research on ways to scale and sustain garden, nutrition, and cooking programs in schools are warranted.

Design for Dissemination and Sustainability: Junior Master Gardener Program's Implementation Success Stories Using the Learn, Grow, Eat & GO! Curriculum

Ms. Lisa Whittlesey¹

¹Texas A&M AgriLife Extension Service, College Station, USA

S.1.05: Designs for Moving Research into Practice: Planting Seeds to Growing Programs, Room 215, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Learn, Grow, Eat & GO! (LGEG) is a youth program within the Texas A&M AgriLife Extension Service International Junior Master Gardener (JMG) program. LGEG is a 10-week academically rich and school-based curriculum that incorporates evidence-based practices supported by a 5-year randomized controlled trial. It combines interdisciplinary elements of garden science, nutrition, food preparation, vegetable tastings, and physical activity designed to improve child, family, and school community health and wellness outcomes. Currently, the JMG program is implemented in all 50 U.S. states and in 10 countries. The purpose of this session is to apply the Designing for Dissemination and Sustainability (D4DS) framework to the LGEG program.

Methods: The D4DS approach, with Conceptualization, Design, Dissemination, and Impact phases, aims to design interventions to match the contextual characteristics of the target audience to increase dissemination and sustainability. This presentation will highlight and examine examples from the LGEG program within each D4DS phase while also analyzing the topics, issues, and trends which have guided dissemination and sustainability since the program's conceptualization.

Results: Conceptualization will assess the need and demand for the LGEG program during its development phase. The program design reflects the significant transformations which occurred as the LGEG program's goals grew to include the following: reach diverse audiences, reflect AgriLife Extension's mission, develop resources, and continually strengthen the strategic direction of JMG's reach into communities statewide, nationally, and internationally. The dissemination phase will identify how LGEG effectively reaches under-resourced populations. Finally, the impact phase will highlight the involvement of Extension staff, volunteers, schools, and school district personnel, community-based organizations, and community leaders. Each of these pivotal phases will illustrate the evolution of the LGEG program from a practice-based initiative to an evidence-based approach that serves as a model of enhanced dissemination and long-term sustainability.

Conclusions: The LGEG program's successful dissemination and sustainability reflects the mission of JMG and AgriLife Extension to invest in evidence-based solutions to enhance the health and wellness of children and families locally, nationally, and internationally. This program case study, with the application of the D4DS framework, highlights how to effectively grow and sustain a program with global reach.

Design for Dissemination and Sustainability: Application of Best Practices from the Better Living for Texans Program

Ms. Renda Nelson¹, Ms. Lindsey Breunig-Rodriguez¹

¹Texas A&M AgriLife Extension Service, College Station, USA

S.1.05: Designs for Moving Research into Practice: Planting Seeds to Growing Programs, Room 215, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Better Living for Texans (BLT), a U.S. Department of Agriculture Food and Nutrition Service and Texas Health and Human Service Commission federally funded nutrition education program, is implemented through the Texas A&M AgriLife Extension Service. Since 1995, Extension agents, educators, and volunteers have partnered with schools, faith-based organizations, and non-profits to provide BLT programs at no charge to families receiving and eligible to receive benefits from the U.S. Supplemental Nutrition Assistance Program (SNAP). Offered in 180 of Texas's 254 counties, agents and educators identify and plan with partners to deliver 13 different practice, research, and evidence-based nutrition, physical activity, and gardening curriculums. This presentation will address how the Designing for Dissemination and Sustainability (D4DS) framework applies to BLT.

Methods: The D4DS four phase framework, Conceptualization, Design, Dissemination, and Impact, includes participant and partnership voices in all aspects of intervention design, implementation, and evaluation. Identifying the needs, strengths, and areas for improvement influences best practices to impact positive behavior change and partnership suitability. This presentation will highlight examples from the BLT program within each phase and examine topics, issues, and trends that have guided dissemination and sustainability for nearly 30 years.

Results: From the initial pilot to the current reach across Texas, the BLT program responds to the needs identified by agents, partners, and participants and provides programs relevant to low-income individuals and families. Additionally, agents track impacts through a statewide reporting portal that provides impact reports for the BLT program team to share with local, state, and federal funders, partners, and stakeholders. Connecting the D4DS phases to the evolution and continued development of the BLT program is essential to the relevancy, dissemination, and long-term program sustainability.

Conclusions: The dissemination, sustainability, and success of the BLT program reflects the missions of AgriLife Extension and our funders while providing evidence-based nutrition, health, and wellness knowledge to empower individuals, families, and communities to make positive changes for healthier lives. The impacts of the BLT program and application of the D4DS framework highlights best practices for a national nutrition education program implemented in a state with a large and diverse population.

Design for Dissemination and Sustainability: Lessons Learned from 25 Years of Walk Across Texas Program Implementation

Dr. Michael Lopez¹

¹Texas A&M AgriLife Extension Service, College Station, USA

S.1.05: Designs for Moving Research into Practice: Planting Seeds to Growing Programs, Room 215, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Walk Across Texas (WAT) is an eight-week, web-based physical activity program designed to help Texans be more active. Through the team-based approach, participants are encouraged with friendly competition to virtually walk across the state of Texas. Locally sponsored activities and events are facilitated by Extension agents, but the program allows for year-round participation using a full-service web platform called Howdy Health (<https://howdyhealth.tamu.edu>). Since 1996, more than 700,000 participants have started their virtual WAT journey to achieve and maintain an active lifestyle. The purpose of this session is to apply the Designing for Dissemination and Sustainability (D4DS) framework to the WAT program.

Methods: The D4DS approach includes designing interventions to match the contextual characteristics of the target audience in a way that increases the likelihood of sustainment after initial implementation. The D4DS framework describes four phases to design for dissemination. The phases include Conceptualization, Design, Dissemination, and Impact. This presentation will highlight case study examples from the WAT program within each phase and examine topics, issues, and trends that have guided dissemination and sustainability for over 25 years.

Results: Conceptualization will explore the need and demand for the WAT program during its development phase. The Design phase will highlight the significant transformations that took place as goals, priorities, resources, and the strategic direction of AgriLife Extension have evolved. The Dissemination phase will include how the WAT program effectively reaches its intended audience of participants with current low- or no-activity levels. Finally, the Impact phase will elucidate the involvement of local leaders, which includes both internal staff and external volunteers. Each of these pivotal phases will be examined to illustrate the evolution of the WAT program from a practice-based initiative to an evidence-based approach. The result is the continued development of a program with enhanced dissemination and long-term sustainability in mind.

Conclusions: The successful program dissemination and sustainability with the implementation of WAT reflects AgriLife Extension's mission and investment into evidence-based solutions to enhance the health and wellness of Texans. This program case study, and the application of the D4DS framework, highlights important lessons for researchers and practitioners alike.

Comparison of Community-Engaged System Processes on Coalition-Driven Child Physical Activity Policy, Systems, and Environmental Change Strategies in Rural Communities

Ms. Mary Von Seggern¹, Dr. Marisa Rosen¹, Dr. Ann Rogers¹, Dr. Regina Idoate¹, Dr. Carrie Mershon², Dr. Brandon Grimm¹, Dr. Athena Ramos¹, Dr. David Dzewaltowski¹

¹University of Nebraska Medical Center, Omaha, USA, ²Kansas State University, Manhattan, USA

S.1.06: Comparison of Designs for Community-Engaged Systems for Child Population Health Physical Activity: The Wellscapes Randomized Rural Community Effectiveness-Implementation Trial, Room 216, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: This study compares the Wellscapes Investigate-Design-Practice-Reflect (IDPR) community development process with Collective Impact's planning and accountability process on coalition-driven child physical activity (PA) policy, system, and environmental (PSE) changes in rural communities.

Methods: Coalitions in four rural communities (Wave 1, n=2 non-Hispanic/White; Wave 2, n=2 concentrated Hispanic) were randomized to the Wellscapes (WS) or Collective Impact (CI) community-engaged system processes. WS coalitions followed a rapid cycle IDPR development process consisting of 1) community asset, place-based, and social influence mapping (Investigate), (2) developing a roadmap and PA opportunity prototypes (Design), (3) implementing prototypes (Practice), and (4) reviewing data feedback from practices piloted (Reflect). CI coalitions were facilitated through a standard quality improvement CI process composed of (1) developing a common agenda, (2) creating an action and accountability plan, (3) executing assigned action steps, and (4) reviewing data feedback from executed plan. The research team facilitated the community-engaged processes during a baseline infrastructure development and an intervention academic year. Wave 1 (n=2) communities' work (Sept. 2018–May 2020) was disrupted by COVID-19 in March 2020. Wave 2 (n=2) communities' work occurred during Sept. 2021–May 2023. Informed by developed PSE-coding schemes, implementation activities were evaluated using qualitative content analysis by three independent researchers from multi-method data collection (i.e., direct observation, document analysis, stakeholder interviews).

Results: Coalitions guided by the WS process (IDPR) implemented more collective policy (W1, n=1; W2, n=3), systems (W1, n=3; W2, n=4), and environmental (W1, n=3; W2, n=6) changes than coalitions guided by CI, which implemented two policy (W1, n=1; W2, n=1), six systems (W1, n=3; W2, n=3), and seven environmental (W1, n=4; W2, n=3) changes. We identified one overarching theme: WS coalitions developed local solutions by engaging community-wide stakeholders and assets to create new PA opportunities, while CI coalitions relied on existing membership to select and implement programs.

Conclusions: Manipulation of community-engaged system processes resulted in differences in coalition-driven PA PSE change strategies. The IDPR process may encourage local entrepreneurial efforts utilizing existing resources through the exploration of the local community wellness landscape while CI may encourage traditional program selection and implementation by following a plan.

The Impact of a Rural Community-Engaged Systems Intervention on Child Setting and Population Health Physical Activity: Results of the Wellscapes Randomized Rural Community Effectiveness-Implementation Trial

Dr. Ann Rogers¹, Dr. Marisa Rosen¹, Ms. Mary Von Seggern¹, Dr. Michaela Schenkelberg², Dr. Chelsey Schlechter³, Dr. Gregory Welk⁴, Dr. Richard Rosenkranz⁵, Dr. Philip Dixon⁴, Dr. Brandon Grimm¹, Dr. Athena Ramos¹, Dr. David Dzewaltowski¹

¹University of Nebraska Medical Center, Omaha, USA, ²University of Nebraska Omaha, Omaha, USA, ³University of Utah, Salt Lake City, USA, ⁴Iowa State University, Ames, USA, ⁵University of Nevada, Las Vegas, Las Vegas, USA

S.1.06: Comparison of Designs for Community-Engaged Systems for Child Population Health Physical Activity: The Wellscapes Randomized Rural Community Effectiveness-Implementation Trial, Room 216, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: This study describes setting and community population health physical activity (PA) effectiveness-implementation outcomes of a two-wave whole-of-community systems intervention trial.

Methods: Rural communities (n=2/wave) were randomized to a Wellscapes or Collective Impact (CI) condition. Within communities, organized group setting meetings (e.g., sport team practices) were video-recorded, and simultaneously, accelerometer data were collected from attending children. Meetings were time-segmented into smaller social system units (sessions) based on purpose (e.g., PA). Primary effectiveness and implementation outcomes included change in meeting percent time (%time) in moderate-to-vigorous PA (MVPA) and number and duration of PA sessions, respectively. Children self-reported the secondary population health PA outcome using the Youth Activity Profile each fall and spring (2018–2023). Students' responses were used in an algorithm to estimate daily, in-school, and out-of-school PA minutes. Due to COVID-19, data collections ended early in Wave 1 (fall 2018–March 2020), and video/accelerometer data were not collected in Wave 2 (fall 2021–spring 2023). Mixed effects models examined the intervention effect on group meeting %time in MVPA and PA session implementation and self-reported child population PA.

Results: For outcomes limited to Wave 1, Wellscapes increased (p=0.03) school setting %time in MVPA (3.2±0.6% to 6.3±1.1%) compared to CI (4.9±0.9% to 4.6±0.8%) and increased (p=0.04) implemented duration (minutes) of PA sessions (6.5±1.6 to 16.2±4.1) compared to CI (20.7±5.2 to 18.0±4.5). The condition-by-time population health PA Youth Activity Profile outcomes were not significant across waves. However, for Wave 1, the Wellscapes community had a greater increase (p=0.005) in in-school MVPA minutes (29.2±0.4 to 30.4±0.4) compared to the Wave 1 CI community (21.9±0.4 to 21.5±0.4). Significant condition-by-time effects were not found for Wave 2 spring 2022–spring 2023.

Conclusions: The Wellscapes intervention may have contributed to effectiveness-implementation during school compared to the CI condition. The absence of setting-level data collection and feedback in Wave 2 may have contributed to the lack of intervention effect on overall PA outcomes across waves. More research is needed to identify the characteristics of community systems that improve out-of-school PA.

Examining Differences in Rural Community Coordination Systems to Improve Child Population Physical Activity

Dr. Marisa Rosen¹, Ms. Mary Von-Seggern¹, Dr. Ann Rogers¹, Dr. Brandon Grimm¹, Dr. Athena Ramos¹, Dr. Michaela Schenkelberg², Dr. David Dzewaltowski¹

¹University of Nebraska Medical Center, Omaha, USA, ²University of Nebraska - Omaha, Omaha, USA

S.1.06: Comparison of Designs for Community-Engaged Systems for Child Population Health Physical Activity: The Wellscapes Randomized Rural Community Effectiveness-Implementation Trial, Room 216, May 21, 2024, 8:25 AM - 9:40 AM

Purpose: Local health promotion efforts can bring stakeholders across a community together to create a community-engaged system that coordinates local solutions to impact community systems to improve population health. This study examines differences in the design of community-engaged coordination system structure and processes in rural communities.

Methods: Four rural communities randomized to the Wellscapes (WS) or Collective Impact (CI) condition (Wave 1, 2018-2021, n=2, Wave 2, 2021-2023, n=2) formed a local community coordination system to improve child population physical activity. WS followed polycentric, heterarchical structure principles to form the community coordination system, while CI followed standard, hierarchical coordination system principles. To assess coalition structure (i.e., role of coalition members, grassroots or grassroots stakeholder) and community system coordination processes (e.g., trust, autonomy, collective efficacy), a self-report survey was administered to coalition members each spring (Wave 1, 2019, 2020; Wave 2, 2022,2023). Descriptive statistics examined coalition structure and mixed effects models examined the intervention effect on coordination processes.

Results: From post-baseline infrastructure development year (WS, n=25; CI n=17) to post-intervention year (WS N=32, CI N=19), the percent of self-identified grassroots or grassroots changed in both WS (grassroots = 36% to 64%) and CI (grassroots = 41.2% to 31.6%). From baseline to follow-up, there were no significant differences in coalition trust (WS \bar{x} =3.14, \bar{x} =3.14; CI \bar{x} =4.06, \bar{x} =3.82), collective efficacy (WS \bar{x} =3.08, \bar{x} =3.03; CI \bar{x} =3.81, \bar{x} =3.48) or autonomy (WS \bar{x} =3.85, \bar{x} =3.85; CI \bar{x} =4.24, \bar{x} =3.99). Influence measures added for Wave 2 at post-intervention indicated no significant differences in the level of influence (power) community entities had on the WS (\bar{x} =2.8±0.9) and CI (\bar{x} =3.1±0.7) coalitions.

Conclusions: Despite no significant differences in coordination process measures, a descriptive shift in grassroots membership and lower levels of community entity influence in the WS condition suggests a polycentric coordination system was established. These findings support the need for a larger study of the community coordination system principles that impact community entity agency autonomy and diversity of power in the production of child physical activity services.

The Use of Technology for Delivering a Weight Loss Program for Adolescents with I/DD

Dr. Lauren Ptomey

¹University of Kansas Medical Center, Kansas City, USA

S.1.07: Using Technology to Deliver Health Promotion Programming to Youth with Intellectual and Developmental Disabilities, Ballroom B, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: The purpose of this trial was to compare the effectiveness of two diets [Enhanced Stop light (eSLD) vs. conventional (CD)] and two delivery strategies [face-to-face (FTF) vs. remote (RD)] across an 18 month weight management program (6 mos. weight loss, 12 mos. maintenance) in adolescents with intellectual disabilities (ID) who were randomized to one of 3 arms: FTF/CD), RD/CD, RD/eSLD.

Methods: Adolescents and a parent attended individual behavioral sessions delivered via FTF home visits or remotely using FaceTime™ twice/month (0-12 months) and once/month during months 13-18. The eSLD used the Stop Light guide which categorizes foods by energy content: green (low energy-eat freely), yellow (moderate energy-eat sparingly), and red (high energy-avoid) which was enhanced by encouraging consumption of low energy portion-controlled entrées and shakes and fruits/vegetables. The CD was a nutritionally balanced, reduced energy diet following U.S. dietary guidelines. Participants were also asked to increase their physical activity, and to self-monitor diet (RD: diet app, FTF: paper diary), physical activity (RD: wireless tracker, FTF: pedometer) across the 18-mo. intervention.

Results: One hundred and ten adolescents with ID (53% female, age ~16 yrs) were randomized to either the FTF/CD (n=36), RD/CD (n=39), or RD/eSLD (n=35) arms. Weight was obtained from ~92% and ~82% of participants at 6 and 18 mos., respectively. Weight loss was significantly greater using the eSLD compared with the CD at 6 months (RD/eSLD: -5.0±5.9kg vs. RD/CD: -1.8±4.0kg; p=.01) but not at 18 mos. (RD/eSLD:-2.2±7.4kg vs. RD/CD: -0.2±6.6kg; p=0.28). There were no significant differences in weight loss between FTF and RD at either 6 (FTF/CD: -0.3±5.0 kg vs. RD/CD: -1.8±4.0kg; p=0.20) or 18 mos. (FTF/CD:1.4±9.7kg vs. RD/CD: -0.2±6.6kg; p=0.47). The percentage of behavioral sessions attended (FTF/CD=76%, RD/CD=71%, RD/eSLD=71%), the percentage of days of self-monitoring of diet (FTF/CD=67%, RD/CD=61%, RD/eSLD=61%), and self-monitoring MVPA/steps (FTF/CD=66%, RD/CD=62%, RD/eSLD=62%) did not differ significantly between by diet or delivery strategy across 18 months (all p>0.05)

Conclusions: An eSLD, delivered remotely, results in clinically relevant weight loss in adolescents with ID. However, future research is required to identify effective strategies to maintain this weight loss long-term.

GamerFit-ASD: Feasibility and Preliminary Efficacy of an Evidence-based Exergaming and Telehealth Coaching Intervention for Autistic Youth

Dr. April Bowling

¹Merrimack College, North Andover, USA

S.1.07: Using Technology to Deliver Health Promotion Programming to Youth with Intellectual and Developmental Disabilities, Ballroom B, May 21, 2024, 4:45 PM - 6:00 PM

Background: Autistic youth experience significant barriers to physical activity (PA) program engagement, including a lack of safe and tailored community programming and depleted parental resources. Using the Physical Activity Engagement for Invisible Social, Emotional, and Behavioral Disabilities (PAID) Framework, we adapted GamerFit-ASD for autistic youth with or without co-occurring intellectual disabilities from an existing theory- and evidence-based exergaming and telehealth coaching intervention, and pilot tested it for feasibility, acceptability, accessibility, and preliminary efficacy.

Methods: Following an iterative adaptation process that included autistic youth and their families, graduate student coaches were trained by professional health coaches and an autistic consultant to implement the intervention. The 12-week single-arm demonstration pilot recruited youth ages 10-15 years from community programs serving autistic youth and their families. Participants wore a Fitbit, followed a 3-times/week exergaming program, and met with their health coach weekly. Graduate student coaches were overseen by professional coaches for the first three weeks of the program. Accelerometry data were collected at baseline and week 12. Feasibility and engagement were assessed with process measures. Questionnaires measured video game use and participant mood. Paired t-tests were used to assess PA, video gaming and mood changes.

Results: 23 participants enrolled (average age 11.6 years; 78% male-identified; 83% white; 17% with a potential co-occurring intellectual disability). Coaching session attendance was 92%; on average, participants completed 67% of exergaming sessions/week, 78.5 minutes/week of exergaming, and 6645 steps/day. Most youth reported enjoying the exergames (72%) and intending to keep playing them (67%); 94% reported it was easy to learn the games; and 79% of parents reported it was easy to participate. Total PA trended towards an increase of approximately 1 hour per week ($p=0.35$), but changes were not statistically significant. Self-reported video game use excluding exergaming decreased by 50 min/day ($p=0.10$), but self-reported mood did not change.

Conclusions: GamerFit-ASD was feasible, acceptable, and accessible for use increasing PA among these participants, however additional feasibility testing should be conducted in a sample with more participants with intellectual disabilities. Effectiveness should be evaluated via an RCT with a larger, more diverse sample.

A Remotely-Delivered Pilot and Feasibility Program to Promote Physical and Food Literacy in Adolescents with Intellectual Disabilities

Dr. Heidi Stanish

¹UMass Boston, Boston, USA

S.1.07: Using Technology to Deliver Health Promotion Programming to Youth with Intellectual and Developmental Disabilities, Ballroom B, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: Youth with intellectual disabilities (ID) are known to have low physical activity levels and poor diet quality. Physical and food literacy are thought to support adoption of healthy lifestyles; however, few interventions have been developed for this population. Physical and food literacy are concepts that encompass skills, confidence, knowledge, and desire to engage in physical activity and make healthy food choices. The “New Skills/No Scores” intervention was developed to build physical and food literacy skills among adolescents with ID.

Methods: Participants with ID ages 12-16 years were recruited for a 12-week sports skills and nutrition education intervention. Program sessions and all measures were administered via Zoom by trained instructors. Weekly sessions comprised 35 minutes of sport skills training to build physical literacy, followed by a 35-minute food literacy lesson involving nutrition education activities and taste testing. Feasibility, acceptability, and preliminary efficacy were assessed by attendance, satisfaction, and pre-post measures of motor skills, physical self-concept, motivation and confidence for physical activity, classifying foods, making healthy choices, and food consumption.

Results: Six teens participated in the program and attended 87.5% of the sessions. Satisfaction data suggested that the program was well-received by both teens and parents. Trends toward improvements on physical literacy and food literacy outcome measures were observed.

Conclusions: Preliminary data suggest that a remotely-delivered physical and food literacy program tailored to youth with ID is promising for building the skills, confidence, and motivation that underpin healthy lifestyle choices.

Building physical and food literacy may have promise for contributing to the adoption of healthy lifestyles in youth with ID.

Can default order of foods in an online grocery store nudge healthier food selection?

Dr. Eva Valenčič^{1,2,3}, Dr. Emma Beckett^{2,4}, Prof. Clare Collins^{2,3, 5}, Associate Professor Tamara Bucher^{2,3,5}, Prof. Barbara Koroušič Seljak¹

¹Jozef Stefan Institute, Ljubljana, Slovenia, ²University of Newcastle, Newcastle, Australia,

³Hunter Medical Research Institute, Australia, Newcastle, Australia, ⁴Nutrition Research Australia, Sydney, Australia, ⁵Bern University of Applied Science, Bern, Switzerland

S.1.08: Digital Food Choice Environments - Can the shift to shopping food online be used to promote healthy and sustainable choices? Room 212, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: This study sought to investigate the potential of repositioning foods in an online grocery store to promote healthier food choices. Specifically, we focused on repositioning product categories and individual products within these categories to investigate its impact on purchasing choices.

Methods: Conducted as an experimental study in Australia, the study involved 175 adult participants. Individuals were randomised to one of two conditions: the intervention condition, where high-fibre foods were presented at the top of the webpage, and the comparator condition, where high-fibre foods were positioned at the bottom. Each participant was given a weekly grocery budget of up to AU\$100 and was asked to complete a shopping task in the experimental online grocery store.

Results: The findings indicate that the repositioning of high-fibre foods and product categories had an impact on consumers' food choices. In the intervention condition, there was a significant increase in the total fibre content per 100 kcal per cart ($p < .001$) and the total fibre content per cart ($p = .036$) compared to the comparator condition. Notably, there were no statistically significant differences between the two conditions in terms of the total number of fibre-source foods ($p = .67$), total energy per cart ($p = .17$), or total grocery price per cart ($p = .70$), suggesting that affordability remained unchanged. Moreover, nearly half of the participants (48%) expressed an interest in having the option to sort food products based on specific nutrient criteria while shopping online.

Conclusions: This study highlights the effectiveness of repositioning higher-fibre products and product categories on the main page of an online grocery store in increasing the fibre content of consumers' purchases. The findings hold significant implications for consumers by showing them that user interface can affect food choices, for digital platform operators aiming to promote better choices, for researchers in health and food-related fields, and for policy makers looking to leverage digital tools for the improvement of public health.

Clicks for Health: A Comprehensive Examination of Digital Nudging in Online Grocery Stores

Ms. Maryam Alsaeed^{1,2,3}, Associate Professor Marc Adam^{1,3}, Ms. Jessica Piper^{1,3}, **Associate Professor Tamara Bucher**^{1,3,4}

¹The University of Newcastle, Newcastle, Australia, ²King Faisal University, Hofuf, Saudi Arabia, ³Hunter Medical Research Institute, Newcastle, Australia, ⁴Bern University of Applied Science (BFH), Bern, Switzerland

S.1.08: Digital Food Choice Environments - Can the shift to shopping food online be used to promote healthy and sustainable choices? Room 212, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: This literature review explores the potential of digital nudges (DN) to promote healthy and sustainable food choices in online grocery stores. Specifically, we focused on the current state of research on the use of DN to promote healthy and sustainable food choice in online grocery shopping.

Methods: A systematic literature review was conducted in nine databases to find studies that used at least one food DN, focused on online food choice, and evaluated the DN in an empirical setting with humans. We excluded conceptual studies, studies that used DN outside of an online grocery/supermarket context, and non-English publications. We identified 60 studies to be included in the review across these databases covering outlets in human-computer interaction (HCI), nutrition, and psychology. The review synthesized existing research, using a conceptual framework based on Mehrabian and Russell's S-O-R model. In this framework, DN was structured into UI design (Stimulus), the user's mind (Organism), and behavioural outcomes (Response).

Results: The findings indicate that UI Design (Stimulus) identified four main elements of DN stimuli, revealing a prevalence of salience nudges over social or combined nudges. The nudges primarily focused on the positive aspects of healthy choices and nutrition quality, and a growing body of studies (25.8%) focused on positive impacts in terms of sustainability. The studies highlighted the importance of timing, location (product choice, after-choice, checkout, and pre-filled carts), and the design properties of nudges. To understand the processes in the Human Mind (Organism), the review explored various theories employed by studies to explain user perception and processing of DN. While the Purchasing Behaviour Theory was frequently referenced (21.7%), the diversity of theories employed underscores the need for future research to integrate different streams toward a unified theoretical foundation. Further, about (20%) of the studies did not refer to any theory. The behavioural outcomes (Response) analysis indicated effectiveness of DN in driving healthier and more sustainable food choices.

Conclusion: This review synthesizes existing research on DN types and their impact on healthy and sustainable food choices. Understanding these effective UI components is essential to designing DN that effectively promote healthier and more sustainable choices.

Ko te hā o Tāne-nui-a-rangi: Enhancing physical activity research through indigenous knowledge and experiences

Prof. Scott Duncan¹, Ms. Lana Chisholm¹, Prof. Tania Ka'ai¹, Prof. Robert Hogg¹, Assistant Professor Isaac Warbrick¹, Ms Julia McPhee¹, Prof. Erica Hinckson¹
¹Auckland University of Technology, Auckland, New Zealand

S.1.09: Indigenous Pathways to Wellness: Integrating Knowledge, Nourishment, and Cultural Immersion, Room 213, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: There is limited research exploring how indigenous knowledge systems can enhance contemporary science. This case study investigated the impact of an immersive Māori cultural experience on the personal and professional development of a diverse group of physical activity academics.

Methods: In October 2023, 15 researchers from 10 countries were invited to Aotearoa New Zealand to participate in a five-day workshop for the Lancet Series on Physical Activity. For the first three days, participants were immersed in te ao Māori (the Māori world/worldview) and mātauranga Māori (traditional Māori knowledge) through activities such as waka ama (outrigger canoeing), mihi maioha (breathing exercises), a marae visit (meeting ground), tākaro (games), a kapa haka demonstration (performing arts), and a private viewing of Māori taonga (treasures) housed at the Auckland Museum. Seminar sessions discussed the importance of movement to Māori and the spiritual connection between Māori and the natural environment. Data were collected using three methods: (1) anonymous surveys before and after the workshop, (2) structured interviews, and (3) participant observations. Quantitative and qualitative data were collated, coded, and analysed using a phenomenological approach.

Results: Three main themes emerged from the analysis. (1) Personal transformation. Considerable personal value was placed on the rediscovery of ancestral concepts relating to human and planetary health. (2) Intragroup interactions. The process fostered a 'safe space' for emotional exchanges, enabling deep sharing and critical inquiry. (3) Adapting research practice. There was a common desire to integrate indigenous methods/knowledge into current practice, but uncertainty on how this might be done. Overall, participants experienced meaningful personal growth and appreciation for the link between indigenous culture, holistic wellbeing, and the natural world.

Conclusions: This case study provides an example of the potentially transformational personal impact of a facilitated discovery of indigenous knowledge and ways of being. The deep significance of the natural world in many indigenous cultures has particular relevance to climate change mitigation and prevention efforts, and could be a means to strengthen links between physical activity research and environmental sustainability. However, further long-term observation is required to determine if this approach can have a meaningful influence on professional practice.

The identification of Indigenous standards of rigor for physical activity and nutrition-focused community-engaged research projects

Mr. Colin Baillie¹, Dr. Treena Delormier², Dr. Alex McComber², Dr. Amelia McGregor, Dr. Lucie Lévesque¹

¹Queen's University, Kingston, Canada, ²McGill University, Montreal, Canada

S.1.09: Indigenous Pathways to Wellness: Integrating Knowledge, Nourishment, and Cultural Immersion, Room 213, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: A growing number of researchers are choosing to engage with Indigenous knowledge systems in physical activity (PA) and nutrition-focused research projects. Despite increasing interest in using Indigenous knowledge systems, researchers often gauge the quality of their work by Western standards of rigor (e.g. the concepts of reliability, validity, and generalizability in positivist research). This undermines the value of Indigenous knowledge systems in academia and contributes to skepticism about the authenticity of community-academic relations. The purpose of this study was to identify quality criteria that may be used to determine the rigor of Indigenous community-engaged research projects focusing on PA and nutrition.

Methods: A total of 18 Elders, knowledge holders, community members, and researchers (both Indigenous and non-Indigenous) involved in community-engaged research projects representing different Nations, geographies, and genders took part in talking circles. Each talking circle lasted between 45 minutes and 1 hour. All notes were photographed and talking circles were transcribed verbatim. Talking circles were analyzed using the inductive thematic analysis process outlined by Braun and Clarke (2006), with additional notes used to strengthen interpretation (Halcomb & Davidson, 2006).

Results: Participants in the talking circles identified three quality criteria (contextual, practical, and self-determined) that were used to gauge the rigor of community-engaged Indigenous research projects that they were involved in. These criteria were most often used in addition to dominant Western standards of rigor. A visual representation of the three identified criteria was created to make results more accessible and as a way to facilitate team member feedback (Liebenberg, 2009; Marsden, 2004).

Discussion: Findings from this study can potentially contribute to the liberation of Indigenous community-engaged research projects from the limitations imposed by Western standards of rigor that devalue Indigenous methodologies and knowledges. Identifying criteria for the rigorous application of Indigenous methodologies and knowledges will allow PA and nutrition-focused community-engaged research projects to conduct research inquiries from within an Indigenous knowledge paradigm from conception to dissemination. A future study will apply these criteria to two ongoing Indigenous PA and nutrition-focused research projects to gauge the quality of their work by the Indigenous standards of rigor identified in this study.

"Stepping back into the Canoe": A phenomenological analysis of First Nation's experiences accessing traditional foods during the pandemic.

Mrs. Revathi Sahaipal¹, Assistant Professor Brittany Wenniser:iostha Jock¹, Dr. Treena Delormier¹

¹McGill University, Montreal, Canada

S.1.09: Indigenous Pathways to Wellness: Integrating Knowledge, Nourishment, and Cultural Immersion, Room 213, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: The COVID-19 pandemic has undoubtedly affected everyone but has the potential to exacerbate existing health inequities for Indigenous Peoples. First Nations (FNs) in Canada experienced higher food insecurity rates pre-pandemic. Few studies have examined how the pandemic affected food access experiences, how these changed, and how communities responded. This study explored the implications of COVID-19 on traditional food access experiences and coping strategies amongst two First Nations communities to understand food environments.

Methods: We conducted 41 in-depth interviews and 2 modified Talking Circles with two communities participating in the Food, Environment, Health and Nutrition of First Nations Children and Youth (FEHNCY) study. In-depth interviews were conducted with community food experts to understand the policies and programs that were developed to promote food security and with parents/caregivers to understand their experiences and decisions around food access and preparation during the pandemic. Modified Talking Circles were conducted with Community Advisory Circles to confirm and clarify findings. A phenomenological analysis was used to elicit rich descriptions focusing on community members' experiences of food access in the context of COVID-19.

Results: Participants' experiences highlighted community resilience, revitalizing traditional food practices and access issues to address territorial restrictions and land dispossession. For both FN communities, having access to and sharing traditional foods during the pandemic was connected with a sense of food security, increased food self-determination and pride in their cultural identity. The pandemic offered a chance for reflection and connection to the land and cultural values. It was an opportunity to acknowledge and take pride in the traditional ways of being and doing. Participants felt more secure for themselves, their families, elders, and the community when they had opportunities to hunt and practise traditional ways of getting food.

Conclusion: This analysis is one of the first to explore FNs food environment as experiences within the context of the pandemic. The findings highlight strong evidence for policymakers to support Indigenous nutrition and wellness research, emphasizing resilience and revitalizing reciprocal relationships with foodways.

Physical activity levels among 7-11-year-olds in Wales: identifying determinants across the school environment

Dr. Kelly Morgan¹, Dr. Kaitlyn Donaldson¹, Dr. Safia Ouerghi¹, Dr. Graham Moore¹
¹Centre for Development, Evaluation, Complexity and Implementation in Public Health Improvement, School of Social Sciences, Cardiff University, Cardiff, United Kingdom

S.1.10: Global perspectives on environmental determinants of physical activity across the lifespan, Room 214, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: The present study examined the prevalence and associated determinants of physical activity levels among 7-11-year-olds in Wales, United Kingdom.

Methods: This cross-sectional study of 354 schools was conducted in 2022/23 across Wales. In total, 32,606 students (aged 7-11-years) completed a survey. The self-report survey included questions addressing students' time spent on physical activity, wider health behaviours such as nutrition and screen-time use and student demographics. School location, size and deprivation was also collected. A senior lead from each school has since been invited to complete a School Environment Questionnaire (SEQ) (currently in field). This survey captures data on the types of policies and practices being implemented by schools to support pupil health and wellbeing. Associations were studied using multilevel mixed-effects logistic regression analysis.

Results: Of the 29,722 students answering the physical activity question, 7,775 (26.16%) reported daily physical activity. Reporting low levels of physical activity (i.e., less than daily) was found to be associated with being older (OR: 0.90, 95%CI: 0.83-0.98), identifying as a girl (OR: 0.57, 95%CI: 0.53-0.62) or other gender identity (OR: 0.71, 95%CI: 0.52-0.97) and low family affluence (OR: 1.14, 95%CI: 1.09-1.19). Low levels of physical activity were also found to be associated with schools located in urban areas (OR: 0.87, 95%CI: 0.78-0.98) but not with school size (OR: 1.00, 95%CI: 1.00-1.00). Higher levels of daily physical activity were associated with schools with lower affluence levels (OR: 1.08, 95%CI: 1.02-1.13). A significant interaction between family affluence and school affluence was found (OR: 0.95, 95%CI 0.91, 0.99), suggesting less affluent children were doing more daily exercise when attending less affluent schools than when attending more affluent schools. Regressions analyses performed with SEQ data will be presented at the symposium.

Conclusions: Students attending schools located in urban areas were less likely to report daily levels of physical activity compared to students located in rural areas of Wales. These findings require further investigation into how school-level efforts might interplay with the wider school context when considering children's physical activity levels.

Physical inactivity in Denmark: Understanding the wider environmental determinants throughout adult life

Dr. Knud Ryom¹, Dr. Camilla Bakkær Simonsen²

¹Department of Public Health, Applied Public Health Research, Aarhus University, Aarhus, Denmark, ²Department of Health Science and Technology, Sport and Social Issues, Aalborg University, Aalborg, Denmark

S.1.10: Global perspectives on environmental determinants of physical activity across the lifespan, Room 214, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: The objective of this study was to demonstrate how physical inactivity should be studied not merely as a personal trouble, but as a social issue closely related to the social context of physically inactive individuals.

Methods: This study was part of a larger study on physical inactivity in Denmark, including numerous methods for a deeper understanding. Methods used included; a) a narrative review of reviews (n=11) supplemented with expert interviews (n=4), b) 14 narrative interviews with previously physical inactive adults (who had become active within the last 6 months) and c) a survey among 1033 physical inactive Danes on motives and barriers for physical activity. The narrative review included reviews only using the PRISMA-Scr guidelines as a framework and was supplemented with 4 expert interviews with vast knowledge on physical inactivity in Denmark. The 14 narrative interviews were built as semi-structured interviews using the lifeline method to provide deeper insight into important life events. The survey was built on a large-scale Danish measurement the “How are you feeling” by the Danish Health Authorities and validated questionnaires (BREQ-3 & TILS). To include physically inactive respondents only, the International Physical Activity Questionnaire short form (IPAQ-SF) was used. The responses were analysed descriptively to provide insight into motives and barriers for physically inactive Danes.

Results: Merging the data from survey, review, and expert interviews, has helped built a socioecological model of important determinants for physical activity in adult life. This model illustrates the vast array of determinants at multiple levels of influence that affects the individual. Based on this initial work we analysed the narrative interviews to build three narratives typologies across adult life (young adulthood, family life and late adult life), which will be presented as well as the socioecological model.

Conclusions: We conclude that interventions into social and structural conditions are essential to support physical activity among physically inactive adults, and we point to the need to holistically integrate physical activity into people's lives beyond “simple” individual-level behaviour change.

Environmental drivers of physical activity in Mexico and the US: the often-unrecognized role of necessity versus choice

Dr. Deborah Salvo^{1,2}, Dr. Eugen Resendiz¹, Dr. Harold Kohl^{1,3}, Dr. Alejandra Jauregui²
¹Department of Kinesiology & Health Education, The University of Texas at Austin, Austin, TX, USA, ²Departamento de Actividad Física y Estilos de Vida Saludables, Centro de Investigación en Nutrición y Salud, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, ³Department of Epidemiology, Human Genetics and Environmental Sciences, UTHealth Houston School of Public Health in Austin, Austin, TX, USA

S.1.10: Global perspectives on environmental determinants of physical activity across the lifespan, Room 214, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: To summarize built environment and physical activity research study findings from Mexico and the US, and shed light on the often-unrecognized roles that the issues of economic necessity versus “free healthy choices” play for understanding these relations and informing policy action across settings.

Methods: The International Physical Activity Environment Network (IPEN) adult study was the first of its kind in Cuernavaca, Mexico (2011), replicating standardized accelerometry, GIS and survey methods used in 16 other cities across 11 additional countries across the globe (including US cities). More recently (2013-2022), the EcoBici and Travel Related Activity in Neighborhoods (TRAIN) studies assessed the effects of new urban infrastructure (cycle lanes, light-rail lines) on active travel in Mexico City, Mexico, and Houston, USA, respectively. In 2023, a new framework for conducting physical activity research in global settings emerged: the ‘necessity- versus choice-based physical activity models’ framework. The framework posits that the multilevel drivers of physical activity vary depending on whether physical activity results from economic necessity or true choices.

Results: Although similar built environment characteristics are significantly associated with physical activity behaviors in Mexico and the USA, the direction, strength, and magnitude of associations varies by context. Studies from Mexico report null or inverse associations between the US-based walkability index and physical activity. Other factors, like park access and perceived neighborhood aesthetics, are more important environmental drivers of physical activity in Mexican cities. In the US, the walkability index is consistently positively associated with physical activity. New cycling infrastructure in Mexico City has led to increases in active travel behaviors; while in Houston the expansion of the light rail system did not appear to increase active travel.

Conclusions: Some of the observed differences in the relations between the built environment and physical activity across Mexican and USA settings can be explained by the fact that necessity-based physical activity predominates in Mexico, while in the US, choice-based model is more common. Environmental approaches to promote physical activity must consider the roles of necessity versus choice in the target communities, and incorporate maintenance and quality of life as additional key outcomes of interest.

Equitable evaluation approaches for assessment of fruit and vegetable intake: a case study from a USA fruit and vegetable intervention

Dr. Carmen Byker Shanks¹, Dr. Betty Izumi², **Ms. Jenna Eastman**¹, Ms. Teala W Alvord², Dr. Amy Yaroch¹

¹Gretchen Swanson Center for Nutrition, Omaha, NE, USA, ²OHSU-PSU School of Public Health, Portland, OR, USA

S.1.11: Nutrition intervention and assessment approaches that support populations with socio-economic barriers to good health: Insights from the US and Australia, Room 216, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: The burden of diet-related diseases, as well as food/nutrition insecurity, disproportionately impact socio-economic disparity populations across racial/ethnic groups. Interventions have been implemented to address healthy diets alongside these interconnected disparities, and fruit and vegetable intake (FVI) is commonly measured to assess impact. This presentation draws upon the Gus Schumacher Nutrition Incentive Program (GusNIP) Training, Technical Assistance, Evaluation, and Information Center's (NTAE) research to develop shared measures to assess a national fruit and vegetable initiative in the U.S. The case study identifies challenges and opportunities to equitably evaluate FVI among socio-economic disparity populations across diverse racial/ethnic groups.

Methods: GusNIP provides grants for nutrition incentive and produce prescription projects to distribute financial incentives for fruits and vegetables to socio-economic disparity populations in the U.S. The NTAE evaluates key outcomes of these projects with a participant survey, which includes assessment of FVI through the Dietary Screener Questionnaire (DSQ) Fruit and Vegetable Module. This study used a participatory, mixed methods approach to explore challenges and opportunities associated with measurement of FVI within the GusNIP intervention. The NTAE: assessed aggregated quantitative DSQ data collected by grantees from 16,089 GusNIP participants; collected qualitative data through 3 focus groups and 18 interviews from data collectors, evaluations, and other NTAE collaborators; and drew upon their experience with over 200 GusNIP awards.

Results: DSQ data demonstrated varying, and typically positive, impacts on FVI due to GusNIP participation. Qualitative data illuminated several opportunities to enhance the accuracy of the DSQ instrument results among GusNIP participants. These included: pairing quantitative data with qualitative data to illuminate preferences, issues, and practices driving fruit and vegetable intake; ensuring dietary assessment is inclusive of non cis-gender; expanding food examples to be reflective of diverse cultural identities; providing valid language translation and interpretation strategies; cognitively test questions and responses; providing training to data collectors.

Conclusions: Dynamic assessment of fruit and vegetable intake has the potential to inform appropriately tailored implementation strategies, which may in turn enhance our understanding of disparities, influence healthy diets, and improve food/nutrition security among socio-economic disparity populations across diverse racial/ethnic groups.

Using qualitative insights to improve quantitative measures – semi-structured and cognitive interviews with young families who experience food insecurity

Dr. Rebecca Lindberg¹, **Dr. Courtney Parks²**, Dr. Amy Yaroch², Dr. Amber Bastian¹, Dr. Paige Van der Pligt¹, Dr. Fiona McKay¹, Dr. Sarah McNaughton¹

¹Deakin University, Geelong, Australia, ²Gretchen Swanson Center for Nutrition, Omaha, NE, USA

S.1.11: Nutrition intervention and assessment approaches that support populations with socio-economic barriers to good health: Insights from the US and Australia, Room 216, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: People who are at an increased risk of food insecurity include single-parent households and caregivers who are living on a low-income with children. Public health efforts have been unable to 'solve' food insecurity in high-income countries despite a strong food supply and generally high living standards. The tools used to regularly monitor household food security status in national public health surveillance efforts could be improved. The purpose of this series of studies was to better understand lived experience of food insecurity for families with young children and develop new measures that may help to assess food security status more comprehensively. This presentation will focus particularly on the qualitative components of this two-country multi-year study with low-income households that include a pregnant person and/or infants and young children (hereafter 'young families').

Methods: Young families were recruited in Omaha, USA (n=19) and Melbourne, Australia (n=22) and interviewed to explore their food security status. Content and thematic analysis helped inform a draft of new survey items to better monitor food security through public health surveillance. Resources allowed subsequent cognitive interviews in Australia (n=11), sampled from the original interviewees and new participants, to help finalise a new comprehensive household food security survey.

Results: Cognitive interviews led to changes in overall readability and question responses offerings, improvements in clarity of questions and new items. A 78-item comprehensive household food security measure was designed, informed substantially by qualitative methods and with the intention of examining the four dimensions of food security.

Conclusion: With an increased understanding of household food security, particularly for young families, practitioners, policymakers, and governments will be better placed to identify and implement the required solutions.

The importance of exploring the cultural and social elements of eating; A qualitative exploration into culturally themed lunch clubs for older adults

Dr. Georgia Middleton¹, Dr. Stefania Velardo¹, Dr. Karen Patterson¹, Dr. John Coveney¹
¹Flinders University, Adelaide, Australia

S.1.11: Nutrition intervention and assessment approaches that support populations with socio-economic barriers to good health: Insights from the US and Australia, Room 216, May 21, 2024, 4:45 PM - 6:00 PM

Purpose: Older adults with culturally and linguistically diverse backgrounds are at greater risk of social isolation and poor health outcomes due to circumstances surrounding both the ageing process, and the experiences of migration and displacement in a new country. Our food and eating practices are inherently shaped by our cultural practices and living circumstances, and for many older adults, preparing and eating adequate quantities of nutritious foods is a challenge. The aim of this research was to explore the experiences of older individuals who attend culturally themed, community shared lunches, and to appraise the extent to which these meals support their perceived health and wellbeing.

Methods: Four focus groups were conducted with individuals aged >65 years attending culturally themed lunches in Italian, Greek, Chinese and Ukrainian communities in South Australia. Focus groups were conducted in participant's native language, assisted by an accredited interpreter, recorded, transcribed, and analysed using descriptive methods.

Results: The culturally themed lunches were shown to be a rare opportunity for social interaction, to leave the house, and something to look forward to. The culturally themed food provided a tie back to participant's homeland, helping them form deeper connections with their fellow lunchmates, and their cultural roots. Participants described the meals as age-appropriate, inexpensive, nutritious, and more substantial than they would have eaten otherwise. These shared lunches fostered feelings of health and wellbeing for participants through opportunities to socialise, service of traditional and nutritious foods, and connection with culture.

Conclusion: These findings demonstrate there is more to eating practices than the nutrients available in the foods we consume. It is important to consider the cultural and social aspects of our eating environments when attempting to measure health and nutrition outcomes, to understand how our eating environments shape and impact nutritional intake. For this high-risk population group, the social eating environment was critical in providing a nutritious meal, helping participants feel connected to others, giving them purpose, and contributing to their perception of health and wellbeing.

A Conceptual Framework of Nutrition Security

Mrs. Caitlyn Faul¹, Dr. Stephanie Jilcott Pitts¹, Dr. Eric Calloway², Dr. Hilary Seligman³, Ms. Heidi Reis¹, Ms. Cheryl Cherry¹, Dr. Irene Hatsu⁴, Dr. Oyinlola Babatunde¹, Dr. Alexandra MacMillan Uribe⁵, Dr. Jared McGuirt⁶, Dr. Rebecca Seguin-Fowler⁵

¹East Carolina University, Greenville, USA, ²Gretchen Swanson Center for Nutrition, Omaha, USA, ³University of San Francisco, San Francisco, USA, ⁴The Ohio State University, Columbus, USA, ⁵Institute for Advancing Health through Agriculture, College Station, USA, ⁶University of North Carolina at Greensboro, Greensboro, USA

S.2.12: Nutrition Security: Recent Advancements and Future Directions in Conceptualization and Measurement, Ballroom B, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: Due to the coexistence of food insecurity and diet-related health disparities and diseases, nutrition security recently emerged in the United States as a more common and viable construct compared to food security. While encompassing the ideas of food security, nutrition security is more comprehensive in promoting “consistent and equitable access to healthy, safe, and affordable foods that promote optimal health and well-being,” as defined by the United States Department of Agriculture. Nutrition patterns of US individuals continue to fall short of dietary recommendations, and yet a clear conceptual framework of what it means to be nutrition secure does not currently exist. To address this gap in the literature and initiate the development of such a framework, a meta-ethnography approach was used to review 58 relevant qualitative studies on nutrition security.

Methods: The seven-step process for a meta-ethnography was used to collect information from the most relevant, highest quality 58 qualitative papers of 6,831 screened. Inclusion criteria was set as follows: US based studies with qualitative research methods, publication in 2013 or later, and a diverse sample of primarily adults who did not have specified chronic conditions nor were exclusively older adults. Two research team members independently read and extracted data from each paper. The data extraction information was then combined, and two investigators generated themes to determine critical constructs of nutrition security.

Results: The final conceptual framework includes two primary constructs, 16 secondary constructs, and 51 tertiary constructs of nutrition security. The two primary constructs are environmental circumstances and psychosocial functioning. The secondary constructs within environmental circumstances include availability, accessibility, affordability, acceptability, and accommodation related to healthy food, the importance of cooking appliances, federal and charitable nutrition assistance programs, stability, management of chronic stress, and pace of life. Psychosocial functioning includes secondary constructs of cognitive coping, obligation, financial adjustments, agency, self-efficacy, and social support.

Conclusions: A more comprehensive understanding of nutrition security and the proposed conceptual framework will help guide the development of an improved measure of nutrition security in order to facilitate more targeted interventions that aid in better diet quality and overall health.

Household Nutrition Security Measure: Further Establishing Validity

Dr. Eric Calloway¹, Ms. Leah Carpenter¹, Mr. Tony Gargano¹, Dr. Amy L. Yaroch¹

¹Gretchen Swanson Center for Nutrition, Omaha, USA

S.2.12: Nutrition Security: Recent Advancements and Future Directions in Conceptualization and Measurement, Ballroom B, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: Nutrition insecurity is a major public health issue globally that disproportionately impacts vulnerable populations. Nutrition security encompasses food security and additionally emphasizes healthfulness and equitable access. However, while the global community has coalesced around two common food security measures (Household Food Security Survey Module and Food Insecurity Experience Scale), there is no standard measure for nutrition security.

The authors created and conducted initial validation testing of a 4-item nutrition security scale in 2022 (Household Nutrition Security Measure). The measure was made freely publicly available to enable other researchers to use and test the tool in various contexts and applications. The purpose of the current study was to conduct additional testing using Rasch modeling to build on the exploratory factor analysis and classical test theory approaches employed in the initial testing study.

Methods: Rasch modeling was used in a secondary analysis of cross-sectional survey data. Respondents were recruited from food pantries and free health clinics across five American states (CA, FL, MD, NC, WA).

Results: Respondents (n=432) were aged 45.1 years (SD=14.6), 74% women, and 77% experiencing poverty. Infit (0.76-1.30) and outfit (0.74-1.30) supported item model-fit and usefulness for measurement. The person separation index (1.81) and person reliability coefficient (0.77) were above acceptable thresholds, indicating the measure's ability to separate respondents into strata. Differential Item Functioning (DIF), a metric assessing item-level bias, was assessed for gender, race, education, age, and poverty status. No DIF was detected (all effect sizes <0.17). Item difficulty (threshold parameters) ranged from -3.24 – 2.96, indicating good coverage across levels of the latent trait. These metrics, as a whole, support the validity of this tool to measure the latent trait in this sample.

Conclusions: While the concept of nutrition security is complex, brief measurement and screening is crucial for feasibility in real world settings, both in the United States and globally. Additional testing in this study supports the validity of the Household Nutrition Security Measure. However, more testing in different contexts (e.g., developing countries) is needed. Additionally, there is a need to develop more comprehensive measures to better explore nutrition security and inform behavioral intervention approaches.

Unlocking Nutrition Security: The Household Nutrition Security Measure in Practice

Jayna Dave¹, Ms. Maha Almohamad²

¹USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, USA,

²University of Texas School of Public Health, Houston, USA

S.2.12: Nutrition Security: Recent Advancements and Future Directions in Conceptualization and Measurement, Ballroom B, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: Nutrition-related diseases are a major public health concern, marked by substantial health inequity and costs in the United States and globally. While progress has been made in addressing food security issues, the focus has been on ensuring access to sufficient calories, rather than prioritizing access to nutritious foods. Recognizing the importance of quality over quantity, a construct of "nutrition security" is emerging, transforming healthcare, public health, and policy. This construct goes beyond food security and is especially relevant to underserved communities. The Gretchen Swanson Center for Nutrition (GSCN) has developed a four-item Household Nutrition Security Measure. Three questions address household food consumption and its impact on health and well-being; while, the fourth question assesses dietary diversity. The screening tool has demonstrated initial validity, but further testing in different contexts is needed for refinement and validation. This symposium section will share research using this tool to enhance our understanding of nutrition security in diverse settings.

Methods: The symposium will present data on two different studies, each contributing to a deeper understanding of nutrition security: 1) a secondary data analysis study of the initial data collected by the GSCN (n=486); and 2) a primary data collection study with food pantry clients (n=60).

Results: The secondary analysis study examined the relationship between nutrition security, food security, and diabetes in adults and found a significant association between higher nutrition security scores and reduced odds of diabetes (AOR= 0.59; 95% CI: 0.44, 0.79; p-value<0.001), particularly among non-SNAP participants. The study also demonstrated that food insecurity, in isolation, was not statistically associated with diabetes. The symposium's primary data collection study with food pantry clients promises further insights into this critical issue. Further analysis is underway; results will be ready for presentation at the upcoming annual meeting.

Conclusions: The current studies emphasize the relevance and importance of nutrition security in addressing nutrition-related diseases, particularly among vulnerable populations. Prioritizing access to nourishing foods, not just calories, can make a significant impact on public health, emphasizing the need for further research in this domain.

State and local government funding is associated with healthy environments and behaviors across the United States

Dr. Marilyn Wende¹, Dr. Andrew Kaczynski²

¹University of Florida, Gainesville, FL, USA, ²University of South Carolina, Columbia, SC, USA

S.2.13: Leveraging evidence on the connection between environmental resources and health outcomes to inform policy internationally, Room 213, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: Due to high rates of physical inactivity, social isolation, and obesity, research is needed on policies that increase opportunities for positive health behaviors. Therefore, this study examined relationships between state and local funding for parks and recreation and access to exercise opportunities, physical inactivity, social associations, and obesity.

Methods: This cross-sectional analysis used publicly available data for all U.S. counties (n=3142). State-level data from the U.S. Census Bureau, 2021 Annual Surveys of State and Local Government Finances were used to assess the percentage of state and local expenditures toward parks and recreation. For county-level estimates of access to exercise opportunities, physical inactivity, social associations, and obesity, 2021 County Health Rankings data were used. Access to exercise opportunities measures the percentage of individuals residing in a census block within a half-mile of a park or 1-3 miles (depending on rurality) of a recreational facility. Physical inactivity is the percentage of adults reporting no leisure-time physical activity. Social associations are the number of membership associations per 10,000 population. Obesity is the percentage of adults reporting a body mass index ≥ 30 kg/m². Generalized estimating equations in SAS 9.4 (with $\alpha=.05$) determined relationships between state and local expenditures and four related outcomes.

Results: Parks and recreation expenditures ranged from 0.4 to 2.5% (Mean=1.1, stdev=0.4) of state and local expenditures. After adjustment, 1% increase in parks and recreation expenditures was significantly associated with a 561% increase in the percentage of residents with access to exercise opportunities (p<.0001). A 1% increase in parks and recreation expenditures was significantly associated with a 222% decrease in the percentage of residents who were physically inactive (p<.0001). A 1% increase in parks and recreation expenditures was significantly associated with an 182% decrease in the percentage of residents who were obese (p<.0001). Parks and recreation expenditures were not associated with social associations (p=.123).

Conclusions: This study highlights the importance of state and local expenditures for promoting healthy environments and behaviors at the county level across the United States. Policy measures should increase funding allocated toward parks and recreation resources, given its potential for addressing physical inactivity, social isolation, and obesity.

Changes in neighbourhood walkability and incident CVD: a population-based cohort study of 3.5M adults covering 24 years

Mr. Paul Meijer^{1,2}, Mr. Mingwei Liu¹, Ms. Thao Lam^{2,3,4}, Dr. Yvonne Koop^{1,5}, Dr. Maria Gabriela Pinho⁶, Dr. Ilonca Vaartjes¹, Prof. Joline Beulens^{1,3,4}, Prof. Diederick Grobbee¹, Dr. Erik Timmermans¹, Dr. Jeroen Lakerveld^{2,3,4}

¹Department of Global Public Health & Bioethics, Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, Netherlands, ²Upstream Team, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, Netherlands, ³Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Epidemiology and Data Science, Amsterdam, Netherlands, ⁴Amsterdam Public Health, Health Behaviours & Chronic Diseases, Amsterdam, Netherlands, ⁵Dutch Heart Foundation, The Hague, Netherlands, ⁶Copernicus Institute of Sustainable Development, Department Environmental Sciences, Utrecht University, Utrecht, Netherlands

S.2.13: Leveraging evidence on the connection between environmental resources and health outcomes to inform policy internationally, Room 213, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: To investigate the relationship between changes in neighbourhood walkability and subsequent cardiovascular disease (CVD) risk in Dutch adults.

Methods: We used register data from Statistics Netherlands. The study cohort consisted of all Dutch residents aged 40 or older at baseline (2009), without prior CVD, and who did not move house after baseline (n = 3,570,342). As exposure measure, we used a nationwide, objectively measured walkability index calculated for Euclidean buffers of 500m around the participants' residential addresses for the years 1996, 2000, 2003, 2006 and 2008. To identify changes in neighbourhood walkability during these years, we applied latent class trajectory modelling. We assessed incident CVD between 2009 and 2019 using the Dutch hospital discharge register and the national cause of death register. Cox proportional hazards modelling was used to analyse associations between walkability trajectories and subsequent CVD incidence, adjusting for individual- and neighbourhood-level confounders.

Results: Most of the study population (88.06%) had a stable but relatively low walkability trajectory. We also identified two groups with a relatively higher initial neighbourhood walkability which decreased moderately (0.75%), and steeply (0.64%), over time. Furthermore, we identified two groups with a relatively lower neighbourhood walkability which increased moderately (2.18%), and steeply (8.37%), over time. We found that steep decreasing walkability was associated with a 10.7% lower risk of CVD compared to stable walkability (HR: 0.893; CI: 0.860 to 0.926). Moderately increasing walkability was associated with a 3.5% lower CVD risk (HR: 0.965; CI: 0.949 to 0.980). We also observed that steep increasing walkability was associated with a 2.1% lower risk of coronary heart disease (HR: 0.979; CI: 0.964 to 0.995). We did not find significant associations for stroke, HF, and CVD mortality in the overall population. Associations were more evident in younger age groups, in urban residents, and for CHD relative to other outcomes. Meijer

Conclusion: This study found evidence for associations of varying trajectories of changes in neighbourhood walkability over time with a lower risk of cardiovascular disease (CVD) in Dutch adults. This dynamic aspect is relevant for urban planners and policymakers to assess the potential of policies regarding neighbourhood walkability.

Development of a nationwide obesogenic environment index using data-driven method: A case study for Singapore

Ms. Thao Lam^{1,2,3}, Ms. Pei Ma⁴, **Dr. Nicole den Braver**^{1,2,3}, Dr. Jeroen Lakerveld^{1,2,3}, Assistant Professor Shin Bin Tan⁵, Associate Professor Falk-Müller Riemenschneider^{4,6}, Assistant Professor Borame Sue-Lee Dickens⁴

¹Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Epidemiology and Data Science, Amsterdam Public Health Institute, Amsterdam, Netherlands, ²Amsterdam Public Health, Health Behaviours and Chronic Diseases, Amsterdam, Netherlands, ³Upstream Team, Amsterdam UMC, VU University Amsterdam, Amsterdam, Netherlands, ⁴Saw Swee Hock School of Public Health, National University of Singapore, Singapore, Singapore, ⁵Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore, Singapore, ⁶Digital Health Center, Berlin Institute of Health, Charité-Universitätsmedizin Berlin, Berlin, Germany

S.2.13: Leveraging evidence on the connection between environmental resources and health outcomes to inform policy internationally, Room 213, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: The burden of obesity-related noncommunicable diseases in Asia is on the rise. This study aimed to characterize the neighborhood obesogenic built environment in Singapore using composite indicator approach and examine its association with obesity-related outcomes in a large cohort study.

Methods: Obesity-related outcomes were measured in the Multiethnic Cohort study 2 (MEC), an island-wide cohort study of adults between 21-75 years old (n = 16,895). For each neighborhood (n=868), built environment variables (n=11 including bus stop, subway, green space, park, intersection, footpath and residential density; fast food, general food, fresh produce and convenience store access) were dichotomized, and further short-listed based on their univariate association with overweight (BMI >23kg/m²) in the cohort study. Selected components were combined to create a categorical index with higher levels indicating more obesogenic environment. Multivariate logistic regression was used to examine the cross-sectional association between the index categories and dichotomous obesity-related measures (using specific Asian cut-off values), adjusted for personal sociodemographic characteristics. Effect modification of ethnicity was also tested.

Results: The obesogenic environment index has four components (general food outlet access, park density, subway density and residential density) and five levels, ranging from 0 to 4. Most cohort study participants (n=10,487) live in levels 3 and 4, opposed to only 235 in the lowest level of obesogenicity. Compared to level 0, those residing in level 4 have 43% higher odds of overweight (95%CI: 1.08, 1.88), 48% obesity (95%CI: 1.03, 2.13), 30% high waist-to-hip ratio (95%CI: 0.96, 1.77) and 27% high waist-to-height ratio (95%CI: 0.96, 1.69). Estimates were similar for other levels of obesogenicity. Stratified analysis showed elevated risks of overweight for the Malays and Indians compared to the Chinese. For the Malays, associations between the index and obesity were inverse and associations with other measures were inconsistent, while for the Chinese and Indians, associations remained consistent with the main analyses.

Conclusion: Our study reveals a pervasive obesogenic built environment in Singapore, which is consistently associated with obesity-related outcomes among residents. Our obesogenic environment index could be a practical tool for informing targeted health and infrastructure policy to address the increasing burden of obesity.

Lessons learned from conducting a natural experiment of the effects of urban cycling infrastructure expansion on active travel behaviors in Mexico City: the good, the bad, and the ugly

Dr. Deborah Salvo^{1,2}, Dr. Eugen Resendiz^{1,2}, Dr. Alejandra Jauregui²

¹People, Health & Place Lab, Department of Kinesiology & Health Education, The University of Texas at Austin, Austin, USA, ²Departamento de Actividad Física y Estilos de Vida Saludables, Centro de Investigación en Nutrición y Salud, Instituto Nacional de Salud Pública, Cuernavaca, Mexico

S.2.14: Can We Re-Engineer Utilitarian Physical Activity Back into Our Lives? Challenges from Natural Experiments Evaluating the Effects of Urban Planning or Infrastructure Changes on Active Travel, Room 214, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: To describe the practical and methodological challenges faced and lessons learned from designing and implementing a natural experiment assessing the effects of a large-scale expansion of cycling infrastructure in Mexico City, Mexico, on active travel.

Methods: Funds for conducting a two-year natural experiment study were secured in mid-2019. The original study was slated to examine the effects of a planned expansion of Mexico City's public bicycle-sharing program (EcoBici) on active travel. Our research team designed a rigorous study, including intervention and control neighborhood samples, based on the expansion timelines and maps provided by the city. Data collection was initiated in October 2019. However, in March 2020, the COVID-19 emergency reached Mexico, and with this came a major shift in urban infrastructure resources and priorities. EcoBici expansion plans were delayed and modified multiple times while other cycling infrastructure improvements were funded and rolled out. These new plans included major and rapid expansions to the City's protected cycling lane infrastructure, emphasizing adding high-quality cycle lanes to high-capacity roads traversing the city North-to-South and East-to-West. Our research team worked closely with the funding agency to adapt the original study design to capture the effect of these COVID-related infrastructure improvements on active travel patterns.

Results: The original aims and hypotheses focused on the effects of bicycle-sharing programs remain unrealized. However, pandemic-induced expansions of protected cycle lane infrastructure provided an excellent platform for assessing the impacts of a different type of cycling infrastructure on active travel. Due to the disruption caused by the pandemic, the study duration was expanded to 3 years. Preliminary results suggest significant increases in cycling for transportation associated with new infrastructure. Despite the intention for the new protected cycle lanes rolled out during COVID-19 in high-capacity roads to be a temporary pandemic-response measure, many have been converted into permanent infrastructure given high user demand.

Conclusions: Rigid designs, protocols, timelines, and funding schemes may be incompatible with successful and informative natural experiments. Finding a balance between scientific rigor and flexibility is key for successfully conducting natural experiments that can inform better urban design for health.

A Natural Experiment in Active Transportation: Lessons Learned from the Houston Travel-Related Activity In Neighborhoods (TRAIN) Project

Dr. Harold W. (Bill) Kohl III¹, **Dr. Abiodun Oluyomi**³, Dr. Deborah Salvo^{2,4}, Dr. Deanna Hoelscher¹

¹Michael & Susan Dell Center for Healthy Living, Department of Epidemiology, The University of Texas Health Science Center at Houston (UTHealth Houston) School of Public Health, Austin, USA, ²People, Health & Place Lab, Department of Kinesiology & Health Education, The University of Texas at Austin, Austin, USA, ³Department of Medicine, Section of Medicine - Epidemiology & Population Science, Baylor College of Medicine, Houston, USA, ⁴Departamento de Actividad Física y Estilos de Vida Saludables, Centro de Investigación en Nutrición y Salud, Instituto Nacional de Salud Pública, Cuernavaca, Mexico

S.2.14: Can We Re-Engineer Utilitarian Physical Activity Back into Our Lives? Challenges from Natural Experiments Evaluating the Effects of Urban Planning or Infrastructure Changes on Active Travel, Room 214, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: This presentation will focus on methodological lessons learned from the Houston TRAIN Project and present recommendations for future work.

Methods: Natural experiments have the potential to add valuable answers to scientific questions that may not be able to be addressed with experimental or traditional observational studies. In a natural experiment, participants are exposed to a “treatment” that is not under the control of the investigator. The Houston Travel-Related Activity In Neighborhoods (TRAIN) Project was a natural experiment designed to take advantage of a Light Rail Train (LRT) expansion project throughout the city of Houston Texas (USA) to determine if increased access to mass transit would result in an increase in transportation related physical activity. Four waves of recruitment resulted in a cohort of 865 participants who were followed for varying amounts of time as four expansions of the LRT were completed. Physical activity was assessed via questionnaire and accelerometry.

Results: Although there was no association between the LRT expansion proximity and changes in travel-related physical activity, sub-analyses suggested that usual travel mode was a potential confounding factor. Several unexpected and uncontrollable outside influences occurred during the project that could explain the findings. Participant recruitment and retention, construction delays, a natural disaster, and potential delays or lags between environmental change and behavior change were unique influences that could explain the findings from this study.

Conclusions: The utility of natural experiments to improve physical activity must be balanced with unexpected and uncontrollable external influences.

Taking it to the STREETS: Lessons Learned from Evaluating Infrastructure to Increase Active Commuting to Schools

Dr. Leigh Ann Ganzar¹, Dr. Deborah Salvo^{2,3}, Ms. Sarah Bentley⁴, Dr. Deanna Hoelscher⁴
¹Professional Data Analysts (PDA), Minneapolis, USA, ²Departamento de Actividad Física y Estilos de Vida Saludables, Centro de Investigación en Nutrición y Salud, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, ³People, Health & Place Lab, Department of Kinesiology & Health Education, The University of Texas at Austin, Austin, USA, ⁴Michael & Susan Dell Center for Healthy Living, The University of Texas Health Science Center at Houston (UTHealth Houston) School of Public Health, Austin, USA

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Purpose: This presentation will describe the study design and methods of the STREETS study, with examples of challenges faced and lessons learned. Preliminary data for the project will also be shown.

Methods: Evaluations to determine the efficacy of urban infrastructure interventions to increase active commuting to schools (ACS) have been small in scope and often lack objective measurements of physical activity. In 2016, a mobility bond in Austin, Texas, USA, allocated \$27.5 million (USD) for changes in the built environment around schools to facilitate ACS. The Safe TRavel Environment Evaluations in Texas Schools (STREETS) study was designed to determine the health effects of these infrastructure changes. The STREETS Study comprises two designs: 1) a serial cross-sectional design to assess changes in the prevalence of ACS in participating schools over time, and 2) a quasi-experimental, prospective cohort to examine changes in child physical activity and ACS. Measures include ACS tally measures across grades 3, 4, and 5; school-level policy and programs surveys; parent surveys; child surveys; child physical activity as measured using accelerometers; and school-level audits.

Results: Study schools were recruited in 2018 (n = 88 for the cross-sectional study, 45 for the quasi-experimental study). Both studies included comparison schools that did not receive funds for infrastructure changes. Initial recruitment and measurements were robust, but the COVID pandemic in 2020 necessitated changes in data collection procedures. During this time, school-level measures were paused, and individual-level child and parent measures were transitioned to home-based measures. COVID also affected the schedule for the infrastructure improvements. Strategies to address these changes included: (1) working with school districts to develop alternate measurement protocols; (2) alterations in study design to account for school attrition and missing data; (3) regular meetings and communication with city urban planners to track changes in construction schedules; and (4) flexibility with the study timeline.

Conclusions: Flexibility in study design, data collection protocols, and funding timeline is crucial for natural experiments that evaluate infrastructure changes. Since the 'intervention' e.g., infrastructure change, is not within the control of study investigators, a close working relationship with city planners is necessary.

A community partner's perspectives on planning, implementing, and sustaining the Building Healthy Families program.

Ms. Trudy Merritt

¹West Central District Health Department, North Platte, USA

S.2.15: Developing community capacity to address childhood obesity: Infrastructure, engagement, and community perspectives., Room 215, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: This presentation will provide a community perspective on using the Building Healthy Families (BHF) Online Training Resource and Program Package and participating in the BHF action learning collaborative.

Rationale: North Platte, Nebraska, is a small regional city of approximately 23,000 people. Childhood obesity was identified as a regional health priority, but no local programs existed to help families with children who were experiencing obesity. To address this need, our community responded to a call for proposals for communities that were interested in delivering a childhood obesity program in small towns and rural areas across Nebraska. The North Platte application was accepted, and the community was provided access to the BHF resources and learning collaborative.

Methods: The North Platte community partners included an integrated healthcare network, the department of health, and school and other community-based organizations. The partnership was provided access to the BHF resources and participated in 9 action learning collaborative sessions over approximately 2 years.

Results: After initial challenges due to the COVID-19 pandemic, community partners from the health department led the training and implementation of BHF. Over, they delivered BHF to 2 cohorts of approximately 10 families. Challenges included developing a sustained partnership with leadership in the school district to assist with recruitment and needing to move cohorts back based on pandemic guidance. However, community partners expressed that the BHF Online Resources were easy to use and while the program was complex to implement it was one of the most impactful programs the community leaders had implemented. The action learning collaborative was also helpful to address unique recruitment and implementation challenges such as addressing children being raised in multiple households, address behavioral issues, and make positive adaptations (e.g., celebration when the group achieved 100-pound weight loss).

Conclusions: Having access to the BHF online resources and the action learning collaborative allowed this community to deliver a program it did not have the capacity to deliver previously. The connections with families and across organizations was a highly valued component of the program and North Platte has big plans to sustain BHF, even after the research is completed.

Designing for dissemination: Key lessons learned from packaging Building Healthy Families (BHF) for implementation in rural communities

Dr. Kate Heelan¹

¹University of Nebraska Kearney, Kearney, USA

S.2.15: Developing community capacity to address childhood obesity: Infrastructure, engagement, and community perspectives., Room 215, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: Building Healthy Families (BHF), a Family Healthy Weight Program (FHWP) that is an adaptation of Epstein’s Traffic Light Diet (TLD) and has been implemented in a Midwestern micropolitan city and successfully achieved clinically and statistically significant reductions in child BMIz scores. FHWP’s reduce child weight status, but for families living in micropolitan cities (<50,000) and rural areas, the availability of inter-disciplinary healthcare teams recommended to deliver FHWPs is low—so adapted interventions with well packaged materials and training resources are necessary to fit the needs of families, and organizations interested in reducing obesity in these regions. The purpose of this project is to describe the development of BHF Online Training and Resource Program package for dissemination to community implementation teams across the US.

Methods: We created the BHF Online Training Resources and Program package using a backward design approach to incorporate several instructional design features and adoption and implementation strategies to focus on effectiveness across all user groups. Online training modules were created for each implementation team role including program coordinator and nutrition, physical activity, lifestyle and recruitment coordinators. Additionally, the packaged program includes presentation materials, handouts, and lesson plans that increase the likelihood that the delivery of the program will be consistent across communities. A data portal was built to allow users to track local program effectiveness.

Results: An overview video of “What is Building Healthy Families” along with stakeholder presentations and written documentations and contracts have been developed to explain the how and what is needed for implementation. Knowledge checks and self-rated implementation fidelity were high across seven pilot communities. Frequently asked questions and lessons learned from the design process will be discussed.

Conclusion: Implementing a program and packaging a program for broad distribution for community implementation requires a different set of skills by the research team and partners. Including enough time for a backward design process increased the acceptability and utility of the platform for rural implementation teams. Further, developing marketing materials and describing content and feasibility of the digital package is needed to recruit communities.

Action learning collaboration strategy improves fidelity and cross community capacity building

Paul Estabrooks¹, Prof. Jennie Hill¹

¹University of Utah, Salt Lake City, USA

S.2.15: Developing community capacity to address childhood obesity: Infrastructure, engagement, and community perspectives., Room 215, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: To describe the development and testing of an action learning collaborative implementation strategy to facilitate cross community collaboration to address the reach, effectiveness, adoption, implementation, and maintenance of BHF Online Training Resources and Program Package with (BHF-LC) and without participation in an action learning collaborative (BHF-PO). The BHF-LC includes learning sessions and action periods consisting of activities grounded in evidence-based training principles, community action planning, and structured follow-up. Quarterly learning sessions were attended by all community implementation teams (CIT) and provided opportunities for learning/training, peer sharing, goal setting and planning as a team. Between learning sessions, action periods followed a 'plan, do, study, and act' cycle and the research team conducted at least one, 1:1 meeting with each CIT during the action period.

Methods: Mixed methods process and outcome data were collected during the study. Direct observations were used to track implementation fidelity based on the number of sessions completed, participant attendance, CIT adherence to session activities and objectives, family engagement, and overall quality of implementation. In addition, knowledge checks were used as a proxy for CIT competence across sessions. Finally, child BMI z-scores were recorded using a research-grade scale and stadiometer at 3 months to determine effectiveness.

Results: Reach: Families in the BHF-LC (n=12) condition attended significantly more sessions (94.3%) than those in BHF-PO (n=14 families; 73.7%; p<0.05).

Effectiveness: BHF-LC community children had a significantly higher BMI z-score change (-0.15±0.08) when compared to those in BHF-PO communities (-0.09±0.11; p<0.05).

Implementation: BHF-LC delivered more sessions (11.75/12 vs 10/12) and had stronger adherence to protocol based on objectives (84% vs 72%) and activities (91% vs 73%) by number of sessions completed.

Maintenance: All 7 communities planned additional BHF cohorts.

Adoption: 28 of 90 rural counties were within the recruitment areas of the 7 CITs identified through our bundled adoption strategy.

Conclusions: Communities participating in the BHF learning collaborative had higher implementation fidelity, increased confidence in their ability to deliver BHF and increased capacity to sustain BHF.

Evidence-based guidelines for the lifestyle management of PCOS: research gaps in adolescent support

Dr. Lisa Moran¹

¹Monash University, Melbourne, Australia

S.2.16: Lifestyle Strategies for the Early Treatment and Prevention of Adolescent PCOS, Room 216, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: To clarify the current, evidence-based guidelines for the lifestyle management of PCOS and understand research gaps, specifically as they relate to adolescent support.

Methods: Systematic review and meta-analyses were conducted to evaluate the current evidence for the utility of lifestyle interventions in general, specific diet or physical activity interventions, behavioural interventions and to assess the reasons for higher weight gain and impact of weight stigma for the treatment and management of PCOS. When sufficient data were available to make an evidence-based recommendation, the recommendation was based on the certainty of evidence and strength of the recommendation following review of individual studies. In absence of sufficient data in PCOS, consensus recommendations and practice points were provided.

Results: Evidence-based recommendations (EBR) were made across all domains except for behavior strategies for the treatment of PCOS, although the quality of evidence for the EBRs were low or very-low confidence in the effect estimate. The high frequency of clinical recommendations and practice points underscore the lack of data in individuals with PCOS. Focusing on dietary interventions for the management of PCOS, the EBR advises that no one type of diet favoring macro- or micronutrient composition shows benefit for the management of PCOS across physiological or psychological outcomes, with very low certainty in the effect estimate. While details of the recommendations will be outlined in the presentation, the lack of data among adolescents with PCOS was noted.

Conclusion: The 2023 International Guideline summarizes all of the available evidence using lifestyle management of PCOS; however, these data are largely in adult populations. Whether lifestyle interventions early in the PCOS diagnosis confers additional benefit to mitigate the chronic disease burden of PCOS remains unknown and unaddressed.

Role of the Registered Dietitian in Newly Diagnosed Adolescents with PCOS

Ms. Joy Kim¹

¹Texas A&M University, College Station, USA

S.2.16: Lifestyle Strategies for the Early Treatment and Prevention of Adolescent PCOS, Room 216, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: To characterize goal setting by registered dietitians (RDs) and identify barriers and facilitators to nutrition and lifestyle modifications for adolescents newly diagnosed with polycystic ovary syndrome (PCOS) at a multi-specialty PCOS clinic.

Methods: A retrospective chart review was conducted of RD nutrition notes recorded into the medical record of adolescents newly diagnosed with PCOS at the Children's Mercy Kansas City Hospital multi-specialty PCOS clinic between 2015-2020. Nutrition notes were extracted, de-identified, and coded using open coding and a priori objectives. Goals, barriers, and facilitators were characterized for emerging themes using qualitative content analysis.

Results: Of the 118 nutrition notes, the majority recorded 3 or more goals set with the adolescent at the end of the session (7 notes recorded 0 goals, 10 recorded 1 goal, 40 recorded 2 goals, and 61 recorded ≥3 goals). The goals covered four major themes: incorporation of the MyPlate/plate model, modifying carbohydrate intake, incorporate or increase physical activity, and little focus on weight reduction despite most patients having obesity (70%). Further thematic analysis identified five major themes that highlight both barriers and facilitators to behavior change in adolescents with PCOS: interest and motivation, family involvement, resources and food environment, taste preferences, and perceived behavioral control and competence.

Conclusion: RDs are critical in supporting lifelong dietary and lifestyle management of PCOS. Goal setting is a strategy used to help identify specific behaviors to change and plan associated courses of action. However, the potential burden of too many goals was noted. Adolescents with PCOS report several intrapersonal, interpersonal, and environmental barriers and facilitators that may affect their ability to establish and act upon these goals. Further research will explore the impact of goal-setting strategies and nutritional counseling on long-term behavior change and PCOS outcomes in adolescents with newly diagnosed PCOS.

Does dietary intake in early post-menarcheal adolescents predict future PCOS risk?

Dr. Heidi Vanden Brink¹

¹Texas A&M University, College Station, USA

S.2.16: Lifestyle Strategies for the Early Treatment and Prevention of Adolescent PCOS, Room 216, May 22, 2024, 8:25 AM - 9:40 AM

Purpose: To determine whether dietary intake and social determinants of dietary intake are associated with the development of PCOS symptoms in the early post-menarcheal years.

Methods: Dietary intake was evaluated via two 24-hour diet recalls at 6-10, 12-, 18-, and 24-months post-menarche in n=26 adolescents participating in a prospective cohort study (Clinicaltrials.gov NCT04424576). A fasting blood draw, anthropometry, and hirsutism score were also conducted. Menstrual diaries were maintained by participants during the study. In our pilot analysis, dietary data from 6-10- and 12-months post-menarche were patterned for adherence to a Mediterranean-style Diet, Healthy-Eating Index, and their respective individual dietary components. The degree to which dietary intake at predicted symptoms of PCOS and/or PCOS risk at the end of the study (n=4 at 18 months, n=22 at 24 months) was determined using generalized mixed models, adjusting for race, household income, total caloric intake, and baseline BMI. For continuous variables, random effects of study site were included.

Results: Low-fat/non-fat dairy intake at 12 months post-menarche reduced the likelihood of PCOS risk at the end of the study ($p < 0.05$). Red meat intake (g/1000kcal/day) at 12 months post-menarche tended to predict menstrual irregularity ($p < 0.1$), whereas red meat intake at 6-10 months post-menarche was associated with free androgen index ($p = 0.05$). Higher hirsutism scores were associated with lower intakes of legumes ($p = 0.02$), vegetables ($p = 0.04$), and whole grains ($p = 0.02$) at 6-10 months post-menarche. Overall dietary patterns and other dietary components were not significant predictors of reproductive symptoms or PCOS risk in this analysis.

Conclusion: Dietary intake during the early post-menarcheal years is independently associated with evidence of reproductive dysfunction consistent with a trajectory towards PCOS. Research is underway to model dietary intake over time through 2 years post-menarche and to expand these findings in a larger cross-sectional cohort with inclusion of assessments of food insecurity and food environment.