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Pre-Congress Workshops

1A - Studying governance for nutrition: theory and methods

Authors: Dr Anne Marie Thow\textsuperscript{1}, Dr Ashley Schram\textsuperscript{2}, Dr Carmen Huckel Schneider\textsuperscript{1}, Prof Sharon Friel\textsuperscript{2}

Affiliations\textsuperscript{1}University Of Sydney, Camperdown, Australia, \textsuperscript{2}Australian National University

Abstract:

Background: Global food systems are failing to deliver nutritious food that is readily available and accessible to all. To address all forms of malnutrition and achieve the SDGs (12 of which relate to nutrition), nutrition must be considered in food systems policy making. But policy outcomes for food systems and nutrition are impacted by diverse governance structures that preference certain interests, by sectoral commitments, and by the power of a wide range of actors within state/non state and public/private spheres.

Aims/learning objectives of the workshop: This workshop aims to inform research that supports new approaches to governing food systems, which requires in-depth understanding of existing governance mechanisms across public and private sectors, as well as actor interests, power and influence.

Process: This workshop will draw on theories of governance, power, policy processes and historical institutionalism from an applied research perspective, and cover:

- Institutional analysis, to identify spaces and processes for decision making
- Stakeholder analysis, addressing actor interests, power and influence
- Policy content analysis, to examine sectoral agendas, priorities and activities

The format will draw on participatory workshopping techniques, and involve a short overview on each theory and method, followed by small group roundtable discussions on each of the research theories and methods.

Dissemination: The workshop will generate knowledge about different theories and methods relevant to health governance research, with an explicit focus on nutrition as a multisectoral governance space. Following the workshop, the convenors will produce a JECH Glossary style article describing terms, theories and methods.

1B - Preparing our future public health nutritionists to achieve sustainable food system transformation

Authors: Liza Barbour\textsuperscript{1}, Sandra Murray\textsuperscript{2}, Dr Sarah Burkhart\textsuperscript{3}, Dr Rebecca Lindberg\textsuperscript{4}, Liesel Carlsson\textsuperscript{5}, Dr Nanna Meyer\textsuperscript{6}, Dr Clare Pettinger\textsuperscript{7}, Dr Jessica Wegener\textsuperscript{8}

Affiliations: \textsuperscript{1}Monash University, Notting Hill, Australia, \textsuperscript{2}University of Tasmania, Launceston, Australia, \textsuperscript{3}University of the Sunshine Coast, Australia, \textsuperscript{4}Deakin University, Burwood, Australia, \textsuperscript{5}Acadia University, Canada, \textsuperscript{6}University of Colorado, United States of America, \textsuperscript{7}University of Plymouth, United Kingdom, \textsuperscript{8}Ryerson University, Canada

Abstract:

Aim/learning objectives: This workshop will engage participants in facilitated activities to:

1. Describe the tertiary education landscape for nutritionists and dietitians in Australia to learn about sustainable food systems, and situate this in the global context
2. Showcase effective mechanisms and innovative approaches (including international case studies) to improve food system competency amongst students and describe how this may translate into improved outcomes
3. Explore possibilities for international research and collaborations amongst tertiary educators

Background: Our natural environment needs to produce enough food for a growing population. As finite resources diminish, there is an urgency to strengthen action towards more sustainable food systems. Public health nutritionists (PHN) form an integral part of the inter-disciplinary workforce required to achieve this and are well-placed to provide leadership. International momentum in this area has recently transferred to Australia, with more tertiary education opportunities arising for PHN students. To strengthen the PHN workforce in this area, training must inspire and equip nutrition students to take action.

Process: The proposed workshop will open with recent research on sustainable food systems teaching and student familiarity and understanding of this topic. Innovative teaching methods will be showcased. Facilitated activities will help identify key competencies required by PHN practitioners to lead sustainable food system transformation and opportunities to formalise cross-disciplinary collaboration to advance teaching and learning in this field.

Utilisation and dissemination of findings: Findings will inform international research collaborations and/or a community of practice for tertiary educators delivering food sustainability systems training for PHN students.
1C - Harnessing co-design technology to support communities advance the healthiness of food environments

Authors: Associate Professor Julie Brimblecombe¹, Dr Megan Ferguson², Dr Jill Whelan³, Professor Colin Bell³, Dr Emma McMahon⁴, Professor Amanda Lee², Dr Laura Alston³, Professor Steven Allender³

Affiliations: ¹Monash University, Clayton, Australia, ²University of Queensland, Brisbane, Australia, ³Deakin University, Geelong, Australia, ⁴Menzies School of Health Research, Brisbane, Australia

Abstract:

Aims/learning objectives: To develop capacity of public health practitioners in utilising co-design and evaluation tools to determine with communities culturally and contextually relevant strategies to improve and sustain healthy food retail environments.

Background: Co-design with communities enhances the feasibility and acceptability of solutions for advancing health. Co-design with food retailers and consumers offers a novel approach to improving consumer food environments. We have combined several different technologies to support the co-design of healthy food environments in the retail setting.

The workshop will cover the principles of co-design, and develop participants understanding of a continuous quality improvement approach using co-design to improve food retail environments. “CO-Design and Evaluation with Communities of HEalther food Environments To Advance Health” (CODE CHEETAH) combines in-store data (Store Scout) with consumer cost and affordability of healthy diets data (Healthy Diets ASAP) as a starting point for helping consumers and retailers map their local food environment (STICKIE) and design and prioritise acceptable, feasible and evidence-informed strategies. Sales data (FoodFox) is then translated to food and nutrient reference values to assess impact on diet.

Process: Participants will participate in group model building and explore co-design case studies from regional communities and remote Indigenous communities in Australia.

Findings/Capacity building outcomes: CODE CHEETAH will raise participants’ awareness of the complexity of local food systems, engage them in designing strategies for enabling healthy food choices and provide tools for evaluation of strategies in real-life, diverse retail settings.

1E - How to use national reports in nutrition advocacy to progress systemic change.

Authors: Ms Naomi Hull¹, Dr Julie Smith², Ms Mary Peterson¹, Ms Jen Hocking¹, Ms Dale Hansson¹

Affiliations: ¹WBTi AUS, Ashgrove, Australia, ²Australian National University, Canberra, Australia

Abstract:

Background: The World Breastfeeding Trends Initiative (WBTi) provides a key tool for tracking a country’s progress on the implementation of the WHO Global Strategy for Infant and Young Child Feeding (GSIYCF). It helps countries to understand and take action on Action Area 5 ‘safe and supportive environments for nutrition at all ages’.

WBTi Australia released it’s 80-page report in 2018. It revealed a severe lack of policy and funding commitment and outlined a strategy for improvement. Suggestions for government action included strengthening the International Code of Marketing of Breast-milk Substitutes (WHO Code) (influencing the food environment, ICN2 recommendations 13, 15, 16, 39), full funding and commitment to Baby-friendly Health Initiative (BFHI) (protect, promote and support breastfeeding, Recs. 29 - 33) and providing adequate paid maternity leave (Rec. 30).

Aims: The WBTi Australia report and advocacy strategy will:

· familiarise participants with the WHO GSIYCF and WBTi tool (Rec. 28);
· support participants to understand linkages between WBTi findings and required actions and priorities under ICN2;
· equip participants to use the WBTi tool for advocacy and research.

Methods: The workshop will provide participants with:

· briefings on Australia’s commitment to WHO Code/BFHI/paid maternity leave;
· facilitated discussions to understand the impact of policies on families;
· demonstrate WBTi tool as an advocacy strategy;
· and discuss building collaboration beyond the health sector to improve community nutrition standards.

Conclusion: Participants of this workshop will be equipped to use the WBTi tool as a comprehensive advocacy strategy to improve public health nutrition in their country.
2A - How to bridge the gap between knowledge and policy development

Authors: Ms Christel Leemhuis¹, Ms Lyndall Soper¹, Professor Amanda Lee²

Affiliations: ¹Australian Government Department of Health, Canberra, Australia, ²The University of Queensland, Brisbane, Australia

Abstract:
The aim of the workshop is to engage participants in a discussion to better understand how Government develops food and nutrition policy and to explore how the pathway from evidence to policy development works practically. The workshop will also explore how policy makers can better use international success stories to influence local policy, in particular those with limited evidence.

Key discussion areas will include:
• Identifying data – how do we find, filter and use data to inform policy
  o When is there enough evidence to justify policy development
• How do we develop policy in the absence of strong evidence
  o Who should be involved in policy development
  o What’s the role of media
• How do we better engage the knowledge generation sector to undertake research that best suits policy development
  o How can knowledge generators better influence policy development
  o How can policies best be scoped and framed to gain support from decision makers
  o How should policy actions be prioritised
• What is happening internationally that we could use to enhance our processes
  o Should we uplift programs working internationally without national data
  o How do we better share efforts internationally
• How do we balance competing priorities in policy making e.g. international trade and business growth, job creation, fiscal, equity and sustainability considerations?

The workshop will include 3 presentations (30mins) followed by small group work addressing each key theme (30mins), report back (20mins) and conclusions (10mins).

2B - How to implement a co-designed, culturally-tailored, childhood overweight and obesity prevention program

Authors: Ms Jessica Hardt¹, Mr Tevita Peu¹

Affiliations: ¹Children’s Health Queensland Hospital And Health Service, South Brisbane, Australia

Abstract:
Aims/Learning Objectives:
1. Develop an understanding of aspects involved in co-designing a childhood obesity prevention program.
2. Practice skills necessary to effectively implement a co-design methodology.
3. Identify key enablers and potential barriers of implementing a co-design approach.
4. Discuss strategies to promote effective and sustainable co-design implementation.

Background: The cross-cultural gap in health equity continues to expand, with Maori and Pacific Islander (MPI) populations exhibiting a higher prevalence of obesity and the life diminishing comorbidities. Despite the effectiveness of multicomponent behaviour change interventions, contextualisation of obesity prevention programs to ethnically diverse populations is currently lacking.

Aiming to tackle MPI obesity burden, a team of consumers, health professionals and cultural-advisory members collaborated to co-design a first-of-its-kind, culturally-tailored community-based childhood obesity prevention program. The co-design methodology provided a great sense of ownership to the MPI community, resulting in outstanding levels of satisfaction, engagement and thus health behaviour change.

Process: Individuals holding significant co-design experience will deliver information via a presentation format. Working in groups, participants will apply their learnings via a case study, followed by a discussion of key enablers and potential barriers of implementing this methodology within their respective fields. To conclude, future areas to apply the co-design methodology to address the cross-cultural gap and sustainably improve health care delivery among Australia’s vulnerable populations will be formulated.
Dissemination: Promoting consumer empowerment, building capacity of health professionals and initiating change on a systems-level will improve health service delivery, significantly reduce health inequity and improve health outcomes of Australia’s most vulnerable populations.

2C - Successes and failures in addressing household food-security: lessons learned

Authors: Dr Sue Kleve1, Prof Danielle Gallegos2, Dr Sue Booth3, Prof John Coveney1, Dr Leisa McCarthy7, Assoc Prof Julie Brimblecombe1, Dr Christina Pollard4, Dr Rebecca Lindberg5, Dr Andrea Begley4, Assoc Prof Jeremy Temple6, Mrs Liza Barbour1, Dr Margaret Raven8

Affiliations: 1Monash University, Melbourne, Australia, 2Queensland University of Technology, Brisbane, Australia, 3Flinders University of South Australia, Adelaide, Australia, 4Curtin University, Perth, Australia, 5Deakin University, Melbourne, Australia, 6University of Melbourne, Melbourne, Australia, 7Menzies School of Health Research, Darwin, Australia, 8University of New South Wales, Sydney, Australia

Abstract:
Background: Household food insecurity is one of the most pressing issues of the millennia. In high income countries, poverty and inequality are drivers of food insecurity, yet approaches to improve food security have predominantly focussed downstream and overlooked the social determinants.

Methods: This workshop will:
1. Examine successful and unsuccessful food security programmes in national/state/community-settings;
2. Identify factors that have enabled programme success and barriers to wider uptake of programme success;
3. Appreciate different stakeholder perspectives (e.g. food system, government, non-profit sector, consumers) in food security programme planning and implementation;
4. Introduce a framework for addressing food and nutrition security and the inequities in healthy eating for multi-sectoral action.

Results: A framework that distinguishes nutrition-specific and nutrition-sensitive actions, incorporating political and welfare structures and the diverse needs of sub-population groups has been applied to food security. This framework will be used to explore the effectiveness of Australian and overseas case studies across downstream (e.g cooking classes), midstream and upstream (e.g income generation) interventions.

Conclusion: To progress SDG -2, to achieve food security, public health initiatives must be framed in context of actions on social determinants. Workshop participants will be able to:
1. Identify the role of policy and advocacy in food security programmes;
2. Facilitate the process of co-design of knowledge and skills in food security programme planning and implementation;
3. Document thinking of immediate and long term actions promoting positive attributes that will optimise success of a range of food security interventions to strategically improve the right to food.

2D - Global Syndemic - policy indicators for obesity, undernutrition and climate change?

Authors: Prof Boyd Swinburn1, Prof William Dietz2

Affiliations: 1University Of Auckland, Auckland, New Zealand, 2George Washington University, Washington DC, United States of America

Abstract:
Background: There is a convergence from many disciplines related to food and nutrition, that transforming food systems to be sustainable, healthy, equitable and prosperous will be central to reducing The Global Syndemic of obesity, undernutrition and climate change. While The Global Syndemic is the paramount challenge for human and environmental health, there has been substantial policy inertia in implementing recommended policies. Food industry opposition and the reluctance of governments to tax and regulate are the two major reasons for policy inertia, but a third reason is insufficient demand from civil society for policy action. Monitoring tools are needed so that civil society can contribute to the accountability systems for policy action by national and municipal governments.

Aims: To develop the monitoring tools for measuring policy implementation for food systems transformation.

Methods: Multiple monitoring systems exist which contain some indicators of policy action on food systems. A process of linking these efforts and creating collaborations across the monitoring organisations is underway. A series of indicators which relate to policy implementation are being collated for wider consultation with end-users. Delegates at the WPHNA conference are important end-users and this interactive workshop will seek feedback and discussion on the suite of indictors. Key questions relate to the coverages of the indicators (eg gaps, priorities), the process of data collection (eg cost, burden, lead agencies), the communications (eg league tables, stories, recommendations) and application (eg advocacy, evaluation).

Conclusions: Civil society needs the tools to engage in monitoring for accountability for food systems transformation.
2E - Indigenous foods, food sovereignty and dietary diversity

Authors: Dr Margaret RAVEN1, Mr Gerry Turpin2, Ms Tracy Hardy1, Mr Yon FernandezLarrinoa3, Mr Beau Cubillo5, Associate Professor Danny Hunter4, Ms Julia McCartan5, Professor Amanda Lee5, Associate Professor Julie Brimblecombe6

Affiliations: 1UNSW Australia, Kensington, Australia, 2James Cook University, Cairns, Australia, 3University of Queensland, Brisbane, Australia, 4FAO, Rome, Italy, 5Monash University, Melbourne, Australia, 6Biocversity International CGIAR, Montpellier, France

Abstracts:
Aim: Explore the role of traditional Indigenous food for diets for improved Indigenous, population, and planet health; and the application of policy and action for Indigenous peoples’ sovereignty in their use.

Background: Climate change and loss of biodiversity has brought increased attention to the knowledge of Indigenous peoples’ as stewards of natural resources and guardians of biodiversity. The United Nations Declaration on the Rights of Indigenous Peoples establishes the principle of Free, Prior and Informed Consent as a pre-requisite for activities that affect Indigenous ancestral lands and natural resources. Agricultural, urban and mining developments have ignored the rights of Indigenous peoples and exploited their natural resources to the detriment of their health and wellbeing. However, some Indigenous peoples have retained their sovereignty in developments related to traditional food, leading to benefits to the local and wider community.

Method/process: The workshop will include a series of short presentations, an expert panel and table discussions. We will explore the status of global and state policy to protect Indigenous sovereignty in use of resources for ‘dietary diversity’ and identify the elements of successful local initiatives and enablers and barriers. We will present the nine international principles from the FAO and UN high level expert seminar on Indigenous food systems to consider their practical application in Australia and internationally.

Results: This workshop will provide participants with knowledge of Indigenous peoples’ food rights and their practical application. Findings will be disseminated to participants and shared more widely with relevant organisations to support advocacy.

3A - Exposing and avoiding conflict of interest and industry interference in PHN agendas

Authors: Libby Swanepoel, Dr Angela Carriedo, Melissa Mialon, Camila Maranha, Kathrin Lauber, Ann Louise Lie

Abstract:
Background: Since its foundation, the World Public Health Nutrition Association (WPHNA) has been a leading association in protecting public health initiatives and strategies aimed at improving the food and nutrition status of populations. Research has shown that food and beverage industry (F&BI) interference in public health nutrition policies and programs can be subtle yet pervasive, with conflict of interest (COI) situations often not recognised by those involved.

Aim: This WPHNA-led workshop aims to provide an overview of what a COI is in the context of public health nutrition, where COI situations are occurring and what are the main actions the public heath nutrition community can take to prevent it. Also, it aims to explore the food and beverage industry tactics interfering with the work of leading international health agencies. Policy makers, practitioners, activists and academics are invited to attend.

Process: Speakers will set the scene by defining, providing examples and suggesting actions to combat COI and to increase awareness of F&Bi interference in the public health nutrition agenda. Participant interaction will be invited through Q&A with a panel of experts from different settings (government and organizational policy makers, practitioners, activists and academics) as well as practice of documenting cases for the WPHNA COI website.

Outcomes: Participants will be better informed and prepared to recognise and deal with COI situations in their public health nutrition work. All participants can contribute to a statement calling for action against nutrition COI in the South and South East Asia region.

3B - Building capacity through monitoring food marketing and prices

Authors: Professor Amanda Lee2, Dr Bridget Kelly4, Dr Sally Mackay3, Prof Colin Bell1, Ms Christine Zorbas4, Dr Kathryn Backholer1, Ms Meron Lewis3, Dr Stephanie Vandevijvere1

Affiliations: 1The University Of Auckland, Auckland, New Zealand, 2The University of Queensland, Brisbane, Australia, 3University of Wollongong, Wollongong, Australia, 4Global Obesity Centre, Institute for Health Transformation, Deakin University, Melbourne, Australia, 5Deakin University, Geelong, Australia

Abstract:
Aim/Learning objectives:
To propose methodological advances to monitor food environments, in particular the cost of foods and diets, and the exposure of children to marketing of unhealthy foods.

Background: INFORMAS® is an international network of researchers monitoring food policies and environments globally using shared step-wise methods and protocols in seven modules. This workshop focuses on two of these; assessment of the exposure
and power of promotion of unhealthy foods; and measurement of the relative price and affordability of healthy diets, meals and foods with current (less healthy) choices.

**Process:** Four five-minute presentations followed by small group work. Participants will explore practical and logistical challenges inherent in the current protocols, propose solutions and identify future needs. Participants will work on food marketing or food prices, considering the feasibility of approaches in the context of their own country. Each group will include an INFORMAS facilitator. Discussion will focus on: monitoring advertising on emerging marketing platforms, particularly social media; the type of information required to assess diet and food costs; and the feasibility of new approaches to monitoring food marketing (e.g. screen capture of social media marketing) or food prices (e.g. using electronic price data or ‘citizen scientists’) in different populations, sub-groups, cultures and locations.

**Capacity building:** Participants will explore how monitoring tools/methods can be used in their own country with support from the INFORMAS network. The INFORMAS protocols will be updated based on the ideas generated at the workshop.

*International Network for Food and Obesity/NCDs Research, Monitoring and Action Support

**3C – Participatory Learning in Action: alternative approaches to community engagement in nutrition education**

**Authors:** Regina Keith, Vandana Prasad, Libby Swanepoel, Susana Jiles Castilo

**Abstract:**

**Aims:** Leave the workshop as a changed practitioner with enhanced skills to work more effectively with communities through approaches such as Participatory Learning in Action or Social Audits.

**Background:** Community conversations can add to our future chances of achieving Health for All by 2030 and the Right to Food by 2025. We invite you to explore with us what is needed, while perhaps learning new skills. Join us to engage in participatory approaches to nutrition education that have a better chance of success and may change the way you perceive nutrition education.

**Process:** Each of the facilitators will present a case study of a participatory tool exploring issues such as gender inequity, use of problem trees to determine root causes, and adverse impacts of top down nutrition education. Non-threatening approaches to exploring problems through tools such as problem hats, Venn Diagrams and Seasonal Calendars will be shown, while exploring possible solutions and using picture cards, games and local materials to reflect on the determinants of malnutrition, impacts of social and commercial determinants and how to support communities to call for their rights. You will then work in groups on selected tools, followed by reflection to share participant perceptions of the session and tools.

**3D - Increasing public health voices at Codex**

**Authors:** Ms Alexandra Jones¹, Dr Anne Marie Thow²

**Affiliations:** ¹The George Institute For Global Health, Newtown, Australia, ²Menzies Centre for Health Policy, University of Sydney, Camperdown, Australia

**Abstract:**

**Aims:** This workshop will build practical capacity of public health stakeholders to participate in processes of the international food standards agency - the Codex Alimentarius Commission

**Background:** Codex is a UN body created by the World Health Organization (WHO) and Food and Agriculture Organization (FAO) with a dual mandate: to protect public health, and promote fair trade. Codex standards are voluntary, but frequently used by countries as a touchstone when developing national policies. As Codex is recognised as an international standards setting body at the World Trade Organization (WTO), guidance it develops has potential to show up in trade discussions around food.

In short - what happens at Codex matters for public health nutrition.

Current issues being discussed include front-of-pack nutrition labelling, follow-up formula, and criteria for ‘high in’ labelling of fats, sodium and sugars.

The food industry actively participate at Codex, and have potential to undermine the ability of countries to take progressive public health measures. It is necessary to increase public health voices at the Codex table at both a national and international level.

**Process:** We will introduce Codex, its significance for public health nutrition and provide practical directions for contributing to Codex processes. A variety of government and non-government practitioners will share their experiences. An exercise will guide participants through providing comments on Codex draft texts.

**Utilizing findings:** Participants will be encouraged to take follow up action at a national level, and to contribute to a growing network of public health stakeholders following Codex
3E - Advocacy for healthy and sustainable food systems

Authors: Dr Christina Pollard¹, Professor Mark Lawrence², Doctor Julie Woods³, Dr Andrea Begley¹, Dr Phil Baker², Mrs Claire Pulker²

Affiliations: ¹Curtin University, School of Public Health, Mount Hawthorn, Australia, ²Institute for Physical Activity and Nutrition (IPAN), Faculty of Health, Deakin University, Geelong, Australia

Abstract:

Background: Achieving sustainable, resilient food systems for healthy diets is a key pillar of action by the United Nations Decade of Action on Nutrition. Yet, current food systems are unsustainable and entrenched in producing unhealthy foods. The scale of the challenge demands urgent food system transformation, not nudges, or tweaks which are insufficient to achieve healthy diets from sustainable food systems.

Workshop format: Workshop presenters will examine: (1) the characteristics of healthy and sustainable food systems; (2) the global and national organisations that influence nutrition policies affecting food systems; (3) the power of global retailers and their response to nutrition policies; (4) the impact of ultra-processed food on sustainable and healthy diets; and (5) dietary guidelines incorporating sustainability considerations. Participants will then practically explore the role advocacy plays, and what they can do to promote healthy and sustainable food systems.

Learning objectives: This workshop will assist participants to:

1. Describe the characteristics of healthy and sustainable food systems.
2. Identify current government nutrition policy priorities, and their strengths and weaknesses in making progress to achieving healthy and sustainable food systems.
3. Describe the complex web of global organisations who can influence national nutrition policies.
4. Explain the importance of supermarket responses to government-led nutrition policies.
5. Discuss how dietary guidelines and the NOVA food classification system, based on level of food processing, can assist in creating healthy and sustainable diets.
6. Practically apply the recommended advocacy process to identify what they can do to promote healthy and sustainable food systems.
Poster Presentations – P1

P1.001 - Influence of food insecurity on management of cardiometabolic diseases: a systematic review

Authors: Ms Elizabeth World1, Professor Danielle Gallegos1, Dr Peter Collins1

Affiliations: 1Queensland University Of Technology, Brisbane, Australia

Abstract:
Cardiometabolic diseases including insulin resistance, dyslipidaemia and hypertension are leading contributors to the global burden of health. Food insecurity is associated with several risk factors for cardiometabolic diseases. This review summarises the evidence on the relationship between food insecurity and the management of cardiometabolic diseases, and the role that diet plays in this relationship. Electronic databases were searched using medical subject headings (MeSH) and text words related to food insecurity and cardiometabolic diseases. Studies reporting the significance of the relationship between individual or household food insecurity and management of at least one biomarker of cardiometabolic disease in adults residing in an English-speaking OECD country were included. Studies were assessed for quality using the Joanna Briggs Institute checklists. Twenty-one cross-sectional and retrospective cohort studies conducted in the United States were included. Studies investigated management of insulin resistance, dyslipidaemia and hypertension. Covariates adjusted for varied widely across studies. Mixed evidence on positive, negative and null associations was found for insulin resistance, dyslipidaemia and hypertension. The current studies present inconclusive evidence that food insecurity is associated with poorer management of insulin resistance, but not with poorer management of dyslipidaemia or hypertension. Further research including mixed-methods and longitudinal studies is required to explore mechanisms and establish causality of the relationship between food insecurity and cardiometabolic disease management. This research will inform policies and practice to reduce inequalities in health and wellbeing between people with and without food insecurity.

P1.003 - Outpatient therapeutic care outcomes of wasted and stunted under-5s in Karamoja, Uganda

Authors: Ms. Gloria Obeng Amoako Odei1, Dr. Henry Wamani2, Dr. Joel Conkle1, Prof Richmond Aryeetye4, Ms. Joanita Nangendo1, Dr. Mark Myatt3, Prof Joan N. Kalyango1, Prof André Briendif1, Prof Charles Karamagi1

Affiliations: 1Clinical Epidemiology Unit, School of Medicine, College of Health Sciences, Makerere University, Kampala, Uganda, 2Department of Community Health and Behavioural Sciences, School of Public Health, College of Health Sciences, Makerere University, Kampala, Uganda, 3School of Medicine, Centre for Child Health Research, University of Tampere, Tampere, Finland, 4Health and Nutrition Section, UNICEF, , Namibia, 5Brixton Health, Llawryglyn, Powys, Wales, United Kingdom, 6School of Public Health, University of Ghana, Legon, Ghana, 7Department of Nutrition, Exercise and Sports, University of Copenhagen, Copenhagen, Denmark

Abstract:
Background: This study assessed the prevalence of concurrently wasted and stunted (WaSt) children, their characteristics, treatment outcomes and response; and factors associated with time to recovery among children 6-59 months admitted to the Outpatient Therapeutic Care (OTC) in Karamoja, Uganda.

Methods: We conducted a retrospective cohort study with data from January 2016 to October 2017 for children admitted to nine OTCs in Karamoja. WaSt was defined as concurrently wasted and stunted.

Results: Out of 788 eligible children; 48.7% (95% CI; 45.2–52.2) had WaSt with an excess of males; 56.3% (95% CI; 51.3–61.3). During recovery, WaSt children gained more weight than non-WaSt children (2.2 g/kg/day vs. 1.7 g/kg/day). WaSt children were less likely to recover (58.0% vs. 65.4%; p= 0.037) and more likely to be non-responsive to treatment (18.7% vs. 9.8%; p<0.001). The difference in median time of recovery between WaSt and non-WaSt children (63 days vs. 56 days; p=0.4649) was not significant. Factors associated with time to recovery were children aged 24-59 months (aHR=1.30; 95% CI;1.07-1.57; p=0.007), children with MUAC 10.5-11.4cm (aHR=2.03; 95% CI; 1.55-2.66; p<0.001), MUAC ≥ 11.5cm at admission (aHR=3.31; 95% CI; 2.17-5.02; p<0.001) and living in Moroto (aHR=3.34; 95% CI; 2.60-4.30; p<0.001) and Nakapiripirit (aHR=1.95; 95% CI; 1.51-2.53; p<0.001) districts.

Conclusions: The magnitude of WaSt children in OTC shows existing therapeutic feeding protocols could be used to detect and treat WaSt children. Further research is required to identify and address the factors associated with sub-optimal recovery in WaSt children for effective OTC programming in Karamoja.

P1.004 - Impact of the ASSP project on child nutritional status and feeding practices

Authors: Marc Bosonkiet1, Janina Wisniewski1, Paul Lusamba1, Paulin Mutombo1, Pelagie Babakazo6

Affiliations: 1Kinshasa School Of Public Health, Nutrition Department, Kinshasa, Congo (the Democratic Republic of the), 2Tulane University, Global Health Management and Policy, New Orleans, USA, 3Kinshasa School Of Public Health, Biostatistics and Epidemiology Department, Kinshasa, Congo (the Democratic Republic of the), 4Kinshasa School Of Public Health, Nutrition Department, Kinshasa, Congo (the Democratic Republic of the), 5Kinshasa School Of Public Health, Biostatistics and Epidemiology Department, Kinshasa, Congo (the Democratic Republic of the)

Abstract: Out of 788 eligible children; 48.7% (95% CI; 45.2–52.2) had WaSt with an excess of males; 56.3% (95% CI; 51.3–61.3). During recovery, WaSt children gained more weight than non-WaSt children (2.2 g/kg/day vs. 1.7 g/kg/day). WaSt children were less likely to recover (58.0% vs. 65.4%; p= 0.037) and more likely to be non-responsive to treatment (18.7% vs. 9.8%; p<0.001). The difference in median time of recovery between WaSt and non-WaSt children (63 days vs. 56 days; p=0.4649) was not significant. Factors associated with time to recovery were children aged 24-59 months (aHR=1.30; 95% CI;1.07-1.57; p=0.007), children with MUAC 10.5-11.4cm (aHR=2.03; 95% CI; 1.55-2.66; p<0.001), MUAC ≥ 11.5cm at admission (aHR=3.31; 95% CI; 2.17-5.02; p<0.001) and living in Moroto (aHR=3.34; 95% CI; 2.60-4.30; p<0.001) and Nakapiripirit (aHR=1.95; 95% CI; 1.51-2.53; p<0.001) districts.

Conclusions: The magnitude of WaSt children in OTC shows existing therapeutic feeding protocols could be used to detect and treat WaSt children. Further research is required to identify and address the factors associated with sub-optimal recovery in WaSt children for effective OTC programming in Karamoja.
Abstract:
Background: Many projects have supported an integrated approach to improving the availability and quality of health care services in the Democratic Republic of Congo (DRC). However, to date, the impact of these projects has not been rigorously evaluated. This study aims to evaluate the impact of the ASSP (Accès aux Soins de Santé Primaires) project on child nutritional status and feeding practices.

Methodology: We conducted a quasi-experimental panel study among women aged 15 to 49 years with underfive children in Orientale, Maniema, Equateur, Kasai-Occidental and Kasai-Oriental provinces. A total of 4,200 households were sampled at baseline and endline, and an additional 1,400 households at endline only. Dose-response analysis and a difference-in-differences analysis were performed.

Results: Rates of stunting increased significantly in ASSP areas. Overall rates of wasting and underweight did not change significantly in ASSP areas. Stunting and wasting have worsened in Maniema/Tshopo since 2014. Three in four children under five do not have a minimum dietary diversity. There was no significant change in this indicator. Minimum meal frequency declined significantly in ASSP areas. There was no significant change in minimum acceptable diets in ASSP or non-ASSP areas.

Conclusions: The ASSP project had a negative or no impact on the nutritional status of children. It is particularly to identify differences over time in Maniema that might explain the negative change in nutritional outcomes. This will be particularly important in the design of strategies to promote the transition from humanitarian to development programming in DRC and achieving the SDG 2.

P1.005 - Baby milk sales in India and China: A food policy comparison

Authors: Dr Julie Smith1, Dr Arun Gupta2, Dr JP Dadhich3

Affiliations:1 Australian National University, Canberra, Australia, 2IBFAN South Asia, Pitampura, India, 3Breastfeeding Promotion Network of India (BPNI), Pitampura, India

Abstract:
Background and aim: Rising sales of commercial baby food including formula in Asia means fewer infants and young children are optimally breastfed. Formula sales count as boosting GDP and economic growth, but the consequent decline in breastmilk production is not measured.

This study estimated the economic value of human milk production in India and China, compared with markets for commercial baby foods in these countries with different breastfeeding policies.

Methods: Trends in sales of commercial baby food in India and China are analysed using Euromonitor data. This is compared with the economic value of human milk and lactation.

Results: Over 3.3 billion liters a year of human milk is produced in India, but in China production has declined considerably below potential 2006-2010 levels of around 4.9 billion liters. The China market for infant formula has doubled in five years with sharp declines in breastfeeding.

By contrast, in India, breastfeeding for the first 6 months is higher due partly to enabling health system policies and WHO Code implementation, though the market for commercial products is growing. Rising incomes, aggressive commercial marketing, and maternal employment are factors in these trends.

Conclusion: Not measuring breastmilk production in economic data may distort public policy especially in newly industrialising or transition economies. Higher breastfeeding in India compared to China may reflect laws constraining marketing as well as maternity care practices and economic factors. Health system investments are needed to better protect, promote and support breastfeeding (ICN2 R28), including restraining marketing through health channels (R15, R29).

P1.006 - Sustainability of Integrated Management of Acute Malnutrition among Pediatric TB DOT Providers

Authors: Ms Helen Palik1

Affiliations: 1National Department Of Health, Port Moresby, Papua New Guinea

Abstract:
Background: Malnutrition is still a threat with stunting rate of 43% among under five years old children in PNG. Since 2014 integrated management of acute malnutrition was an intervention introduced by UNICEF to address high rate of malnutrition (under nutrition) in PNG. It was then adopted by National Department of Health including PNG Paediatric Society where the implementation process started with training of all paediatricians. As this study is part of implementation research which will assess implementation outcome of sustainability at different levels but more focus at implementation level among the Paediatric TB DOT Providers in different environmental context.

Objectives: The main aim of the study is to assess sustainability of IMAM among TB DOT providers and explore factors that may influence sustainability and also make comparison of sustainability level at different environment context.

Method: It will be a qualitative study that will be conducted in Morobe Province of PNG from April to June, 2019. The four urban and rural districts health facilities will be the study sites for implementation level while the assessment of sustainability will also include all levels of decision making.
Results: Increase in number of malnourised children managed at TB DOT Clinic and increase number of better nutrition and TB treatment outcome.

Conclusion: More added knowledge to TB and nutrition Program for strategic planning purposes and prioritise activities to improve implementation of IMAM.

P1.007 - Community Development and Nutrition

Authors: Denis Joseph Bukenya

Affiliations: 1People’s Health Movement, Kampala, Uganda

Abstract: Uganda as a country has all sorts of foods to address micronutrient deficiency however there is a knowledge gap on how to characterize and prepare the food in the fight against nutritional deficiencies an issue that calls for health systems strengthening and community involvement. The Uganda Demographic and Health Survey 2016 report (UBOS, 2016) indicates that majority of Ugandans consume less than the recommended three meals per day with 51% consuming two meals per day while 12% consume one meal per day.

Amongst the international organisations of food security and health, there is a growing consensus on the need to strengthen health systems upstream by making them more resilient though providing strong integrated primary health care systems (Vancouver, 2016). Part of this strategy involves working with the communities.

Methods: In Spring 2019, Basic Food lab students received a food literacy based curriculum to improve food literacy skills and healthful food consumption habits through hands-on, experiential skills application. A web-based Qualtrics survey was given at pre- and post-semester. Analysis were conducted using McNemar test and Wilcoxon Signed rank.

Results: Students (n=39) were single (95%), white/Caucasian (92%) , female (64%) nutrition majors (46%), with a mean age of 21.2 years. Results showed statistically significant (p<.05) increases in food literacy-based self-efficacy, food safety and cooking skills, and recipe modification.

Conclusion: A structured curriculum can improve college students’ food-literacy-based self-efficacy and cooking skills. Increases in self-efficacy promote the potential for engagement in these associated behaviors. Improvements may also lead to positive dietary habits, and improved health and academic performance. Policy changes supporting undergraduate curriculums that include food literacy may improve student health behaviors and stress levels, leading to benefits in their academic performance.

P1.008 - Promoting Food Literacy in Appalachian College Students through a Food Literacy-Based Curriculum

Authors: Sakinah Craine, Dr. Jamie Griffin, John Arrowood, Melissa Gutschall

Affiliations: 1Appalachian State University, Boone, United States

Abstract: Food literacy includes the self-efficacy to plan, manage, select, prepare, and eat food. Higher self-efficacy in food literacy and cooking skills are reported in college students who have taken a food-focused course. Increasing food safety and cooking skills self-efficacy may improve college students’ cooking literacy and healthful food consumption habits, leading to improved academic performance and weight management. This study examined the effectiveness of a food literacy-based curriculum to promote cooking literacy skills and healthful food consumption habits through a Basic Food laboratory in a rural university in Appalachia.

Methods: In Spring 2019, Basic Food lab students received a food literacy-based curriculum to improve food literacy skills including self-efficacy, food safety, cooking skills, and recipe modification through hands-on, experiential skills application. A web-based Qualtrics survey was given at pre- and post-semester. Analysis were conducted using McNemar test and Wilcoxon Signed rank.

Results: Students (n=39) were single (95%), white/Caucasian (92%) , female (64%) nutrition majors (46%), with a mean age of 21.2 years. Results showed statistically significant (p<.05) increases in food literacy-based self-efficacy, food safety and cooking skills, and recipe modification.

Conclusion: A structured curriculum can improve college students’ food-literacy-based self-efficacy and cooking skills. Increases in self-efficacy promote the potential for engagement in these associated behaviors. Improvements may also lead to positive dietary habits, and improved health and academic performance. Policy changes supporting undergraduate curriculums that include food literacy may improve student health behaviors and stress levels, leading to benefits in their academic performance.

P1.009 - Pathways to Kwashiorkor or Marasmus in Ameya, Ethiopia.

Authors: Miss Frantsiska Zigah, Mrs Regina Keith

Affiliations: 1University Of Westminster, London, United Kingdom

Abstract: The magnitude of malnutrition, including kwashiorkor and marasmus are high in the rural areas of Ethiopia. The aim of this qualitative study is to explore barriers to food security and access to healthcare in under 5-year old’s displaying kwashiorkor or marasmus in Ameya, Ethiopia.
Method: Thematic analysis was used in this research. Data collection involved: researchers’ observations, one-on-one interviews, group discussion and in-depth interviews with key stakeholders.

Results: The main themes that emerged were: behavioural and environmental. The behavioural aspect involved: feeding practices, water and food storage, coping strategies, illness, father’s involvement and PHW perceptions. While environmental aspects were: socio-economic status, community infrastructure, access to market, market food diversity, market environment and cost of healthcare.

Conclusion: Children in Ameya are lacking nutritious foods due to food costs, unavailability of diverse food crops at the market, poor farming yields, while unsanitary market places and contaminated water sources cause diarrhoea and malabsorption in children. Long term solutions include; training community HWs in diagnosing and treating common diseases and providing adequate medications, while new nutritious food crops should be introduced into the farming community at a low price. Long-term interventions that provide numerous safe water systems in the community can also reduce the risk of diarrhea and malabsorption. Introducing diverse food crops and safe water systems can act as a protective mechanism against malnutrition and will not only aid in reaching SDG2, but can promote healthy lives (SDG 3) and help end poverty (SDG1) since children grow to their full potential.

P1.010 - Chilean packaged Food label analysis in the 20,606 law frame: 2013 baseline

Authors: Katia Mayo1, Daiana Quintiliano1, Lorena Rodriguez2, Anna Christina Pinheiro1

Affiliation: 1School of Nutrition and Dietetics, Faculty of Medicine Clinica Alemana.Universidad Del Desarrollo, Santiago, Chile, 2Public Health School, Universidad de Chile, Santiago, Chile

Background/aims: In 2016, Chilean government implemented the front of package (FOP) advertisement on packaged foods high in critical nutrients. July 2019 was the final period of law implementation and many industries changes the food content of ingredients and nutrients to comply with the regulation. This study evaluated the nutrient content of major categories of industrialized foods consumed in Chile prior the food law implementation.

Methods: It was selected the 70% of the most consumed packaged foods (National Food Consumption Survey (2009-2010)). In 2013, a bank of images (~2800) of these packages foods (n=553) was conforming. The photos were obtained in supermarkets of Santiago. A database with nutrient content of each product was conforming and the products were classified according the National Sanitary Regulation of Foods. The Law's final (2019) limits were used to evaluate if these foods would receive any warning “high in”, solids: >275kcal, >10g, >4g, >400mg, and liquids: >70kcal, >5g, >3g and >100mg from calories, sugars, saturated fats and sodium, respectively. The simulation of FOP warning presence/absence was analyzed by product category. Results of major categories: warning presence by calories: beverages 24,1%, dairy products 57,6%; by sugars: beverages 76%, dairy products 67,1%; by sodium: snacks 50%, dairy products 25,6%.

Conclusions: FOP could help consumers to improve selection of foods with better nutrient profile. We will evaluate these products in 2019/2020.

P1.011 - ‘Lost milk’- food production losses due to suboptimal breastfeeding policies

Authors: Dr Julie Smith1

Affiliations: 1Australian National University, Canberra, Australia

Abstract:

Background and aims: Economic statistics are widely used by policy decision makers and managers, and for advocacy by industry. However, the contribution of breastfeeding is unmeasured in food information systems.

This study demonstrates how the macroeconomic value of human milk supply can be included in key economic statistics such as gross domestic product (GDP), and provides estimates of lost production for selected countries.


Results: Australian women produce 42 million litres of human milk annually, its value exceeding US $4 billion. The United States could produce around US$127 billion p.a if women were enabled to breastfeed, but loses two thirds of potential human milk supply due to premature weaning. In Norway, production of US$907 million annually is 60% of potential human milk supply.

Conclusion: Invisibility of human milk in economic statistics reduces the perceived importance of policies, programs and regulations that empower women to breastfeed. Potential lost food production for infants and young children is large. Food production information systems should be improved to account for mothers’ milk production in GDP and other food system data. Counting human milk in GDP in line with the UNSNA would improve policy development and accountability, strengthen nutrition governance and reduce food loss (ICN2 R5, R7, R11).

P1.012 - Hunger crisis in India: An Australian student’s perspective

Authors: Ms Susanne Baker1

Affiliations: 1Edith Cowan University, Innaloo, Australia
**Background:** The Indian nation has a long history of poverty and hunger, a student study tour in 2019 provided unique insight into the reality of this situation. Methods: First hand observations lead to desktop research into the past and current burden of under-nutrition, nutrition deficiencies and obesity within India followed by reflection on students making a difference.

**Results:** Reductions have been seen in overall energy deficiency however stunting and anemia still affect large proportions of the population. This is more prevalent in those living in poverty stricken rural areas. Obesity levels particularly in urban areas are of growing concern. The Indian government has actively addressed the hunger crisis through initiatives such as the midday meal program, rations for pregnant mothers and subsidised grains for those living in poverty.

**Conclusions:** These initiatives combined with the work of not-for-profit organisations and a fast growing economy has seen a reduction in poverty and under-nutrition levels. The United Nations Sustainable Development Target (STD) of zero hunger by 2030 (SDT2) is however, still a long way from being achieved. The formation of a knowledge brokerage between Australian and Indian nutrition students and graduates could be one way to build capacity in early nutrition career to help accomplish SDT 2. Significance: Knowledge brokerage is the concept of mediators bridging the gap between research and utilisation of that knowledge through practical action steps. Students would share and gain insight into the issues of hunger and nutrition and work together to find practical solutions.

**P1.014 - Exploration of parental perceptions and practices concerning sugar/oral health of children**

**Authors:** Claudia Baker1, Regina Keith1

**Affiliations:** 1University of Westminster, London, United Kingdom

**Abstract:**

**Background:** The consumption of sugary foods and drinks and poor oral health practices among children is closely linked to the development of tooth decay. The aim of the study was to explore perceptions and practices concerning sugar consumption and oral health of young children.

**Methods:** This qualitative study was conducted using semi-structured focus group discussions with parents (n=28) and key informant interviews with healthcare providers (n=10). All data were collected in Tower Hamlets, London. Data analysis was performed on transcribed interviews using a thematic analysis approach and NVivo Starter 11.

**Results:** Six themes emerged related to sugar and oral health during analysis: (1) Communication: internet as a form of communication and limited communication on UK Sugar Tax to parents. In addition, influencing communicative messages on food packages and labels to parents and children. Themes related to barriers: (2) cost, (3) convenience of sugary foods and drinks, (4) fussy eaters prevent parents from giving their children healthier foods, (5) family influence makes it much harder for parents to feed their children healthier foods, and (6) family influence and mixed messages on sugar and correct oral health practices. Conclusion: Parents and healthcare providers identified many factors that influence parent’s perceptions and practices around sugar consumption and oral health. However, parents face many barriers to reduce sugar and performing correct oral health practices. Future public health policy planning should consider implementing a multifactorial approach to improve child health that includes the barriers identified in this qualitative study.

**P1.015 - Public health workforce planning to address the nutrition-related burden in South Africa**
P1.016 - A new didactic approach to explain how food is related to SDG´s
Authors: Bruna Menegassi1
Affiliations: 1Universidade Federal Da Grande Dourados, Dourados, Brazil
Abstract:
Background: There is a relationship between foods and Sustainable Development Goals (SDG´s). There is scientific evidence that unhealthy and unsustainably produced food poses a global risk to people and the planet. What are these relationships, and how can we act on this to reach the SDG´s? Aim: The objective of this work was to answer these questions with an unpublished didactic approach.
Methods: This is a qualitative study with a descriptive purpose. Bibliographic research on the topics of interest was carried out in indexed databases. The root cause analysis method adapted was used to organize the data obtained.
Results: An original infographic shows the production and consumption of ultra-processed foods as the root cause of at least eight problems, targets of Goals 3, 6, 8, 11, 12, 13, 14 and 15. To reach these SDG’s we can start preferring natural or minimally processed foods, prepare the food by ourself, purchasing local foods, valorize real food, and the pleasure of eating it. These actions are recommendations for an adequate, healthy, and sustainable diet of food-based dietary guidelines, as Brazilian Food Guide. To prefer natural or minimally processed foods to ultra-processed foods can be a catalyst to reach the SDG’s.
Conclusion: This new didactic approach to explain how food is related to SDG’s can be used by health professionals in public health nutrition actions in the Decade of Nutrition.

P1.017 - Nutrition counselling in pregnancy: What is it, how to do it well?
Authors: Krizia Tatangelo1, Jenny Busch-Hallen2, Jennifer Hatchard3, Sarah Rowe1
Affiliations: 1Nutrition International, Ottawa, Canada
Objective: Quality interpersonal counselling (IPC) lacks a standardized, universal definition, which may contribute to the lack of guidance for nutrition counselling, and may impede optimal implementation of WHO 2016 ANC nutrition recommendations. Nutrition International (NI) sought to fill a knowledge and program guidance gap on what is required for the provision of quality nutrition IPC in low-middle income countries.
Methods: NI reviewed grey and published literature for existing definitions and standardized indicators, guidance and tools, and effect on maternal and neonatal health and nutrition (MNHN) outcomes. The literature review and group discussion informed the development of a program pathway demonstrating and connecting inputs and activities required for delivery of quality IPC in ANC, as well as outputs, outcomes and impact expected on MNHN outcomes. NI then developed a definition of quality IPC, as well as practical tools for implementation.
Results: Standardized definitions and indicators were not found through the literature review; however, the relationship between counselling and MNHN outcomes was evident. The developed definition of quality IPC provides a common understanding and frames the inputs and activities required for effective implementation of quality nutrition IPC in ANC, as illustrated by the program pathway.
Conclusion: The IPC definition and tools provide greater guidance and assistance to healthcare workers for the provision of quality nutrition IPC in ANC. This work also helps to raise awareness and increase advocacy for greater support for operationalising quality nutrition counselling, enabling the effective delivery of nutrition recommendations in ANC as outlined by WHO.

P1.018 - Child Nutrition in Areas Affected by Mount Sinabung Eruptions in Indonesia

Authors: Mr Sadar Ginting¹, Mrs Michelle Ann Miller¹, Mrs Nithra Kitreerawutiwong²

Affiliations: ¹Asia Research Institute, National University of Singapore, 21 Lower Kent Ridge Rd, Singapore, ²Faculty of Public Health, Naresuan University, Phitsanulok, Thailand

Abstract:
Background: The impact of a volcano eruption on malnutrition in children has been known. However, the risked population and child nutrition measurements were only monitored in the shelter areas. This study was focused on the Mount Sinabung eruption, due to it was the longest eruption mountain (from September 2013 to June 2019) in the history of the volcanic eruption in Indonesia, even the world. Therefore, child nutrition and its risk factors during Mount Sinabung eruptions are important from a scientific.

Methods: A cross-sectional design was used with 489 samples. Face to face interviews with the respective child’s mother and measurements of the respective child’s weight and height were carried out. Crude odds ratio and adjusted odds ratio with a 95% confidence interval were calculated. Results: Out of 489 subjects, we found normal weight, underweight, and severely underweight in 67.5%, 26.8%, and 5.7% respectively. Children’s nutritional status was significantly associated with demographic characteristics, socioeconomic characteristics, food consumption, food access and availability, food utilization including care and feeding practices, and public health. Through this study results, known that the volcanic ash reduces the household food security and causes water supply problems, environmental sanitation and infectious diseases, which then could affect to the child nutrition.

Conclusion: Lower socioeconomic status, household food insecurity, and poor child-caring practices were associated with child nutrition. Besides the implementation of programs focusing on poverty reduction post volcano eruption, community-based nutrition and hygiene education with extensive family planning should be intensified to improve child nutrition during Sinabung’s eruption.

P1.019 - IYCF-E IN A HIGH-INCOME COUNTRY: developing from the ground up

Authors: Mrs Michelle Pensa Branco¹, Ms. Jodine Chase¹, Ms. Carole Dobrich¹

Affiliations: ¹Safelyfed Canada, Mississauga, Canada

Abstract:
This presentation will present the experience of building out infant feeding and young child feeding in emergencies (IYCF-E) policies and practice following a major natural disaster in a Canadian city. Following a full city evacuation due to a wildfire in May 2016, SafelyFed Canada with the Wood Buffalo Woman and Baby Care Association identified an absence of IYCF-E preparedness as a gap. Innovative policy and practice was developed locally in the absence of useful regional or national guidance using global guidance and tools and local expertise.

Together with partners at the Regional Municipality of Wood Buffalo and Alberta Health Services, SafelyFed Canada helped to identify and deliver specific training and policy needs in the northern Alberta community of about 100,000 residents, including approximately 3,000 children under the age of two.

The key outcomes from the first phase of the project, ending in May 2017, will be outlined, including the use of a locally-adapted WBTi-based indicator, the value of data available as a result of Baby-Friendly Initiative preparation at public health and the dissemination of the outcomes to the community and the wider IYCF-E field. We will share the challenges and opportunities identified for advancing IYCF-E in high-income countries using global guidance such the IFE Core Group Operational Guidance.

P1.021 – Exploring the traditional Indigenous foods of tribal communities of Jharkhand, India

Authors: Dr Suparna Ghosh Jerath¹, Ms Ridhima Kapoor¹, Ms Satabdi Barman¹, Dr Archna Singh¹, Dr Shauna Downs², Dr Gail Goldberg³, Dr Jessica Fanzo⁴

Affiliations: ¹Indian Institute of Public Health-Delhi, ²All India Institute of Medical Sciences, ³Rutgers University, ⁴Nutrition and Bone Health Research Group, ⁵Johns Hopkins University

Abstract:
Background: Sauriya Pahariya, Santal and Munda tribal communities of Jharkhand have diverse culture, traditions and food environment. Availability and nutritive value of indigenous food sources in these communities were explored.

Methods: Focus group discussions were conducted in 28 villages in two districts of Jharkhand among three tribal groups for free listing of indigenous foods (IFs), their sources and seasonality. Based on list, plant specimens were photographed, collected, herbariums prepared and sent to Botanical Survey of India (BSI) for taxonomic classification. Plants, animals, fishes and insects identified were searched in literature including Indian Food Composition Tables (IFCT) for nutritive value. Seasonal collection of foods with no documented nutritive value were done and sent to laboratory for nutrient analysis.
Results: 438 IF items were identified with local names including cereals (12%), pulses (3%) green leafy vegetables (21%), animal foods (24%), mushrooms (19%), roots and tubers (8%), fruits (8%), and other vegetables (5%). Taxonomic classification has been completed for 22% foods. Of these, 20% have nutritive values available (IFCT, other sources). Nutrient content of 32 food samples has been analysed in laboratory. Among these, iron content was above 20 milligrams in 12 IFs, calcium above 600 milligrams in 6, beta-carotene above 5000 micrograms in 6 and zinc above 10 milligrams per 100 gm in 8 IFs.

Conclusion: A wide range of IFs with high micronutrient content exist in food environment of these three tribal communities and can be explored as a sustainable means of addressing micronutrient malnutrition.

P1.022 - Protein leverage hypothesis and ultra-processed food consumption: study in seven countries.

Authors: Dr Euridice Martinez Steele, Dr David Raubenheimer, Mrs Giovanna Calixto Andrade, Dr Gustavo Cediel, Dr Maria Laura Louzada, Mrs Priscila Machado, Dr Fernanda Rauber, Dr Carlos A. Monteiro

Affiliations: 1Departamento de Nutrição, Universidade de São Paulo, São Paulo, Brazil, 2Núcleo de Pesquisas Epidemiológicas em Nutrição e Saúde (NUPENS), São Paulo, Brazil, 3Departamento de Medicina Preventiva, Faculdade de Medicina, Universidade de São Paulo (FMUSP), São Paulo, Brazil, 4Charles Perkins Centre and School of Life and Environmental Sciences, The University of Sydney, Sydney, Australia, 5Universidad de Antioquia. Escuela de Nutrición y Dietética, Medellin, Colombia

Abstract:

Background/Aims: Protein Leverage Hypothesis (PLH) propounds that human protein regulation has interacted with a dietary protein dilution, largely driven by cheap low-protein food availability, to boost energy overconsumption and rise in obesity. This study examined the association between dietary contribution of ultra-processed foods (UPF), dietary protein contribution and absolute protein and energy intakes in seven countries.

Methods: Adult participants from seven national representative cross-sectional studies were included: Brazil 2008-2009, Chile 2010, Colombia 2004, Australia 2011-12, France 2006-2007, UK 2008-2016 and US 2015-2016 (n 65451).

Results: We found a strong inverse association between UPF consumption and dietary protein density. The mean decrease in protein content for every unit increase in UPF quintiles ranged between -0.2% in Colombia and -1.1% in US.

For every unit increase in UPF quintiles the mean absolute protein intake decreased between 4.8 kcal in Chile and 15 kcal in the US, increasing 6.2 kcal in Colombia. For every unit increase in UPF quintiles, the mean energy intake increased between 34 kcal in US and Australia and 84 kcal in Chile, not being statistically significant in France or UK. The role and level of protein leverage in explaining differences in energy intake across UPF quintiles varied between countries.

Conclusions: The protein-diluting effect of UPF might be one mechanism explaining the association between UPF and excess energy intake in most countries. Reducing UPF contribution may be an effective way to increase populations dietary protein fraction and prevent excessive energy intake.

P1.023 – Food Pantry Capabilities and Resource Mapping in Northwest North Carolina

Authors: Dr. Kyle Thompson, Dr. Margaret Barth

Affiliations: 1Appalachian State University, Boone, United States

Abstract:

Background: Food pantries, also called food resource centers (FRCs), play a key role in local food systems by providing emergency food assistance to food insecure populations. To date, the operational capabilities of FRCs have not been widely studied.

Methods: With permission, we used a cross-sectional survey developed by University of Oklahoma researchers to study the operational characteristics of FRCs. We partnered with the Second Harvest Food Bank of Northwest North Carolina (SHFB NWNC) to survey a sample of FRCs located within the SHFB NWNC’s 18-county service area (N = 53; 22.9% response rate). We sought to determine the capabilities of FRCs to provide food assistance, promote self-efficacy among populations served, and address root causes of hunger in their communities.

Results: Data analysis indicated possible components of FRC capability. Based on our results, we purposed to create two tools for tandem use by food banks to enhance capabilities among their constituent FRCs: 1) an FRC capability scorecard/index to identify opportunities to strengthen individual FRCs and optimize resource utilization among FRCs by region, and 2) resource maps to identify regional linkages among FRCs and other organizations focused on the promotion of self-efficacy, including health services and skill development for living wage jobs.

Conclusions: Our regional study is a component of the larger North Carolina Food Pantry Organizational Capability and Mapping Study, now under implementation with research partners in the University of North Carolina System, with public health nutrition implications for addressing food security and impacting root causes of hunger in North Carolina.
**P1.024 - A changing food environment: Perspectives of adult Samoans**

**Authors:** Dr Dana Craven, Dr Ramona Boogoosingsh, Dr Safua Akeli, Ms Jyothi Abraham, Ms Grace Kammholz, Dr Sarah Burkhart

**Affiliations:** 1University of the Sunshine Coast, Sippy Downs, Australia, 2National University of Samoa, Apia, Samoa, 3Centre for Samoan Studies, National University of Samoa, , Samoa

**Abstract:**

**Background/aim:** The food systems of Samoa, a collection of islands in the South Pacific, have experienced significant change over recent years due to globalization, urbanization and climate change. Consequently, Samoa has some of the highest rates of overweight/obesity and diet-related non-communicable disease in the world. This study aimed to explore Samoans’ perceptions of changes in the local food environment.

**Methods:** An interviewer administered questionnaire was conducted with 139 adult Samoans (≥20 years) to explore changes in access to food related amenities, food purchasing and consumption behaviours between childhood and present day. Results: Greater access to electricity (44% vs. 96%) and refrigeration (22% vs. 96%) has resulted in changes to traditional cooking and food storage methods. Drying, brining or keeping at room temperature are used less often. Open fire cooking has decreased with gas and electric stoves now more common. Daily food shopping has increased (77% vs. 18%) with more access to large supermarkets (73% vs. 6%) and fruit and vegetable stands outside homes (59% vs. 30%). Majority of participants reported noticing changes in the common (86%) and special occasion foods (82%) eaten by Samoans. Many participants (69%) reported learning special family recipes.

**Conclusions:** Greater access to amenities has impacted food purchasing and consumption behaviours in a short period of time. This may have implications for health outcomes likely due to increased access to Western style highly processed foods. Nutrition education in the context of the changing food environment is an important consideration for future interventions to support healthy eating patterns.

**P1.025 - Indigenous food consumption and nutrition in Sauria Paharia tribal children of India**

**Authors:** Dr Suparna Ghosh-Jerath, Ms Ridhima Kapoor, Dr. Nilima Niilima, Dr. Archna Singh, Dr. Shauna Downs, Dr. Jessica Fanzo, Dr. Gail Goldberg

**Affiliations:** 1Indian Institute Of Public Health-Delhi, PHFI, Gurgaon, India, 2All India Institute of Medical Sciences, New Delhi, India, 3Rutgers University, New Brunswick, USA, 4John Hopkins University, Baltimore, USA, 5MRC Epidemiology Unit, University of Cambridge, School of Clinical Medicine, Cambridge, UK

**Abstract:**

**Background:** Indigenous foods (IFs) of tribal communities are rich sources of micronutrients and have potential to address child malnutrition. The present study assessed IF intake and their contribution to nutritional status of Sauria Paharia children (6-59 months).

**Methods:** Exploratory cross-sectional study conducted in 18 villages of Sunderpahari and Boarior blocks, Godda district of Jharkhand. Eligible child (6-59 month) each in 246 households (HHs) were covered. HH and Nutrition survey on socioeconomic and demographic profile, anthropometry (n=167), infant and young child feeding (IYCF) practices (159) along with 24-hour dietary recall (24-HDR) (n=215) were conducted. WHO Child growth standards and Recommended Dietary Allowances for Indians were used to assess dietary practices and nutritional status. Statistical analysis was done using software R version 3.5.2.

**Results:** High prevalence of severe underweight (22.7%), severe stunting (24.5%) and severe wasting was observed (8.4%). Early initiation of breastfeeding, exclusive breastfeeding till 6 months and timely introduction of complementary feeding was reported in 42.7%, 17.1% and 16.3% respectively. Few HHs (26.4%) reported incorporating IFs in child’s diet by the age of 6-7 months. Children (6-23 months, n=96) who consumed IFs showed higher vitamin A (p=0.041) and calcium (p<0.001) intake while older children (n=119) consuming IFs showed significantly higher vitamin A (p= 0.001), calcium (p<0.001) and zinc (p=0.036) intake. IF consumption was found to be significantly associated with increasing age in children (p=0.001).

**Conclusion:** Incorporation of IFs in diets of nutritionally vulnerable Sauria Paharia children, can be an effective strategy for improving diet quality and addressing micronutrient deficiencies.

**P1.026 - Indigenous food intake and nutritional outcomes in Sauria Paharia women of India**

**Authors:** Dr Suparna Ghosh-Jerath, Ms Ridhima Kapoor, Ms Nilma Niilima, Dr Archna Singh, Dr Shauna Downs, Dr Jessica Fanzo

**Affiliations:** 1Indian Institute Of Public Health-Delhi, PHFI, Gurgaon, India, 2All India Institute of Medical Sciences, New Delhi, India, 3Rutgers University, New Brunswick, USA, 4John Hopkins University, Baltimore, USA

**Abstract:**

**Background:** Sauria Paharias, a vulnerable tribal group in Jharkhand, India, display indigenous knowledge and live in close proximity to hills and forests which may provide biodiverse food environment. This study explored linkages between indigenous foods (IFs) intake, dietary diversity and nutritional outcomes in Sauria Paharia women.
Methods: Exploratory, cross-sectional study. Eligible women from each of 204 households (HHs) selected from 18 villages. HH and nutrition surveys including Food Frequency Questionnaire (FFQ) and 2 days 24-hour dietary recall (24-HDR) were conducted. Statistical analysis was done in R software.

Results: Majority of HHs owned agricultural land and accessed forests, water bodies and kitchen gardens for food. FFQ revealed consumption of diverse IFs but with low frequencies. 24-HDR revealed inadequate intake for all nutrients, except protein in 60% women. Around 40% women had chronic energy deficiency. More than half of women (59%) consumed IFs with mean intakes of 89 gm ± 135.4 of green leafy vegetables, 49 ± 22.1 of fruits, 55 ± 123.3 of other vegetables. IF consumers had higher intake of vitamin A and calcium, albeit statistically insignificant. Median minimum dietary diversity in women (MDD-W) was 2. Quantitative estimates revealed MDDW <4 was likely to provide 166 mg of calcium and 211 micro gm Vitamin A while MDDW >4 was likely to provide 641 mg of calcium and 1658 micro gm Vitamin A.

Conclusion: Dietary diversity by promoting nutrient rich IFs can be a sustainable strategy for improving nutritional status and address hidden hunger in women of Sauria Paharia tribes.

P1.027 - Food sovereignty and agroecology as an alternate agricultural approach: lessons from Malawi

Authors: Miss Kate Cressall¹

Affiliations: ¹University Of Westminster, London, United Kingdom

Abstract: Background/Aim: Contemporary agriculture and the globalised food system are at a presumptive crossroads. With hunger increasing and environmental degradation rampant, the ‘Zero Hunger’ Sustainable Development Goal highlighted the necessity of integrating global environmental sustainability with food security efforts, advocating for the uptake of ‘sustainable food production systems’. How this will be realised in practice represents a major challenge. Against a backdrop of corporate-led agricultural intensification efforts, a long-term participatory-led research model in Malawi has been exploring the impact of agroecological and food sovereignty approaches on food security in smallholders. The purpose of this scoping review was to identify and reflect on the challenges and opportunities for transforming the food system by considering the outcomes from Malawi.

Methodology and methods: A scoping review of literature databases and reference lists was carried out to source primary research (qualitative/quantitative/mixed) on agroecology and food sovereignty in Malawi, published in English between 2009-2019.

Results: Key social, ecological and economical themes arose from the literature.

Conclusion: Framed against an increasingly corporate-led, industrialised agricultural and development sector, Malawi provides valuable insights into the potential of agroecological and food sovereignty approaches to food security in smallholders as a pathway towards ‘Zero Hunger’.

Implications for public health nutrition: Critical consideration of the power dynamics (household to global) that shape food systems is key with especial focus on the intersectional dimensions of exclusion. A participatory approach, as an effective tool for enhancing the evidence base, should be a significant focus of discussion in agricultural and development initiatives.

P1.028 - Nutrition standards and nature of foods sold at University of Ghana Canteens

Authors: Mr. Maxwell Konlan¹, Dr Amos Laar¹

Affiliations: ¹University Of Ghana, Accra, Ghana

Abstract: Background: Available evidence link unhealthy food environments (FE) to the increasing incidence of obesity and other nutrition-related non-communicable diseases (NCDs). University canteens form a vital part of University FE and can predispose students and staff to NCDs risks attributable to unhealthy diets – especially in settings where operations are unregulated.

Aims: We determined the existence of nutrition standards and assessed the nature of foods sold at all canteens and eateries located on the campus of Ghana’s premier and largest University – the University of Ghana (UG).

Methods: We engaged relevant respondents using qualitative (in-depth interviews) and quantitative (surveys) data collection approaches. In-depth interviewed conducted with stakeholders whose core mandate was to regulate food service businesses. A survey helped determine the nature of food sold at the canteens and eateries.

Results: Majority of the eateries/food outlets sold sugar sweetened beverages (84.7%), refined carbohydrates (80.6%), and fried foods (93.9 %). The sale of fruits or vegetables was 40.8%, sale of whole grains was 38.8%. We identified two nutrition standards that regulate food service business at the University of Ghana. These were food hygiene and safety standards (with University-wide application) and food-based standards (pertaining to the only female-residence of the university).

Conclusions: Our data show that UG-based canteens/eateries offer various energy-dense foods, substantial consumption of which increases one’s risk to NCDs. Publicizing the data may prod relevant authorities to develop local policies/standards to improve food provisioning within the University food environment.
P1.029 - Is a healthy and sustainable diet affordable?

Authors: Ms Tara Goulding1, Dr Rebecca Lindberg1, Dr Georgie Russell1

Affiliations: 1Deakin University, Burwood, Australia

Abstract: Background/Aims: The EAT–Lancet Commission’s Planetary Health Diet (PHD) is the most current proposal of a diet that integrates both nutrition and sustainability, however its consumer affordability is unknown. This study’s aim is to develop a healthy and sustainable (H&S) food basket modelled on the PHD, determine affordability of the PHD basket across various economic groups in Australia, and compare this affordability with a food basket modelled on the current Australian typical diet (TD).

Methods: The PHD basket was developed reflecting the PHD reference diet, and the TD basket was developed previously in a separate study. The cost of the baskets was determined by supermarket online shopping surveys. Affordability of the two baskets was determined for a reference family (2A+2C) by comparing the cost of the baskets to disposable income in each SEIFA group in each Australian state using data from the Australian Bureau of Statistics.

Results: Forthcoming.

Conclusions: This study examined the affordability of the PHD H&S diet, highlighting differences in its affordability compared to the TD. Strategies to address the affordability of H&S diets may be needed if they are to be adopted by a range of socio-economic groups.

Significance to public health nutrition: As the globe aims to reach Sustainable Development Goals by 2030, urgent action on H&S diets is required in every country. Our work highlights affordability may be a major challenge in the uptake of H&S diets which has not been given sufficient attention, but should be addressed when considering how to promote their uptake.

P1.030 - Commercial Food Advertising at the University of Ghana, Legon Campus

Authors: Mr Gideon Amevinya1, Dr. Amos Laar2

Affiliations: 1Department of Population, Family and Reproductive Health, School of Public Health, University of Ghana, Accra, Ghana

Abstract: Background: Non-Communicable Diseases (NCDs) are the leading cause of death globally. NCDs-mortality attributable to unhealthy food environment (FE) are significant. Heavy marketing of unhealthy foods is an important contributor to unhealthy FE.

Aims: We examined the extent of commercial food advertising, messaging, and signage on the campus of Ghana’s premier and largest University.

Methods: We cross-sectionally collected data on all sighted advertisements. Such advertisements/signage were categorized as food or non-food adverts, and as healthy or unhealthy (if they were food).

Results: Of 503 advertisements recorded, 238(47.3%) were food adverts. Advertised food products were categorised as healthy(38.7%), unhealthy(57.6%), or miscellaneous(3.8%). Four of top five most advertised brands were unhealthy-Coca-Cola (13.9%), Fannmilk (10.5%), Pepsi (8.0%), and Indomie(3.8%). Different promotional techniques identified included the use of promotional characters, premium offers and claims. Adverts displayed as free-standing signs had higher odds of being healthy foods compared to those on billboards (AOR = 19.833; 95% CI: 2.003 – 196.381). Adverts displaying single food product type were 2.4 times as likely to be healthy food (AOR=2.437; CI: 1.366 – 4.348).

Conclusions: The preponderance of unhealthy food advertising on Ghana’s largest university has public health implications. Publicizing the data to relevant authorities may motivate development of local policies/regulations to regulate various food promotion activities within the University food environment and other child-serving settings.

P1.031 – Nutritional biomarkers and micronutrient status in Santhal tribal women of Jharkhand, India

Authors: Dr Archna Singh1, Ms Ridhima Kapoor2, Dr Gail Goldberg3, Dr Suparna Ghosh-Jerath4

Affiliations: 1All India Institute Of Medical Sciences, New Delhi, New Delhi, India, 2Indian Institute of Public Health-Delhi, Gurgaon, India, 3Nutrition and Bone Health Research Group, Cambridge, UK, 4Indian Institute of Public Health-Delhi, Gurgaon, India

Abstract: Background and aim: Santhal tribes of Jharkhand have diverse and rich indigenous food environment but also have high prevalence of undernutrition. Micronutrient deficiency often accompanies caloric insufficiency but there are few studies on their micronutrient status.

Methods: We estimated hemoglobin, Retinol Binding Protein 4 (RBP4), C-reactive protein (n= 238) and Vitamin D (n=60) levels in finger prick capillary blood samples of reproductive age group Santhal women from 18 villages of Godda district, Jharkhand. Samples were collected as part of an ongoing study on indigenous foods systems and shipped as blood spots (for haemoglobin)
and serum for the other parameters to the analytical laboratory. Hemoglobin was estimated by cyanmethemoglobin method, RBP4 and CRP by a multiplex luminex assay and Vitamin D by Liquid Chromatography-MS/MS.

**Results:** Mean haemoglobin level was 10.5 ± 1.9 gm/dL with 75% women being iron deficient; The median RBP4 was 3.3 micromoles/L with no women demonstrating Vit A deficiency. The mean total Vitamin D levels were 63 ± 15.7 ng/ml (mean D3 levels:54.8 ± 14.5 ng/ml; mean Vitamin D2 levels: 11.5 ± 3 ng/ml) ; all women were Vitamin D sufficient. The median level of inflammatory marker CRP, was 1 mg/L with raised levels in nearly 22% women.

**Conclusion:** Santhal tribal women had adequate levels of Vitamin A and vitamin D. However, prevalence of iron deficiency anemia was high. Diverse diets comprising of nutrient rich indigenous food sources may need to be utilized and translated into sustainable and complementary strategies into existing ones to address micronutrient malnutrition.

**P1.032 - Micronutrient-rich food consumption in rural food insecure context: Case of Popokabaka, DR Congo**

**Authors:** Dr Brany Mbunga1, Pr Ali Mapatano1, Pr Anne Hatloy2, Pr Tor Strand5, Pr Ingunn Engebretsen4

**Affiliations:** 1Kinshasa School of Public Health/University of Kinshasa, Kinshasa, Congo (the Democratic Republic of the), 2Centre for International Health/University of Bergen, Bergen, Norway

**Abstract:**

**Background:** Foods including -fruits, vegetables, fish, meat and insects- are known as bio-available foods and excellent source of micronutrients (vitamins and minerals). In a food insecure context, various household characteristics may affect the consumption of these foods and expose communities to multiple micronutrient deficiencies.

In this study, we assess food consumption pyramid, and investigate relationship between household parameters and consumption of each of these micronutrient-rich food groups in Popokabaka, DR Congo.

**Method:** This analysis is part of a Micronutrient survey (cross sectional study) conducted in May 2019 in Popokabaka, DRC, within 432 households selected through a multistage probabilistic scheme. A 16-items Food frequency data based on 7-days Recall was used to generate 5 dependent variables (Vitamin A rich leaves or tubers, Green leaves, Meat and chicken, Fish and see food, Insects). Multivariate Poisson regression models was used with 7 household’s independent composites variables.

**Results:** “Green leaves” were found to be the most frequently used as source of micronutrients in Popokabaka. Household food insecurity (HFIAS) had a negative impact on the consumption of animal source micronutrient-rich foods [PR=0.97(0.96-0.98)] while wealth index [PR=1.07(1.03-1.10)] and the livestock activity [PR=1.20(1.06-1.36)] have a positive contribution.

Having farming activity positively determined “Vitamin A rich leaves or tubers” consumption [PR=1.77(1.13-2.73)]. However, others vegetal source of micronutrient food seemed to be equally consumed, regardless household parameters.

**Conclusion:** These results highlight the importance of agriculture as key for household nutrition sustainability to reach the “ending-hunger” SDG goal 2 in such a context area.

**P1.033 - Foodways, food security and dietary choices in older black South African women**

**Authors:** Dr Feyisayo Oduntan-wayas1, Dr Amy Mendham1,2, Dr Naomi Brooks3, Prof Lisa Micklesfield1,4, Prof Dirk Christensen5, Prof Mieke Faber6, Iain Gallagher7, Lillemor Lundin-Olsson, Prof Kathryn Myburg5, Prof Estelle Lambert1, Dr Sebastiana Kalula1, Prof Julia Goedecke1,2, Prof Angus Hunter1

**Affiliations:** 1 Faculty of Health Sciences, University Of Cape Town, Newlands, South Africa, 2South African Medical Research Council, , South Africa, 3Faculty of Health Sciences and Sport,University of Stirling, , Scotland, 4 MRC/WITS Developmental Pathways of Disease Research Unit, School of Clinical Medicine, University of Witwatersrand, , South Africa, 5 Section of Global Health,University of Copenhagen, , Denmark, 6Stellenbosch University, , South Africa

**Abstract:**

**Background:** Gaining insight into factors that influence the dietary choices of older South African adults is important in the development of interventions to promote diet quality which is essential for healthy ageing and attaining SDGs 2 (Zero Hunger) and 3 (Health and Well-being) in older adults.

**Methods:** Participants (n=122, low-income, urban-dwelling older black South African women aged 60-85 years) were recruited through church groups and senior adult support groups, questionnaires were interview-administered, and included information on demographics, food procurement patterns and food security. Anthropometry were also measured.

**Results:** Approximately half of the women were head of their households and were reportedly food insecure. Food insecurity was associated with frequent food purchases at street vendors and small local “spazas” (shops), borrowing money for food and eating less to avail more food for their children. There were significant differences between participants’ actual and perceived body mass index and dietary perceptions. Most of the participants did not complete high school, most relied on government pension grants as sole source of income and provided for 4.7± 2.6 household members. Participants’(76%) household monthly income were below the South African poverty line, of which >50% was spent on food purchase. Social clubs are an integral part of participants’(70%) foodways and social support.
Conclusions: Financial constraint, primarily due to the need to support other household members, and low level of education may be contributing factors to the vulnerability of low income older black South African women to food insecurity, consequently hindering the achievement of SDGs 2 and 3.

P1.034 - Assessment of the food retail environment in the Tamale Metropolis

Authors: Mr. Matthew Yosah Konlan

Affiliations: 1Ghana Health Service, Tamale, Ghana, Ghana

Abstract:
Background: The field of retail food environments research is relatively new in Ghana, as such little is known about the nature of our food marketplace, and how the food marketplace influence consumer behaviour. Understanding the food retail environment may positively impact efforts at curbing the menace of nutrition-related non-communicable diseases (NCDs).

Aims: Focusing on the built environment (traditional markets) and marketing/advertising of food items in the built environment in the Tamale Metropolis of Ghana, we documented the attributes of traditional retail markets, assessed food items that retailers advertise at point-of-sale, or at market exits, and determined the percentage of retailers who sell at least two fresh produce

Methods: The assessment deployed observations, and in-depth interviews with retailers of food retail outlets in the Tamale Metropolis of Ghana.

Results: The data show that about 50% of the outlets retailed fresh fruits and vegetable, 46% had snack foods available. An extremely small number of packaged snack foods (0.2%) had nutrition information on them. About 60% of the retailers advertised various food items--fresh fruits and vegetables (51%), snack foods (46%), wholegrains (20%) and low or no fat dairy (15%).

Conclusions: We conclude that traditional retail markets, which remain the main source of household food in the studied area, have the potential to meet required dietary species richness. Interventions are needed to ensure that such food markets are not adulterated with obeseogenic processed foods.

P1.035 - Consumption of high protein foods and their impact on health of Mauritians

Authors: Miss Sohawn Hanaa Amiirah

Affiliations: 1Naturhouse, Port - Louis, Mauritius

Abstract:
Background and Aims: Dairy products and pulses are rich sources of proteins and can be used as substitutes for red meat, chicken and eggs which, apart from being protein-rich foods, are also high in saturated fats and cholesterol. The aim of this study is to investigate whether or not Mauritians know the importance of dairy products and pulses as alternative and rich sources of proteins, whether these are included in their daily diets, and their impact on health.

Methods: A survey-based questionnaire was designed to carry out a cross-sectional study among 500 respondents. Questions included were on socio-demographic factors, socio-economic factors, lifestyle factors, health and nutritional status, and consumption pattern of red meat, chicken, eggs, dairy products and pulses.

Results: Data showed that although a majority of respondents knew the importance of dairy products and pulses as rich sources of proteins in the diet, they did not consume these adequately. Respondents who consumed more of these foodstuffs everyday were consequently healthier than respondents who consumed red meat, chicken or eggs on a daily basis. Links were found between daily dairy product and pulses consumptions and low prevalence of non-communicable diseases among the respondents who consumed more of these foods, as opposed to those who consumed red meat, chicken or eggs everyday.

Conclusion: The study revealed that awareness must be raised on the importance, health impacts and on the adequate inclusion of alternative protein food sources such as dairy products and pulses in the daily diet of Mauritians.

P1.036 - Nutritional intervention and socioeconomic factors among tea pickers with iron deficiency anemia

Authors: Prof Faisal Anwar1, Prof Ali Khomsan1, PhD Hadi Riyadi1, PhD Betty Yosephin2, MGizi Karina Rahmadia Ekawidyan3, MSi Rian Diana3

Affiliations: 1Department of Community Nutrition, Faculty of Human Ecology, IPB University, Bogor, Indonesia, 2Health Polytechnic of Bengkulu, Bengkulu, Indonesia, 3Department of Health and Nutrition, Faculty of Public Health, Airlangga University, Surabaya, Indonesia

Abstract:
Background/Aim: Anemia is a nutritional problem with the high-risk groups are women of childbearing age, pregnant women, school children, and teenagers. Anemia may pose a negative consequence toward prosperity, health, and socioeconomic conditions. The research aimed to assess the effect of nutritional intervention and socioeconomic factors among women workers in tea plantation (tea pickers) with iron deficiency anemia in West Java, Indonesia.
Methods: A quasi-experimental study of intervention (micro-nutrient supplementation and nutrition education) and control groups for 12 months was used to assess the research outcomes. This research was fully funded by the Neys-van Hoogstraten Foundation, Netherlands.

Results: Subjects (mean age 42.1 years) had low education level and the average income was IDR 1,104,905 or contributed to 50% of the household income. Most of subjects consume less of iron and vitamin C source-foods, 68-91% experienced inadequate intake of energy, protein and vitamin C, and 44% having inadequate iron intake. The prevalence of anemia among the subjects was 28.4% (higher than the national prevalence of 22.7%). A total of 54.8% subjects suffered from central obesity with mean body fat of 32.0%. The nutritional interventions have no significant effect on hemoglobin and ferritin levels. Nevertheless, it has a tendency to increase the ferritin levels in the intervention group by almost 3-fold compared to the control.

Conclusion: Anemia is still a health problem that require more attention. Micro-nutrients supplementation with a frequency of 3 times a week is suggested to increase the levels of iron deposits in the body.

P1.037 - Food habits and the implementation on Indonesian Dietary Guidelines in school children

Authors: MSc Gunarti Prasetya¹, Prof Ali Khomsan²

Affiliations: ¹STIKES MITRA KELUARGA, Bekasi, Indonesia, ²IPB University, Bogor, Indonesia

Abstract: Food habits among school children were generally lacked of diversity, low in vegetable and animal protein consumption and too much consumption on sweet foods.

Methods: A cross sectional design was used to assess children’s food habits, knowledge and practice on IDG (n = 210 students). This research was fully funded by Neys-van Hoogstraten Foundation, Netherlands.

Results: About 30-35% students have a good nutritional knowledge and the practice on IDG was better at elementary. There still many students have skipped their breakfast (30.0%-37.5%). The quality of breakfast was still lacked of diversity with only carbohydrate and protein content. The main foodstuffs on children’s diet were rice/bread/noodle, milk/egg/chicken meat, tofu/soybean cake, spinach/carrot/water-crass, mango/banana/guava. Snacks consumed were mostly biscuit and fried foods and beverages were sweet ice tea and fruit juices. Most of students (65-95%) having mild physical activity.

Conclusion: Food habits among school children were generally lacked of diversity, low in vegetable and animal protein consumption and too much consumption on sweet foods.

P1.038 - The effect of nutrition education and traditional-game based physical activity interventions on nutritional status of overweight and obese children

Authors: Dr Cica Yulia¹, Prof, Dr ALI KHOMSAN², Prof, Dr DADANG SUKANDAR³, Dr HADI RIVADI²

Affiliations: ¹UNIVERSITAS PENDIDIKAN INDONESIA, Bandung, INDONESIA, ²INSTITUT PERTANIAN BOGOR, Bogor, INDONESIA

Abstract: Overweight and obesity among schoolchildren nowadays is one of nutritional problems that should get special attention. It is caused by the increase in overweight and obesity cases among schoolchildren that not only occur in developed countries, but the prevalence also begins to increase in developing countries. This study aimed to analyze the effects of nutrition education and traditional-game based physical activity on nutritional status of overweight and obese elementary school children. The research method used was experiment with Split Plot design. The number of replication in this study was 72. The response variables in this study were nutritional status. The study was conducted from October 2016 to May 2017.It was approved by Ethics Committee of Public Health Faculty, Diponegoro University, Semarang, in the form of ethical clearance Number: 271/EC/FKM/2016. Combination of nutrition education and traditional-game physical activity interventions that had been conducted for 12 weeks could decrease body mass index (BMI)-for-age. Duncan test proved that there was no difference in the decrease in BMI between the group that was given nutrition education and the one that was not given nutrition education. There was also no significant difference found between the traditional-game physical activity intervention group, gymnastics intervention group, and the group that did not perform physical activity. All treatment groups generally experienced a decrease in BMI-for-age. The conclusion was nutrition education and traditional-game physical activity interventions conducted for 12 weeks had not been effective in improving nutritional status (BMI-for-age) of the overweight and obese children. Although there was a decrease in BMI-for-age in one treatment group, but it was not significant when compared to other treatment groups. Nutrition education and traditional-game physical activity interventions had not been able to improve lipid profile and fitness levels of overweight and obese children.
P1.039 - Children’s habitual diet and food safety of snacks in school environment

Authors: Prof Ali Khomsan1, Prof Faisal Anwar1, PhD Hadi Riyadi1, MSc Hana Navratilova1

Affiliations: 1IPB University, Bogor, Indonesia

Abstract:

Background/Aim: School-age is a children period of growth and development into adolescence. Therefore, adequate intake of nutrients and food that is safe to consume is very important. There are potential problems on the safety of snacks sold at school (the hazardous food contamination, hygiene and sanitation problems). The research aimed to assess children’s habitual diet and food safety of snacks sold in urban and rural areas of Tangerang regions, West Java, Indonesia.

Methods: This research used a cross-sectional design, conducted in six selected public elementary schools from the respondents of elementary school children (5th grade; n = 214) and school food vendors. The data was collected by the questionnaire interviews and laboratory tests of the snack foods. This study was fully funded by Neys-van Hoogstraten Foundation.

Results: More students in rural area have 3 times meal a day compared to those who lived in the urban (p < .05). Neither urban nor rural area of students have a regular daily breakfast. Most of the students in the city (61.0%) and rural area (76.2%) had their habitual eating snack for 4-6 times/week. Food vendors’ attitude on nutrition and food safety was found better in urban area compared to rural area (p < .05). The snack foods were generally considered as safe, except for a noodle which contaminated by the formalin.

Conclusion: Regular daily breakfast had not been practiced by students in urban and rural. Food safety of snacks sold at schools was considered good except for one snack.
2A – Engaging and supporting adolescents and young adults

Rapid Fire Presentations

Prevalence and past decade trends in Australian adolescents’ healthy lifestyle behaviours

Authors: Dr Belinda Morley¹, Maree Scully¹, Claudia Gascoyne¹, Professor Melanie Wakefield¹

Affiliations: ¹Cancer Council Victoria, Melbourne, Australia

Abstract:

Background: The National Secondary Students’ Diet and Activity (NaSSDA) monitoring survey provides current population estimates of Australian adolescents’ adherence to national dietary and physical activity recommendations and assesses trends over time.

Methods: Nationally representative cross-sectional samples of 12-17-year-olds surveyed in 2009-10 (n=13,790 from 238 schools), 2012-13 (n=10,309 from 196 schools) and 2018 (n=9,102 from 104 schools) using validated self-report instruments administered online.

Results: In 2018, 12% of students reported meeting vegetable recommendations (≥5 daily serves), while 73% consumed the recommended ≥2 daily serves of fruit. Only 16% engaged in ≥60 minutes of physical activity daily, and adherence to sedentary behaviour guidelines (≤2 hours of electronic media for entertainment) was low on school (16%) and weekend days (9%). Frequent sugary drink consumption (≥4 cups p/week) was observed among 17% of students and 40% consumed fast food at least weekly. Males performed better than females on vegetable intake and physical activity, but worse on fruit intake, fast food and sugary drink consumption. There were no significant improvements over time in students meeting vegetable, fruit and physical activity recommendations or in fast food consumption; however, decreases in meeting sedentary behaviour recommendations and frequently consuming sugary drinks were observed.

Conclusions: The majority of Australian adolescents are placing their health at risk by falling short of national dietary and physical activity recommendations. Greater investment in strategies aimed at creating supportive environments for young people are needed to better promote healthy eating choices and physical activity over sedentary pursuits within this important population segment.

A qualitative study exploring influences on the food choices of university students

Authors: Ms Michelle Lambert¹

Affiliations: ¹University of Notre Dame Fremantle, Fremantle, Australia

Abstract:

Issue addressed: University students generally make independent decisions regarding food choices. Current Australian research about the level of nutrition knowledge, sources of that knowledge and influences on food choices for this group is scarce.

Methods: Qualitative data was collected from gender separated focus groups comprising four female (n=31) and four male (n=18) to identify: nutrition knowledge; sources of knowledge; factors that influence food choices; perceived relevant nutrition messages; and how best to deliver them.

Results: Significant gaps in knowledge were identified particularly regarding number of serves and serving size for food groups. Social media was the most commonly reported source of knowledge. Social media was also a major influence on food choice due to its impact on body ideals.

Conclusion: Current health promotion nutrition messages were perceived as irrelevant given the focus on long-term health risks. Health and adhering to the Australian Dietary Guidelines were not identified as significant influences. The desire to look a particular way was identified as the major influence on food choice.

So What? While there is an awareness of Australian Dietary Guidelines, university students did not to adhere to them as health is not a significant influence on food choice. This identifies a significant challenge for developing relevant preventive health messages for this target audience.

Growing up fat: An ethnographic exploration of young people’s weight bias experiences

Authors: Alexa R. Ferdinands¹, Tara-Leigh F. McHugh¹, Kate Storey¹, Kim D. Raine¹

Affiliations: ¹University Of Alberta, Edmonton, Canada

Abstract:

Background: Weight bias refers to the tendency to unfairly judge people based on weight. Interventions targeting childhood obesity, a common focus of public health nutrition research and action, typically revolve around the “eat less, move more” mantra, which can unintentionally perpetrate weight bias. Experiencing weight bias in childhood can elicit many harmful health outcomes, such as disordered eating. However, the literature lacks nuanced insight into how weight bias occurs in children’s lives—essential for informing effective population-level strategies to reduce weight bias. This qualitative study aims to fill this
Food in my life: an adolescent perspective on food environments

Authors: Ms Kora Uhlmann¹, Prof Helen Ross¹, Dr Brenda Lin²

Affiliations: ¹The University of Queensland, St Lucia, Australia, ²Commonwealth Scientific and Industrial Research Organisation, Brisbane, Australia

Abstract:
Background: The Sustainable Development Goal sets out to ensure healthy lives and promote wellbeing for all ages. Adolescence is a crucial period of socialization when young people learn and develop many of the consumption values, habits, attitudes, preferences and behaviours that they will carry into adulthood. Young people however have limited control over the safety or healthiness of their macro-level food environment (or foodscape).

Methods: Thirty-two adolescents (12-17 years old) from rural and urban high schools in the greater Brisbane area (Australia) used photovoice to describe their foodscape. Themes were extracted from the photos and discussed with the adolescents in semi-structured interviews, which were transcribed verbatim and analyzed using Leximancer.

Results: Significant differences between urban and rural schools were observed in relation to the prevalence of discretionary food items and agricultural food production. Adolescents clearly understand the importance of consuming vegetables and fruits daily, however felt that their foodscape contain more discretionary items making it difficult to choose healthier foods. Additionally, many expressed that for every healthy food consumed they treat themselves with an unhealthy food, giving rise to a ‘healthy-ish’ diet mentality.

Conclusions: Dietary public health messages of consuming daily fruit and vegetables have reached young adults, but the ever-presence of discretionary items and complexity of the Australian food system are not helping adolescents form a healthy connection with their food. Future studies should value adolescent perspectives in actioning clear messages on improving food system literacy and connection to achieve supportive and healthier food environments for all.

Mindful eating: Is nutrition knowledge associated with food group intake among adolescents?

Authors: Associate Professor Fiona Farringdon¹

Affiliations: ¹University Of Notre Dame Australia, Fremantle, Australia

Abstract:
Background: Evidence indicates adolescents do not comply with the Australian Guide to Healthy Eating (AGHE) recommended daily serves (RDS). Little research however, has identified their level of knowledge regarding the guidelines and associations with food intake.

Methods: Survey methodology was used to measure knowledge of the Healthy Living Pyramid (HLP) and the AGHE-RDS. Food group intake was measured using a modified food frequency questionnaire. A generalised linear model (GLM) investigated associations between the HLP, RDS knowledge and daily equivalent frequencies (DEFs) for each food group.

Results: 190 students aged 14-15 years participated in the study. The majority reported accurate knowledge of the HLP. Only fruit and vegetable RDS was correctly identified. Participants did not meet DEFs for any food group. For both DEF grains (P = 0.004) and vegetables (P = 0.023) participants with correct knowledge reported DEF closer to the RDS. For DEF-baked goods and snacks (P = 0.012), participants reporting correct knowledge also reported DEF closer to the RDS. No associations were identified for the other food groups.

Conclusions: Knowledge of the HLP was more accurate than the AGHE-RDS. Knowledge of fruit and vegetable RDS was better than the other food groups. The positive associations between knowledge and compliance with some RDS suggests knowledge can influence food choice. However, the lack of associations between knowledge and consumption for most food groups suggests clear “do” messages, similar to Go for 2&5, about the RDS for all food groups should be developed for adolescents.
Eating context and ultra-processed food consumption among UK adolescents

Authors: Fernanda Rauber1, Carla Adriano Martins1, Catarina Machado Azeredo1, Maria Laura da Costa Louzada2, Renata Bertazzi Levy3

Affiliations: 1Department of Nutrition, School of Public Health, University of Sao Paulo, Sao Paulo, Brazil, 2School of Medicine, Federal University of Uberlandia, Uberlandia, Brazil, 3Department of Public Policies and Public Health, Federal University of Sao Paulo, Sao Paulo, Brazil

Abstract: Background/aims: This study aimed to assess the association between eating contexts and ultra-processed food consumption at eating occasions in a national representative sample of UK adolescents.

Methods: Data from four-day food records of adolescents aged 11–18 years participating in the 2008–2014 UK National Diet and Nutrition Survey was used (n=2,045). The eating context was defined by four elements (location of the eating, who was present, whether the television was on, and if consumed at a table) and examined considering the eating occasions of lunch and dinner. Exploratory factor analysis was used to identify the eating context patterns of meals. Adjusted linear regression models were used to test the association between the tertile of eating context of meals patterns and the dietary share of ultra-processed foods.

Results: Three patterns were obtained for lunch and for dinner. The greater adherence to the ‘School meal with friends (at the table)’ pattern at lunch was associated with the lower daily consumption of ultra-processed foods (from 69.3% in the lowest tertile to 66.7% in the highest tertile). At dinner, the greater adherence to the patterns ‘Fast food meal with friends’ (from 66.7% to 70.1%, respectively) and ‘Alone watching TV’ (from 66.3% to 69.1%, respectively) were associated with the higher daily consumption of ultra-processed foods.

Conclusion: Our findings suggest a potential relationship between the immediate meal environment pattern and ultra-processed food consumption in adolescents. Therefore, it is important to identify specific contexts that may encourage or discourage negative healthy eating behaviours.

Funding: FAPESP 2016/14302-7.

Young adults require supportive fast food and restaurant environments for healthier eating

Authors: Prof Margaret Allman-Farinelli1, Mr Hasssan Rahman1, Dr Monica Nour2, Ms Lyndal Wellard-Cole3, Ms Wendy Watson2

Affiliations: 1Charles Perkins Centre, University of Sydney, Australia, 2Cancer Council NSW, Woolloomooloo, Australia

Abstract: Background and aim: Young adults experience the highest annual weight gain among adults and have poorest quality diets, yet, they are largely neglected in nutrition promotion. Among the eating behaviours believed to contribute to their weight gain is their frequent intake of foods prepared outside the home. The aim of this qualitative research was to gather views of young adults as to what factors would enable them to select healthier foods when eating out.

Method: Young adults aged 18 to 30 years-old were recruited to participate in four focus groups. Predetermined questions were used to guide discussions facilitated by an experienced research dietitian. All sessions were audiotaped then transcribed. The content was organized into themes and then sub-themes using nVivo software.

Results: Thirty-one young adults participated. Two broad themes arose – very limited discussion of personal behaviours and predominantly suggested changes to physical and social food environments. Strategies such as price discounts were important in their food decision making. Menu-labelling was favoured and the possibility of a scale rather than a single energy label was proposed. Endorsement by peers and from credible organisations for meals and food outlets was valued. Smartphones emerged as a tool to enable immediate access to many restaurants to order food, check reviews and a source of persuasive food imagery.

Conclusion: To enable young adults to eat healthier diets current menu-labelling initiatives should continue and be expanded, food pricing should be explored and the influence of smartphones on diet choices acknowledged as a part of modern foodscapes.

Dietary diversity in adolescents after a two-year health promotive school intervention, Sweden

Authors: Miss Julia Wanselius1, Professor Christina Berg1, Professor Christel Larsson2

Affiliations: 1University Of Gothenburg - Department Of Food And Nutrition, And Sport Science, Gothenburg, Sweden

Abstract: Background/aims: Food habits adopted in youth seem to track into adulthood, why health promotive actions targeting children and adolescents are important. As adolescent dietary intake is up for improvement, increased dietary diversity could contribute to a healthier intake overall. The aim was to investigate if a two-year health promotive school intervention had effects on dietary diversity and attitudes towards eating a diverse diet.
Methods: Adolescents in grade 7 (mean age 13 years old) living in Gothenburg, Sweden were recruited to a two-year study, where health promotive activities were decided in cooperation with the participants. Dietary intake was assessed with food frequency questionnaires before and after the intervention in the intervention group (n=42) and in a control group (n=33). Seven food groups formed a dietary diversity score: vegetables, fruits, potatoes and root vegetables, meats, fish and shellfish, breads, and dairy products.

Results: The dietary diversity scores were maintained or improved in the intervention group to a greater extent than in the control group (p=0.046). In general, the adolescents had positive attitudes toward eating a diverse diet, at baseline 71 and 79% of participants in the intervention and control groups respectively. At endpoint, the positiveness had increased in the intervention group to 86% of the participants, where in the control group a trivial decrease was seen.

Conclusions: Performing empowerment based health promotive interventions to improve dietary habits together with adolescents during school hours may improve attitudes towards as well as eating a diverse diet.

A Yhunger training taster for engaging diverse groups of marginalised young people

Authors: Rowena Yamazaki1

Affiliations: 1Youthblock Youth Health Service, Sydney Local Health District, NSW Health, Darlington, Australia

Abstract: The Yhunger program has been building the nutrition capacity of youth services in Sydney, Australia for the last twenty years. Yhunger focuses on developing independent living skills in food and nutrition and opportunities to be physically active with marginalised young people (12-25 years old).

The Yhunger resource kit and one day training workshops’ for frontline youth homelessness, health, education and humanitarian services have been reviewed, refined and adapted over this time.

Yhunger encourages youth workers, health educators and peer leaders to use strength based dialogue and fun activities or games to engage young people.

Key principles include ‘learning by doing’ & developing positive relationships over food and movement. Trauma informed practices and an equity approach are important for inclusivity with diverse youth.

By attending this workshop, participants are able to:
1. Develop a shared understanding of the Yhunger living skills kit and take it home (USB).
2. Be playful and creative in small group activities with a range of new and well-loved Yhunger activities, including ones recently developed for refugee youth.
3. Pilot test a simplified food literacy checklist and provide feedback on its usefulness when working with marginalised young people from diverse backgrounds, in a global context.

The workshop reflects on these Sustainable Development Goals’ (SDGs) application to young people:
- Zero hunger
- Good health and wellbeing
- Quality education
- Reduce inequalities

Yhunger recognises that eliminating poverty is the most effective way to address the food insecurity and homelessness that marginalised young people face in Australia.

Fueling the future of our youth, one region at a time.

Authors: Miss Julia Platts1

Affiliations: 1Foodbank Wa, Perth, Australia

Abstract: Background/aims: Fuel Your Future (FYF) is a nutrition education program for youth aged 12 to 18, currently implemented in the remote Pilbara region of Western Australia (WA). WA’s largest food relief organisation, Foodbank WA, identified a service gap and obtained funding for FYF to meet this demand. FYF is the only nutrition education program in WA specifically designed to improve the food literacy of youth.

Methods: A pilot informed program alterations to address the unique needs of youth attending schools and youth organisations in the region. This target group was identified with high level disengagement, low literacy and a high proportion of Aboriginal people. Program modifications included tailored design, cultural considerations and implementation in remote communities. FYF successfully engages youth by creating a safe space for practical and fun nutrition education. To combat the transient nature of attendance between organisations, FYF was designed with flexible delivery, and emphasis on building strong partnerships to foster trust and engagement within the youth community.
**Results:** Quantitative pre- and post-program evaluation and qualitative feedback emails measuring food literacy knowledge and skill, continue to demonstrate the program’s positive impact and high levels of satisfaction.

**Conclusions:** Demand for public health nutrition services which improve youth food literacy significantly outweighs the supply in WA. To meet Sustainable Development Goals of zero hunger and good health and wellbeing at all ages, greater investment and action in youth nutrition is needed. FYF can be used as a successful model for the development of similar youth nutrition education programs.

**Connecting with the disengaged in the 21st century**

**Authors:** Dr Michelle Harrison¹, Professor Julie Hepworth¹

**Affiliations:** ¹The University Of Queensland, Brisbane, Australia

**Abstract:**

**Aim:** To understand the needs of marginalised parents to assist local service delivery.

**Background:** There is universal acceptance of the importance of parenting on childhood development. Parents who live in poverty are more likely to struggle with parenting and are less engaged with support services due to social isolation, lack of trust and stigma.

**Methods:** A mixed-methods phased research was used to capture the voices of parents from disadvantaged communities. Interviews were conducted with parents and service providers in two Australian communities, followed by a national survey of parents.

**Results:** Many parents struggled with caring for their children, with 3-in-5 parents dealing with feeding and sleeping problems and 2-in-5 parents with child development concerns. The complex challenges to parenting were financial restraints coupled with the impact of mental health, substance abuse, domestic violence, child safety and intergenerational trauma. Facebook parent groups to connect with peers and learn about parenting was universally supported, and the only source of support for some parents. Incorporating professionals was perceived as managing the judgment, trust and relationship issues that influenced parent self-efficacy and service engagement.

**Discussion/Conclusion:** Engaging parents into traditional maternal & child health services can be challenging, particularly parents from disadvantaged areas. This research supports using Facebook groups to encourage parents’ connections with peers and services. Findings from a pilot Facebook group will be shared, including the role of child health and allied health/nutrition.

**Significance to PHN:** Inability to engage marginalised families to provide appropriate early nutrition education and support, increases social and health inequalities.
2B – Influence of locality on food access and safety

Effectiveness of dietary interventions implemented in rural Australian communities: A systematic review

Authors: Dr Laura Alston1,2, Dr Stephanie Partridge1

Affiliations: 1Westmead Applied Research Centre, The University Of Sydney, Sydney, Australia, 2Deakin University, The Global Obesity Centre, Geelong, Australia, 3Colac Area Health, Colac, Australia

Abstract:

Objective: To synthesize the evidence on dietary interventions targeting people over the age of 13 years living in rural Australia.

Methods: Five databases were systematically searched including CINAHL, Medline, EMBASE, and Academic Search Complete. Articles meeting inclusion criteria were included. Studies had to examine dietary outcome before and after an intervention, with at least 1 month between measurements. All studies included were targeted at rural populations. Studies had to be published in English. No restrictions were placed on study design. Articles meeting inclusion criteria and together provide incomplete coverage across all states of Australia and population groups (mean age 53 years, 56% female). One study focussed on reducing malnutrition, whilst the remaining 12 studies were targeting diet to chronic disease risk factors. Five of the 12 studies focused on community initiatives such as nutrition store policies, and remaining seven were individual or group-based behaviour change programs. All studies, with one exception, focussed on specifically on rural adults and no interventions specifically targeting adolescents in rural areas. All studies found a positive outcome for either dietary intake, body mass index, waist circumference or diet-related biomedical risk factors in rural areas.

Conclusion: Dietary interventions in rural Australia are under-studied (especially among the adolescent population), despite the high level of preventable disease burden related to diet in these populations. Existing evidence shows promise in improving dietary intakes in rural areas, but further, large scale intervention research is urgently needed to improve the health of rural communities

The influence of local food environments on dietary intake following residential relocation

Authors: Ms Alexia Bivoltsis1, Dr Gina Trapp1, Professor Matthew Knuiman1, Dr Paula Hooper1, Assoc/Professor Gina Ambrosini1

Affiliations: 1School of Population and Global Health, The University Of Western Australia, Perth, Australia, 2Telethon Kids Institute, PO Box 855, West Perth, Australia, 3School of Agriculture and Environment and the School of Human Sciences, The University of Western Australia, 35 Stirling Highway, Crawley, Australia

Abstract:

Associations between changes in the food environment and changes in dietary intake, following residential relocation from an established neighbourhood to a new residential development, were examined in Perth, Western Australia, from 2003 to 2007.

Spatial food environment exposure measures were generated relative to each participant’s (n = 1,207 adults) home address using the locations of food outlets at baseline (prior to moving house) and follow-up (1-2 years after relocation). Self-reported data on socio-demographics, self-selection, usual dietary intake, individual behaviours and perceptions of the food environment were sourced from the RESIDential Environments (RESIDE) Project. Changes in spatial exposure measures and changes in dietary outcomes were examined using mixed linear models.

Moving to a neighbourhood with more convenience stores and café restaurants around the home was significantly associated with an increase in unhealthy food intake (β = 0.004, SE = 0.021; β = 0.020, SE = 0.007), whilst a greater percentage of healthy food outlets around the home following residential relocation was significantly associated with an increase in healthy food intake (β = 0.003, SE = 0.001) and fruit/vegetable intake (β = 0.002, 0.001). Access to a vehicle at baseline was significantly associated with an increase in healthy food intake (β = 0.321, SE = 0.155) and fruit/vegetable intake (β = 0.304, SE = 0.141) following relocation.

Policy and planning may influence dietary intakes by limiting the number of convenience stores and other unhealthy food outlets around the home and improving the mix of food outlets within new developments by increasing healthy food outlets, such as those selling fresh produce.

Food swamps and food retail environment trends in Greater Melbourne 2008–2016

Authors: Ms Cindy Needham1, Associate Professor Liliana Orellana2, Professor Steven Allender1, Associate Professor Gary Sacks1, Dr Miranda Blake1, Dr Claudia Strugnell2

Affiliations: 1Global Obesity Centre (GLOBE), Deakin University, Geelong, Australia, 2Deakin University, Biostatistics Unit, Faculty of Health, Burwood, Australia

Abstract:

Introduction: Obesity prevalence is unequally distributed across socioeconomic groups and geographic areas. Food environments, including food outlet types, their healthiness and relative density, may contribute to health disparities. Little is
known about the dynamic nature of food environments over time. This study examines food environment change over time, and variation across geographic areas and area-level socioeconomic position, in Greater Melbourne between 2008 and 2016.

**Methods:** Food retail data (business type, location) was extracted at local government area (LGA) level from historical business listings. Food outlets were classified by type and healthiness (unhealthy, e.g. takeaways; less healthy, e.g. cafes; healthy, e.g. supermarkets). LGAs were categorised by distance from the central business district (CBD) and socioeconomic position. Linear mixed models estimated variation over time in number, density and ratio of food outlet types/groups by LGA distance from CBD and socioeconomic position.

**Results:** Overt time densities of supermarkets, takeaway franchises, healthy and unhealthy food outlets increased. Across LGAs, the ratio of unhealthy to healthy food outlets ranged from 6:1 to 9:1; while the ratio unhealthy to less healthy ranged from 3:1 to 13:1. Both ratios were highest in LGAs located in designated urban growth areas. Density of food outlets decreased as LGA distance from CBD increased (inner=130; middle=73; outer=55; growth=38 outlets per 10,000 people).

**Conclusion:** A food swamp best describes Greater Melbourne’s food environment. Improved understanding of changing food environments over time, alongside well-designed definitions of what comprises healthy food environments is needed to inform policy and urban planning, and ensure social justice.

**Food swamps: inequalities in food access in Campinas, Brazil.**

**Authors:** Mariana Fagundes Grilo1, Caroline de Menezes2, Ana Clara da Fonseca Leitão Duran1,2

**Affiliations:** 1Faculty of Medical Sciences (FCM), Unicamp, Campinas, Brazil, 2Nucleus of Studies and Research of Food (NEPA), Unicamp, Campinas, Brazil

**Abstract:**

**Background/aims:** Food environment characteristics can interfere with access to healthy food and accentuate health inequalities. The presence of food swamps in municipalities, defined as vulnerable areas where unhealthy foods are more readily available than healthy foods, may be related with obesity. The present work aims to evaluate the existence of food swamps in Campinas, Brazil.

**Methods:** For the cross-sectional study, fast food restaurants, supermarkets, and open-air food markets were geocoded. The average income and percentage of blacks and browns resident in the census tracts provided by the 2010 Population Census were used to determine the socioeconomic level of the neighborhoods. Socioeconomically vulnerable neighborhoods with greater distribution of fast food restaurants compared with supermarkets and open-air food markets were identified as food swamps and graduated maps were developed in ArcGis 10.6.1 software.

**Results:** The neighborhoods with the highest income and lower percentage of blacks and browns presented a higher concentration of all food commercialization establishments in relation to the socioeconomically vulnerable regions.

**Conclusions:** In Campinas, six administrative divisions were identified as food swamps due to the high density of unhealthy food establishments and socioeconomic characteristics of the regions. The findings highlight the importance of public policies that contribute to reducing inequality in access to healthy food in the municipality.


**Food safety concerns of adolescents regarding their food environment in urban Ethiopia**

**Authors:** Mrs Ursula Trubswasser1, Mr Kaleab Baye2, Mrs Megan Loeffen1, Mrs Michelle Holdsworth1, Mrs Edith Feskens1, Mrs Elise Talasma2

**Affiliations:** 1Wageningen University, Division of Human Nutrition and Health, Wageningen, Netherlands, 2Center for Food Science and Nutrition, Addis Ababa University, Addis Ababa, Ethiopia, 3Food and Nutrition in the Global South Research Unit (NUTRIPASS), IRD - Institut de Recherche pour le Développement, Montpellier, France

**Abstract:**

**Background:** Adolescence is a period in which nutritional needs increase and lifelong nutrition behaviors are formed. With changing food environments, it is expected that adolescent nutrition in Ethiopia will deteriorate as research from high-income countries have linked overweight rates and unhealthy diets with changing food environments. Perceptions of the food environment need to be better understood.

**Methods:** The overall objective of this study was to understand adolescents’ perceptions of their food environment using Photovoice. The study was conducted in one public and one private school in Addis Ababa with 26 students (14 -19 years old). Students received a training on the basics of Photovoice and took photographs of their environment.

**Results:** The students had good knowledge on food safety and hygiene, but less knowledge related to nutrient content of different food items. Findings from the qualitative interviews and discussions indicate that food safety concerns appear to be the major influencing factor for adolescents’ dietary choices. Unhealthy and unsafe foods appear to be more available and/or
cheap in their neighborhoods and unsafe foods or food outlets were also depicted in almost half of the photographs taken by students. Students considered foods available in their environments as generally unsafe, calling for more packaged food.

Conclusion: Concerns for food safety and hygiene seem to be dominating factors for adolescents’ food choices. Limited nutrition knowledge, preference for packaged foods, could make those foods more desirable. More studies are needed to confirm these findings.

COMMUNITY LED TOTAL SANITATION (CLTS): A CASE STUDY IN TELUKNAGA VILLAGE TANGERANG

Authors: Devi Angeliana Kusumaningtiar, Gisely Vionalita

Affiliations: 1Department of Public Health, Faculty of Health Sciences, Universitas Esa Unggul, Jakarta, Indonesia

Abstract: Background: Diarrhea accounts for 1 in 9 deaths worldwide, which is the second leading cause of death in children at 5 years. In children with HIV, diarrhea is even more deadly. Based on the profile data of Teluk Naga health center, the case of diarrhea in Teluk Naga Village occupies the top 10 diseases with a total target of 335 handled by 226 (67%), with a total of 107 (62%) and women 109 (73%) Teluk Naga Health Center has a community and the eyes of the community who can fish fish ponds. Teluk Naga Village is very close to many restaurants and rivers and different places. The involvement of many communities still behaves badly, this is evident from the fact that there are still people who have Open Defecation Free (ODF) in the river.

Method: this research is descriptive with cross sectional design. The research was carried out in Teluk Naga Village, Tangerang Regency with a random number of respondents of 100 people.

The results: the results of the study indicate that the attitudes of the community about CLTS that are not good in pillar 5 and pillar 1 safeguard household liquid waste as much as 97% and Stop BABs as much as 91%.

Conclusion: Puskesmas needs to increase socialization because CLTS is one of those who have Open Defecation Free (ODF) habits on the river and provides simulations of open defecation free (ODF) that will impact on health conditions in the future.

The experience of parents managing their child’s food allergy in regional Queensland

Authors: Ms Anthea Oorloff, Dr Catherine O’Mullan, Dr Karena Burke, Prof Jenni Judd

Affiliations: 1Central Queensland University, Bundaberg, Australia

Abstract: The physiological effects of childhood food allergies are well known; as such, recommended strategies for their clinical management remains the focus of intervention. To date, the parental management of childhood food allergies is less well understood. Interventions aimed at improving the day to day management of food allergies have the potential to reduce parental psychosocial stress and also support the health and safety of the child.

To gain an in depth understanding of how parents manage the ongoing impact of a child’s food allergy, a phenomenological research approach was used to explore the lived experience of parents who have children with newly diagnosed food allergies in regional Queensland. Seven sets of parents were interviewed using semi-structured interviews. Data analysis revealed four major themes relating to how parents manage their child’s food allergy. These were: managing risk, knowledge is power, navigating the outside world, and focusing on the positives. Strategies forming the sub-themes under each of these included: seeking control over symptoms, accepting our new life, ensuring inclusion, becoming informed, and trust in others.

Findings from this research will help parents to manage the medical, nutritional and psychosocial needs of their child. Furthermore, the findings can also be used by health care professionals to better support parents (particularly those in regional areas) who are managing the care of their child with food allergies.

Weight status and related behaviours in urban Aboriginal children: the SEARCH study

Authors: Louise Baur, Leonie Burgess, Sumithra Muthayya, Simone Sherriff

Affiliations: 1The Sax Institute, Sydney, Australia, 2The University of Sydney, Sydney, Australia

Abstract: Background/aims: Childhood obesity poses an urgent public health challenge in Australia, where one in four children aged 5-17 years are currently affected by overweight or obesity. Aboriginal children are more affected than non-Aboriginal children, with the gap in weight status widening between the two groups, increasing the risk of metabolic disorders earlier in life. This study aimed to explore early life and key risk factors for overweight and obesity in Aboriginal children in urban settings.

Methods: Children aged 2-19 years (n=1176) were recruited through four Aboriginal Community Controlled Health Services in urban/regional New South Wales. Questionnaire data on the health of the children including demographic, social, lifestyle and environmental factors were collected from caregivers. Clinical measures of height, weight, blood pressure and waist circumference were obtained.

Results: Most children (65.3%) had a normal body mass index (BMI), but a third (31.6%) had overweight or obesity. A slightly higher proportion had central obesity (36.6%). Results will be presented for a selection of predicted risk factors associated with weight status including duration of breastfeeding (66.0% breastfed for ≤6 months), intake of vegetables (38.8% consumed ≤1 serve daily), and intake of fruit (26.1% consumed ≤1 serve daily).
Conclusion: This study provides vital information on the weight status of urban Aboriginal children and highlights key risk factors associated with weight status. This information will enable Aboriginal and other mainstream organisations to develop effective and responsive action plans.

Paragraph on First Nations projects: This project is part of the Study of Environment on Aboriginal Resilience and Child Health (SEARCH), which is a partnership between the Aboriginal Health & Medical Research Council NSW, The Sax Institute, researchers, and four Aboriginal Community Controlled Health Services (ACCHSs). SEARCH was developed to explore priority health and wellbeing areas identified by the partner Aboriginal communities. This project on weight status of children was highlighted as an area of interest that the communities wanted research on. The data for this project were collected by trained Aboriginal research officers based at the ACCHSs and the lead researcher and presenter are Aboriginal. The SEARCH partner ACCHSs have given permission to present these findings at the conference and if the abstract is accepted for presentation, the final presentation will have approval from the partner ACCHSs and the AH&MRC.

Factors influencing eating behaviour in children in Sri Lanka

Authors: Mrs Thillan Kalaichelvi1, Professor Pulani Lanerolle1, Dr Shanika Mututanthri2, Tharanga Thoradeniya3, Professor Pujitha Wickramasinghe3

Affiliations: 1Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Colombo, Sri Lanka, Colombo, Sri Lanka; 2Oral Health Unit, Family Health Bureau, Colombo, Sri Lanka, Colombo, Sri Lanka; 3Department of Paediatrics, Faculty of Medicine, University of Colombo, Sri Lanka, Colombo, Sri Lanka

Abstract:

Background/aims: Children’s eating behaviour is critical in mitigating diet related chronic disorders. We aimed to understand the factors influencing children’s eating behaviour.

Methods: Data from two studies conducted among pre-school children aged 4-5 years (cross sectional study; n=813) and primary school children aged 8-9 years [case control study; 161 males and 163 females with high and normal adiposity (body fat cut offs; boys:28.6%; girls:33.7%)] was analysed. The socio-demographic factors and eating behaviour in all, and free sugar intake in pre-school children were assessed.

Results: The free sugar intake observed among pre-school children [21.1%(12.5%-35.9%) of total energy requirement of the child] was four times higher than suggested by the WHO guideline (<5% of total energy intake). The median frequency (IQR) of sugar intake was four times/day (2.7–6.1 times/day) and were mostly during watching television and coming back from preschool. The total and the frequency of sugar intake significantly reduced (p=0.005) with higher maternal education level. Among male primary school children, higher parental education level (p<0.001), both parents being employed (p<0.05) and higher family income (p<0.05) were positively related to high adiposity. High adiposity was associated with (p<0.001) higher screen time (>14hours) (in all primary school children), eating while watching TV (in males), snacking at the school gate (in males) and drinking sweet carbonated drinks (in females).

Conclusion: Our findings on parental factors and poor eating behaviour in relation to high sugar intake and adiposity indicate the need for further study to understand the role of parenting in these behaviours.

Food environments in informal settlements in Nairobi: identifying levers for improving diets

Authors: Dr. Shauna Downs1, Dr Simon Kimenju2, Ms Emily Merchant1, Ms Minna Sabbahi1

Affiliations: 1Rutgers School of Public Health, Newark, United States, 2Agri-Food Economics Africa, Nairobi, Kenya

Abstract:

Low-income urban populations living in informal settlements in Kenya are among the most vulnerable to the multiple burdens of malnutrition, experiencing both high rates of undernutrition and overweight/obesity, sometimes within the same household. Food environments in these settings may not support nutritious food choices. However, little is known about these food environments and how they influence the drivers of food choice. The aims of this study were to: 1) characterize the food environment in two informal settlements in Nairobi, Kenya and 2) identify the drivers of food choices within those communities. We purposively selected four villages in two informal settlements in Kenya and mapped all food outlets, the prices of selected foods as well as the diversity and quality of fruits and vegetables sold by vendors. We also conducted 40 interviews and 5 focus groups with women living in informal settlements. Over half (62%) of the food outlets in the settlements were permanent vendors, while the remaining were street and mobile vendors. The majority of foods sold (72%) required cooking and/or preparation and were unpackaged/unbranded (89%). The most common type of street/mobile vendor were those selling fruits and vegetables. Women indicated that price was the main driver of their food choices, while other key drivers were food safety, preparation time, familiarity with the foods and health. Interventions aimed at improving food environments in these communities need to be grounded in the context-specific drivers of food choice of consumers living within them in order to increase their likelihood of success.
2C – Childcare & school food environments influence of locality on food access and safety

Rapid Fire Presentations

Benchmarking food provision guidelines for Australian Early Childhood Education and Care services

Authors: Dr Alison Spence1, Ms Amy Wakem2, Ms Ros Sambell3, Prof Amanda Devine4, Ms Margaret Rozman5, Dr Rebecca Byrne6, A/Prof Rebecca Golley7, Ms Kaylah Schroeter8, Ms Blanca Trajcevski9, Ms Rachael Kambouris1, Mr Devon Achen10, Ms Julia Middeke11, Ms Jessica Casado12, Dr Penny Love13

Affiliations: 1Deakin University, Burwood, Australia, 2Nutrition Australia Vic, Melbourne, Australia, 3Edith Cowan University, Joondalup, Australia, 4Queensland University of Technology, Brisbane, Australia, 5Flinders University, Adelaide, Australia

Abstract:
Background/aims: Early Childhood Education and Care (ECEC) food provision guidelines differ across Australian jurisdictions due to subjective interpretation against Australian Dietary Guidelines (ADG). This makes it difficult to collaborate, utilise and create consistent resources to support the ECEC sector with healthy food provision, particularly for the national accrediting body ACECQA when auditing services against National Quality Standards. This project aimed to benchmark current guidelines and recommend areas for harmonising food provision guidelines nationally for the >1.2 million children currently utilising ECEC services within Australia.

Methods: A convenience sample of child nutrition experts nationally were recruited April-August 2019 through membership of the National Nutrition Network-ECEC (NNN-ECEC), snowball sampling, and email invitations to relevant organisational interest groups. A Qualtrics online survey captured views on existing jurisdictional food provision guidelines and their alignment.

Results: Preliminary data (n=26) shows ≥90% agreement that at least 50% of the daily recommendations for the ADG five food groups (vegetables, fruit, grains, dairy, meat/alternatives) should be provided in long day-care. There was less agreement regarding translating these food quantities into menu planning guidelines. For discretionary foods, 88% agreed these should be offered once per month/never.

Conclusions: Child nutrition experts support alignment of food provision guidelines with the ADG for each food group, across jurisdictions.

Significance: Next steps in translating these findings to impact public health nutrition include NNN-ECEC engagement with jurisdictional policy makers regarding harmonising guidelines, with ECEC services regarding implementation, and with ACECQA regarding accreditation and assessor support. This work supports Sustainable Development Goal 3.

What’s in the lunchbox? Food provision in Family Day Care.

Authors: Ms Erin Kerr1, Professor Anthony Okely1, Associate Professor Bridget Kelly1, Ms Lara Hernandez2, Dr Maria Nacher Espuig3, Ms Karen Wardle4, Dr Jenny Norman5, Dr Susan Furber6, Ms Lisa Franco7, Ms Cecilia Vuong8

Affiliations: 1University Of Wollongong, Wollongong, Australia, 2Office of Preventive Health, Liverpool, Australia, 3South Western Sydney Local Health District, Campbelltown, Australia, 4Illawarra Shoalhaven Local Health District, Warrawong, Australia

Abstract:
Background/aims: Good nutrition in young children is essential for optimal cognitive, emotional and physical development and can reduce the risk of developing chronic diseases. Children attending formal education and care within a Family Day Care (FDC) service receive up to 75% of their daily food intake while in care. This study aimed to capture the food provided to children in FDC by families in children’s lunchboxes.

Methods: This cross-sectional observational study included children from FDC homes in the Illawarra and south west Sydney regions of New South Wales in 2019. Lunch content provided to children was measured using weighed food records. Foods and beverages were categorised according to the Australian Guide to Healthy Eating. The proportion of lunchboxes that contained food categories and the average number of serves per group were analysed.

Results: Nutritional preliminary data is available for 36 lunchboxes. All lunchboxes contained fruit (average 1.5 serves), 17 contained vegetables (average 0.3 serves), 30 contained dairy (average 0.5 serves), 31 contained grains and cereals (14 contained wholegrains), 28 contained a sandwich/wrap/roll, 10 contained a cooked meal, 35 contained discretionary foods and 2 contained discretionary beverages.

Conclusions: Data on approximately 150 children will be presented. Preliminary findings are consistent with the literature; children are meeting dietary recommendations for fruit but not vegetables, dairy and wholegrains. FDC is an important health promotion setting to reach young children and their families. Interventions to promote healthy eating should use FDC to encourage families to improve the diet quality in their child’s lunchbox.
Implementation of practices to support healthy eating in childcare services

Authors: Mrs Nicole Pond1, Dr Meghan Finch1, Dr Sze Lin Yoong1,2,3, Dr Rachel Sutherland1,2,3, Associate Professor Luke Wolfenden1,2,3, Dr Melanie Kingsland1,2,3, Ms Karen Gillham1, Ms Taya Wedesweiler1, Ms Monique Santarelli1, Ms Jayde Kerr1

Affiliations: 1Hunter New England Population Health, Lambton, Australia, 2Centre for Evidence and Implementation, Sydney, Australia, 3School of Medicine and Public Health, University of Newcastle, Newcastle, Australia, 4Hunter Medical Research Institute, New Lambton, Australia, 5Priority Centre for Health Behaviour, University of Newcastle, Newcastle, Australia

Background/ Aims: Implementation of healthy eating policies and practices by educators in childcare settings are recommended to create supportive nutrition environments and promote healthy eating among young children. This study aims to describe the implementation of healthy eating practices and lunchbox guidelines in a sample of Australian childcare services that require children to bring a packed lunch.

Methods: A cross sectional study was conducted with 17 childcare services where parents are required to provide food in a lunchbox. An adapted nutrition environment and policy observation tool was used to observe educator healthy eating practices over two meal occasions and a service manager interview was conducted to collect information on service lunchbox policies and procedures.

Results: Preliminary results found that educators were observed sitting with children at mealtimes and supporting children to try new foods and in 100% (n=17) and 94% (n=15) of services respectively. Educators having discussions about healthy foods with children at mealtimes was observed in 47% of services (n=8). Educators were observed making statements that may influence children to ignore cues of satiety in 82% of services (n=14). All services reported providing parents with lunchbox guidelines regarding foods to pack or not to pack (100% (n=17), with 65% (n=11) of these guidelines from a recognized source.

Conclusions: Further support for childcare services to improve upon existing healthy eating practices may be warranted and contribute towards improved supportive healthy eating environments and child dietary intake in this setting.

Multi-arm RCT to support childcare service implementation of nutrition guidelines: 12-months follow-up.

Authors: Dr Alice Grady1,2,3, Dr Kirsty Seward1,2,3, Dr Meghan Finch1,2,3,4, Dr Rebecca Wyse1,2,3, A/Prof Luke Wolfenden1,2,3, Prof John Wiggers1,2,3, Dr Sze Lin Yoong1,2,3

Affiliations: 1University Of Newcastle, Callaghan, Australia, 2Hunter New England Population Health, Wallsend, Australia, 3Hunter Medical Research Institute, Newcastle, Australia, 4Centre for Evidence and Implementation, Pyrmont, Australia

Abstract:

Background: Despite the potential to improve child public health nutrition, poor implementation of dietary guideline recommendations has been reported in the early childhood sector.

Aims: To assess the effectiveness of implementation strategies of varying intensities on improving childcare service compliance with nutrition guideline recommendations.

Methods: A six-month three-arm parallel group randomised controlled trial was undertaken with childcare services within Hunter New England, NSW, Australia. Sixty-nine services were randomised to one of three arms: high-intensity (securing executive support; group face-to-face staff training; provision of resources; multiple rounds of menu audit and feedback; ongoing face-to-face and phone support); low-intensity (group face-to-face staff training; provision of resources; single round of menu audit and feedback); or control. A two-week menu review was undertaken at baseline and 12-months to assess overall menu compliance, and individual food group compliance with nutrition guidelines.

Results: A significant group interaction was found between the three arms for individual food group compliance. Relative to control, a significantly greater proportion of low-intensity services were compliant with dairy (p=0.02), and significantly greater proportion of high-intensity services were compliant for fruit (p<0.01); breads and cereals (p=0.04); dairy (p<0.01); vegetables (p=0.02); and discretionary food (p=0.01). There was a significant difference between the high and low-intensity interventions for discretionary food compliance (p=0.04).

Conclusion: High-intensity implementation strategies may be effective in supporting childcare service implementation of individual food group recommendations, compared to control, with the potential to impact public health nutrition in the setting. Further analyses should be undertaken to determine the cost-effectiveness of implementation strategies.

Improving the nutritional-quality of student purchases from online canteens: A cluster RCT

Authors: Ms Tessa Delaney1, Associate Professor Luke Wolfenden1,2,3, Dr Sze Lin Yoong1,2,3, Dr Rachel Sutherland1,2,3, Professor John Wiggers1,2,3, Dr Rebecca Wyse1,2,3

Affiliations: 1University Of Newcastle, Wallsend, Australia, 2Hunter New England Local Health District, Wallsend, Australia, 3Hunter Medical Research Institute, New Lambton, Australia, 4Priority Research Centre for Health Behaviour, University of Newcastle, Callaghan, Australia

Abstract:

Background: Online canteens, where students order and pay for their lunch online, are increasingly popular and represent an
opportunity to deliver public health nutrition interventions to improve the nutrition quality of student canteen purchases. This study aimed to assess the impact of an intervention implemented in an online canteen on improving the ‘nutrition quality’ of student online lunch purchases, including i) mean proportion of items purchased that were ‘healthy’ and ‘less healthy’ and ii) mean percent of energy from saturated fat and sugar.

Methods: Ten NSW primary schools (2,714 students) using an online canteen were recruited to a cluster RCT conducted over an 8 week period. Intervention schools received a multicomponent behaviour intervention integrated into their online menu (including menu labelling, healthy food availability, item placement and prompting). Control schools received no change to their online menu.

Results: Intervention student lunch orders contained significantly higher proportion of items that were ‘healthy’ (21.47%) and significantly lower proportion of items that were ‘less healthy’ (-7.52%) (P<0.001). Intervention students lunch orders contained a significantly lower percent of energy from saturated fat (-1.77%; P<0.001) but significantly higher percent of energy from sugar (19.82%; P<0.001).

Conclusions: The study provides evidence supporting the efficacy of a multicomponent behaviour intervention utilising online canteen infrastructure to improve the nutritional quality of student purchases from primary school canteens and may represent an appealing policy option as part of a broader government strategy to improve child public health nutrition.

Laws restricting soft drinks sales in Brazilian schools lower their availability

Authors: Phd Catarina Machado Azeredo1, Msc Maria Alvim2, Phd Fernanda Rauber3, Msc Camila Zancheta Ricardo4, PhD Renata Bertazzi Levy2

Affiliations: 1Universidade Federal Dee Uberlândia, Uberlândia, Brazil, 2Departamento de Medicina Preventiva, Faculdade de Medicina FMUSP, Universidade de Sao Paulo, Sao Paulo, Brazil, 3Faculdade de Saude Publica FSP, Universidade de Sao Paulo, Sao Paulo, Brazil

Abstract: Background/aims: To assess whether laws forbidding soft drink sales in schools are associated with lower availability of these beverages to students.

Methods: We identified laws forbidding either the presence of non-government administered cafeterias in schools or sales of soft drinks inside the school in each of the 27 Brazilian state capitals. Data on sales of soft drinks in schools were obtained from PeNSE (Pesquisa Nacional de Saude do Escolar 2015), for a sample of Brazilian 9th grade students. Students were attributed the status of its school regarding the coverage of the restrictive law and the sale of soft drinks. Co-variables were school status (public or private); school size; geographic regions; mother’s educational level; and quartiles of a score of goods and services. We used Poisson regression multivariable models.

Results: We found 23 laws covering 63.0% of the Brazilian state capitals; 56.9% of the students attended schools where sales of soft drinks were forbidden. A third of the students attended schools where soft drinks were available. Students attending schools covered by law are 54% less likely to be exposed to sales of soft drinks than those attending schools where there is no restriction (PR=0.46; 95%CI=0.34-0.62). Restrictive laws were associated with lower sales of soft drinks only in more developed regions and had a greater association with the availability of soft drinks in public schools (PR=0.25; 95%CI=0.15-0.41), compared with private schools.

Conclusion: State and local policies forbidding soft drinks sales within school are positively associated with a better school food environment.

Enablers and barriers to implementation of school-based healthy food and beverage policies

Authors: Dr Rimante Ronto1, Dr Neha Rathi2, Prof Anthony Worsley3, Dr Taren Sanders4, Prof Chris Lonsdale5, Prof Luke Wolfenden6

Affiliations: 1Macquarie University, North Ryde, Australia, 2Indian Institute of Technology Bombay, Bombay, India, 3Deakin University, Australia, 4Australian Catholic University, Australia, 5University of Newcastle, Australia

Abstract: Background: Globally, health professionals and policy makers have recognized schools as a potential setting for improving young peoples’ food and beverage choices. Objective audits suggest that many schools fail to adhere to healthy food and beverage policy standards. Therefore, this systematic literature review aimed to explore the enablers and barriers to effective implementation of and compliance with school-based food and beverage policies.

Methods: Eight electronic databases were searched for articles in May-June 2017. Studies were eligible for inclusion if they reported on implementation and/or compliance of food and/or beverage policies in school settings with outcomes relating to enablers and/or barriers. This review had no restrictions on study design, the year of publication or language. 62 full-text articles were assessed for eligibility of which were included in this review.

Results: Financial (cost of policy-compliant foods, decreased profit and revenue), physical (availability of policy-compliant foods, close geographical proximity of unhealthy food outlets), social (poor knowledge, understanding and negative stakeholders’ attitudes towards policy) factors were the most frequently reported barriers for policy implementation. Sufficient funding,
effective policy communication and management, and positive stakeholders’ attitudes towards the policy were the most frequently reported enablers for policy implementation.

Conclusions: The findings of this review contribute to a thorough understanding of factors that underpin best practice recommendations for the implementation of school-based food and beverage policy and alert those responsible for improving public health nutrition through school-based nutrition policies.

Opportunities to improve vegetable offering in primary schools; an online menu analysis

Authors: Dr Janne Beelen¹, Jessica Heffernan¹, Maeva Cochet-Broch¹, Shadia Djakovic², David Chung³, Dr Rebecca Golley⁴, Dr Astrid Poelman²

Affiliations: ¹CSIRO, North Ryde, Australia, ²Healthy Kids Association, St Leonards, Australia, ³Flinders University, Adelaide, Australia

Background / aims: Vegetable consumption of Australian children is far below recommendations. The school canteen could contribute to improving children’s vegetable intake. In this study a menu analysis was conducted to determine current offerings and identify opportunities to increase vegetable options in Australian primary school canteens.

Methods: Online menus from primary schools of low/medium/high socio-economic status (SES) in 12 geographic areas across Sydney were downloaded. Number of items and items containing vegetables overall and in subcategories, and price information were collected. Differences in amount and proportion of vegetable items between different SES-levels, school size and type (government vs private) were statistically tested.

Results: On average, 80.4 items were listed on the menus (n=112), with 30.4% containing vegetables. Most sandwiches (60.3%) and hot foods (53.8%) didn’t include vegetables, and none of the drinks contained vegetables. Results also showed that salads and sandwiches with vegetables were costlier than sausage rolls and meat pies and variety of vegetables offered was small. There were few differences across SES-level, school size and type.

Conclusions: Despite canteen menus having a large variety of items listed, only a third of these contained vegetables. Especially snacks, hot foods and drinks provide opportunities to increase the vegetable supply in canteens which will positive influence the food environment of children. By knowing the current state of play in Australian primary school canteens, we can work towards feasible opportunities through new products and sales strategies to increase supply and demand of vegetables in canteens to improve children’s health on the long term.

Associations between diet and the school food environment among regional Australian students

Authors: Dr Laura Alston¹, Mr Nicholas Crooks¹, Dr Claudia Strugnell¹, Associate Professor Liliana Orellana², Professor Steven Allender³, Ms Claire Rennie¹, Dr Melanie Nichols¹

Affiliations: ¹The Global Obesity Centre (GLOBE) Deakin University, Geelong, Australia, ²Biostatistics Unit, Deakin University, Geelong, Australia

Abstract: Background: The school environment has been shown to influence school children’s eating behaviors across developed countries. The objective of this study was to understand associations between the current school food environment and school students’ dietary intake and Body Mass Index (BMI) z-scores in Victoria.

Methods: This cross-sectional study covered a total of 53 primary schools, comprising a sample of 3,496 students in year levels two, four and six. School students had their height and weight measured by trained researchers and completed dietary questionnaires. School principals from each of the schools completed a survey on school food environment. Mixed effects logistic regression controlling for multiple con-founders was used to assess the relationship between dietary intake, BMI-z scores and school food environment scores.

Results: From the sample of schools, 33.9% had a high food environment score. No associations were found for the relationship between students’ reported dietary intake and food environment scores. Meeting the guidelines for vegetable and fruit intake was not associated with the food environment scores, but students were more likely to meet the guidelines if they attended a large school (>300 enrolments) and were female (OR: 1.28 95%CI: 1.02, 1.59). BMI z-score was not associated with food environment scores, but being normal weight was associated with less disadvantage (OR: 1.24 95%CI 1.05,1.45).

Conclusion: In this study, the school food environment had no association with dietary intakes or BMI among students. Further research is needed into the influence on the schools food environment among primary schools.

Parent and teachers’ perspectives on hunger in Australian school children

Authors: Dr Rebecca Lindberg¹, Dr Claire Margerison¹, Kathryn Cirone¹, Laura McMillan¹, Professor Sarah McNaughton¹, Rachel Laws¹, Professor Kylie Ball¹

Affiliations: ¹Deakin University, Carlton, Australia, ²Eat Up, Melbourne, Australia

Abstract: Background and aim: Almost 1 in 5 Australian children are estimated to live below the poverty line. This impacts their development and wellbeing in a range of ways, including their nutrition and food related behaviours. In this presentation...
researchers and community partners from Eat Up, a not for profit organisation that makes and delivers thousands of lunches to schools around Australia, will share the findings and lessons from a recent collaboration. The aim of this qualitative study was to gather the perspectives of parents, caregivers and school staff on children’s food insecurity and its ramifications.

Methods: This study included semi-structured interviews in the state of Victoria, conducted between July and September 2019.

Results (forthcoming): The data will be analysed to examine if and how food insecurity manifests quantitatively (running low or going without food); qualitatively (limited dietary variety or inability to eat cultural or nutritious foods); psychologically (anxiety, stress or shame); and socially (being unable to maintain peer prescribed food behaviours) in children’s school and domestic lives. The impact of food insecurity will be analysed for behavioural, emotional and developmental ramifications.

Conclusions and significance: School settings may offer a universal platform to fight hunger and improve nutrition and related social and academic outcomes and in the Australian context.

ECEC services have the potential to disrupt food provision: > 15,000 services

Authors: Ms Rosalind Sambell1, Dr Ruth Wallace1, Dr Leesa Costello1, Dr Johnny Lo1, Dr Amanda Devine1

Affiliations: 1Edith Cowan University, Joondalup, Australia

Abstract: Background/Aims: Nutrition is critical in the early years. Yet, new evidence highlights a spectrum of nutritional inadequacy in Early Childhood and Education and Care (ECEC) services when compared to jurisdictional guidelines. To better understand opportunities for behaviour change that support dietary compliance in this sector, Food Coordinators (FC) and Directors were examined using the Theoretical Domains Framework (TDF).

Methods: An online survey was emailed to 8428 Australian ECEC services (excluding NSW); 460 services agreed to participate, 294 were excluded or non-responders, 166 completed the survey (36.1%). 7-point Likert scale response scores for each of the 14 behaviour domains were averaged and mean ranks calculated and compared between FC (n= 61) and Directors (n=101) using Mann Whitney U Test.

Results: Four of 14 domains (36%) were significantly different between roles: Professional role and identity (p=0.001); Memory attention and decision processes (p=0.018); Goals (p=0.028); Skills (p= 0.034). FC had fewer years’ experience (7.6±9.1 y vs. 13.6±9.2y), were more likely to consider food provision as part of their role, use Australian Dietary Guidelines in menu planning and give menu planning the required attention compared to Directors.

Conclusions: Previous research has demonstrated a lack of adequate food provision and this research suggests that FC perceive this within their role more than Directors. Recommendations: Key statements in position descriptions should allocate responsibility of food provision to FC; Targeted education for FC; Development of a FC training certificate that provides an accredited qualification for FC. These recommendations align with SDG 3 and protect children’s health.
2D – Advertising and marketing to children

Persuasive and abusive strategies directed to children on food and beverage advertising

Authors: Julia Soares Guimarães¹, Marina Oliveira Santana², MSc Fernanda Helena Marrocos Leite¹,², Dr Laís Amaral Mais¹, Dr Paula Martins Horta³, Dr Rafael Moreira Claro⁴, Dr Ana Paula Bortoletto Martins¹,³

Affiliations: ¹Brazilian Institute for Consumer Defense (Idec), São Paulo, Brazil, ²Postgraduate Program in Nutrition and Health, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brasil, ³Center for Epidemiological Studies in Health and Nutrition (Nupens), University of São Paulo (USP), São Paulo, Brasil, ⁴Nutrition Department, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brasil

Abstract: Background/Aims: Unhealthy food and beverage advertising on television (TV) can directly influence food choices, especially on children, mainly due to their lack of experience and low cognitive development. The aim of this study was to analyze and monitor the persuasive and abusive strategies aimed at children on food and non-alcoholic beverage advertising on Brazilian TV.

Methods: The programming of the three most popular Brazilian free-to-air TV channels was recorded during eight non-consecutive days in April 2018, from 6am to 12pm. All food and non-alcoholic beverage ads were identified and classified according to the NOVA classification system. The information collected from those ads were based on the International Network for Food and Obesity/Non-Communicable Diseases Research, Monitoring and Action Support (INFORMAS)’s protocol and on national advertising regulations, such as the Consumer Defense Code.

Results: A total of 432h of TV programming was recorded and 858 food and non-alcoholic beverage ads were identified. From that, 90.8% contained at least one ultra-processed food product. Only 0.2% of those ads were directed to adults and 99.8% included children among their targeted audience. Among all ultra-processed food ads aimed at children, excessive colors (53.4%), company characters (17.0%), children’s characters (16.5%) and cartoons/animations (16.5%) were the main strategies used in their promotion.

Conclusions: Brazilian food and non-alcoholic beverage advertising is mainly composed by ultra-processed food products, directed to children, and apply persuasive and abusive strategies aimed at this target audience. This is a major public health concern given the influence of unhealthy advertising on food habits.

Healthiness of Foods and Beverages Advertised on Ghanaian Television Programmes Targeting Children

Authors: Ms. Irene Kumi¹, Dr. Amos Laar²

Affiliations: ¹Department of Population, Family and Reproductive Health, School of Public Health, University of Ghana, Accra Ghana, Accra, Ghana

Abstract: Background: The rate at which energy-dense nutrient-poor foods and non-alcoholic beverages are advertised to children is of great public health concern. There is an established link between food advertisement and children’s food preferences, purchases and consumption behaviour.

Aims: We assessed the healthiness of foods and non-alcoholic beverages advertised on Ghanaian Television programs targeting children.

Methods: We purposively selected three Ghanaian television channels and recorded their programmes over a four-month period. Composite week sampling technique was used to sample the days for recording. Content analysis of food and beverage product advertised was categorized into major food groups. Healthiness of foods was defined on the basis of foods’ positive effect on preventing nutrition-related non-communicable diseases (NCDs).

Results: Of the 1,926 adverts recorded, 590 were of foods and beverages. The most advertised foods was sugar-sweetened beverages (25.8%); followed by snacks (12.8%), milks and yogurts (12.4%), Indomie/instant noodles (7.1%), candy/chocolate and ice creams (6.4%), breakfast cereals and beverages (5.3%), fruits (2%), water and vegetables (<1.5%). The most used persuasive technique were those utilizing sensory-based attributes (taste, texture, appearance, aroma -44%,), followed by adverts which suggested use for children (30%), used of animation (29%), use of children and cartoon characters/health claims (18%), portrayed happiness (14%), or fun and pleasure, (13%) etc. None of the adverts had a disclaimer.

Conclusions: Unhealthy food adverts dominate Ghanaian TV programming, and are accompanied by at least one persuasive technique, with significant potential to influence children’s purchases and consumption of energy-dense nutrient-poor foods.
What is on sale? Healthiness of foods on promotional-flyers of Accra-Based Supermarkets

Authors: Ms. Patience Tsrah1, Dr. Amos Laar1

Affiliations: 1Department of Population, Family and Reproductive Health, School of Public Health, University of Ghana, Accra Ghana, Accra, Ghana, 2Department of Population, Family and Reproductive Health, School of Public Health, University of Ghana, Accra Ghana, Accra, Ghana

Abstract:
Background: It is argued, rather controversially, that supermarkets promote unhealthy foods more heavily than healthy ones. The use of promotional-flyers is commonly deployed to influence purchasing behaviours. In the West African sub-region, there is a lack of evidence on this subject.

Aims: We aimed to assess the healthiness of foods on promotional-flyers of all major Accra-based supermarkets.

Methods: We carried out a content analysis of promotional flyers in four major Accra-based supermarkets/shopping malls. Supermarket food promotions on flyers (32) were sampled using composite week sampling technique. The first author served as a mystery shopper. All promoted foods were evaluated for healthiness. Healthy foods/food group comprised products which have a positive effect on preventing nutrition-related non-communicable diseases (NCDs).

Results: All foods (100%) promoted via flyers were unhealthy; high sodium/saturated fats (71.9%), high sodium exclusively (18.8%) and high in added sugar foods (9.4%). These unhealthy foods were greatly discounted (average percentage discount was 27.5%). Price benefit claims (54.0%) and puffery size claims (34.0%) were the major claims associated with promoted food products.

Conclusions: Our data show that Accra-based supermarkets promote unhealthy food items in promotional flyers at great discounts. This may influence purchasing behaviour, may cause substantial consumption of the unhealthy/obeseogenic foods (saturated fats, high sodium and added sugar foods and sugar-sweetened beverages). The causal relationships between the practice and NCDs needs to be evaluated.

Big Food/Soda’s role in promoting unhealthy food advertising on Brazilian television

Authors: Ms. Fernanda Helena Marrocos Leite1,2, Dr. Lais Amaral Mais1, Ms. Julia Soares Guimarães1, Camila Zancheta Ricardo1, Dr. Rafael Moreira Claro1, Ana Clara Duran2,3, Dr. Ana Paula Bortoletto Martins1,2

Affiliations: 1Brazilian Institute for Consumers Defense (Idec), São Paulo, Brazil, 2Center for Epidemiological Studies in Health and Nutrition (Nupens), University of São Paulo (USP), São Paulo, Brazil, 3Nutrition Department, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil, 4Postgraduate Program in Nutrition and Health, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil, 5Center for Food Studies. University of Campinas (UNICAMP),

Abstract:
Background/Aims: Evidence demonstrates the role of transnational food and beverage companies in promoting low-nutrient-dense food products on television worldwide. However, little research has been undertaken in Brazil around this topic. This study aimed to investigate the main ultra-processed food and beverage companies’ advertisements on Brazilian free-to-air television (TV).

Methods: Cross-sectional study based on the International Network for Food and Obesity/Non-Communicable Diseases Research, Monitoring and Action Support (INFORMAS) protocol. A total of 432 hours on the three major Brazilian free-to-air TV channels was recorded from April 1st to 30th 2018 (for eight days, from 6am to 12am). All food-related ads were coded using a systematic approach and classified according to the Pan-American Health Organization (PAHO) nutrient profiling model as “eligible”/”not eligible” for marketing restrictions. For each advertisement, the parent company of promoted food products, supermarkets and restaurants was identified.

Results: A total of 1,610 food and beverage ads were broadcasted during the selected period. Over 80.0% of all foods and beverages advertised on Brazilian TV channels did not meet the PAHO nutritional quality standards and were considered “eligible” for marketing restrictions. Altogether, 10 transnational and local food and beverage companies, along with the two largest fast food chains in the world and two of Brazil’s largest supermarket retailers accounted for almost 90% of all unhealthy food ads shown according to the PAHO (89.9%) model.

Conclusions: Multinational corporations play an important role in promoting unhealthy food through advertisements on Brazilian free-to-air television, especially the ‘Big Soda’ and ultra-processed meat product companies.

An audit of food advertisement in Hong Kong Mass Transit Railway Stations

Authors: Mr Steven Ka Ho Lo1, Dr Jimmy Chun Yu Louie1

Affiliations: 1School of Biological Sciences, The University Of Hong Kong, Pokfulam, Hong Kong

Abstract:
Background/Aims: To audit junk food promotion in Mass Transit Railway (MTR) stations in Hong Kong.

Methods: All advertisements located in selected Hong Kong MTR stations (n = 8) were recorded by photographs or videos. These stations were located in districts of low/high socioeconomic statuses (SES) and densities of schools (DS). Advertisements
were classified into food and non-food promotion, with sub-categorization in terms of healthiness, seasonality and specialty. Proportion of advertisement promoting food, as well as unhealthy food products being promoted were calculated. ANOVA and Chi’s square were used to test for differences in continuous and categorical outcomes between categories respectively.

**Results:** Of 8064 advertisements documented, 861 (10.7%) were food advertisements. Among the 1860 food products being advertised, 54.5% were non-core, unhealthy food. Only 43% of food advertisements were for core, healthy foods. Higher proportion of food advertisement in high DS stations were for non-core, unhealthy foods than low DS stations. Food advertisements in high DS districts had higher mean ± SD number of food promoted than in low DS districts (1.9 ± 1.2 vs. 1.7 ± 1.1; p = 0.043).

**Conclusions:** This study provides important evidence of the prevalence of unhealthy food product advertisements in Hong Kong MTR stations, and the noticeable effect of DS on the number of unhealthy food promotion.

‘Not child-directed’ food advertising elicits children’s brand recognition and positive attitudinal responses

**Authors:** Dr Jennifer Norman¹, Associate Professor Bridget Kelly¹, Dr Anne-T McMahon¹, Dr Emma Boyland¹, Dr Kathy Chapman⁴, Associate Professor Lesley King⁶

**Affiliations:** ¹Early Start, Faculty of Social Sciences, University Of Wollongong, , Australia, ²School of Health and Society, Faculty of Social Sciences, University of Wollongong, , Australia, ³Department of Psychological Sciences, University of Liverpool, Liverpool, UK, ⁴School of Medicine and Public Health, University of Newcastle, , Australia, ⁵School of Public Health, University of Sydney, , Australia

**Abstract:**

**Background/aims:** Despite calls from the highest levels of international policy-making, children remain unprotected from unhealthy food advertising on TV and, increasingly, online. Demonstrating how marketing communications, with content permissible under industry self-regulatory arrangements, affect children can highlight limitations in these regulations.

**Methods:** 160 children (7-12 years) attended one of four, six -day holiday camps in New South Wales, Australia. Children were allocated to a single-media or multiple-media condition (n=80/condition). All children viewed 10 TV food advertisements in a cartoon on three occasions. For one of the brands, one group of children also played online ‘advergames’ featuring the brand. International brands were used to isolate the effects of the study advertising. Children’s recognition and attitudes towards brands and brand consumers and children’s desire to eat the product were reported via a brand recognition and attitude survey pre-and post-intervention. Marketing techniques were categorised.

**Results:** Children recognised more brands following exposure (p=0.0001). Most brands appealed to children. Children wanting to eat the advertised products rated the brands more positively than children who did not express a desire to eat the products. Playing the advergames strengthened children’s positive attitudes towards consumers of the brand. Anti-adult themes, fun/humour and parent pleasing were marketing techniques unique to the most recognised and favoured advertisements.

**Conclusions:** The marketing communications increased children’s brand recognition and elicited positive attitudinal responses.

**Significance:** These findings indicate a need for policymakers to consider additional regulations to protect children from the persuasive influence of unhealthy food advertising and children’s health and well-being (SDG 3).

**Mapping Progress to Targets for Unhealthy Food Marketing to Children in Malaysia**

**Authors:** Mr See-Hoe Ng¹, Assoc. Prof. Bridget Kelly¹, Prof. Dr. Heather Yeatman¹, Prof. Dr. Boyd Swinburn², Dr. Stefanie Vandeveliwere¹, Emeritus Prof. Dr. Mohd Ismail Noor², Prof. Tilakavati Karupaiah²,

**Affiliations:** ¹Early Start, School of Health and Society, University of Wollongong, wollongong, Australia, ²School of Population Health, University of Auckland, Auckland, New Zealand, ³Faculty of Hospitality, Food and Leisure Management, Taylor’s University, Subang Jaya, Malaysia, ⁴Dietetics Program, School of Healthcare Sciences, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, ⁵School of Biosciences, Faculty of Health and Medical Sciences, Taylor’s University, Subang Jaya, Malaysia

**Abstract:**

**Background:** The food industry has been urged by global health authorities to practise responsible food marketing to children. Government-led policy action in this area, although critical, has experienced slow implementation in Malaysia. This study aimed to (1) benchmark food promotion policies in Malaysia against international best practice, and (2) investigate opportunities to strengthen efforts in this area.

**Methods:** Using the Food-Environment Policy Index (Food-EPI) protocol developed by the International Network for Food and Obesity/NCD Research Monitoring and Action Support, evidence was collected for the food promotion domain. Review of publicly available policy documents and associated outcomes was undertaken. This was complemented by personal communication from relevant stakeholders and validation by government stakeholders. An independent Panel (n=26) evaluated the Food-EPI evidence, and prioritised policy actions based on achievability and importance.

**Results:** Existing policies did not provide specific clauses to restrict unhealthy food marketing to children in Malaysia. International best practice represents a mandatory legal framework for this restricting children’s exposure to unhealthy food.
marketing. The Panel rated as ‘low’ the current implementation, and prioritised policy actions in the food promotion domain among the Top 10 recommendations for government action.

Conclusion: Food marketing is a complex matrix involving not only interests of the food industry but also broadcasters and advertisers. Policy mapping enables clarity, identifies gaps in policy implementation and creates opportunities to improve planned policies in achieving targets set in Sustainable Development Goals 2 (Target 3.4) and 3 (Target 2.2).

Most foods would be restricted from child-targeted marketing under proposed Canadian regulations

Authors: Christine Mulligan1, Dr. Anthea Christoforou1, Laura Vergeer1, Mary R L’Abbe1

Affiliations: 1University Of Toronto, Toronto, Canada

Abstract: Background: Canadian federal restrictions on child-appealing food and beverage marketing (M2K) were proposed in 2016, such that products exceeding thresholds for sugars, sodium and/or saturated fat would be prohibited from M2K. Product packaging, however, is not included in scope of the proposed regulations. This study examined the extent to which Canadian packaged foods and beverages, including child-appealing products, would be eligible for M2K under the proposed regulations.

Methods: Packaged products from the University of Toronto Food Label Information Program 2013 database (n=15,200, including n=427 child-appealing products (i.e., displaying child-appealing marketing techniques on their package)) were evaluated using Canada’s proposed nutrient thresholds. The proportion of products not exceeding any nutrient threshold (i.e., permitted to be M2K) and exceeding each individual nutrient threshold was calculated overall and for child-appealing products.

Results: Overall, 18.2% of products would be permitted to be M2K, while only 2.7% of child-appealing products would be permitted, with 10.4% of child-appealing products exceeding all three nutrient thresholds (versus 4.7%, overall).

Conclusions: These results highlight the stringency of Health Canada’s proposed nutrient criteria and demonstrate its ability to effectively reduce children’s exposure to unhealthy foods and beverages. Child-appealing products are higher in nutrients of public health concern than the overall food supply. The proposed regulations should cover all forms of child-appealing marketing, especially on packaging, to best protect Canadian children. This research supports continued efforts to implement federal M2K restrictions to promote the nutritional health and well-being of Canadians from a young age (i.e., SDG 2 & 3).

Lessons on implementing regulations to restrict marketing of unhealthy foods to children

Authors: Dr Angela Carriedo1, MSc Fiona Sing1

Affiliations: 1World Cancer Research Fund International, London, United Kingdom

Abstract: Marketing of food and beverages high in fat, sugar and/or salt (HFSS) is a matter of public health concern, as it affects how a person perceives, desires, and selects foods. Children are particularly susceptible. This report is part of the WCRF International Building Momentum series. It aims to compile lessons learned from implemented nutrition policies and collates them with available literature to succinctly outline how to design and implement a robust nutrition policy. This number focuses on policies to restrict marketing of HFSS food to children. We conducted a literature review and a set of interviews. The literature review included international reports, research papers (<5 years) and policy documents related to marketing restrictions. We interviewed fourteen key stakeholders from different countries. Then data were analyzed thematically to unpack the policy process and to understand the main challenges faced when designing and implementing the policy. Approaches to restrict marketing HFSS foods to children vary largely between countries. Most of them regulate both the exposure and power of marketing. The main constraints faced are the industry legal and political pushbacks in various matters: the age of the target population, mediums, and foods to be included. The CSOs push for governments to consider the child’s rights approach for marketing practices helps to get to the policy agenda. Key factors identified as critical for building a robust policy included: build coalitions among supporters, keep consist key messages to defend it, refer to novel research; and actively participate in global networks concerned with the issue.

Little Lunch, Big Data: Using online-canteens to understand and affect student purchases

Authors: Dr Rebecca Wyse1,2,3, Ms Tessa Delaney1,2,3, Associate Professor Luke Wolfenden1,2,3

Affiliations: 1University Of Newcastle, Callaghan, Australia, 2Hunter New England Population Health, New Lambton, Australia, 3Hunter Medical Research Institute, New Lambton, Australia, 4Priority Research Centre for Health Behaviour, University of Newcastle, Callaghan, Australia

Abstract: Background: Online school canteens, where users access the school canteen menu, order and pay for student lunches online, are increasingly popular with the leading provider of online canteens servicing over 1200 schools nationally and processing over 13 million lunch orders per year. The aim of this study is to describe a research program based on online canteen ordering in NSW primary schools. Specifically, to describe the opportunity for online canteens to: i) efficiently pilot novel interventions to encourage healthier purchasing; and ii) implement effective public health nutrition interventions at scale.

Methods: The research program has utilised multiple methodologies including: i) cross-sectional surveys of principals, canteen managers and parents; ii) pilot RCTs testing individual intervention strategies (menu labelling, tailored feedback, modifying
menu layout); iii) a 10 school cluster pilot RCT testing a consumer behaviour intervention (manual implementation); and iv) a 17 school cluster RCT testing a more comprehensive consumer behaviour intervention (automated implementation). Each trial recruited NSW primary schools with an existing online canteen, and all users of the online canteen participated.

Results: Results from the pilot cluster RCT (n=10 schools, 2714 participants, 19,081 orders, ~40,000 items purchased over a 2-month baseline period) have demonstrated that an intervention implemented using online canteens significantly reduced the kilojoule (-572kJ), saturated fat (-2.4g), and sodium (-231mg) content of students’ lunch orders (p<0.001), without any decrease in revenue. Trials of the individual strategies were less effective.

Conclusion: Online canteens may represent an effective and efficient way of testing and translating public health nutrition research.

Can point-of-sale nutrition information and health-warnings promote healthier drink choices among teens?

Authors: Associate Professor Helen Dixon1,2,3, Ms. Maree Scully1, Dr. Belinda Morley1, Prof. Melanie Wakefield1,2

Affiliations: 1Cancer Council Victoria, Melbourne, Australia, 2Melbourne School of Psychological Sciences, The University of Melbourne, Parkville, Australia, 3School of Psychology, Faculty of Health Sciences, Curtin University, Bentley, Australia

Abstract:
Background/Aims: Youth are heavy consumers of sugary drinks. Point-of-sale (POS) interventions and public health campaigns could help curb their consumption. This study tests effects of these interventions on youths’ drink preferences and perceptions.

Methods: Using an online experiment N=2,000 Australian adolescents aged 14-17 will be recruited from an online panel (via their parents) and randomly assigned to one of five point-of-sale (POS) signage conditions: no signage (control); sugar content; Health Star Rating; text health warning; graphic health warning. Participants will view their randomly assigned POS sign on screen alone, then alongside a drinks product display and asked to select which drink they would choose to buy for themselves. Finally, participants will complete ratings of their perceptions of various drink products and report whether they saw the sugary drinks public health campaign.

Results: Data for this project is being collected in 2019, with results available for presentation at the conference in 2020. Analyses will examine whether the proportion of participants selecting a sugary drink varies as a function of POS condition and prior exposure to the sugary drinks public health campaign. Effects of the interventions on perceptions of various drink products will also be examined.

Conclusion: This project will yield evidence on whether exposure to POS signage and a public health campaign targeting sugary drinks can promote healthier drink preferences and determine which signage content is most influential. Findings will help inform future efforts to promote reduced sugary drink consumption, through use of POS signage and public health campaigns.
2E- Food industry roles, responsibilities & impacts
Rapid Fire Presentations

Ultra-processed Foods and the Corporate Capture of Nutrition
Authors: Dr Gyorgy Scrinis
Affiliations: ¹University Of Melbourne, Melbourne, Australia

Abstract: Food manufacturing corporations use a range of strategies to engineer and market their ultra-processed products in response to a range of health concerns and aspirations of consumers, including concerns with the health impacts of their products. This includes reformulating their products to reduce nutrients-to-limit, micronutrient fortification to address micronutrient deficiencies, and adding functional nutrients and ingredients for claimed health benefits. To do so these corporations draw upon and exploit the dominant nutritional paradigms and recommendations. In particular, they benefit from a reductionist and decontextualized scientific understanding of nutrients — what I call nutritionism — and scientific claims of the precise understanding of the role of nutrients, food components and foods in promoting or addressing particular health conditions. They also benefit from nutrition policies and food labeling and marketing regulations that are similarly dependent on nutritionally-reductive profiling systems, including reformulation policies. In this paper I identify the ways in which food corporations have captured the current nutritional paradigms and policies. I also outline alternative ways of defining, classifying and characterizing ultra-processed foods that potentially resist this form of capture, and how this might inform and shape more robust nutrition policies and regulations.

Impact assessment of the European food industry on obesity and population nutrition
Authors: Iris Van Dam¹, Dr. Stefanie VandeVijvere²
Affiliations: ¹Sciensano and INRA, Brussels and Paris, Belgium and France, ²Sciensano, Brussels, Belgium

Abstract: Background: Our food environment is becoming increasingly dominated by ultra-processed foods and big industry players often escape accountability through self-regulation and vague commitments.

Methods: applying the ‘Business Impact Assessment’ (BIA-Obesity), as proposed by INFORMAS, the commitments and performance of the biggest companies among packaged food and soft drink manufacturers, fast food restaurants and supermarkets were assessed at a European level and in Belgium as a case study. The tool consists of six different domains comprising the corporate nutrition strategy, food formulation, labelling, marketing, accessibility of (un)healthy products and relationships with other organisations.

Results: Preliminary results for Belgian companies show a median score of <30% and a maximum score of <60% for comprehensiveness, specificity and transparency of commitments. Hardly any commitments are in place to increase accessibility to healthier products. Even though several commitments are made regarding advertisement towards children below 12 years, on average 36% of sales is for products not permitted to be marketed to children (WHO) and 71% for products that are ultra-processed (NOVA). Throughout Europe, companies selling ultra-processed foods on average generate 85% (77%-90%) of their sales from ultra-processed foods of which 50% (35%-74%) is not permitted to be marketed to children.

Conclusion: Even though many commitments are made, they are not sufficiently specific or comprehensive and do not link well with performance. To reach the goals set out by the SDG’s and to improve the food environment it is crucial to ensure that commitments don’t get lost in translation, but are strengthened and transformed into results.

Influence of food industry on policy, research and practice in Latin America
Authors: Dr Melissa Mialon¹, Prof Carlos Monteiro, Prof Patricia Jaime, Prof Fernanda Scagliusi
Affiliations: ¹University Of Sao Paulo, Sao Paulo, Brazil

Abstract: Introduction: Unhealthy diets are one of the primary risks factors for NCD. Policies to prevent and control NCD have yet to be adopted in most countries, despite their likely effectiveness. One of the key barriers is the influence of the food industry, also known as corporate political activity (CPA). The main objective of this project was to identify the CPA of the food industry in Brazil, Colombia and Chile, over a 2-years period.

Methods: This research consisted in a step-by-step document analysis of publicly available information, triangulated with interviews with key informants inside and outside the food industry.

Results: We found evidence of the influence of the food industry on public health policy, research and practice. The industry tried to build alliances with health organisations, opinion leaders, communities and the media. Industry actors also criticised and attacked the work of civil society organisations. In addition, they influenced the production and dissemination of scientific papers, provided biased education in schools and to health professionals, and questioned the science on a wide range of public health issues. We also found evidence of the direct involvement and influence of food industry actors in policy in Latin America,
as well as the use of legal strategies. Finally, the industry used a broad range of discursive strategies to influence public health policy, research and practice.

Discussion: The results of this project could inform individuals and institutions in policy, research and practice about practices that could compromise public health efforts to prevent and control NCD.

NCD governance and the SDGs: a qualitative analysis of food industry framing

Authors: Miss Kathrin Lauber1, Dr Robert Ralston2, Dr Melissa Mialon3, Dr Angela Carriredo Lutzenkirchen4, Professor Anna Gilmore5

Affiliations: 1Tobacco Control Research Group, University Of Bath, Bath, United Kingdom, 2Global Health Policy Unit, School of Social and Political Science, University of Edinburgh, , United Kingdom, 3Center for Epidemiological Studies in Health and Nutrition, Department of Nutrition, Faculty of Public Health, University of São Paulo, , Brazil, 4World Cancer Research Fund International, London, United Kingdom

Abstract:
Background: The UN system's shift towards multi-stakeholder governance, now enshrined in the SDGs, invites not only civil society but also the private sector to the table, thereby providing opportunities for the ultra-processed food (UPF) industry to influence the NCD agenda of the World Health Organization (WHO). This research critically examines UPF actors' governance preferences and the strategic framing used to promote these preferences.

Methods: A qualitative frame analysis was conducted on written responses from UPF actors to NCD policy-relevant WHO consultations held after January 2016. From five consultations, we identified 44 submissions from 22 trade associations (no individual companies).

Findings: Respondents overwhelmingly promoted self- and co-regulation, and opposed statutory regulation. They framed the UPF sector as a legitimate partner in NCD policymaking, differentiating themselves from the tobacco industry and referencing a history of successful collaboration while invoking multi-stakeholder norms to portray collaboration as necessary, contrasting this with the limits of WHO's mandate. Respondents invoked principles of good governance and evidence-based policymaking to promote an economically oriented policy environment which identifies a clear role for industry and its evidence.

Conclusion: Findings confirm existing research on national-level UPF framing and highlight similarities with tobacco industry arguments on the supranational level. Our observation that the UN's call for partnerships to support the SDGs is invoked to defend corporate access to policymaking highlights the need for more cautious approaches. The systematic opposition to regulation and to governance approaches which may compromise industry's insider role in global health raises questions about the value of collaboration.

How does Big Food retain dominance? How could regulation modify its influence?

Authors: Professor Fran Baum1,2, Dr Julia Anaf3, Dr Matthew Fisher1

Affiliations: 1Southgate Institute For Health, Society And Equity, Adelaide, Australia, 2People's Health Movement, , Australia

Abstract:
Background and Aims: This paper will analyse data from a corporate health impact assessment exercise to determine the ways in which trans-national food corporations maintain their dominance of food markets despite their contribution to creating unhealthy food environments. Trans-national corporations (TNCs) increasingly dominate food markets and offer mainly ultra-processed products.

Methods: We adapted existing Health Impact Assessment methods using data sourced through document and media analyses, and semi-structured interviews to examine the practices of McDonalds in Australia. Data were mapped against a corporate health impact assessment framework which included the corporation’s political and business practices; products and marketing; workforce; social, environmental and economic conditions; and consumers’ health related behaviours.

Results: Our study highlights the ways in which the corporate practices of McDonalds enable it to retain its market position. These include: aggressive advertising including to children; corporate social responsibility and philanthropic activities; lobbying of government through industry bodies to curb regulation; tax minimization strategies which increase profit margins but reduce health and welfare investment; externalization of environmental and health costs; funding research to produce favourable results; and suppressing opposition to new outlets through legal and other means.

Conclusions: The study highlighted the ways in which TNCs are able to use their power and size to maintain their position of dominance of food environments despite increasing public and government concern about obesogenic environments. Reducing the power of the TNCs to market unhealthy food will result from regulations such as sugar taxes, restriction on advertising, and restrictions on tax avoidance practices.

Ultra-processed food industry regulation in the Brazilian legislature: many proposals, no enactments

Authors: MSc Aline Mariath1,2, PhD Ana Paula Martins3

Affiliations: 1Department of Nutrition, School of Public Health, University of Sao Paulo, Sao Paulo, Brazil, 2Camara dos Deputados, Brasilia, Brazil, 3Center for Epidemiological Studies in Health and Nutrition, University of Sao Paulo, Sao Paulo, Brazil

Abstract:
Background: because of the well-established relationship between ultra-processed foods intake and the prevalence of obesity
and diet-related non-communicable diseases, regulation of ultra-processed food industry practices has been widely recommended as a public health measure for controlling the obesity pandemic.

Aim: to assess bills aimed at regulating food industry activities considered in the Brazilian legislature between 2015 and mid-2019.

Methods: we searched the Chamber of Deputies and Federal Senate databases to identify bills under consideration in this time period. Key-words related to main recommendations of international organizations regarding the regulation of food industry activities were used. Descriptive and content analysis of the bills were carried out.

Results: eighty-four bills were identified. Most frequently addressed topics were: nutrition labelling (36.9%), marketing of unhealthy products (30.9%), access to unhealthy products (26.2%), and critical nutrients content (14.3%). Only 8.3% of bills have proposed sugary drinks taxation. Restriction of sales and distribution of unhealthy products to children and adolescents has been addressed in 95.5% of bills on access to unhealthy foods. In this period, no bill has passed, 2.4% have been rejected and 10.7% archived. Among bills still under consideration, 52.4% have not passed in any of the committees so far.

Conclusions: although many bills have been introduced, no regulation of the ultra-processed food industry practices has been enacted at the mid-point of the Decade of Nutrition. Because legislative process is intricate and lengthy, we foresee two major risks: no law being passed or enacted legislation not being able to impact public health by 2025.

Electoral campaign contributions: obstacle to sugary drinks regulation in the Brazilian legislature?

Authors: MSc Aline Mariath1,2, PhD Larissa Baraldi1,3, PhD Ana Paula Martins4

Affiliations: 1Department of Nutrition, School of Public Health, University of Sao Paulo, Sao Paulo, Brazil, 2Camara dos Deputados, Brasilia, Brazil, 3Center for Epidemiological Studies in Health and Nutrition, University of Sao Paulo, Sao Paulo, Brazil, 4Center of Food Studies, University of Campinas, Campinas, Brazil

Abstract: Background: public policies aimed at reducing sugary drinks consumption are widely recommended for tackling obesity and diet-related non-communicable diseases. However, the private sector frequently opposes such measures and has been claimed to use corporate political activity – including electoral campaign contributions – to exert influence on government regulations. Aim: to assess campaign contributions from sugar and sugary drink industries to candidates for the Brazilian legislature in 2014 Elections.

Methods: publicly available data on campaign contributions and candidates was downloaded from the Electoral Superior Court website. Sugar and sugary drink industry corporations were identified among donors. Two major trade associations (ABIR and UNICA) were selected based on their participation in public hearings on sugary drinks taxation and their members identified from their websites.

Results: declared campaign contributions from sugar and sugary drink industry corporations totaled USD 29,334,715. Although no trade associations have been identified among donors, contributions from their members represented 77% of total contributions from the sector. Highest contributions were made by these corporate groups: Ambev, Coca-cola, Petropolis Group, Cutrale and Copersucar. As regards elected members of parliament, 34% of federal deputies and 37% of senators have received contributions from the sector.

Conclusions: these results are concerning because although campaign contributions alone cannot explain decision making, they can buy access to lawmakers and could therefore advantage private interests. Participation of sugar and sugary drink industries in electoral campaigns in Brazil might have jeopardized regulation of their activities and thus the achievement of SDGs related to obesity and diet-related non-communicable diseases.

Potential benefits and risks of benchmarking food companies on their nutrition policies

Authors: Ms Ella Robinson1, Dr Miranda Blake1, Dr Gary Sacks1

Affiliations: 1Global Obesity Centre (GLOBE), Deakin University, Melbourne, Australia

Abstract: Background: While the potential role of the food industry in efforts to address diet-related disease is much debated, the need for more comprehensive action from various stakeholders has led to an increased focus on food industry accountability. This study aimed to evaluate the outcomes of the Business Impact Assessment (BIA) - Obesity initiative that benchmarked Australian food companies on their nutrition policies and commitments.

Methods: The outcomes of the BIA-Obesity initiative were evaluated against the pre-specified program logic model for BIA-Obesity and theoretical frameworks for assessing corporate political activity. The evaluation employed a mixed methods approach which drew on multiple sources, including surveys (n=11/34), and in-depth interviews with company representatives (n=16/34). Outcomes evaluated included company engagement with the initiative and the impact of the initiative on company policies and practices.

Results: Half of the companies actively engaged in the initiative, and the launch of the results generated extensive national media coverage. Several company representatives stated that the initiative had led to improvements in their nutrition
strategies, policies or disclosure practices. Two companies criticised the initiative publicly, and some companies indicated that the initiative had limited impact.

**Conclusion:** This study provided evidence of the positive value of accountability mechanisms for provoking incremental improvements in food company policies and practices related to nutrition. However, there is a risk that the initiative serves to advance industry preferences for self-regulation. Overall, accountability mechanisms that align with the Sustainable Development Goals, show promise as part of a comprehensive response to addressing poor population diets.

**Business Impact Assessment (BIA)—Obesity Malaysia: Benchmarking top food companies’ commitments and disclosures**

**Authors:** Professor Dr Tilakavati Karupaiha1,2, Mr SeeHoe Ng3, Dr Karuthan Chinn4, Professor Dr Mohd Ismail Noor5, Dr. Gary Sacks6, Dr. Bridget Kelly7, Professor Dr Boyd Swinburn8, Professor Dr Heather Yeatman9, Dr Ella Robinson4, Dr Stefanie Vandevijvere1

**Affiliations:** 1Taylor’s University, Subang Jaya, Malaysia, 2University Kebangsaan Malaysia, Kuala Lumpur, Malaysia, 3Early Start, School of Health and Society, University of Wollongong, Wollongong, Australia, 4School of Medicine, Faculty of Health and Medical Sciences, Taylor’s University Taylor’s University, 47500 Subang Jaya, Selangor, Malaysia, 47500 Subang Jaya, Malaysia, 5Faculty of Hospitality, Food and Leisure Management, Taylor’s University, Subang Jaya, Malaysia, 6Deakin University, Global Obesity Centre (GLOBE), Geelong, Australia, 7School of Population Health, University of Auckland, Auckland, New Zealand

**Abstract:**

**Background:** Malaysia has an alarming prevalence of obesity and non-communicable diseases. The food industry is viewed as a potential contributor to reducing this burden. Our study aims to (1) benchmark the commitments and disclosure practices of top food and beverage manufacturers, fast food companies and retailers, and (2) suggest recommendations to align with government directions and international norms.

**Methods:** The study adopted the INFORMAS protocol adjusted to the Malaysian context. Evidence on corporate strategy and governance, and product marketing components were collected from publicly available information for the biggest 33 food companies. Some companies (6/33) helped verify the evidence and random market surveys complemented the evidence collection for the other companies (27/33). An expert panel (>5 members) assessed the comprehensiveness, specificity and transparency of the commitments to Malaysia and reported with weighted scores. Panel recommendations were reviewed by government stakeholders (n=13).

**Results:** Company scores ranged from 1% to 60% across 3 sectors, with only 8 companies scoring >25%. Commitments were greater in corporate strategy, product formulation and nutrition labelling domains. The Panel recognised significant room for comprehensive improvements in commitments and suggested recommendations for 6 domains, based on gaps in the evidence and alignment with government plans and international norms.

**Conclusions:** The benchmarking process of BIA-obesity provided accountability frameworks for public health nutrition in Malaysia. This tool is in line with the Sustainable Development Goals (SDGs) in sustainable reporting (Target 12.6) for population nutrition, as it enables up-stream monitoring over time to synergistically achieve SDG Goals 2 and 3.

**SNAP-Authorized Retailers Score Poorly on Business Impact Assessment—Obesity and Population Nutrition Tool**

**Authors:** Dr. Bailey Houghtaling1, Ms. Susan Chen3, Dr. Vivica Kraak2, Dr. Elena Serrano1, Dr. Samantha Harden1, Dr. George Davis4, Dr. Sarah Misyak1

**Affiliations:** 1Louisiana State University Agcenter, Baton Rouge, United States, 2Department of Human Nutrition, Foods, and Exercise at Virginia Tech, Blacksburg, United States, 3Family Nutrition Program. Department of Human Nutrition, Foods, and Exercise at Virginia Tech, Blacksburg, United States, 4Department of Agricultural and Applied Economics at Virginia Tech, Blacksburg, United States

**Abstract:**

**Background:** Evaluation of food retailers’ commitments to improve the food environment is needed that aligns with the 2030 Sustainable Development Goal (SDG) 3 (health and well-being for all). We assessed Supplemental Nutrition Assistance Program (SNAP)-authorized retailers’ commitments to reduce obesity in the American population. SNAP is the largest federal nutrition assistance program in the United States (U.S.), that provides supplemental dollars to low-income consumers for household food purchases at authorized stores.

**Methods:** The Business Impact Assessment—Obesity and Population Nutrition (BIA-Obesity) tool was used to evaluate 60 prevalent U.S. retailers’ on commitments to address consumer obesity among six categories: corporate strategies; relationships; product formulation; nutrition labeling; promotion practices; and product accessibility. Retailers’ online web pages and gray literature sources were searched (2018-2019) to identify information of interest. Two authors agreed on outcomes.

**Results:** None of 60 high-profile SNAP-authorized U.S. retailers including supermarket, drug, dollar, supercenter, mass-merchandiser, convenience, and restaurant/delivery services had comprehensive policies or commitments to address obesity among six categories. Supermarkets scored higher than other retailers; however, scores were overall low (>50% scored less
Implementing government nutrition policy in a commercial foodscape within a public hospital

Authors: Miss Kate Rose

Affiliations: Queensland Health - Sunshine Coast Hospital and Health Service, Birtinya, Australia

Abstract:

Background: Obesity remains a major issue in Queensland with over two thirds (64%) of adults overweight or obese and one quarter of children overweight or obese. In response, the Queensland Government developed the Healthier Drinks Directive (HDD) in April 2019, aimed at removing all Sugar-Sweetened Beverages (SSB) from sale and promotion within healthcare facilities by July 1st, 2019. This study investigates the implications of implementing government policy in a unique Private-Public Partnership (PPP) at Sunshine Coast University Hospital (SCUH), with 10 contracted retail outlets (4 franchises), in a multi-layered business model.

Methods: A Dietitian Project Officer was appointed to assist with implementation. Methods included USC Dietetic student projects (stakeholder education, audits pre/post implementation), surveys on knowledge and opinion. Extensive stakeholder consultation, including legal/contracts and state-wide liaison occurred throughout, and educational tools were developed to assist implementation.

Results: Stakeholder engagement was essential during implementation and escalation of issues. Education tools increased stakeholder knowledge and acceptance. Audits revealed significantly fewer red drinks available post compliance. Compliance levels were proportional to legal contract terms, with franchises least compliant. Legal contract length and potential compensation was a major barrier to implementation, and stakeholder perceived profit losses. Negative media coverage also impacted future communications and decreased acceptance.

Conclusions: It is difficult to implement government policy when commercial interests exist. Long-term legal agreements can prevent population health strategy implementation when the costs of severance impacts acute healthcare and thus outweighs the ‘perceived’ benefits. All governments should consider these factors before entering into any future PPP arrangements.
2F – Africa & Asia Pacific Diet diversity and food security

Rapid Fire Presentations

Australia-wide audit of the price of recommended (healthy) and current (unhealthy) diets

Authors: Dr Kathryn Backholer¹, Ms Christina Zorbas¹, Ms Rebecca Bennett¹, Dr Shaan ², Ms Josie Marshall³, Ms Meron Lewis⁴, Professor Anna Peeters⁵, Professor Amanda Lee⁶

Affiliations: ¹Deakin University, Geelong, Australia, ²The University of Queensland, Herston, Queensland, School of Public Health, Faculty of Medicine., , Australia

Abstract:

Background: The perceived price of foods is a key determinant of dietary intake. Whether there are differences between the price and affordability of recommended (healthy) and current (unhealthy) diets in different Australian States and Territories is unknown.

Methods: We selected a simple stratified random sample of Statistical Area 2 (SA2) geographical areas (n=56), stratified by quintiles of socioeconomic disadvantage and remoteness, within each Australian State and Territory. Using the Healthy Diet ASAP tools and online price data from the two major Australian supermarkets, supplemented with phone calls to relevant outlets, such as fast food retailers, we calculated the mean fortnightly cost and affordability of a recommended (healthy) and current (unhealthy) diet for a household of four for each area and State and Territory.

Results: The mean price of a healthy diet was $580 per household per fortnight, which was highest in the Northern Territory ($603) and lowest in Western Australia ($566). Per year, this equates to an additional $951 is required for a household in the Northern Territory to purchase a healthy diet. The mean price of the unhealthy diet was $744 per household per fortnight, which was highest in the Australian Capital Territory ($761) and lowest in the Northern Territory ($722). Rates of unaffordability (>30% of disposable household income) of a healthy diet were highest in Tasmania.

Conclusions: Addressing these inequities in food and diet prices will be critical to equitably improve population diets, health, and to achieve the Sustainable Development Goals in Australia.

Food Security and Food Affordability in Malaysia

Authors: Tan Zhai Gen¹, Wan Manan²

Affiliations: ¹Khasanah Research Institute, Kuala Lumpur, Malaysia

Abstract:

Malaysia is more food secure today compared to the past by the various internationally accepted criteria, especially compared to the colonial period. All major foods are available in sufficient quantities to meet market demand. Production has improved for poultry and vegetables, while rice production is supplemented by imports. Food access is no longer an issue, with improving processing, transport and storage systems and distribution arrangements, for most major food items. However, food affordability remains an issue. Household income has generally increased less than food prices, contributing, with more ‘eating out’, to relatively more spending on food. Furthermore, certain food categories, such as beef and milk, have experienced apparent price anomalies, with domestic prices not running parallel to international trends. Most major food imports have been subject to the Approved Permits (AP) regime, which may result in oligopolies/oligopsonies and related price distortions. Income inequality and related spending patterns also mean that higher prices adversely impact poorer households disproportionately, with these households spending relatively more on food. Consumption patterns also differ among households, due to cultural and behavioural preferences besides having different means. Concrete steps will have to be taken for the country to improve food security. Below are four policy recommendations that should be considered.

Increasing agrobiodiversity for better diets: A cluster randomised control trial in Vietnam

Authors: Jessica E. Raneri¹,², Giles Hanley-Cook³, Dr. Gina Kennedy³, Ky Hoang³, Dr Carl Lachat²

Affiliations: ¹Bioversity International, Rome, Italy, ²Gent University, Gent, Belgium, ³HealthBridge Foundation Canada, Hanoi, Vietnam

Abstract:

Agrobiodiversity is gaining global attention for it’s potential to bridge dietary gaps whilst supporting sustainable food systems. This research utilised a cluster RCT to evaluate an intervention that promoted utilisation of local agrobiodiversity in home gardens for better nutrition. 95 women-child pairs from 60 village clusters were randomly selected (30 control; intervention each). A participatory consultation process identified intervention crops and delivery mechanisms (village level women’s diversity clubs). The intervention was implemented for 12 months, with 6 club meetings in total delivering integrated homegarden and nutrition capacity building. A quantitative 24hour dietary intake assessment was used to collect baseline and endline data. Significant positive changes were found for almost all dietary quality indicators. For women and children respectively vitamin A (intervention effect (IE) = 845 μg/d RAE; p = 0.006; IE = 539 μg/d RAE; p < 0.001), iron (IE = 7.0 mg/d; p < 0.001; IE = 4.8 mg/d; p < 0.001) and dietary species richness (IE = 2 species/d; p = 0.001; IE = 2 species/d; p = 0.004) all increased. Dietary diversity (DD) improved with increased proportion of women and children reaching minimum DD (IE = 34.1%; p = 0.004 and IE = 16.4%; p = 0.009 respectively). After controlling for energy the effect was reduced for women but not...
children, suggesting nutrient density of children’s diets increased significantly more than women’s. This research provides evidence on how agrobiodiversity based nutrition-sensitive interventions can produce positive nutrition outcomes by increasing the quantity and quality of foods consumed.

Qualitative inquiries into indigenous food systems of two tribes of Jharkhand, India

Authors: Dr Suparna Ghosh-Jerath, Ms Ridhima Kapoor, Dr Archna Singh, Dr Shauna Downs, Dr Jessica Fanzo

Affiliations: 1Indian Institute of Public Health-Delhi, PHFI, Gurgaon, India, 2Indian Institute of Public Health-Delhi, PHFI, Gurgaon, India, 3All India Institute of Medical Sciences, New Delhi, India, 4Rutgers University, New Brunswick, USA, 5Johns Hopkins University, Baltimore, USA

Abstract: Background: Indigenous communities have rich food systems characterized by diverse agroforestry and traditional ecological knowledge (TEK). Paradox exits between food diversity, poor utilization and resulting nutritional status.

Objective: To explore food systems of Santhals and Sauria Paharias tribes of Jharkhand and assess factors affecting their availability and access.

Methods: 19 FGDs were conducted among Santhal and Sauria Paharia communities in 15 tribal villages with participating adult men, women and elders. Transcripts were coded using open, axial and selective coding and subsequently organized into key themes around the research questions.

Results: Around 143 indigenous foods (IFs) among Santhals (33.3% routinely consumed) and 211 IFs among Sauria Paharias, (31.7% routinely consumed) were identified. These were accessed from agricultural lands, forests, water bodies and markets. Some IFs though micronutrient rich, were found to be “neglected” or not ‘valued, while others were valued for superior palatability and health benefits, but high opportunity cost restricted their use. Facilitators associated with availability and access to IFs, included preference towards indigenous crop for low resource requirements, climate change resilience, superior palatability, nutritional quality, suitability for storage, collateral benefits with forest based economy, and socio-cultural norms. Barriers included low agricultural yield, less profitability, higher opportunity cost, damage to indigenous varieties due to farming methods, proximity to market and migration.

Conclusion: Both tribal groups had reasonable availability and access to IFs. Facilitators including the TEK need to be retained and barriers need to be addressed through awareness generation and behaviour change communication for maintaining these rich indigenous food systems.

Exploring sociodemographic influences on dietary diversity in a remote Solomon Islands population

Authors: Ms Bridget Horsey, Dr Libby Swanepoel, Prof Steven Underhill, Mrs Judith Aliakbari, Dr Sarah Burkhart

Affiliations: 1University of the Sunshine Coast, Maroochydore, Australia, 2The Hilltop Training Institute, Auki, Solomon Islands

Abstract: Background/aims: Like many Pacific Islands, the current food environment in Auki, a remote Solomon Islands location, is in active transition from a diverse traditional diet towards one overly reliant on less nutritious commercially sourced food. Accelerated changes to local food systems and dietary patterns in the Solomon Islands contributes to food insecurity and multiple forms of malnutrition, however there is limited understanding of dietary diversity in this population. The aim of this study was to investigate individual dietary diversity and food preferences of an adult population living in Auki, Solomon Islands.

Methods: A cross-sectional study to measure dietary diversity was undertaken with 133 adult Auki residents via an interviewer administered questionnaire using a 24hr recall method to assess consumption of items from predetermined food groups.

Results/discussion: The mean individual dietary diversity score (DDS) was 7.27 (range 2-12). Females and participants who lived further from the town centre had significantly higher DDS (p= 0.014, p= 0.048 respectively). Low consumption of a variety of nutritious foods within food groups and high consumption of energy dense processed foods, indicates that diet quality is likely limited in some of this population. Participants desire for a more diverse diet including majority local foods suggests that this population makes dietary choices driven by financial motives and food insecurity regardless of food preferences.

Conclusions: Further research and development efforts that take a systems approach are warranted to consider the contribution of gender, geographical location, food access and availability in influencing dietary diversity in the Solomon Islands.

Predictors of Dietary Diversity of Indigenous Smallholder Farming Households in Rural Fiji

Authors: Ms Lydia O’Meara, Dr Susan L. Williams, Mr David Hickes, Prof Philip Brown

Affiliations: 1WorldFish (CGIAR), Penang, Malaysia, 2CQUnderstanding, Cairns, Australia, 3CQUniversity, Rockhampton, Australia, 4Secretariat of the Pacific Community, Sigatoka, Fiji, 5CQUnderstanding, Bundaberg, Australia

Abstract: Background: Fiji like other Pacific Islands are undergoing economic and nutrition transitions that increase the risk of NCDs due to changes of the food supply and dietary intake. The aim of this study was to examine associations between household dietary
dissertation and a range of personal and household characteristics and farm diversity in a sample of indigenous (iTaukei) smallholder farming households in rural Fiji.

**Methods:** Surveys were conducted with households (n=161) from the Nadroga-Navosa, Namosi and Ba Provinces of Western Fiji in August 2018. Participants reported on foods consumed in the previous 24-hrs, per the Food and Agriculture Organization’s Household Dietary Diversity Score. Data was analysed using descriptive statistics and multinomial logistic regression.

**Results:** Most households exhibited medium dietary diversity (66%;M=7.8±1.5). Commonly consumed foods included sweets (98%), refined-grains (97%) and roots/tubers (94%). Least consumed foods were orange-fleshed fruits (23%) and vegetables (35%), eggs (25%), legumes (32%) and dairy (32%). Households with medium dietary diversity were more likely to be unemployed (OR3.2,p=.017) but less likely to have ≥6 occupants (OR=0.4,p=.024) or purchase food ≥2 times/week (OR=0.2,p=.023). Households with low dietary diversity were more likely to have low farm diversity (OR=5.1,p=.017) or be unemployed (OR=3.7,p=.047) but less likely to have ≥6 occupants (OR=0.1,p=.001).

**Conclusions:** Irrespective of socio-economic factors, traditional subsistence diets in iTaukei Fijian smallholder farming households represented a higher quality diet. During nutrition transitions, there is a need for public health initiatives to promote traditional diets high in vegetables, fruits and lean protein and agricultural initiatives to promote farm diversity.

**Availability, access and consumption of indigenous foods in Limpopo province, South Africa**

**Authors:** Ms Sefora Makuse, Prof Xikombiso Mbhenyane, Dr Lindelani Mushaphi, Dr Ayuk Tambe

**Affiliations:** 1Stellenbosch University, Cape Town, South Africa, 2University of Limpopo, Sovenga, South Africa, 3University of Venda, Thohoyandou, South Africa

**Abstract:**

**Background/aim:** The main aim of the study is to develop models for improving food security and nutritional status of households using indigenous foods among rural communities in the selected areas of Limpopo Province. This paper reports on food availability, access and consumption of indigenous foods by households in Limpopo Province.

**Methodology:** The approach was a descriptive survey where purposive mixed and multi stage sampling was used. The data was collected using a Household hunger scale, Coping Strategy index and Household dietary Diversity 17 item scale. The project received ethical clearance from Stellenbosch University (Ref #: N16/06/083) and permission was obtained from Traditional Leadership.

**Results:** A total 280 households and 2520 participants were included in the study. 23.6% of households were food secure, 39.6% at risk of hunger while 36.8% were experiencing hunger. The copying strategies occurring at least for 3 days (mode) in a week were: reliance on less preferred and less expensive foods (53.9%); reduce portion sizes until month end (36.4%); reduce number of meals eaten in a day (33.6%); and limit portion size at mealtimes (25%). Only 15% of the households with an occurrence of once week gathered indigenous foods. The majority 74.7% had low dietary diversity score (4 – 7), with food groups that incorporate indigenous foods “dark green leafy vegetables” and “legumes, nuts and seeds” were reported by 33.4% and 11.9% respectively.

**Conclusion:** High levels of food insecurity was reported and household employ various approaches to cope with food deprivation with low utilisation of indigenous foods.

**Weekly Iron Folic Acid (WIFA) supplementation program on the Indonesian’s school girls**

**Authors:** Prof Dodik Briawan, Prof Ali Khomsan, PhD Mira Dewi, PhD Ikeu Ikayanti, Msc Mardewi Mardewi

**Affiliations:** 1Bogor Agricultural University, Bogor, Indonesia, 2Nutrition International, , Indonesia

**Abstract:**

The iron supplementation program for school girls being gradually implemented by the Indonesian Government since 2016. Objective of this study was to assess anemia prevalence and estimated the coverage of WIFA supplementation among school girls. A cross-sectional survey was conducted in East Java (EJ), East Nusa Tenggara (ENT), and South Sulawesi (SS) in the year 2018. Thirty schools were involved from 10 districts for each province, and the total number of samples was 2700 school girls. WIFA supplementation coverage and adherence were assessed at the previous six months at the time of data collection. Hemoglobin (Hb) was tested by HemoCue 201+ and cutoff anemia if Hb <12 g/dL. The results showed that the prevalence of anemia was 42.1% in EJ, 49.1% in ENT, and 30.5% in SS. The high prevalence of anemia may be due to poor iron food sources, and some of the school girls suffering from malaria infection. The coverage WIFA supplementation at the three provinces is considered as low, namely 31.2% in EJ, 9.9% in ENT, and 52.4% in SS. Among school girls who received WIFA supplement, most of them did not consume some/all IFA tablets at EJ 73.2%, ENT 15.4%, and SS 85.3%. The reasons for not consuming IFA were such as forgot to consume (30-40%), suffered from side effects (10-20%), did not like the taste (5-25%), and felt that it was not necessary to consume IFA tablet (10-20%). It was concluded that WIFA supplementation must be conducted, and IFA tablet should be consumed together at school.
2G - Workshop

Stories of Change: how countries are grappling with the challenge of malnutrition

Authors: Dr Stuart Gillespie1, Dr Jody Harris2, Dr Nicholas Nisbett2, Dr Anne-Marie Thow3

Affiliations: 1International Food Policy Research Institute (IFPRI), Lewes, United Kingdom, 2Institute of Development Studies (IDS), Brighton, United Kingdom, 3University of Sydney, Sydney, Australia

Abstract:
In response to an increasing demand for evidence and experience of how to drive change in nutrition, the Stories of Change (SoC) initiative started in 2015. SoC aims to support experiential learning on how to address malnutrition in different settings, drawing upon case studies of countries that have experienced significant success in reducing child stunting, as well as those facing challenges in generating political commitment to address overweight and obesity. SoC aims to inspire as well as inform action. Stakeholder engagement is fundamental to its modus operandi, with interviews, focus groups and in-country consultations central to each case study.

Eighteen case studies will be complete by early 2020. As this wealth of documented experience has grown, there’s a corresponding need to ensure findings and lessons are widely debated, critiqued, validated and ultimately used – to accelerate further positive change.

This workshop aims to do just that -- to present lessons learned within and across the SOC case studies, facilitate learning across national borders, help countries turn their plans into realities, and ultimately to maximize impact on addressing the challenge of malnutrition in all its forms. It will be highly interactive, drawing on participatory workshopping methods to garner participant insights on the cross-cutting themes from the case studies. After a brief overview, and syntheses of lessons from Asia and Africa, we will host a wider structured debate on lessons learned. We will capture and disseminate the workshop proceedings in a report and blog.
Poster Presentations – P2

P2.001 - Unpacking vague and confusing 'UNese' in the Decade of Nutrition
Authors: Dr Claudio Schuftan
Affiliations: 1WPHNA and PHM, Saigon, Vietnam
Abstract:
Non-state actors: The UN cannot continue to put in the same basket the private sector and the public interest civil society organizations(!)
Stakeholders: As a promoter of human rights, the UN must start using claim holders and duty bearers instead(!)
Aligned health systems: Aligned with/to what? Digging, one finds it means: decrease duplications/inefficiencies; harmonizing processes/policies; streamlining programs/policies; seek synergies; aligning investments; and supply chain management. What are we to understand by these?
Essential nutrition actions (what are these for universal coverage?): Are we to understand the actions recommended in The Lancet series? Or the ones by EAT?
Resilient food systems: The discourse of ‘increasing resilience’ is simply not likely to prevent crises recurrences in the long-term, because it does not analyze the root causes of the problems. Resilience does not address equity, equality and human rights.
Supportive environments for nutrition: What are we to understand by these? The focus must be on acting at all levels of UNICEF’s conceptual framework of the causes of malnutrition(!), not leaving out the social, economic and political determinants (i.e., the basic causes)
Nutrition sensitive interventions: Invented by David Nabarro; supposed to mean ‘cross-sectional’ (as opposed to ‘nutrition specific’). But what does cross-sectional add to what the social determinants are, a concept accepted in health, but not in yet nutrition by UN agencies?
Poor dietary habits/unhealthy diets: These are misleading judgmental concepts; they are based on the wrong assumption that consumers have a ‘freedom to choose’ ignoring the role of industry.

P2.002 - International infant feeding indicators: findings from the GUINZ birth cohort study
Authors: Dr Teresa Gontijo De Castro1, Dr Sarah Gerritsen1, Professor Susan Morton1, Dr Carin Napier1, Associate Professor Clare Wall1
Affiliations: 1The University Of Auckland, Auckland, New Zealand
Abstract:
Aims: Within the Growing up in New Zealand (GUINZ) cohort we: described infant feeding indicators based on the World Health Organization recommendations and the frequency of intake of ultra-processed products (UPPs) according to NOVA classification and; examined associations between these indicators and antenatal maternal socio-demographics.
Methods: 6,120 infants (94.5%) aged 8.00 to 11.99 months at the nine-month interview. Breastfeeding indicators were measured retrospectively and infant feeding indicators were calculated from a food frequency questionnaire. Adjusted prevalence rates and 95% confidence intervals (PR, 95% CI) were calculated (p<0.05).
Results: 35.7% and 13.9% of the infants were breastfed for 12 months or more and exclusively breastfed until the age of 6 months, respectively. The proportion of infants having daily intake of iron-rich foods and UPPs were 80.2% and 21.5%, respectively. Minimum dietary diversity was reached by 32.9% of infants who were being breastfed and by 54.0% of infants who were no longer being breastfed. The infants more likely to be fed with UPPs on daily basis were the ones from mothers younger than 35 years (20-34 years:1.17; 1.02-1.54/<20 years:1.62; 1.27; 2.08), with a level of education below Bachelor’s degree (Diploma:1.30;1.07-1.57/ Secondary school: 1.26;1.03-1.54/ No qualification: 1.72;1.33-2.22), and of ethnicity other than European (Māori: 1.28;1.07-1.52;/Pacific: 1.69;1.43-2.00/ Asian: 1.64;1.40-1.92).
Conclusions: Adherence to infant feeding indicators were below WHO guidelines and 1 in 5 infants had UPPs daily. This study will guide national policies that aim to invest in adequate early life nutrition as a shared platform to reduce all types of malnutrition.

P2.003 - Creating Healthy Food Environments at Community Events
Authors: Mrs Michelle Riekie1, Mrs Jessica De Vries2, Ms Megan Sauzier1
Affiliations: 1WA School Canteen Association, East Perth, Australia
Abstract:
Introduction: Traditionally food vendors at community events offer mainly high fat, high salt, high sugar, low nutrient food and drinks contributing to the abundance of unhealthy food options in our day-to-day lives. As these events, including festivals, fairs and agricultural shows are attended by people of all ages they provide an ideal setting for food environment reform.
The Western Australian School Canteen Association Inc. (WASCA) provides a support service to Healthway funded organisations to implement strategies to create healthier food environments at community events.

**Methods:** The advisory service, menu and recipe assessments, resources and tools aim to empower event organisers to increase access to healthy food and drinks at their events. Healthier food vendors are identified to attend and a range of strategies are implemented to promote the sale of healthier options.

**Results:** Since 2017, WASCA engaged with 124 events across the state attended by an estimated 1.8 million Western Australian’s. Project successes include 35 food vendors listed in the Healthier Vendor Guide; marketing strategies (posters; social media) to promote healthier vendors and healthy food, and event competitions. More recently, WASCA has been working with event organisers and vendors to remove from display or eliminate sugary drinks at events.

The sugary drinks strategy in particular, challenges community norms and encourages behaviour change, which can be intricately without compromising community expectations and vendor profits.

**Conclusion:** Having the opportunity to work with event organisers and food vendors through Healthway’s sponsorship program has enabled reform, creating supportive food environments in this setting.

**P2.004 - Early life vegetable preference development: Review of the science and current guidelines.**

**Authors:** Mrs Claire Gardner¹, Dr Lucy Bell¹, Dr Astrid Poleman², Dr David Cox³, Miss Esther Tian⁴, Ms Maeva Broch⁴, Associate Professor Saravana Kumar⁵, Associate Professor Rebecca Golley⁴

**Affiliations:** ¹Flinders University, College of Nursing and Health Sciences, Adelaide, Australia, ²CSIRO, Agriculture and Food, North Ryde, Australia, ³CSIRO, Health and Biodiversity, Adelaide, Australia, ⁴University of South Australia, School of Health Sciences, Adelaide, Australia

**Abstract:**

**Background:** Less than 5% of 4-5 year old children meet vegetable recommendations. Development of vegetable preferences begins during pregnancy, lactation and the complementary feeding periods. Governments and professional organisations have guidelines which provide guidance on appropriate nutrition during the early years that could provide leverage points for encouraging acceptance of vegetables. This project aimed to review the scientific evidence on early vegetable preference development within the context of current guidelines.

**Methods:** Two activities 1) an umbrella review of the scientific evidence and 2) a desktop review of the grey literature identifying relevant guidelines, were undertaken. These were mapped and evaluated against a framework to identify effective strategies and the level of adoption of evidence within current guidelines.

**Results:** Strategies including repeated exposure, role modelling, availability and accessibility and non-food rewards are effective in increasing children’s familiarity with vegetables. Strategies that showed promise include in-utero exposure, the commencement of complementary feeding with offering vegetables and increasing familiarity through vegetable-based picture books. Most guidelines provided nutritional advice but overall lacked specificity for vegetables. Where advice was vegetable-specific, practical details on how to offer and promote vegetable to increase their acceptance was limited.

**Conclusions:** Gaps in advice to encourage the acceptance and consumption of vegetables exist. Current Australian guidelines could be strengthened by incorporating more practical tips and feeding advice. Next steps will involve stakeholder engagement to identify opportunities to incorporate newly researched strategies to improve acceptance and consumption of vegetables in children resulting in long-term health benefits.

**P2.005 - Ultra-processed food and body fat from 6 to 11 years: cohort study**

**Authors:** Dr Caroline dos Santos Costa¹,², Dr Maria Cecilia Formoso Assunção³, Dr Christian Loret de Mola³, Ms Juliane de Souza Cardoso³, Dr Alicia Matijasevich⁴, Dr Aluídio J D Barros⁵, Dr Carlos A Monteiro¹,², Dr Iná Silva Santos¹

**Affiliations:** ¹Department of Nutrition, School of Public Health, University Of São Paulo, São Paulo, Brazil, ²Center for Epidemiological Research in Nutrition and Health, Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil, ³Post-Graduate Program in Epidemiology, Federal University of Pelotas, Pelotas, Brazil, ⁴Post-Graduate Program in Public Health, Federal University of Rio Grande, Rio Grande, Brazil, ⁵Post-Graduate Program in Biochemistry and Bioprospecting, Federal University of Pelotas, Pelotas, Brazil, ⁶Department of Preventive Medicine, Faculty of Medicine FMUSP, University of São Paulo, São Paulo, Brazil

**Abstract:**

**Background/aims:** Ultra-processed food consumption and obesity has been highlighted as an important relationship to public health. We aimed to evaluate the association between ultra-processed food consumption and body fat from six to eleven years of age.

**Methods:** We assessed the association between ultra-processed food consumption (from food frequency questionnaires) and body fat (measured by Air-displacement plethysmography) from six to eleven years of age, among participants of The Pelotas-Brazil 2004 Birth Cohort. The NOVA classification was used to classify foods according to the processing degree. Body fat was evaluated relatively to the height using fat mass index (FMI). Generalized estimating equations were used to answer the main research question and mediation analysis were run to assess the direct and indirect effect of ultra-processed food in body fat.
Results: At full-adjusted analysis, an increase of 100 grams in contribution from ultra-processed food to daily food intake between six and eleven years was associated to a gain of 0.14 kg/m² in FMI, in the same period. After allowing for confounders, 58% of the effect of ultra-processed food intake at six years over the change in FMI between six and eleven years was mediated by its caloric content.

Conclusions: There is an important direct effect of the caloric content of ultra-processed food over the FMI from childhood to early adolescence. Besides its direct energy contribution, there may be other pathways linking this association.

P2.006 - Non-Nutritive Sweeteners consumption by Chilean pre-schoolers before the Food Labelling Law

Authors: Carolina Venegas-Hargous1, Marcela Reyes1, Lindsay Smith-Taille4, Carmen Gloria González1, Camila Corvalán1

Affiliations: 1Institute Of Nutrition And Food Technology, University of Chile, Santiago, Chile, 2Carolina Population Center, University of North Carolina, Chapel Hill, USA

Background/aims: Obesity prevention policies like food labelling can promote food reformulation to replace added sugars with non-nutritive sweeteners (NNS). Our aim was to describe the consumption of six NNS in Chilean pre-schoolers before the implementation of a national obesity prevention law and assess its association with sociodemographic and anthropometric characteristics.

Methods: 24-hour recalls obtained in 959 low-medium income Chilean pre-schoolers were linked to NNS content information obtained through a photographic record of packaged foods (n=12,233). NNS daily intakes were calculated and compared against their acceptable daily intake (ADI, JECFA). Main food sources of each NNS were described. Finally, associations between NNS consumption and sociodemographic and anthropometric characteristics of the sample were determined.

Results: Sixty-eight percent of the pre-schoolers consumed NNS daily; Aspartame (2.5 mg/kg/day), Sodium Cyclamate (1.6 mg/kg/day) and Stevia (1.2 mg/kg/day) were the most consumed. Median daily intakes of all NNS studied were below the recommendations; in contrast, among high-level consumers (p95), 33 pre-schoolers exceeded the ADI for Stevia. Beverages and dairy products were the main sources of NNS in pre-schoolers’ diet. A higher tendency to consume NNS was seen in boys, obese children and those whose mothers had a high level of education compared to girls, normal-weight children and those whose mothers were less educated; however, none of the associations reached statistical significance (p>0.05 for all variables).

Conclusions: NNS consumption was frequent among Chilean pre-schoolers. Continuous monitoring of NNS consumption is essential given the recent implementation of obesity prevention actions that can promote food reformulation.

P2.007 - Marketing of food products high in sodium on Brazilian free-to-air television

Authors: Ms. Fernanda Helena Marrocos Leite1,2, Dr. Lais Amaral Mais1, Ms. Julia Soares Guimarães1, Ms Marina Oliveira Santana3, Dr. Paula Horta Martins4, Dr. Rafael Moreira Claro5, Dr. Ana Paula Bortoletto Martins1,2

Affiliations: 1Brazilian Institute for Consumers Defense (Idec), São Paulo, Brazil, 2Center for Epidemiological Studies in Health and Nutrition (Nupens), University of São Paulo (USP), São Paulo, Brazil, 3Postgraduate Program in Nutrition and Health, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil, 4Nutrition Department, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil

Abstract:

Background/Aims: Low-quality diets are one of the main contributors to the development of non-communicable diseases. In Brazil, sodium consumption exceeds the daily World Health Organization’s recommendation by more than twice. Therefore, significant reductions in mean population sodium intake have become a priority action within the United Nations Decade of Action on Nutrition. This study aimed to investigate the marketing of food products high in sodium in Brazilian television.

Methods: Cross-sectional study based on the International Network for Food and Obesity/Non-Communicable Diseases Research, Monitoring and Action Support (INFORMAS) protocol. A total of 432 hours on the three major Brazilian free-to-air television channels was recorded from April 1st to 30th 2018 (for eight days, from 6am to 12am). All food-related ads were coded using a systematic approach, and all processed and ultra-processed food products classified according to the Pan-American Health Organization (PAHO) nutrient profiling model as “excessive” or “not excessive” in sodium (≥1 mg of sodium: 1 kcal).

Results: A total of 1,610 food and beverage ads were broadcasted during the selected period. Processed and ultra-processed food products represented 1.6% and 78.9%, respectively, of all products advertised on Brazilian television. Over half (52.8%) of these products did not meet the PAHO criteria for sodium. The most frequently advertised food categories that exceeded predetermined thresholds for this nutrient were: convenience foods, processed meats, cheese, fruit-flavored drinks, sauces/dressings and salty snacks.

Conclusions: The findings of this study demonstrate that the Brazilian population is highly exposed to the marketing of ultra-processed food products excessive in sodium.
P2.008 - ‘It makes me feel motherly’ - Breastfeeding and motherhood identity

Authors: Konsita Kuswara1, Professor Tess Knight2, Professor Karen Campbell1,2, Dr Kristy Bolton3, Dr Miaobing Zheng1,2, Associate Professor Kylie Hesketh1,3, Dr Rachel Laws1,2

Affiliations: 1Institute for Physical Activity and Nutrition, Burwood, Australia, 2Centre for Research Excellence in the Early Prevention of Obesity in Childhood, Sydney, Australia, 3Cairnmillar Institute, Hawthorn East, 3123, 4Global Obesity Centre, Geelong, Australia

Abstract:
Background: Exclusive breastfeeding is rarely achieved among Chinese Australian mothers, even when they intended to breastfeed. A better understanding of the context of formula introduction in the early weeks of birth can provide a deeper insight into how Chinese Australian mothers can be best supported.

Method: An interpretative phenomenological analysis approach was used to examine the lived breastfeeding experiences of 11 first time Chinese mothers in Australia. All mothers intended to breastfeed and the experiences of those who breastfed exclusively were compared to those who introduced formula in the first week after birth.

Results: Regardless of how they fed, all mothers made sense of their breastfeeding experience in relation to their identity as a mother. Breastfeeding was understood broadly in three categories: breastfeeding as a pragmatic decision to feed a child but with little personal significance to the mother; breastfeeding as an important way to externally validate her that she was a ‘good mother’; breastfeeding defined their motherhood identity. Greater persistence and enjoyment of breastfeeding was most evident when it was essential to their definition of motherhood. In contrast, when breastfeeding had less personal meaning, mothers experienced higher mental stress with breastfeeding and thus infant formula was introduced to mitigate breastfeeding related stress.

Conclusions: Chinese Australian mothers are most motivated to breastfeed exclusively when it is connected deeply to their personal identity as a mother. There is a need for further discussions on ways to encourage greater intrinsic motivations to breastfeed among Chinese Australian families.

P2.009 - Creating supportive environments that promote healthier lifestyles: A community led approach

Authors: Damian Kukulies1, Clare Brown1, Kani Thompson1

Affiliations: 1Apunipima Cape York Health Council, Cairns, Australia

Abstract:
Background: The Healthy Communities project aimed to engage Aboriginal and Torres Strait islander communities in Cape York in creating supportive environments to address high sugary drink consumption, smoking and physical inactivity.

Methods: Community-led action with particular focus on engagement with local Councils and establishment of local community advisory committees (CACs) was central to project development and implementation. The CACs were a dynamic group of community representatives from a range of sectors who provided significant input into project activities and provided rich cultural guidance. They were vital to contributing to community readiness to prepare for implementation.

Results: High community engagement across three Cape York communities has been seen throughout the project. Community engagement and awareness raising activities to “soften the ground” led to further discussions with Councils and stakeholders to address public health policy. These included discussions on smoking policies, sugary drink policies (such as no sugary drinks at community events) and installing infrastructure to encourage healthy habits such as water fridges, chilled water bubblers and walkway signage to promote physical activity.

Conclusion: Community-led action is fundamental to successful public health projects that work towards improved health outcomes. This process gave community an opportunity to be part of leading solutions to community identified issues and led to strengthened partnership between the project team and community, particularly the local Councils who became more involved in the promoting the health agenda. This project will continue to develop and be refined with the next phase focusing on the remote food environment.

P2.010 - Perceived barriers and facilitators of fruit and vegetable consumption in Argentina

Authors: Ph.D Luciana Castronuovo1, MPH Victoria Tiscornia4, Bs Leila Guarnieri1, LLD Belén Rios1, MPH Lorena Allemandi1

Affiliations: 1Fic Argentina, Ciudad De Buenos Aires, Argentina

Abstract:
Background/Aim: In-depth knowledge of the perspectives, attitudes and beliefs of consumers’ is germane to policy design and implementation to increase fruit and vegetable (FV) intake. The objective of this study was to explore the social determinants of FV consumption among the adult population in the Metropolitan Area of Buenos Aires (AMBA) with an emphasis on barriers and facilitators to increase FV intake.

Methods: focus groups (n 6) with 40 men and women aged 25 to 60 years who participate in food purchase decisions within the household and live in the AMBA with diverse educational backgrounds.
**Results:** The main perceived barriers to increase vegetable consumption were time constraints in meal preparation, insufficient knowledge on preparing vegetable-based meals, habituation, the perception that vegetable-based foods are less filling, lack of appeal of (FV), and the overwhelming supply and advertising for ultraprocessed foods. Costs were a concern mainly for fruit purchases, but the connection between price and fruit consumption remains unclear. Initiatives aimed at increasing FV availability in school settings and work environments and providing ready-to-eat items were the most common perceived facilitators for increasing FV consumption.

**Conclusions:** Interventions designed to counter obesogenic environments and shape healthy habits early in life could be the most cost-effective to increase FV intake among adults. Suggestions include school-based educational programs, restricting advertising of unhealthy food, increasing the appeal of FV products through celebrity endorsement and other advertising techniques, and increasing FV availability in the workplace and other institutional settings. FV consumption may be differentially determined.

P2.011 - Development of conceptual model of the perceived home food environment in Brazil

**Authors:** Msc Larissa Alvadia, PhD Rosane Grieb, Dr Leticia Cardoso

**Affiliations:** 1Oswaldo Cruz Foundation, Rio De Janeiro, Brazil

**Abstract:**

**Background:** The characteristics of the food environment are measured objectively and subjectively. Subjectively the perception of the individuals is evaluated. Currently in Brazil there is no conceptual model of the perception of the home food environment.

**Aims:** To develop a conceptual model on the perception of the home food environment in the Brazilian reality.

**Methods:** This is an exploratory research. The search for instruments that measure the domestic, adult-focused, food environment occurred between September 2017 and July 2019, using multiple search tools including Pubmed, Lilacs, PsycINFO and Scielo. Specialist in epidemiology and nutrition were consulted.

**Results:** A conceptual model was developed. It includes distal factors: past influences (history, culture, etc.), government (politics, economy, incentives, etc.); individual characteristics; and subjective factors such as the perceptions of: food and nutritional knowledge, time available for cooking, the community food environment, availability of home equipment for preparing, storage and access, food availability and accessibility in the home.

**Conclusions:** This is a work in progress, this version attempts to summarize the factors related to the perception of the home food environment. Better understanding of the relationship between environment and individual perceptions can bring important information about the different influences of the physical, social and personal choices and help construct a more equitable and sustainable domestic food environment.

**Significance to public health nutrition:** Assessing this environment allows a greater understanding of the possible causes of excessive energy consumption and may support the development of effective interventions for the prevention and treatment of obesity and other diseases.

P2.012 - Nutrition priorities for infants and young children in a Queensland Aboriginal Community

**Authors:** Mrs Berneice Fitzpatrick, Miss Julietta Close, Miss Madeleine Estell, Ms Sophie Sellars

**Affiliations:** 1University Of Queensland, Brisbane, Australia, 2Darling Downs Health, Kingaroy, Australia

**Abstract:**

**Background/aims:** Adequate nutrition and healthy eating behaviours in early life can improve health outcomes through adulthood, including reduced risk of: obesity, micronutrient deficiencies, malnutrition and chronic disease. This quality project focussed on identifying nutritional priorities for infants and young children in a South East Queensland Aboriginal community. Barriers to eating a diet within NHMRC guidelines were also explored.

**Methods:** Three University of Queensland postgraduate students adapted the validated Menzies Remote Short-Item Dietary Assessment Tool (MRSDAT) to survey parents and carers of young children (newborn–4 years, n=40). Surveys were conducted at three locations across an Aboriginal community in South East Queensland throughout May 2019. Additionally, semi-structured interviews with key stakeholders (n=7) and observational data were collected and analysed.

**Results:** Results suggest low rates of breastfeeding, inappropriate introduction of complementary foods, and overconsumption of discretionary items relative to the NHMRC and WHO guidelines. Dietary adequacy and intake of core foods was varied across data collection methods. The timeframe for this activity was a notable limitation, contributing to low community engagement.

**Conclusion:** Improved childhood nutrition goes beyond reducing hunger and promoting good health and wellbeing, potentially reducing health and social-economic inequities presently experienced by Indigenous Australians. Adequate nutrition in early life improves mental and physical health, thus impacting on education and subsequently economic opportunities. Further community consultation and evaluation of the highlighted nutrition priorities, community strengths, and the current barriers is warranted to best inform future nutrition programs.
**P2.013 - Menu planning practices in childcares services – factors associated with menu compliance**

**Authors:** Dr Alice Grady1,2,3, Dr Fiona Stacey1,2, Dr Kirsty Seward1,2,9, Dr Meghan Finch1,1,2,4, Dr Jannah Jones1,2,9, Dr Sze Lin Yoong1,2,9  

**Affiliations:** 1University Of Newcastle, Callaghan, Australia, 2Hunter New England Population Health, Wallsend, Australia, 3Hunter Medical Research Institute, Newcastle, Australia, 4Centre for Evidence and Implementation, Pyrmont, Australia  

**Abstract:** Despite recommendations, early childhood education and care services do not plan menus in accordance with sector dietary guidelines.  

**Aims:** This study aimed to examine the following among Australian long day care services: i) menu planning practices; ii) prevalence of menu compliance with sector dietary guidelines; and iii) menu planning practices associated with higher menu compliance with sector dietary guidelines.  

**Methods:** Long day care services within Hunter New England, NSW participated in a pen and paper survey assessing menu planning practices and sociodemographic and service characteristics. Service’s two-week menus were assessed for their compliance with sector dietary guidelines, based on the number of servings of food groups provided per child, per day.  

**Results:** Staff from 72 services completed the survey, and 69 provided a copy of their menu. Results indicated that the service cook was fully responsible for planning the menu in 43% of services, and 57% had received written support to assist with menu planning. Service menus were compliant with an average of 0.68 out of 6 food groups. In poisson regression models, a shorter menu cycle length (p=0.04) and the receipt of training opportunities to support menu planning (p<0.01) were significantly associated with higher menu compliance.  

**Conclusion:** Menu compliance with sector dietary guidelines was low among participating services. The implementation of practices such as shortening of the menu cycle and the provision of training opportunities may assist in the planning of menus that are more compliant with dietary guidelines to improve child nutrition in this setting.

**P2.014 - Childhood stunting and vegetation changes in DR Congo**

**Authors:** Mr Freddy Bangelesa1, Prof. Anne Hatløy1, Prof. Mala Ali Mapatano1, Prof. Paulin Mutombo1  

**Affiliations:** 1Department of Nutrition, School of Public Health, University of Kinshasa, DR Congo, 2Faso, Institute for Labour and Social Research, Box 2947 Toyen, 0608, Norway  

**Abstract:** Prevalence of child stunting in the Democratic Republic of Congo (DRC) is among the highest in the world. Factors determining stunting are much documented. However, few studies have attempted to understand the implications of environmental changes on stunting. This study aim to measure the impact of vegetation changes that persist even in the face of enormous nutritional interventions at the national level.  

We used data from DRC-DHS 2013–14 collected from the nationally representative cross-sectional survey conducted. Height-for-Age Z score was calculated and classified according to the WHO guideline. The satellite derived product Normalized Difference Vegetation Index (NDVI) of the growing season (September–November–December) was used as a proxy of vegetation good condition (independent variable). We created a 10 km buffer around each DHS cluster centroid to extract the corresponding NDVI value. The association between stunting and NDVI was assessed using Mixt effect logistic regression with cluster as random effect. We adjusted the model for mother’s education, mother’s work status, national wealth quintile, child’s age in months and mother’s previous birth interval.  

The results revealed that the NDVI was negatively associated with stunting. For every unit increase in NDVI, there is a 65% percent decrease in stunting (OR = 0.35; 95% CI = 0.09-1.31). However, there is a lack of precision because of the huge confidential interval. Increasing the power of the study may bring more light in this research.  

This study can further help policy makers to understand the consequences of environmental changes on childhood nutrition.

**P2.015 - Navigating food systems and changing dietary patterns: exploring food literacy in Samoa**

**Authors:** Ms Grace Kammholz1, Dr Dana Craven4, Dr Ramona BoodooSingh2, Associate Professor Safua Akeli3, Ms Jyothi Abraham2, Dr Sarah Burkhart1  

**Affiliations:** 1University Of The Sunshine Coast, Sippy Downs, Australia, 2National University of Samoa, Apia, Samoa  

**Abstract:** Background/aims: Over the last six decades Samoan food systems have undergone a dramatic nutrition transition with dietary patterns changing concurrently with increased rates of diet-related non-communicable disease. Policy action and environmental interventions play an important role in improving access to, and consumption of healthy foods, however the success of these is influenced by an individual’s ability to source, select, prepare and eat. This study aimed to investigate food literacy among Samoan adults.
Methods: A cross-sectional interviewer-administered survey of a convenience sample of 150 Samoan adults (≥20 years) in shopping centres, markets, schools, and bus stations across Upolu and Savaii assessed four domains of food literacy (plan/manage, select, prepare and eat).

Results: Fifty percent of participants reported planning meals and 80% budgeted for food. Most (68%) knew where to find nutrition information on foods, with 55% using this most or all the time. Over half (52%) of participants always feel confident cooking a variety of foods. Majority (82%) reported knowing how to store food to make it last longer, however 75% agreed cooked foods can be stored at room temperature overnight. Over 90% of people agreed or strongly agreed that food had an impact on their health. A small proportion (10%) identified the three Pacific Guidelines for A Healthy Diet and Lifestyles food groups, with 1.4% identifying two protective foods.

Conclusions: Understanding the ability of Samoans to plan/manage, select, prepare and eat food is an important consideration for future interventions aiming to assist this population to navigate changing food systems.

P2.016 - Exploring early childhood educators perceptions’ about a health promotion nutrition online course

Authors: Mrs Ana Renda1

Affiliations: 1Sydney Local Health District, Randwick, Australia

Abstract:

Background/Aims: The prevalence of childhood overweight and obesity has steadily increased globally since 1980. In Australia, childhood obesity is one of the most important public health issues with approximately, 25% of 2 – 3-year olds and 20% of 4 – 5-year olds overweight or obese. A World Health Organization report identified centre-based childcare services as an integral setting for prevention programs. To our knowledge, research investigating key determinants of implementation of healthy eating and physical activity programs has not been conducted in Australian childcare settings.

The aim of this study is to explore the barriers and enablers to implementing a health promotion program following an online training course.

Methods: In-depth qualitative interviews were conducted to early childhood education and care educators. They were distributed into 3 groups: those who completed the Munch & Move live webinar course from 2016-2018; those who registered but did not complete it; and those who did not register nor completed it. The interviews will be transcribed and thematic analysis techniques will be used to analyse data.

Results: Data collection has been completed. Data analysis is being conducted. Results will be available to present at the conference.

Conclusions: As health promotion program implementation and capacity building are steering towards online education, there is a need to explore the agents’ perspective on the most effective training delivery mode. This study will potentially provide recommendations to improve delivery of nutrition and physical activity courses to early childhood educators that might have an impact on children’s health outcomes.

P2.017 - Nutrition Label Use and Factors Affecting It Among Selected Adults in Philippines

Authors: Ms. Denniese Sy1

Affiliations: 1University Of The Philippines Manila, Manila City, Philippines

Abstract:

Background/Aims: Unhealthy diet is one of the risk factors in the development of non-communicable diseases; the leading causes of death worldwide. As one of the recommendations, nutrition labels serve as guide for better quality of food selection through the provision of nutrition information. Hence, this study aimed to determine the prevalence of nutrition label use and determine if socio-demographics, health-related factors, lifestyle factors and other factors were associated with nutrition label use among adults in selected communities in Los Banos, Laguna.

Methods: This analytic cross-sectional study conducted face-to-face interview among 440 adults, aged 18 to 59 years old; selected through a two-stage sampling design in the top four communities with highest population in Los Banos, Laguna, using a developed questionnaire. Data were encoded using MS Excel and were analyzed using STATA software.

Results: Study findings revealed that nutrition label use among adults in the selected communities was 87.73%. Factors found to be associated with nutrition label use using multiple logistic regression were: 1) intention to use nutrition label (OR:4.37; 95% CI:1.77 - 10.82), 2) enough perceived time-spent on shopping (OR: 2.16; 95% CI: 1.17 - 4.01) and 3) searching for specific information (OR: 4.77; 95% CI: 2.55 - 8.93).

Conclusions: These study findings can be used in promoting and increasing nutrition label use in the Philippines and serve as basis for improvement of nutrition labeling policies. Moreover, this study can serve as a reference in the development and strategy-planning of interventions and programs especially in promoting healthy diets among Filipinos.

P2.018 - A cross sectional study of the nutritional quality of school lunch purchases

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P2.019 - Nutrition Practitioners Perspectives of Nutrition Education and Knowledge of Rural Pregnant Women

Authors: Ms. Sydney Van Scyoc, Dr. Danielle Nunnery

Affiliations: Appalachian State University, Boone, United States

Abstract: Background: Women are motivated to make dietary changes during pregnancy but may lack access to reliable information. Prenatal counseling from a Registered Dietitian is associated with improved pregnancy outcomes. The objective of this study was to address inadequate diet quality among rural pregnant women by surveying nutrition professionals regarding their delivery of nutrition education to this population. Insight on these topics from a practitioner viewpoint will help to expose gaps in nutrition care and current knowledge.

Methods: North Carolina nutrition professionals (N=73) working with pregnant women were emailed and asked to complete an online survey about their provision of nutrition services to pregnant clients.

Results: Respondents named cost (91%) and lack of time to cook (83%) as the most influential barriers their clients face when attempting to make dietary changes. The topics most asked about by clients were the same topics practitioners thought clients needed more guidance on: general healthy nutrition for pregnancy (72%), lactation (57%), and appropriate weight gain (76%). Practitioners cited pamphlets, websites, and telehealth counseling as potentially well accepted education methods.

Conclusion: Educational interventions for rural pregnant women should teach general nutrition and appropriate weight gain while providing guidance on time and cost-efficient approaches. Delivering information through technology could be an effective, convenient way for nutrition professionals to engage clients.


P2.020 - Conceptual model development of the perceived home food environment in Brazil.

Authors: PhD Leticia Cardoso de Oliveira, MSc Larissa Alvadia, PhD Rosane Harter Griep

Affiliations: ENSP-FIOCRUZ, Rio De Janeiro, Brazil

Abstract: Background/aims: Currently in Brazil the home food environment is little explored. This study aims to develop a conceptual model of the perception of the home food environment in the Brazilian reality.

Methods: This is an exploratory research. The search for models that discuss the domestic, adult-focused, home food environment occurred between September 2017 and July 2019, using multiple search tools including Pubmed, Lilacs, PsycINFO and Scielo. Specialist in epidemiology and nutrition were consulted.
Results: A conceptual model was developed including distal factors: past influences (history, culture, etc.), government (politics, economy, incentives, etc.); personal and sociodemographic characteristics; and subjective factors such as the perceptions of: food and nutritional knowledge, time available for cooking, the community food environment, availability of home equipment for preparing, storage and access, food availability and accessibility in the home.

Conclusion: This is a work in progress, this version attempts to summarize the factors related to the perception of the home food environment. Better understanding of the relationship between environment and individual perceptions can bring important information about the different influences of the physical, social and personal choices and help construct a more equitable and sustainable domestic food environment.


P2.021 - Nutritional Status and Socio-Economic Factors among Pregnant Adolescents in Ashanti Region, Ghana

Authors: Reginald Annan¹, Charles Apprey¹, Anthony Edusei¹, Linda Gyimah¹

Affiliations: ¹Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Abstract: Background: Birth outcomes have been linked to maternal general health including nutrition as well as maternal age during pregnancy. Nutritional status of both adolescents and adults are likely to be influenced by socio-economic status.

Objective: To assess the nutritional status and socio economic factors of pregnant teenagers.

Method: A cross-sectional comparative study involving 416 pregnant adolescents (13 to 19 years) were recruited from selected health centres in rural and urban Ashanti Region and between 1 to 32 gestational weeks of pregnancy. Assessment of dietary intake and nutritional status and their factors were done using 24-hour dietary recalls, MUAC measurements and a structured questionnaire

Results: The mean age of the population was 17.5 years old, with about 20% having been pregnant before. Three-fourths of the population had no income, only 9% were married and about 21% had secondary education. Close to a third (28%) of the pregnant teenagers experienced severe hunger and a mean Lived Poverty Index of 1.45 indicating a high-moderate lived poverty was found. More than 50% of pregnant teenagers had dietary energy, protein, iron, calcium and folic acid intakes below recommended. Using MUAC, less than 10% were underweight. Anaemia levels was 66.1% in rural-living adolescents, compared to 74.1% among those in urban areas. Only 9.8% of the rural and less than 1% of the urban adolescents had high dietary diversity.

Conclusion: Poor nutritional status and poverty were common in the pregnant adolescents. The high levels of anaemia recorded needs to be addressed to avoid undesirable birth outcomes in these pregnant adolescents.

P2.022 - An audit of junk food advertising on free-to-air TV in Hong Kong

Authors: Miss Vivien Hui In Cheung¹, Dr Jimmy Chun Yu Louie¹

Affiliations: ¹The University Of Hong Kong, Pokfulam, Hong Kong

Abstract: Background/Aims: To study the extent and nature of television junk food advertising (both commercial and product placement) to children in Hong Kong.

Methods: Television data were recorded from two major free-to-air television channels in Hong Kong between 6:00 to 24:00 during October 2018 to January 2019. A total of 8 non-consecutive days (4 weekdays and 4 weekend days) was selected for analysis. Pearson’s χ² tests were applied to compare the pattern of food advertisements for different program categories, day of week, television viewing periods (children’s time and prime time), and the use of persuasive promotional techniques.

Results: Of 10,348 commercials identified, 18.4% were for foods, and 35.2% of these were for unhealthy items. The most frequently advertised unhealthy food was fast foods (12.3%) while the advertisement for baby and toddler milk formulae (19.5%) was the most abundant in Hong Kong. Higher non-core foods to core foods ratio was found during prime time compared with children’s time (7 vs. 4). Common promotional techniques in other countries were not frequently used in Hong Kong. Most food product placements recorded were for non-core foods, fast foods, and unhealthy recipe additions, and half of these included interactions with the products.

Conclusions: In both commercials and product placements, non-core food was the most frequently advertised in Hong Kong, while core food advertising was infrequent. Regulations on junk food advertising in Hong Kong should focus on prime time, as well as on food product placements to reduce children’s exposure to persuasive junk food marketing.

P2.023 - Dietary knowledge and practices of pregnant women in Popokabaka Health area, DRC
Background/aims: Adequate and healthy diet during pregnancy is essential for the health of both mother and baby. Poor dietary intake during pregnancy contributes to maternal malnutrition, particularly in less developed countries. In Kwango Province (DRC), malnutrition, including macro and micronutrient deficiencies in pregnant women remains a serious public health problem. The aim of this study was to explore dietary knowledge and practices of pregnant women in this area.

Methods: This study adopted a qualitative approach. Pregnant women attending antenatal care were selected to participate. Nine in-depth interviews with pregnant women, six key informant interviews with health workers and community health workers were conducted. Husbands and older women participated in four focus group discussions. Triangulation method and thematic analyses were used.

Results: Overall, women had limited knowledge about diet during pregnancy. Hospital, health centers and the community were their main sources of information. Women's feeding practices were characterized by a very low animal proteins, maize and fruits consumption. Cassava was the most common daily food. Food taboos, lack of interest in antenatal care and quality of nutritional education via care facilitators were identified as factors influencing dietary practices. According key informants, education level, level of poverty and scarcity of crops also contribute to poor dietary knowledge and practices.

Conclusions: Socio-environmental factors play an important role in pregnant women dietary practices. Strengthening antenatal care and community health workers programs, farmers' livelihoods support and promoting variety of crops could improve women knowledge and dietary practices.

P2.024 - Determinants of food choice in a transitioning food system: Samoan perspectives

Authors: Dr Sarah Burkhart1, Dr Ramona Boodoosingh2, Dr Safua Akeli3, Ms Jyothi Abraham2, Ms Grace Kammholz4, Dr Dana Craven5

Affiliations: 1University of the Sunshine Coast (USC), Sippy Downs, Australia, 2National University of Samoa (NUS), Apia, Samoa, 3Centre for Samoan Studies, National University of Samoa, Apia, Samoa

Abstract:

Background/aim: Over time, transition from a diet based on traditional foods to a Westernised style of eating has coincided with a steady rise in the prevalence of obesity and subsequent chronic disease in Samoa, a small Island nation in the South Pacific. While there is recognition of the associated health outcomes of this transition, there is very little information on the complex decision-making process of food choice in this population which is important when considering promotion of behaviour change. This study aimed to explore determinants of food choice in an adult Samoan population.

Methods: An interviewer administered questionnaire asked 150 adult Samoans to rate the importance of 24 determinants related to familiarity, sensory appeal, food composition, access/availability/convenience/cost, health outcomes and mood on food choice.

Results: Most participants considered foods that support health, for example those high in micronutrients (96%), protein (85%) and dietary fibre (74%) as very important. Sensory appeal and mood were also very important with >90% rating taste, appearance and texture very important and eating food that makes them happy (92%). Eating childhood foods was rated not at all/a little important by 11%. Knowing where food comes from was considered very important (95%) while easy preparation was considered more important (92%) than easy availability (86%).

Conclusions: Food choice is complex and in a transitioning food environment, several determinants likely influence Samoan adults. Further exploration is warranted to gain a deeper understanding of the relationship between food choice and health outcomes in this changing food environment.

P2.025 - Ultra-processed food consumption during childhood and asthma in adolescence.

Authors: PhD Catarina Machado Azeredo1,2, PhD, MD Marianna Cortese2, PhD Caroline dos Santos Costa3, PhD, MD Kjetil Bjornevik1, PhD, MD Aluisio J. D. Barros1, PhD Fernando C Barros1,4, PhD Iná Santos3,5, PhD, MD Alicia Matijasevich4,6

Affiliations: 1Universidade Federal De Uberlândia, Uberlandia, Brazil, 2Harvard T.H. Chan School of Public Health, Boston, United States, 3Post-graduate Program in Epidemiology, Federal University of Pelotas, Pelotas, Brazil, 4Post-graduate Program in Health and Behavior, Catholic University of Pelotas, Pelotas, Brazil, 5Post-graduate Program in Paediatrics and Child Health, Pontificia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil, 6Departamento de Medicina Preventiva, Faculdade de Medicina FMUSP, Universidade de São Paulo, Sao Paulo, Brazil

Abstract:

Background/aims: It remains unknown whether the consumption of ultra-processed food (UPF) increases the risk of asthma among adolescents. Our objective was to investigate whether UPF consumption during childhood was associated with wheeze, asthma and severe asthma in adolescence.

Methods: We included 2,190 11-year-old children from the 2004 Pelotas Birth Cohort Study, without asthma at the age of 6 years. Consumption of UPF was assessed by Food Frequency Questionnaires at 6- and 11-year follow-ups. Wheeze, asthma and severe asthma data were assessed at 11-year follow-up. We classified foods according to the processing degree in UPF. We
used logistic regression to estimate the odds ratios (OR) and 95% confidence intervals (CIs), for the associations between UPF and the asthma outcomes.

Results: Cumulative incidence of wheeze and asthma between 6 and 11 years were 12.7% and 23.2%, respectively. In prospective analyses, comparing children in the highest and the lowest quintile of UPF consumption at age 6, we found no association with wheeze (OR=0.85; 95% CI=0.54-1.34), asthma (OR=0.84; 95% CI=0.58-1.21), or severe asthma (OR=1.12; 95% CI=0.62 - 2.03) in early adolescence. In cross-sectional analyses, comparing adolescents in the highest and lowest quintile of UPF consumption at 11years, we found no association with wheeze (OR=1.12; 95%CI=0.72-1.75), asthma (OR=1.00; 95%CI= 0.7-1.44), or severe asthma (OR=1.05; 95%CI= 0.59 - 1.86).

Conclusion: Our study suggests that UPF consumption during childhood or adolescence is not associated with asthma or wheeze among adolescents. Future longitudinal research in different populations is needed to confirm our results. Funding: CNpq, CAPES, WHO, ABRASCO

P2.027 - Festive feasting and obesity: a systematic scoping review

Authors: Ms Christina Zorbas1, Ms Erica Reeve1, Dr Shaan Naughton1, Dr Jillian Whelan1, Dr Carolina Batis Ruvalcaba2, Dr Gade Waqa3, Professor Colin Bell1

Affiliations: 1Global Obesity Centre, School of Health and Social Development, Institute for Health Transformation, Faculty of Health, Geelong, Australia, 2CONACYT (Mexico Council for Science and Technology), Health and Nutrition Research Center, National Institute of Public Health, Mexico City, Mexico, 3C-POND, CMNHS Research, School of Public Health and Primary Care, Fiji National University, Suva, Fiji

Abstract: Background: Festive periods are characterised by extended social gatherings and feasting. While evidence indicates that weight gain occurs over these periods, the public health importance of feasting and the effectiveness of strategies to address festive weight gain are unclear.

Aims: To map the knowledge on festive feasting and inform future research priorities.

Methods: A systematic scoping review was conducted. Eight databases were searched to identify studies that describe how festive feasting contributes to weight-related outcomes, the mechanisms driving festive feasting, and interventions to promote healthy diets and weights over festive periods. The findings were narratively synthesised.

Results: Thirty-eight studies were reviewed. Of the 23 studies examining weight-related outcomes, 70% found significant increases in body weight over festive periods (range: 0.25-2.30kg). Increases were also found for body mass index, waist circumference, body fat and energy. Two studies reported increased purchase expenditures on less healthy foods over the Christmas holidays (by as much as 41%). Mechanisms driving festive feasting were hardly assessed (n=4 studies). Three interventional studies suggested that weight maintenance through festive periods can be achieved by self-monitoring or self-weighing.
Conclusions: Consistent evidence suggests that unhealthy weight-related changes occur over festive periods. With festive weight gain contributing to more than 50% of annual weight gain, public health interventions to prevent weight gain during festive periods could have widespread impact. While self-weighing may pose a feasible option to promote healthy weights and prevent non-communicable diseases, the scalability and sustainability of effective interventions requires further investigation, as do the drivers of festive feasting.

P2.028 - Exploring the food environment of Auki, Solomon Islands: A remote Pacific community

Authors: Ms Charis Bottcher, Dr Penelope Love, Dr Jillian Whelan, Professor Colin Bell, Ms Felicity Grainger, Ms Cherie Russell, Ms Meron Lewis, Professor Amanda Lee

Affiliations: 1Deakin University, Institute For Physical Activity and Nutrition, Waurn Ponds, Australia, 2Deakin University, Global Obesity Centre, School of Health and Social Development, Geelong, Australia, 3Deakin University, School of Exercise and Nutrition Sciences, Burwood, Australia, 4The Australian Prevention Partnership Centre, Sax Institute, Sydney, Australia, 5University of Queensland, School of Public Health, Herston, Australia

Abstract: The development of vegetarian societies in Bali is very rapid because it is supported by religious reasons. This study aimed to explore access, availability and food purchasing behaviours in Auki, Malaita.

Methods: Audits of 56 venues assessed food venue access (number, type, characteristics) and availability of items (type, brand, price, size, source, quality). Interviewer administered questionnaires were completed with 133 adult Auki residents investigating food purchasing behaviours (venue, transportation, expenditure, foods purchased, frequency) and decisions.

Results: Access to, and availability of foods from the three Pacific Guidelines for a Healthy Diet food groups were from markets, stores, road-side vendors/food bars and bakery but lacked diversity. Markets (n=70) and stores (n=45) were most popular for purchasing food, with walking most common for transportation (55%). Participants shopped more frequently for store than fresh foods (m=3.87 vs. m=3.25 times/week), spending $1-$200 (m=$56.12) Solomon Island dollars in the previous day. White rice was the most reported purchase (88%). Taste, freshness and family preference were considered more important in purchasing decisions.

Conclusion: Auki residents have access to, and availability of a range of foods, however lack diversity within food groups. Further investigation of remote food environments may assist with developing an understanding of food security to guide policy and interventions.

P2.029 - Dietary patterns, body mass index, and health effects of vegetarian societies

Authors: Dr. Ni Ketut Sutiari, Prof Ali Khomsan, Dr Hadi Riyadi, Mrs DP Yuli Kurniati, Prof Faisal Anwar

Affiliations: 1School Of Public Health, Faculty Of Medicine, Udayana University, Denpasar, Indonesia, 2Department of Community Nutrition, Faculty of Human Ecology, IPB University, Bogor, Indonesia

Abstract: The development of vegetarian societies in Bali is very rapid because it is supported by religious reasons. This study aimed to determine dietary patterns, assess the effects of vegetarian and non-vegetarian diets on health status and nutritional status of vegetarians and non-vegetarians.

This was an analytical study using a cross-sectional study design. This study was conducted from May 2018 to March 2019 in five of Regency in Bali. The samples were vegetarian and non-vegetarian men and women aged 40-65 years. Vegetarian and non-vegetarian dietary patterns were assessed using a semi-quantitative food frequency questionnaire. Health status such as fasting blood glucose and hemoglobin levels were examined through laboratory tests. Differences in food consumption, nutritional status, and health status between vegetarians and non-vegetarians were analyzed using the two-independent sample t-test. This study was fully funded by Neys-van Hoogstraten Foundation.

The results showed that more vegetarians (86.3%) consumed mung beans than non-vegetarian (36.3%). Consumption of milk and other dairy products was more commonly found in vegetarians. Based on BMI, overnutrition was found more in the non-vegetarian group than the vegetarian group, but undernutrition was found more in the vegetarian group (3.1%) than the non-vegetarian group (2.5%). Fasting blood glucose levels of non-vegetarians were higher than the vegetarian, and anemia was still found in vegetarian women (22.5%) than non-vegetarian women (2.5%).

The vegetarian dietary patterns had positive effects on nutritional status and health status. Adults could choose the vegetarian dietary patterns as a healthy choice of dietary patterns.

P2.030 - Healthy Diets in Rural Victoria, Australia — Cheaper than unhealthy alternatives, yet unaffordable.

Authors: Dr Penelope Love, Dr Jillian Whelan, Professor Colin Bell, Ms Felicity Grainger, Ms Cherie Russell, Ms Meron Lewis, Professor Amanda Lee

Affiliations: 1Deakin University, Institute For Physical Activity and Nutrition, Waurn Ponds, Australia, 2Deakin University, Global Obesity Centre, School of Health and Social Development, Geelong, Australia, 3Deakin University, School of Exercise and Nutrition Sciences, Burwood, Australia, 4The Australian Prevention Partnership Centre, Sax Institute, Sydney, Australia, 5University of Queensland, School of Public Health, Herston, Australia
Abstract:
Rural communities experience higher rates of obesity and reduced food security compared with urban communities. The perception that healthy foods are expensive contributes to poor dietary choices. Providing an accessible, available, affordable healthy food supply is an equitable way to improve the nutritional quality of the diet for a community, however, local food supply data are rarely available for small rural towns. This study used the Healthy Diets ASAP tool to assess price, price differential and affordability of recommended (healthy) and current diets in a rural Local Government Area (LGA) (pop 7000; 10 towns) in Victoria, Australia. All retail food outlets were surveyed (n = 40). The four most populous towns had supermarkets; remaining towns had one general store each. Seven towns had café/take-away outlets, and all towns had at least one hotel/pub. For all towns the current unhealthy diet was more expensive than the recommended healthy diet, with 59.5% of the current food budget spent on discretionary items. Affordability of the healthy diet accounted for 30–32% of disposable income. This study confirms that while a healthy diet is less expensive than the current unhealthier diet, affordability is a challenge for rural communities. Food security is reduced further with restricted geographical access, a limited healthy food supply, and higher food prices. Findings from this study support multiple nutrition-related Sustainable Development Goals, in particular #2 Zero Hunger, #3 Good Health and Well Being and #10 Reduced Inequalities.

P2.031 - Market structural trends of the packaged food industry in Australia since 1985

Authors: Dr Benjamin Wood1, Dr Gary Sacks1, Ms Iris Van Dam2, Dr Stefanie Vandevijvere3, Dr Phil Baker4, Dr Owain Williams5

Affiliations: 1Deakin University, Burwood, Australia, 2Sciensano, Ixelles, Belgium, 3University of Queensland, Brisbane, Australia

Abstract:

Background/aims: The packaged food industry has been identified as a major driver of the global epidemics of obesity and diet-related disease. In light of recent commercial determinants of health literature calling for increased scrutiny of the packaged food industry’s relative corporate power, this research aims to present a framework for monitoring market structural trends of the industry and apply it to the Australian context.

Methods: We will use a selection of industry-level (concentration, market share) and company-level metrics (size, profitability, ownership by financial actors, transnationality, employment, brand diversification), drawing from recent literature examining the role of transnational corporations in global food systems and Industrial Organization literature. All relevant mergers and acquisitions will be mapped starting from 1985. Data will be extracted from a selection of business databases, Australian Bureau of Statistics industry reports, and annual company reports.

Results: Results will be presented based on the aforementioned indicators. They are likely to indicate that market concentration in the packaged food industry has increased over time. Structural characteristic trends of dominant companies are likely to support the notion that their relative corporate power, notably their political power in policy-making spaces and market power across food systems, is increasing.

Conclusions: It is critical that the public health community systematically monitors the market strategies of packaged food industry given their role in driving the obesity and diet-related disease epidemics. Regulatory measures to limit anti-competitive behaviour and restrain corporate power may need to be explored as part of efforts to address the sustainable development goals.


Authors: Jennifer Busch-Hallen1, Emily Measures1, Judith Nihorimbere1, Jennifer Hatchard1, Rowena Sugay1, Bill Burns1

Affiliations: 1Nutrition International, NLIFT, Ottawa, Canada

Abstract:
Objective: If the SDGs are to be achieved, those aiming to make meaningful contributions must transcend the current approach, which is siloed by mandate, structure and financing.

NLIFT, through Nutrition International, is a ground-breaking business model that aims to break down silos and close the missed opportunities gap to improve access to evidence-based nutrition interventions, particularly for vulnerable and hard-to-reach groups.

Methods: The NLIFT approach is two-pronged. First, NLIFT reduces missed opportunities for nutrition impact. NLIFT does this by integrating proven nutrition interventions into new and existing large-scale networks and platforms that do not already focus on nutrition. Second, NLIFT increases financing for nutrition. NLIFT drives resources to nutrition that would otherwise be used in other areas. NLIFT requires partners to contribute matching funds, prioritizing investments where the leverage model is 2x or better.

Results: Through this bold approach, NLIFT has identified partnerships that aim to both increase coverage and impact at low cost, and improved outcomes for over 7 million beneficiaries (stacked benefits).

In its final year of implementation, NLIFT offers lessons learned around identifying missed opportunities, integrating nutrition interventions with non-traditional partners, and crowding additional funding.
Conclusions: N-LIFT has proven to be an innovative cost-effective business model that holds a high potential to close the gap between needs and resources for nutrition and reduce missed opportunities in nutrition.
P2.033 - Effect of Dietary Patterns on Maternal Anaemia in Ethiopia: A case-control study

Authors: Mr Kelemu Kibret¹, Dr Catherine Chojenta¹, Professor Deborah Loxton¹, Dr Ellie D’Arcy²

Affiliations: ¹The University Of Newcastle, Newcastle, Australia, ²Western NSW Local Health District, Bathurst, Australia

Abstract:
Background/Aim: Dietary patterns are a modifiable factor that can influence the occurrence of anaemia. Current evidence is inconsistent and resource-limited settings have not been well-researched. The aim of this study was to assess the effect of dietary patterns during pregnancy on anaemia in Ethiopia.

Methods: A case-control study was conducted among pregnant mothers in North Shewa, Ethiopia from November 2018 to March 2019. Four hundred and eighteen pregnant women were included (105 cases and 313 controls) with a 1:3 case to control ratio. Cases were pregnant women with a haemoglobin level < 11 g/dl and controls were pregnant women with a haemoglobin value ≥11.0 g/dl. Data were collected through an interviewer-administered questionnaire and record review of laboratory measurements. A multivariable logistic regression model was applied to identify the predictors of anaemia and a p-value of < 0.05 was taken as significant.

Results: A low dietary diversity score (AOR=1.69; 95% CI: 1.01, 2.81), reducing food intake (AOR=4.68 (95% CI: 2.35, 9.33) and being in the second compared to the first trimester (AOR=4.9; 95% CI: 1.02, 23.6) of pregnancy were independent predictors of maternal anaemia.

Conclusions: During pregnancy intake of a low diversified diet, reducing food intake and advanced trimester of pregnancy were associated with a higher odds of anaemia. Dietary counselling should be emphasized and strengthened in the existing prenatal health service program, with women strongly encouraged to increase their food intake during pregnancy. Dietary interventions should target women in the first trimester and continue as they progress trimesters.

P2.034 - Challenges in implementing nutrition policy at lower level in Papua New Guinea-review

Authors: Ms Helen Palik¹

Affiliations: ¹National Department Of Health, png, Port Moresby, Papua New Guinea

Abstract:
Introduction: The National Nutrition Survey (DHS 2005-2006), has shown that about 44% of the children from ages 6-59 months in Papua New Guinea (PNG) are physically stunted, 5% are wasted and 18% are underweight. The aim of the review is to identify gaps in the challenges in implementation of current nutrition policy strategies at lower level.

Method: Current PNG Nutrition Policy 2016-2026 was reviewed including key informant interviews from May to July 2019.

Result: Challenge 1: Human resources
Proportion of health workers to population at lower level is inadequately distributed at the primary health care level.

- Formula: Limited number of staff + many responsibilities + time = poor outcome
- Eg. MCH OIC is also caretaker of nutrition, immunization and family planning services

Challenge 2: Local managers
Many managers are working in difficult working conditions with changing environment and poor infrastructure, Managers face challenges in areas of personal, technical performance, environment changes and survival and growth. (Shortell & Kaluncy, 2000) “Many challenges await. There are no panaceas for fixing our healthcare system” (Shalala D, 2016).

Challenge 3: health system - need changes
In PNG, there are many reasons why very good policies that have clear goals and visions are not implemented successfully at lower level where outcomes are measured.

Conclusion: Strengthen M & E system by use of latest IT Technology (telemedicine) to asses outcomes, improving accountability and governance for local managers.

P2.035 - Food Governance and Opportunities for Nutrition Policies in Ghana

Authors: Esi Aduku¹, Dr Reginald Annan¹, Mr Samuel Sackar¹

Affiliations: ¹Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Abstract:
Background/Aims: Ghana is battling the double burden of malnutrition (USAID, 2018) and this calls for a robust and concerted approach from all sectors. People source their foods from their environment (Swinburn et. al, 2011) and therefore a healthy food environment enables them to make healthy food choices. Societies, through their governments, engage a potent instrument called “policy” to address and solve problems of public concern.

Policies to reform the food environment that have been formulated in recent times have made impact and have improved lives by supporting people to make healthy choices.
This study was done to understand food governance in Ghana, means to strengthen weak policy coherences and explore the policy space for nutrition policy recommendations (FAO, 2015).

Method: As part of the “Researching the Obesogenic Food Environment” study in Ghana and South Africa, key informants and government officials involved in food policy and governance were identified and interviewed and a stakeholders’ consultative meeting conducted.

Results and Conclusion: Twenty nine interviews conducted with stakeholders were transcribed and analysed. The government and consumers mainly wield power. Presently the government’s food and agricultural policies border on food security and production. The subject of good nutrition holds minimal concern. Consumers face many challenges in making healthy food choices. Notably among these are ignorance and difficulty in accessing healthy food. Possible recommendations can be drawn from pushing the nutrition agenda with the government to create an affordable and easy access to healthy food for consumers.

P2.036 - Systemic Approach to Overweight in Children from Deprived Urban Areas

Authors: Dr Sueli Rosa Gama¹, Dr Marilia Carvalho¹, Dr Amanda Mello², Dr Leticia Cardoso¹

Affiliations: ¹Oswaldo Cruz Foundation, Rio De Janeiro, Brazil, ²Rio de Janeiro State, Niterói, Brazil

Abstract: The prevalence of overweight in children is a problem of high complexity, which characteristically presents a system’s dynamic stability, limiting the effectiveness of isolated actions. Facing complexity requires different approaches, such as the systemic approach adopted in this article. The method is based on the construction of a subsystems and relationships diagram. This diagram describes the interactions and feedbacks that influence each other and guarantee the dynamic stability of the ensemble. From this diagram, it is possible to identify leverage points that guide transformative interventions. The proposed model delimited the “Overweight in childhood” system considering six external subsystems, including related policies. The design of relationships between child, family, microenvironment, school/nursery, and primary health care has given rise to a vision of the system that can guide interventions. In the current Brazilian context, although with less direct influence than family and environment, the relationships originated in the primary care and education systems present potential to transform the situation-problem. Its more incisive and integrated measures can leverage the necessary change of behavior, strengthening the actions proposed by the food and nutrition policy.

P2.037 - Nutrition education and traditional physical activity interventions for overweight and obese children

Authors: Dr Cica Yulia¹, Prof. Dr Ali Khomsan¹, Prod. Dr Dadang Sukandar², Dr Hadi Riyadi²

Affiliations: ¹Universitas Pendidikan Indonesia, Bandung, Indonesia, ²Bogor Agricultural University, Bogor, Indonesia

Abstract: Overweight and obesity among schoolchildren is a nutritional problems that should get special attention. Not only in developed countries but also the prevalence begins to increase in developing countries. This study aimed to analyze the effects of nutrition education and traditional-game based physical activity on nutritional status of overweight and obese elementary school children. The research method used was experiment with Split Plot design. Subject in this study was 72. The study was conducted from October 2016 to May 2017 in Public elementary school in Bandung, West Java, Indonesia. It was approved by Ethics Committee of Public Health Faculty, Diponegoro University, Semarang, in the form of ethical clearance Number: 271/EC/FKM/2016. Combination of nutrition education and traditional-game physical activity interventions that had been conducted for 12 weeks could decrease body mass index (BMI)-for-age. Duncan test proved that there was no difference in the decrease in BMI between the group that was given nutrition education and the one that was not given nutrition education. There was also no significant difference found between the traditional-game physical activity intervention group, gymnastics intervention group, and the group that did not perform physical activity. All treatment groups generally experienced a decrease in BMI-for-age. The conclusion was nutrition education and traditional-game physical activity interventions conducted for 12 weeks had not been effective in improving nutritional status (BMI-for-age) of the overweight and obese children. Although there was a decrease in BMI-for-age in one treatment group, but it was not significant when compared to other treatment groups.

P2.038 - Nutrition and Psycho-social Stimulation Improves Child Development in Rural Early Childhood Education

Authors: PhD Hadi Riyadi¹, Prof Ali Khomsan¹, Prof Faisal Anwar³, PhD Tin Herawati², MSi Neti Hernawati², MSi Atika Rahma², MSi Rian Diana³, MSc Gunarti Prasetya³

Affiliations: ¹Department of Community Nutrition, Faculty of Human Ecology, IPB University, Bogor, Indonesia, ²Department of Family and Consumer Science, Faculty of Human Ecology, IPB University, Bogor, Indonesia, ³Department of Health and Nutrition, Faculty of Public Health, Airlangga University, Surabaya, Indonesia, ⁴Nutrition Science Program, STIKES MITRA KELUARGA, Bekasi, Indonesia

Abstract: Background/Aim: Early childhood education or stand for PAUD in Indonesia is an educational effort intended to preschool-aged children through stimulation to support children’s growth and development. The research aimed to investigate the effects of nutrition and psycho-social stimulation to the child development in rural PAUD.
Methods: A quasi-experimental design consisted of baseline and end-line data collections of control and intervention groups (n = 137) of children under five years with their mothers and teachers at schools (n = 32). The outcomes were investigated for 12 months including mothers’ nutritional knowledge and practice, mothers’ and teachers’ psycho-social stimulation knowledge and practice, children’s nutritional status and development. This research was fully funded by the Nestle Foundation, Switzerland.

Results: Nutrition education increase mothers’ nutritional knowledge score of 4.7 points (p<.01). Child development score was greater in intervention group (p<.001). Teachers’ psycho-social stimulation knowledge was increased by 17.9 points after the intervention (p=.001), so as the score of teachers’ psycho-social stimulation practice was increased significantly at the end-line (p=.044). The intervention could withstand the decline in children’s body mass index for age z-scores (BAZ) (p=.017).

Conclusion: The intervention improves mothers’ nutritional knowledge and practice, mothers’ and teacher’s psycho-social knowledge and practice, and child development.
Ultra-processed foods and the intake of free sugars: evidence from eight countries

Objective: To evaluate the influence of ultra-processed foods on the dietary content of free sugar in eight middle- and high-income countries.

Methods: Analysis of food consumption data from national surveys conducted in Brazil (2008-2009), Colombia (2004), Chile (2013), Mexico (2012), USA (2009-2010), Canada (2004), United Kingdom 2008-2012 and Australia (2013). Ultra-processed foods were identified as industrial formulations of substances extracted from food or synthesized based on food substrates or other organic sources with little or no whole food.

Results: In the USA, Mexico, Canada, the United Kingdom and Australia, ultra-processed foods accounted for more than 40% of the calories consumed, values higher than those observed in the Chilean, Brazilian and Colombian (<30%) diets. The free sugars content of the diet exceeded the WHO recommendation of 10% in about 50% in the USA (15.2%), Colombia (15.1%) and Brazil (14.8%), 30% in Chile (13.6%), Mexico (13.5%), Canada (13.1%) and the United Kingdom (12.5%) and 15% in Australia (11.5%). In all countries, the consumption of ultra-processed foods was directly associated with the mean dietary content of free sugars and with the percentage of individuals with consumption above the WHO recommendation level. Individuals in the lowest quintile of consumption of ultra-processed foods presented a mean dietary content of free sugars below the maximum recommended level for Australia (6.3%), Mexico (7.6%), Canada (7.7%), Chile (8.1%) and the United Kingdom (9.7%) and close to this limit in Brazil (10.2%) and the USA (10.3%).

Conclusions: Reducing the consumption of ultra-processed foods may substantially improve diet quality.

Association between ultra-processed food consumption and diabetes incidence in UK Biobank

Authors: PhD Renata Levy1, PhD Fernanda Rauber2, PhD Kiara Chang3, PhD Maria Laura Louzada4, PhD MD Carlos Monteiro5, PhD Christopher Millett5, PhD MD Eszter Vamos5

Affiliations: 1Department of Preventive Medicine, School of Medicine, University of São Paulo, São Paulo, Brazil, 2Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil, 3Public Health Policy Evaluation Unit, School of Public Health, Imperial College London, London, England, 4Department of Public Policies and Public Health, Federal University of São Paulo, Santos, Brazil

Abstract:

Background/aims: This study investigated associations between ultra-processed food consumption and the risk of diabetes in adults of a UK-based prospective cohort study.

Methods: Participants of the UK Biobank (2009-2019) aged 40-69 years at recruitment with 24-hour dietary recall data and a repeat assessment were included (N=28,443; median follow-up: 5 years). Ultra-processed foods (defined as formulations of many ingredients, mostly of exclusive industrial use) were identified using the NOVA classification and expressed as the percentage of total energy intake and were categorized into quartiles. Incident cases of diabetes were identified based on self-report during follow-up. Multivariable Cox proportional hazards regression models, with age as the underlying time metric, were used to estimate hazard ratios (HR) of newly diagnosed diabetes for ultra-processed food consumption quartiles, using the lowest quartile as reference. Models were adjusted for sociodemographic and lifestyle characteristics.

Results: A total of 703 incident cases of diabetes were identified during follow-up (146,361 person-years). After adjustment for potential confounders, participants in the highest quartile of ultra-processed food consumption had significantly higher risk of developing diabetes (adjusted HR: 1.29; 95%CI: 1.05; 1.59; P-trend<0.001) than those with the lowest quartile of consumption.

Conclusions: In this first cohort study of a UK adult population, our findings provide evidence that higher consumption of ultra-processed food is associated with a higher risk of diabetes.


Monitoring Industrial trans fatty acids in Processed Foods in Argentina 2017–2018

Authors: Bsc Leila Guarnieri1, Mph Maria Victoria Tiscornia1, PhD Luciana Castronuovo1, Mph Lorena Allemandi1, Msc Enrique Martins1

Affiliations: 1FIC Argentina, Buenos Aires, Argentina

Abstract:

Background/aims: Evidence shows the health damage caused by the intake of industrial trans fatty acids (TFAs). In 2014, the
Argentinean TFAs labelling regulation entered into force with a limit on industrial TFAs of 2% of total fat for fats/oils and 5% for all other foods. The aim of this study is to determine TFAs levels of processed foods in Argentina and monitor the current legislation over time.

Methods: Cross-sectional study. Food label information of processed foods was collected between August 2017 and May 2018 using FLIP-LAC database software developed by the University of Toronto. TFAs content in foods was obtained from Nutrition Facts table (NFI). An analysis of the list of ingredients was made to determine the origin of TFAs (industrially-produced or rumiant) to detect products which exceed the limits of industrial TFAs set by the national legislation.

Results: The final sample included a total of 1408 from 19 food categories. From the total sample, 17.3% (n=243) of the products from 15 categories were found to contain TFAs contents (n=243) according to NFI. From the ingredient list analysis, 9 categories were found to have products with industrial TFAs. These products represent 6.7% (n=95) of the total sample. Within these products, 1.8% (n=26) exceed the limit set by the national legislation including cereal bars (7.5%), pastas (6.9%), alfajores (6.8%), pre-cooked meals (2.1%) and bakery products (1.1%).

Conclusions: This study is a valuable tool to independently monitor TFA content of processed foods over time and the implementation of the current legislation.

Ultra-processed foods consumption and its association with added sugar in children's diets

Authors: Dr. Daniela Neri Gama De Almeidasa,1,2 Dr. Euridice Martinez-Steele1,2, Dr. Carlos Augusto Monteiroa,1,3, Dr. Renata Bertazzi Levy1,3

Affiliations: 1University of São Paulo, School of Public Health, Nupens, Sao Paulo, Brazil, 2Center for Epidemiological Research in Nutrition and Health, University of São Paulo, São Paulo, Brazil, 3Department of Preventive Medicine, School of Medicine, University of São Paulo, São Paulo, Brazil

Abstract: Background/Aims: The purpose of this study was to assess the consumption of ultra-processed foods and to examine its association with added sugar content in the diet of US children aged 2-19 years.

Methods: We classified foods according to the NOVA food processing system and looked at the consumption of ultra-processed foods, measured as percentage of total energy intake. We assessed dietary added sugar content by estimating its contribution to total energy intake, and the proportion of individuals with diets exceeding the recommended limit of 10% of total energy intake from added sugars. We also examined the proportion of those who surpassed twice that limit. Gaussian and Poisson regressions estimated the association between consumption of ultra-processed foods and estimates of added sugar content.

Results: Ultra-processed foods contributed to 65% of total energy intake and to 92% of energy from added sugars in the diet of US children. The mean percent energy provided by added sugars in the observed period was 14.3%. Most individuals (70.9%) had diets exceeding the recommended limit of added sugar (<10% of total energy intake), and 18.4% of the population had diets surpassing twice the recommended level (20% of total energy intake). A 5.5% point increase in the dietary share of ultra-processed foods determined a 1 percentage point increase in the dietary content of added sugars, with stronger adjusted associations among younger children.

Conclusions: Public health efforts to reduce added sugars in the diet of US children must put greater emphasis on decreasing the consumption of ultra-processed foods.

Ultra-processed foods consumption and quality of diet in Portugal

Authors: Renata Costa de Miranda1, Fernanda Rauher1, Vânia Magalhães2, Milena Moraes1, Daniela Correia3, Cristina Santos4, Claudia Afonso3, Bruno Oliveira4, Duarte Torres3,4, Carla Lopes3,5, Sara Rodrigues3,4, Renata Bertazzi Levy1

Affiliations: 1Department of Preventative Medicine, Faculty of Medicine, University of São Paulo, Sao Paulo, Brazil, 2Department of Nutrition, School of Public Health, University of São Paulo, Sao Paulo, Brazil, 3Department of Preventive Medicine, School of Medicine, University of São Paulo, Porto, Portugal, 4Faculty of Nutrition and Food Sciences, University of Porto, Porto, Portugal, 5Department of Public Health and Forensic Sciences and Medical Education, Faculty of Medicine, University of Porto, Porto, Portugal

Abstract: Background/aims: This study aims to assess the dietary share of ultra-processed foods on the nutritional quality of diet in Portugal.

Methods: Cross-sectional study involving 5,811 participants aged 3m-84y and enrolled in the 2015-2016 National Food, Nutrition and Physical Activity Survey. Dietary information was collected using two nonconsecutive 24-hour dietary recalls. Food items were classified according to the extent and purpose of processing as established by NOVA. Total energy intake and percentage provided by each of the NOVA food groups as well as the average nutrient content of the overall diet across quintiles of dietary share of ultra-processed foods were assessed.

Results: Average energy intake was 2,163 kcal/day, in which 41.8% was derived from unprocessed/minimally processed foods, 11.4% from processed culinary ingredients, 22.4% from processed foods and 24.4% from ultra-processed foods. The mean dietary share of ultra-processed foods ranged from 7.2% (1st quintile) to 49.9% (5th quintile) of total calories. As the ultra-processed foods consumption increased, the dietary content in carbohydrates; sugars; total, saturated and trans fats increased
significantly. Most important was the rise across quintiles in sugars content from 14.8% (1st quintile) to 21.7% (5th quintile) of total energy. Protein content and dietary fibre decreased significantly as the dietary share of ultra-processed foods increased. Particularly relevant was the decrease in fibre density (g/1.000 kcal) from 10.2g (1st quintile) to 7.8g (5th quintile).

**Conclusions:** Our findings corroborate previous studies from other countries suggesting that decreasing the dietary share of ultra-processed foods may improve substantially the nutritional quality of diets.

**Funding:** FAPESP 2019/05972-7, 2016/14302-7, 2018/07391-9, POCTI-01-0145-FEDER-032090.

**Added sugars and low-calorie sweeteners on packaged foods sold in Brazil**

**Authors:** Mrs Tailane Scapin1, Mrs Luiza Figueiredo1, Mrs Ana Carolina Fernandes1, Mrs Rossana Pacheco da Costa Proença1

**Affiliations:** 1Federal University Of Santa Catarina - Brazil, Florianopolis, Brazil

**Background:** The World Health Organization (WHO) recommends reduce the intake of added sugars (AS) for adults and children, since evidence suggests that the excessive intake is harmful to health. Low-calorie sweeteners (LCS) can be used as sugar substitute, but they also have negative health effects. This study analyzes the presence and types of AS and LCS in the labels of packaged foods.

**Methods:** A cross-sectional census study was carried out. Ingredients lists of all the available packaged foods for purchase in a large Brazilian supermarket were analyzed.

**Results:** From the 4.539 analyzed food, 3.276 (72%) contained some sweetener, including 60% with AS only, 1% with LCS only, and 11% with both AS and LCS. Biscuits, cake mix, and sweetened beverages were the ones with greatest prevalence of both AS and LCS. Salty food such as bottled vegetables, meats, cracker, and ready-made sauce also had AS and LCS.

**Discussion:** Packaged foods are the main source for consumption of AS and an important source of LCS intake. Yet, there are few initiatives to label AS and LCS quantity, especially in Brazil. The lack of information hampers the identification of these components by consumers when buying food.

**Conclusion:** The majority of packaged foods available for purchase in Brazil have AS, LCS or both in their composition. The present study suggests efforts to make information on these components clearer on food labels. It is necessary the revision of the Brazilian legislation on food labeling by making the information easier to understand by consumers.

**Sugar reformulation and biopiracy: the story of stevia**

**Authors:** Dr Jennifer Lacy-Nichols1

**Affiliations:** 1University Of Melbourne, Fitzroy North, Australia

**Abstract:**

**Background:** As governments and public health groups seek to reduce the global consumption of sugar, sugar substitutes have become a multibillion-dollar global industry. One such substitute is stevia: indigenous to Paraguay, the plant is sweet but does not have calories. Yet the existence of a global stevia industry raises important questions about biopiracy and the distribution of power and ownership. Who controls or influences the manufacturing, intellectual property, marketing, regulation and trade in this indigenous food? This study analyses the power dynamics in the stevia industry to inform our understanding of how stevia has been transformed from an indigenous food to an industrial sweetener.

**Methods:** Content analysis of market reports from Euromonitor and company annual reports were used to map the geographical distribution of power in the stevia industry according to the metrics of annual revenue, market share and vertical concentration of companies. Patent databases were searched to identify corporate investment in research and development

**Results:** Preliminary findings indicate that a small number of large companies control much of the market share. They also often control their supply chains from research and development through to their processing labs and final products. Both stevia producers and food manufacturers have patented the sweetener.

**Conclusions:** This paper explores how the pressure to reduce sugar consumption has contributed to the commercialisation of indigenous foods. Biopiracy has been linked to both SDG2 and SDG15, highlighting the need to critically explore the intersections between efforts to reduce sugar consumption and improve food sovereignty.

**The degree of processing and ingredients used in organic frozen meals**

**Authors:** Mrs Larissa Valério1, Msc Priscila Machado2, PhD Larissa Baraldi1,2

**Affiliations:** 1Center for Food Studies - University of Campinas, Campinas, Brazil, 2the Centre for Epidemiological Studies in Health and Nutrition - Universisty of São Paulo, São Paulo, Brazil

**Abstract:**

**Background:** “Health halo” effect -the idea of products that contributes for environment and also for health - is driving organic products sales. Contradictorily, these products may be formulated with several unhealthy substances.

**Aim:** Characterize organic frozen meals according to the presence of food additives
Methods: Ingredients information and certification on labelling were obtained from Label Insight an American marketplace database. All 432 frozen meals were divided into 8 subgroups, and classified according to NOVA system into G3-processed when presented only whole food with added sugar or salt; acidity regulator, antioxidant or preservatives. Otherwise, the presence of another ‘cosmetic’ additive and/or processing aids rise the item to G4-ultra-processed. Distribution and mean difference (by nonparametric tests) of food additives between (sub)groups were estimated.

Results: Organic frozen meals presented 1.3 food additives on average and G4 comprised 54.9% of items. Mean difference (p<0.001) in number of additives was found between food NOVA groups (G3=0.1; min 0 max 1; G4 =2.4; min1 max 9) and across food subgroups. Of note, G4 Pizzas (60% of total) had 2.7 additives on average followed by G4 Mexican food (66.7%) with 2.3 additives. Soups was the only subgroup that presented low percentage of G4 items (23.5%), consequently with the lowest number of food additives (70.6% of the items with zero additives).

Conclusion: Ultra-processed foods are frequent among organic products and claims may be used to promote them despite the large number of additives. To achieve SDG #12 is preferable purchase whole foods from smallholders and family farmer’s producers.

Salt content in food provided by catering food sector in Saudi Arabia

Authors: Mrs Tahrir Aldhirgham1, Mr Ali Duhaim1, Mrs Lulu al-Mutairi1, Mr Turki Almakhlafi, Dr Amani Al-Qahtani1

Affiliations: 1Saudi Food And Drug Authority, Riyadh, Saudi Arabia

Abstract:

Background/aims: In diet, salt used widely and daily at household base and in food industry. Food eaten out home are found to be associated with a higher intake of calories, saturated fat, salt, and has a large portion size comparing to other food. In Saudi Arabia, few research investigating population consumption and dietary content of salt. Moreover, there are no data on restaurant food or fast food content of salt. This research aims to investigate and assess salt content in catering food sector in Saudi Arabia

Methods: Experimental study, using chemical lab analysis data of 1653 food items from 57 food catering serves providers. Data analysis includes mean salt content and the ratio percentage of salt content out of WHO recommended salt intake (5 g/day).

Results: The food groups with the highest average salt content (g/100g) were in dressing and condiments (1.54), extra and add-on (1.47). The lowest average value were in beverages (0.06) and dessert (0.34). The top ratio percentage of salt content per 100g were in dressing and condiments, extra and added-on, meats, and chicken with more than 30%, 29%, 25%, and 25% respectively. The ratio percentage of salt content per serving size were 230 % in meals, 92% in Pizza, 65% in red meat and 64% in chicken.

Conclusions: From public health prospect, this study importance is as a baseline study to monitor trends in salt levels over time, as well as provide a starting point to set potential future salt reduction targets for food providers sector.
3B – Early childhood triple burden of malnutrition
Rapid Fire Presentations

Vitamin D status and linear growth in Amazonian children: the mina-Brazil study

Authors: Miss Thamires Guarnieri1, Dr. Lalucha Mazzucchetti1, Dr. Maira Malta1, Dr. Marly Cardoso1, Dr. Bárbara Lourenço1
Affiliations: 1Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brasil

Abstract:
Background/Aim: The first 1,000 days are essential to promote development, but depict greater vulnerability to inadequate vitamin D status, which is important to linear growth. We aimed to explore factors associated with vitamin D status and its influence on linear growth within the first year of life among Amazonian children.

Methods: A cross-sectional analysis was conducted with 533 children (12.5 months, 51.6% girls, 84.5% brown/black) who participated in the MINA-Brazil study. Prevalence ratios were estimated for factors associated with vitamin D deficiency (25(OH)D <50 nmol/L). Linear regression models were fitted to explore the relationship of vitamin D status and length-for-age Z-scores (LAZ) below or equal/above the World Health Organization (WHO) median for age and sex.

Results: Vitamin D deficiency was observed in 36% of the children, with higher frequency among those whose mothers had a paid occupation and who were born with a cesarean delivery; an inverse relationship was noted with white skin color (p<0.05). Mean LAZ was 0.35 (SD 1.14). After adjustment for household wealth index, maternal height, child’s size at birth, and occurrence of malaria, each increase of 10 nmol/L in 25(OH)D concentrations was significantly associated with a 0.03 higher LAZ among children with linear growth below the WHO median (p<0.05).

Conclusion: Vitamin D deficiency had a considerable magnitude and its optimal status was particularly relevant for children with linear growth below the WHO median in this endemic malaria region. An interplay of social, maternal, and nutritional factors may favor child good health and well-being since early years.

Prevalence and determinants of Infant and Young Child Feeding indicators in Indonesia

Authors: Mrs Ha’i Raga Lawa1, Dr Nina Lansbury Hall, Dr Sue Vlack, Dr Kurt Long
Affiliations: 1School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Australia, 2School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Australia, 3School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Australia, 4Child Health Research Centre, The University of Queensland, South Brisbane, Australia

Abstract:
Objective: Characterize patterns of Infant and Young Child Feeding (IYCF) indicators in Indonesia in 2012 and identify factors associated with them.

Methods: The prevalence of eight IYCF indicators was first determined using the 2012 Indonesia Demographic and Health Survey data. Logistic regression analysis was carried out to identify what factors were associated with the indicators.

Subjects: Children (n 6592) aged 0-23 months.

Results: Breastfeeding was initiated within the first hour of life (EIBF) among 50% of children 0-23 months of age; 42% of 0-5 month old children were exclusively breastfed (EBF), 77% of 12-15 month old children were still breastfed (CBF), 91% of 6-8 months old children had timely introduction of soft and semi-solid food (ISSSF). Among children aged 0-23 months, 58% had minimum diet diversity (MDD), 66% had a minimum meal frequency (MMF), 36% received minimum acceptable diet (MAD) and 35% consumed iron-rich or iron-fortified foods (IRF). Multivariate analyses found that older children had lower odds of EBF but higher odds of MDD, MAD and IRF. Maternal education was positively associated with IRF but negatively associated with EIBF. Higher household wealth-index was associated with higher odds of MDD and MAD. Children in Nusa Tenggara region had better odds of EIBF and EBF than those in Java and Bali region. Children in rural area had higher odds of CBF but lower odds of ISSSF.

Conclusion: Public health efforts should continue promoting feeding practice programs that target lower income households and regions in Indonesia to improve child nutrition and health outcomes.

Prevalence and predictors of early stunting in infants in Papua New Guinea

Authors: Ms Clarissa Moreira1,2, Dr Michelle Scoullar4, Dr Elizabeth Peach1, Ms Pele Melepeia3, Dr Philippe Boeuf2, Ms Eliza Davidson1, Mr SupSup Hadlee3, Ms Ruth Fidelis3, Ms KeryAnne Tokmun1, Dr Elissa Kennedy1, Mr William Pomat4, Mr Peter Siba3, Professor Brendan Crabbb1, Dr Christopher Morgan3,4, Associate Professor Freya Fowkes3,5, Mr Paul Agius1,5, Associate Professor Leanne Robinson1, Professor James Beeson1,2,5
Affiliations: 1Burnet Institute, Melbourne, Australia, 2Burnet Institute (PNG), Papua New Guinea, 3The University of Melbourne, Melbourne, Australia, 4PNG Institute of Medical Research, Papua New Guinea, 5Monash Univeristy, Melbourne, Australia

Abstract:
Background: Papua New Guinea (PNG) has one of the highest rates of stunting globally with nearly half of all children affected.

Prevalence and predictors of early stunting in infants in Papua New Guinea: Results from the PNG 2012-2013 National Nutrition Survey

Authors: Dr. Lalucha Mazzucchetti1, Dr. Marly Cardoso1, Dr. Bárbara Lourenço1, Dr. Leanne Robinson1,2, Dr. James Beeson1,2,5
Affiliations: 1Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brasil, 2Burnet Institute, Melbourne, Australia, 3Burnet Institute (PNG), Papua New Guinea, 4The University of Melbourne, Melbourne, Australia, 5Monash University, Melbourne, Australia

Abstract:
Background: The first 1,000 days are essential to promote development, but depict greater vulnerability to inadequate vitamin D status, which is important to linear growth. We aimed to explore factors associated with vitamin D status and its influence on linear growth within the first year of life among Amazonian children.

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Conclusion: Vitamin D deficiency had a considerable magnitude and its optimal status was particularly relevant for children with linear growth below the WHO median in this endemic malaria region. An interplay of social, maternal, and nutritional factors may favor child good health and well-being since early years.

Prevalence and determinants of Infant and Young Child Feeding indicators in Indonesia

Authors: Mrs Ha’i Raga Lawa1, Dr Nina Lansbury Hall, Dr Sue Vlack, Dr Kurt Long
Affiliations: 1School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Australia, 2School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Australia, 3School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Australia, 4Child Health Research Centre, The University of Queensland, South Brisbane, Australia

Abstract:
Objective: Characterize patterns of Infant and Young Child Feeding (IYCF) indicators in Indonesia in 2012 and identify factors associated with them.

Methods: The prevalence of eight IYCF indicators was first determined using the 2012 Indonesia Demographic and Health Survey data. Logistic regression analysis was carried out to identify what factors were associated with the indicators.

Subjects: Children (n 6592) aged 0-23 months.

Results: Breastfeeding was initiated within the first hour of life (EIBF) among 50% of children 0-23 months of age; 42% of 0-5 month old children were exclusively breastfed (EBF), 77% of 12-15 month old children were still breastfed (CBF), 91% of 6-8 months old children had timely introduction of soft and semi-solid food (ISSSF). Among children aged 0-23 months, 58% had minimum diet diversity (MDD), 66% had a minimum meal frequency (MMF), 36% received minimum acceptable diet (MAD) and 35% consumed iron-rich or iron-fortified foods (IRF). Multivariate analyses found that older children had lower odds of EBF but higher odds of MDD, MAD and IRF. Maternal education was positively associated with IRF but negatively associated with EIBF. Higher household wealth-index was associated with higher odds of MDD and MAD. Children in Nusa Tenggara region had better odds of EIBF and EBF than those in Java and Bali region. Children in rural area had higher odds of CBF but lower odds of ISSSF.

Conclusion: Public health efforts should continue promoting feeding practice programs that target lower income households and regions in Indonesia to improve child nutrition and health outcomes.

Prevalence and predictors of early stunting in infants in Papua New Guinea

Authors: Ms Clarissa Moreira1,2, Dr Michelle Scoullar4, Dr Elizabeth Peach1, Ms Pele Melepeia3, Dr Philippe Boeuf2, Ms Eliza Davidson1, Mr SupSup Hadlee3, Ms Ruth Fidelis3, Ms KeryAnne Tokmun1, Dr Elissa Kennedy1, Mr William Pomat4, Mr Peter Siba3, Professor Brendan Crabbb1, Dr Christopher Morgan3,4, Associate Professor Freya Fowkes3,5, Mr Paul Agius1,5, Associate Professor Leanne Robinson1, Professor James Beeson1,2,5
Affiliations: 1Burnet Institute, Melbourne, Australia, 2Burnet Institute (PNG), Papua New Guinea, 3The University of Melbourne, Melbourne, Australia, 4PNG Institute of Medical Research, Papua New Guinea, 5Monash University, Melbourne, Australia

Abstract:
Background: Papua New Guinea (PNG) has one of the highest rates of stunting globally with nearly half of all children affected.
Insufficient data exists to measure progress towards the WHO Global Nutrition Target of a 40% reduction in child stunting by 2025. Key risk factors for stunting in PNG are unknown. Using data from a longitudinal study of mothers and infants in rural East New Britain (ENB) province, PNG we investigated the prevalence and predictors of stunting.

Methods: Between 2015 and 2018, 699 mothers were recruited during pregnancy. At delivery, one, 6 and 12 months post-partum mothers were interviewed and samples and measurements taken from mothers and their infants to test for infections and nutrient deficiencies. Height for age z scores were calculated using WHO reference standards with <-2 the cut-off for stunting. Predictors of stunting were investigated using mixed multilevel models.

Results: The prevalence of stunting at 6 months was 23% for boys and 20% for girls, increasing to 33% for boys and 23% for girls at 12 months. Mother’s height, education level, malaria infection during pregnancy and infant birth weight and length were significant predictors of stunting at 6 and 12 months. Breastfeeding and complementary feeding indicators were not associated with stunting.

Conclusions: Stunting in ENB among infants <12 months is lower than previous national estimates but remains unacceptably high with life-long consequences. Prenatal maternal factors were the strongest predictors of infant stunting suggesting that improving the health of mothers is key to preventing stunting among PNG infants.

Pilot evaluation of a storybook in navigating the shopping environment with children.

Authors: Mrs Mohd Jamil Sameeha1,2, Professor Heather Yeatman3, Associate Professor Bridget Kelly1, Professor Tilakavati Karupaiah1

Affiliations: 1Nutrition Program, Centre for Community Health, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, Malaysia, 2Early Start, School of Health and Society, University of Wollongong, Wollongong, Australia, 3School of Medicine, Faculty of Health and Medical Sciences Taylor’s University, Subang Jaya, Malaysia

Abstract:
Background: ‘Pester power ’ is defined as children’s influence over adult purchasing through requests/ demands for certain products, often unhealthy. Previous studies have explored the extent of children’s request behaviours and parent-child relationship in the supermarket, but no intervention has been done to reduce unhealthy food requests and improve parenting skills in navigating the supermarket environment. Hence, we developed a theory-driven children’s storybook.

Aim: The aim was to pilot test the storybook to assess its potential to improve children’s request behaviours and parents’ skills in dealing with children’s requests in the supermarket. Methods: Instruments included a 7-day diary record sheet, focus group discussions (FGD)/ interviews, and pre and post intervention questionnaires.

Results: The ‘Let’s Go Shopping’ storybook was pilot tested with 33 parents and 47 children to gain their feedback on the concept and its strategies, and reported changes in knowledge and behaviours. The storybook was well received by parents and children, with suggestions given to improve the storybook. They were engaged with the resource, their understanding of issues improved and changes in their behaviours were reported. The ‘Let’s Go Shopping’ storybook showed promising positive outcomes in the pilot study, for parents and children.

Conclusion: In line with Sustainable Development Goal no. 3 (good health and wellbeing), this research provides evidence that parents and children can be assisted to deal with these challenges through using real world data (from earlier exploratory study), applying relevant theoretical frameworks and engaging with users to develop a practical resource and suggestions for its use.

Socioeconomic and ethnic inequalities in child stunting in 12 Latin American countries

Authors: PhD Giovanna Gatica-Dominguez1, PhD Marilia Mesenburg1, PhD Aluisio Barros2, PhD Cesar Victora3

Affiliations: 1Federal University of Pelotas; International Center for Equity in Health, Pelotas, Brazil

Abstract:
Background: Although the prevalence of child stunting is falling in Latin America, socioeconomic inequalities persist. Yet, there is limited evidence on ethnic differentials.

Methods: We analyzed national surveys carried out since 2006. Based upon self-reported ethnicity, skin color or language, under-five children were classified into three categories: indigenous, afrodescendant and reference group (European/mixed ancestry). Stunting was defined as height(length)/age <-2 SD relative to the WHO standards. Wealth was assessed through household asset indices. We compared mean height(length)/age and prevalence of stunting among the 3 ethnic groups.

Results: Twelve surveys had information on indigenous and seven on afrodescendants. In all countries, the average height(length)/age was significantly lower for indigenous, and in 10 countries there were significant differences in prevalence of stunting. The overall crude stunting prevalence ratio was 1.99 (95% CI 1.91; 2.08), and after adjustment for wealth and place of residence, prevalence ratio remained higher among indigenous in 8 countries. Feeding practices analyses in children aged 6-23 months showed that although indigenous were more likely to be breastfed, the adequacy of their complementary foods was poor, particularly in terms of dietary diversity. Our comparisons of afrodescendants and the reference group showed few height differences, and in two countries afrodescendants tended to be taller.
Conclusions: In all countries studied, indigenous children tended to be shorter than the reference group, but this was not the case for afrodescendants. In order to reach the SDG's challenge of leaving no one behind, the nutrition of indigenous children in Latin America needs to be prioritized.

Gender and Health: An Examination of the Socio-Cultural Dimension of Child Malnutrition

Authors: Dharma Arunachalam1, Pragati Dubey1

Affiliations: 1IITB Monash Research Academy, Clayton, Australia, 2Monash University, Clayton, Australia, 3Indian Institute of Technology, Bombay, India

Abstract:

Background/Aim: This work highlights the need for social protection programs to critically engage with the key cultural aspects of a society that have a strong bearing on child health, including malnutrition. While the importance of state policies and social protection in dealing with the gender and accessibility issues have always been known, there is surprisingly little research especially from an ethnographic perspective on the role of the socio-cultural factors that can influence the nutritional health by influencing the accessibility of the social protection.

Method: The methodology of this study is ethnography and the fieldwork was conducted in a village in West Bengal (India). The participants of the study are the primary caregivers of children aged between 3 months to six years. The method of participant selection was based on random and snowball sampling and the method of data collection was personal interview and focussed group discussion.

Result: The narratives of the participants explain that nutritional vulnerability is not simply due to the unavailability but also due to the accessibility of resources at a micro-level. The study reveals the role of gendered norms, values, the role and position of women within the family, their autonomy, relation with food, intra-household decision making, birth-spacing, family planning and preference for a male child in influencing the accessibility of resources and therefore, the nutritional health of the child. The study also reflects the role of the socio-cultural factors in influencing nutritional objectives by influencing the accessibility of social protection programs.

Conclusion: The fresh insights from the field reflects that the significant problem of the gendered dimension of child malnutrition in India, is much more than poverty and the failure of state policies. The nutritional objective can only be achieved if the socio-cultural dimensions of the community that influence the everyday practices of the people is taken into consideration while framing the social protection programs.

Anaemia and developmental disadvantage among remote Indigenous children; Issues and Opportunities

Authors: Ms Dymphna Leonard1, A/Professor Petra Buttner1, Mr Fintan Thompson1, Ms Clare Brown2, Ms Melinda Hammond2, Ms Aletia Twist2, Ms Kani Thompson2, Professor Maria Makrides3, Professor Robyn McDermott1

Affiliations: 1AITHM - James Cook University, Cairns, Australia, 2Apunipima Cape York Health Council, Cairns, Australia, 3South Australia Health and Medical Research Institute, Adelaide, Australia

Abstract:

The high incidence of early childhood anaemia in remote Far North Queensland (n = 708 children age 6-23 months, 61.3% anaemic (95%CI 57.7%, 64.9%), demonstrates the double burden of malnutrition among Australian Aboriginal and Torres Strait Islander people. Anaemia due to iron deficiency can compromise neurological development in early life. This study investigated the association of early childhood anaemia with indicators of child development.

Methods: During the triennial Australian Early Development Census, teachers assess each child in his/her first year of fulltime school against five domains of childhood development; physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (school-based), communication skills and general knowledge. Children scoring below the tenth centile for any domain are considered developmentally vulnerable on that domain. Health information was linked with AEDC assessments.

Results: AEDC assessment were available for 250 of 708 children with haemoglobin measurement(s) at 6-23 months. Children who had had early childhood anaemia had double the risk of developmental vulnerability on two or more domains (DV2) at school age (OR 2.2 (1.2, 4.1) p = 0.016) compared to children without early childhood anaemia.

Conclusions: Interventions combining nutrition promotion and multi—micronutrient preparations (MMNs) for fortification of complementary foods are effective in reducing childhood anaemia and associated neurological defects. WHO recommends such interventions as an essential nutrition action and opportunity for health services to address ‘hidden hunger’ but these interventions are not currently conducted in Australia. Consultations with communities and health service providers will discuss these findings and their preferred intervention option(s).
Household food insecurity, coping strategies and nutritional status of children (24-59months) Ibadan

Authors: Miss Ifeoluwa Oritoju1, Dr Folake Samuel1

Affiliations: 1University Of Ibadan, Ibadan, Nigeria

Abstract:
Background: During periods of recession, households employ coping strategies to augment for nutritional deficiency; a consequence of food insecurity. There is usually a decline in certain macroeconomic indicators such as gross domestic product (GDP), capacity utilization, household income, and inflation, with the attendant increase in unemployment.

Aim: To assess the household food insecurity, coping strategies and nutritional status of children (24-59 months) in Ibadan.

Methodology: Community-based descriptive cross-sectional study conducted among 360 households with children (24–59 months). For each representative household, household food insecurity, coping strategy, and nutritional status were used to assessed.

Results: Of the households, 54.7% households were moderately food insecure while 11.4% were severely food insecure and was associated with mother and fathers’ educational level and household monthly income. Consequently, the prevalence of wasting, stunting and under-weight among children aged 24–59 months were 15.5%, 26.1%, and 18.3%, respectively. However, age groups 36-47, 24-35 and 24-35 had highest prevalence in wasting, stunting and underweight respectively. A negative correlation was identified between food security status and height-for-age as well as weight-for-age. A statistically significant relationship was found between food security status and coping strategy with a high percentage of respondents relying on less preferred and less expensive foods, ration money to the household, reduce the number of meals consumed by the household and had mothers who limit their intake as coping strategies.

Conclusion: This study revealed that household food security affects children’s nutritional status coupled with the coping strategy employed to ameliorate the effect of the food insecurity experienced.

Treating moderate acute malnutrition with local ingredient-based supplement in Southern Ethiopia.

Authors: Elazar Tadesse Balla1, Anne Hatløy1, Bernt Lindtjorn1, Mrs Debritu Satato1

Affiliations: 1University of Bergen, Bergen, Norway, 2Hawassa University, Sodo, Ethiopia, 3Kotebe Metropolitan University, Addis Ababa, Ethiopia

Abstract:
Background: In Ethiopia, 12.5% of children below five years are wasted, of which, 9.7% moderately wasted. Moderately wasted children are typically given fortified corn-soya blended flour plus (CSB+). In Ethiopia, CSB+ is only provided to chronically food-insecure areas. Using local ingredient-based supplement is considered to be an effective substitute to CSB+ for the management of moderate acute malnutrition (MAM).

Objective: To assess the effect of local ingredients-based supplement compared (LBS) with CSB+ in treating MAM among children aged 6-59 months.

Methods: A randomized controlled non-inferiority trial was conducted in Wolaita, Ethiopia. The calculated sample size is 324 (162 children randomized in each of two arms). The daily ration was: 100 g of local ingredient based supplementary food plus 20 g of sugar in the intervention group, and 150 g of CSB+ with 16 ml of vegetable oil in the control group. These interventions were provided for a maximum period of 12 weeks. Recovery rate (non-inferiority margin Δ= −7%) is the primary outcome and recovery time is the secondary outcome. Data analysis was done using SPSS and STATA software.

Result: Recovery rates of children were similar for the local ingredients based supplement group (64.8%) and CSB+ group (66.7%) (Chi-square test $P=0.056$). Duration of recovery was similar for the local ingredients based supplement group, with a median of 63 days compared to 58 days for the CSB+ group ($P=0.44$).

Conclusion: LBS has the same potential to treat MAM as CSB+. LBS might be important in reaching universal coverage for treatment of MAM.

Infant dietary pattern based on ultra-processed foods and early rapid weight gain

Authors: Phd Daniela Neri Gama De Almeida1,2, PhD Eurdice Martinez-Steele1,2, PhD Maria Helena D'Aquino Benicio1,2, PhD Fernanda Rauber1,2, PhD Renata Bertazzi Levy1,2

Affiliations: 1University of Sao Paulo, School of Public Health, Sao Paulo, Brazil, 2Center for Epidemiological Research in Nutrition and Health, University of São Paulo, Sao Paulo, Brazil, 3Department of Preventive Medicine, School of Medicine, University of São Paulo, Sao Paulo, Brazil

Abstract:
Background/Aims: Our aim was to describe infants’ dietary patterns (DPs) and assess their association with rapid weight gain (RWG).
Methods: 576 infants aged 6-12 months from NHANES 2009-2014 were included. RWG was defined as >0.67 SD change in weight-for-age z-score from birth to assessment. Foods were classified according to the NOVA food processing system. Exploratory factorial analysis was used to identify DPs taking into account NOVA food subgroups and feeding practices.

Results: Median age at assessment was 9 months. 76% of mothers initiated breastfeeding, but only 22% were still breastfeeding at assessment. Ultra-processed foods (UPP) contributed to 65% of all calories, and 46% of infants exhibited RWG. We derived 3 main DPs. DP1: included a variety of unprocessed/minimally processed and some processed and UPP foods; and negative loading for baby jars. This pattern was called “Mixed”. DP2: included some unprocessed/minimally processed and processed foods and a variety of UPP. This second DP, called “UPP”, was positively associated with RWG (OR 1.3; 95%CI, 1.04; 1.65). DP3, characterized by breastmilk and vegetables and negative loading for infant formula, was labeled “Breastfeeding” and inversely associated with RWG (OR 0.79; 95%CI, 0.63; 0.98).

Conclusions: Many families are not meeting recommendations for early feeding practices and DPs. A DP based on UPP was positively associated with RWG, while a DP based on breastfeeding was protective against it. Promoting breastfeeding and increasing consumption of unprocessed/minimally processed foods while decreasing UPP could be beneficial for achieving Sustainable Development Goals and reducing the growing burden of NCDs in the US.
3C- Determinants and remediation of food insecurity

Rapid Fire Presentations

Food Security of Indigenous Smallholder Farming Households in Fiji: A Gendered Perspective
Authors: Ms Lydia O'Meara, Dr Susan L. Williams, Ms Juanita Mooney, Mr David Hickes, Prof Philip Brown

Affiliations: 1WorldFish (CGIAR), Penang, Malaysia, 2CQUniversity, Cairns, Australia, 3CQUniversity, Rockhampton, Australia, 4CQUniversity, Mackay, Australia, 5Secretariat of the Pacific Community, Sigatoka, Fiji, 6CQUniversity, Bundaberg, Australia

Abstract:
Background: Considerable resources have been invested in agricultural projects to improve food security of smallholder farming households. Commercialisation of farming has not always resulted in positive nutrition outcomes, especially for women and children. This study explored perspectives of men and women to identify factors impacting food security of indigenous (iTaukei) smallholder farming households in rural Fiji to inform development of equitable agricultural initiatives.

Methods: In August 2018, focus groups were held with eight iTaukei food-producing communities from the Nadroga-Navosa, Namosi and Ba Provinces of Western Fiji. Groups were stratified by gender to elicit gender-sensitive factors. Transcripts were transcribed verbatim and analysed thematically using an inductive framework approach.

Results: Twenty-one groups were held. Six main themes were identified: (i) socio-cultural importance of food; (ii) economic hardship; (iii) food production; (iv) food environment; (v) nutrition knowledge and time constraints; and (vi) strategies to improve food security.

Conclusions: The environmental and individual factors influencing food security were communicated as complex and inter-related. Communities described economic hardship exacerbated by seasonal fluctuations in food production and income as key drivers for food insecurity. Both genders emphasised the influence of socio-cultural norms, nutrition knowledge and the local food environment on food intake. To ensure equitable health outcomes, multi-faceted initiatives that consider structural, cultural and individual drivers are needed to ensure food security for iTaukei food-producing households. A community-based ‘whole-of-village’ approach to food security initiatives warrants future research.

Transitioning out of malnutrition: a qualitative study in Soweto, South Africa
Authors: Ms Agnes Erzse, Professor Susan Goldstein, Professor Shane A Norris, Professor Mary Barker, Daniella Watson, Dr Sarah Kehoe, Professor Karen Hofman

Affiliations: 1SAMRC/ Wits Centre For Health Economics And Decision Science - Priceless Sa, Johannesburg, South Africa, 2SAMRC Developmental Pathways for Health Research Unit, University of the Witwatersrand, Johannesburg, South Africa, 3University of Southampton, School of Human Development and Health, Southampton, United Kingdom

Abstract:
Background: ‘Double burden’ of malnutrition in South Africa (SA) poses a threat to the realization of sustainable development. The dual nutrition challenge is recognized within the government’s health agenda and among communities alike, however synergistic strategies have yet to be identified. With the aim of optimizing nutrition for mothers and children, this research was designed to obtain a community perspective in SA on nutrition specific matters and solutions.

Methods: A qualitative study with focus group discussions (FGDs) was undertaken in a rapidly transitioning urban poor setting in Soweto, South Africa. Sixty-six individuals (both men and women aged 18 and above) participated in nine FGDs. Data was coded and analysed thematically.

Results: Participants perceived healthy nutrition to be important however, their choices are limited because inexpensive unhealthy food is much easier to access and several key factors such as water, sanitation, land use and basic income play a much more fundamental role in how decisions are made about what to eat or not. Participants’ recommendations encompassed four broad policy areas for action, including health systems, social protection, food system, and the food environment.

Conclusions: South Africa’s current nutrition policy environment does not adequately address community-level needs that are often linked to structural factors beyond the health sector. Findings suggest that optimizing nutrition will take a more integrated and multifaceted approach with coherent policies that address upstream factors, including poverty. Further, there is need for public engagement and the integration of community perspectives and priorities in developing and adapting appropriate nutrition policy.

Impacts of Governance and Leadership on stunting in Zambia
Authors: Miss Ayanna Deane

Affiliations: 1University Of Westminster, London, United Kingdom

Abstract:
Background: According to a report by UNICEF, WHO and World Bank Group, Africa is the only region where number of stunned children has risen. Zambia current rates of stunting in 2018 was 35% fallen form 53% in 2001-2002. Zambia has demonstrated
commitment in addressing malnutrition as a public health issue and has a long history of national policies and legislation, commitment most of which has been driven by international nutrition agenda, advocacy, and international funding.

**Aim:** A “Qualitative exploration of the effectiveness of Nutrition Strategies in addressing Malnutrition (stunting) in Zambia, to be explored through the lenses of the building blocks of HSS framework, using semi structure interviews as a primary data source”.

**Objectives:** To explore the potential reasons leading to the present reduction in stunting in under five from 53% in 2001-2002 to 35% in 2018.

To consider perceived and non-perceived barriers to achieving Zambian national targets by 2023 (reduce stunting to 20.1%).

**Findings:** Potential factors leading to current reduction in stunting is the continuous promotion of exclusive breast feeding up to 6 months supplemented feeding up to two years and the increase usage of bed nets especially in the rural areas.

Stunting is being address by the as a medical/health problem as supposed being addressed as societal and community issue.

There is call by advocacy group to hold government to their commitment in nutrition and actually budget tracking of expenditure on malnutrition to which government has agreed.

### Profiling food-insecurity and food-literacy in Cardinia, Victoria – a local governments perspective

**Authors:** Dr. Sue Kleve¹, Ms Pieta Bucello², Ms Emma van Burgel¹, Ms Christy Arnott²

**Affiliations:** ¹Monash University, Notting Hill, Melbourne, Australia, ²Cardinia Shire Council, Cardinia, Melbourne, Australia

**Abstract:**

**Background:** Cardinia Shire Council is a peri-urban area of Melbourne, Victoria. Food, is one of the 2017-29 Cardinia’s Liveability Plan policy domains with the aim to increase access to affordable, nutritious food. Understanding the role of food literacy and food-security as determinant on health is vital for supporting the development of interventions. The Cardinia Food Literacy and Food-Security Survey was implemented in 2018.

**Methods:** A proportional random sample of all Cardinia-residential addresses was employed, n=2000 households were invited via mail to participate in this cross-sectional survey. The 34-item multiple-choice survey included demographic, food literacy and food-security questions. Food-security questions included: Australian Health Survey single-item, United States Department of Agriculture Household Food-Security Survey Module screening questions and Australian Food and Nutrition Security Screening Survey. Food literacy questions were developed relevant to Cardinia’s context. Surveys were returned via reply-paid envelopes, uploaded to Qualtrics platform and analysed in IBM-SPSS Statistics-25.

**Results:** Survey response was n=342. Two-thirds of respondents were home owners and 24% indicated household income AUD$52,000-$103,000. Reported food literacy was high, with 4.4%(1.3%-7.6%) of respondents classified as food-insecure. The reported spectrum of food-insecurity experience varied from worry to food not lasting. Reasons of food-insecurity were reported according to the food-security dimensions; access, availability and utilisation. The relationship between food literacy and food-security status was explored.

**Conclusion:** Using a range of validated measures food-insecurity was identified as an issue across Cardinia. This research has provided insight to public health nutrition addressing SDG2 in a local government context and identify potential areas for action.

### UnProcessed Pantry Project (UP3) Framework to Decrease Ultra-Processed Food at Food Pantries

**Authors:** Dr. Carmen Byker Shanks¹

**Affiliations:** ¹Montana State University, Bozeman, United States

**Abstract:**

**Background/Aims:** Ultra-processed food has deleterious health effects, increased in availability across the global food supply, and increased in the diets of individuals worldwide over time, especially among low-income populations. Food pantries, which serve low-income and food insecure populations, offer food that ranges from ultra-processed to unprocessed, and for many food pantries, the nutrient quality of the food supply is not consistent. The aim of The UnProcessed Pantry Project (UP3) is to develop an evidence-based framework that limits ultra-processed food in the food supply at food pantries, promotes the availability of nutritious perishable and non-perishable food at food pantries, and improves the compromised nutrition and health needs of food pantry clients.

**Methods:** The UP3 Framework was developed using community-based participatory methods. A social-ecological approach was used to test UP3 during a 16-week intervention with 43 food pantry clients at two food pantries. Food inventories, dietary, psychosocial, and biomarkers of health data were collected to determine the short-term effects and feasibility of UP3 at food pantries and among food pantry clients.

**Results:** The resulting UP3 Framework includes UnProcessed and Ultra-Processed categories. The UnProcessed category includes subcategories: Fresh, Pantry Staples, Lightly Prepared, and Heavily Prepared. The impact of the UP3 Framework on food supply changes in participating pantries and dietary quality, psychosocial, and biomarkers of health will be examined.
Despite some improvements in food supply, diets in the remote APY Lands continued to worsen, prompting concerted action to

The Community Grocer – a localised food insecurity social enterprise

Authors: Leila Alexandra1, Dr Rebecca Lindberg, Russell Shields, Dr Sue Kleve

Affiliations: 1The Community Grocer, Pascoe Vale South, Australia

Abstract:

Background/aims: Across the world, there are a range of programs, from microloans to food banks, to address food insecurity. In the Australian context, we have so far been unable to adequately address this growing nutrition challenge to reach the SDG of zero hunger. A new type of intervention in the local food security landscape is the social enterprise. The Community Grocer is a social enterprise that operates five weekly fresh fruit and vegetable markets across Melbourne. The aim of the study was to examine the market’s ability to increase access, use and availability of nutritious food in a socially acceptable way, for low socioeconomic status individuals.

Methods: The mixed-method evaluation included comparative price audits (n = 27) at local (<1 km) stores; analysis of operational data from sample markets (n = 3); customer surveys (n=91) and customer interviews (n=12), collected in two phases (Autumn 2017, Summer 2018).

Results: Fruit and vegetables cost, on average, were approximately 40% less than local stores. Over twenty per cent of customers were food insecure and 80% of households were low income. Thirty-four different nationalities shopped at the market, and just over half (54%) shopped there weekly. Over 50 types of vegetables and fruit were available to purchase, varying for cultural preferences and seasonality, which supported variety and choice.

Conclusions: Overall, this enterprise promotes food security in a localised area through convenient, affordable, dignified and healthy offerings, suggesting entrepreneurial approaches could have an important role to play in achieving a right to food for all.

Using systems tools to address food insecurity in urban Aboriginal communities

Authors: Ms Jacqueline Davison1,2, Ms Simone Sherriff3,4,5, Mr Darryl Wright3, Ms Tangerene Ingram1, Mr Andrew Brown4

Affiliations: 1The Sax Institute, Ultimo, Australia, 2The Australian Prevention Partnership Centre, Sydney, Australia, 3Tharawal Aboriginal Corporation, Campbelltown, Australia, 4Riverina Medical and Dental Corporation, Wagga Wagga, Australia, 5Global Obesity Centre, Deakin University, Geelong, Australia, 6Sydney School of Public Health, The University of Sydney, Sydney, Australia, 7The Children’s Hospital at Westmead Clinical School, Sydney Medical School, The University of Sydney, Sydney, Australia

Abstract:

Background/Aims: Poor diet is a major contributing factor in the chronic disease epidemic facing Aboriginal communities. Food insecurity, affecting 1 in 5 Aboriginal people residing in non-remote environments, is not well understood. Individuals exposed to mild to moderate food insecurity are at greater risk of chronic disease. This project aimed to apply systems thinking to understand the complexity and dynamics of factors driving food insecurity and guide local action in two Aboriginal communities in urban and regional NSW.

Methods: Qualitative interviews were first undertaken to explore local perspectives of food insecurity in urban Aboriginal communities. Thematic analysis of the interview transcripts was conducted. To build a systems level understanding of local food insecurity, group model building exercises were undertaken which resulted in the development of two causal loop diagrams of food insecurity for the two communities.

Results: The qualitative analysis of all participant interviews identified six overarching themes relating to mild to moderate food insecurity. Group model building workshops in these same communities constructed causal loop diagrams or systems maps. The GMB enabled the participants to consider all the connections between factors, unique feedback and reinforcing loops and, produced a tool that allowed communities to identify opportunities for action in relation to key parts of the system.

Conclusion: These analyses elicited local understanding of the potential levers within the system to address food insecurity. They are being used to develop a community-level work plan to shift the high prevalence of food insecurity and its longer-term impact on preventable chronic disease.

Making it on the Bread Line: improved food security and diet in remote Aboriginal communities

Authors: Liza Balmer3, Amanda Lee1, Stephan Rainow4, Richmond Scholz4

Affiliations: 1The University of Queensland, Herston, Australia, 2Nganampa Health Council, Alice Springs, Australia, 3Ngaanyatjarrpa Pitjantjatjara (NPY) Women’s Council, Alice Springs, Australia, 4Mai Wiru Regional Stores Aboriginal Corporation, Alice Springs, Australia

Abstract:

Background: Aboriginal people suffer higher rates of food insecurity and diet-related diseases than non-Indigenous Australians. Despite some improvements in food supply, diets in the remote APY Lands continued to worsen, prompting concerted action to
support renewed community efforts by Mai Wiru Regional Stores, Nganampa Health and NPY Women’s Council with the Australian Prevention Partnership Centre early in 2018.

Methods: The Mai Wiru Stores Nutrition Policy was updated and strengthened. Resources and capacity were provided for community-led nutrition interventions in two settlements, including ‘bush picnics’, budgeting and cooking workshops, store demonstrations, children’s cooking, and, in a step-wise approach, support for community store’s implementation of nutrition policy actions. Multiple methods of evaluation included assessment of store sales turnover, diet cost/affordability by Healthy Diets ASAP methods, and store policy compliance. Non-intervention communities functioned as staged controls.

Results: Participating stores markedly improved availability, product placement and promotion of healthy food/drinks. Healthy diets cost 15% less than usual diets, and only 6% more than the closest regional town. In the community where all strategies were implemented longest, mean dietary intake of: fruit doubled (from 39g to 79g/person/day), vegetables increased from 109g to 133g/person/day, and sugary drinks decreased by 5%. Reliance on bread as main energy source decreased by 20%, indicating reduced food stress. Overall, energy intake of healthy food/drinks increased from 52% to 54%; the first improvement in forty years.

Conclusions: Multi-strategy, community-led nutrition interventions focussing on both supply and demand can rapidly improve food security and diet, and should be implemented at scale nation-wide.

Lessons from evaluating Eat Up: Fighting hunger in Australian Schools

Authors: Dr Rebecca Lindberg1, Dr Claire Margerison1, Kathryn Cirrone1, Laura McMillan2, Professor Sarah McNaughton1, Dr Rachel Laws1, Professor Kylie Ball1

Affiliations: 1Deakin University, Burwood, Australia, 2Eat Up, Melbourne, Australia

Abstract:
Background and aims: In Australia, an estimated four million people are food insecure, and one in five of these are children. Not for profit food organisations are increasing in scale, building awareness of food insecurity and will likely lead the charge towards the Sustainable Development Goal of zero hunger by 2030. However, to date, there remains a paucity of rigorous evidence, and frameworks for generating such evidence, to determine the impact of community organisational initiatives on food insecurity and associated outcomes. In this presentation, on behalf of researchers and community partners from Eat Up a not for profit organisation, authors will share the findings and lessons from their recent collaboration. The aim of the study was to build an evaluation framework for Eat Up, to measure impact and improve implementation of their free lunch delivery program to food insecure children in Australian schools.

Methods: Interviews were conducted with key stakeholders (staff, schools, parents) and evaluation tools (such as two surveys and audit) were piloted.

Results: The findings suggest regular, low-participant burden and easy-to-use tools are the optimal methods for ongoing data collection and annual reporting in small not for profits. Eat Up’s program has estimated outcomes for children’s in classroom behaviours as well as for their daily nutrition and development.

Conclusions and significance: Partnerships between academia and not for profits can help to build evidence-informed practice and applied science, which will assist in comprehensive action on food insecurity and ensuring the right to food for all.

Food security in disaster relief planning: considering an alternative nutrition source

Authors: Dr Harrison Edwards1

Affiliations: 1University Of Queensland, Herston, Australia

Abstract:
Background: Providing complete nutrition in ways other than normal food intake should be considered in public health disaster planning to help ensure nutrition security. Powder-to-liquid oral total nutrition products have made significant advancement in recent years and are the mainstay of alternative nutrition in hospitals; liquid oral total nutrition is important for patients who cannot take adequate nutrition normally, such as patients with swallowing disorders and malnutrition.

However, scant literature exists examining its application in public health contexts, specifically as a unique addition to disaster planning and preparedness.

Body: Food storage and food distribution are important public health domains in disaster relief and preparedness. Today’s powder-to-liquid oral total nutrition has characteristics that make it uniquely suited for a role in this planning: it is produced from readily available sources with a small carbon footprint, and in powdered form, it is efficiently transported, long-lasting in storage, and easy to prepare by adding water. Additionally, it does not require infrastructure and equipment for refrigeration or cooking which could be disrupted in disasters. This makes it an ideal food source for emergencies in which there is food shortage and insecurity, compared to canned and frozen/refrigerated products that are bulky to store and transport, prone to spoilage and often require cooking.

Summary: Easy to create, transport, store, and use; this complete nutrition source could have a large beneficial impact on public health nutrition in future disasters and emergencies. Therefore, there should be heightened awareness and consideration of this nutrition source in future disaster planning.
Evaluation of nutrient profiling models to underpin nutrition policy in South Africa

Authors: Ms Tamryn Jenkins1, Dr Donna Mile1, Prof Shuwen Ng1, Prof Rina Swart2

Affiliations: 1University Of The Western Cape, School of Public Health, Cape Town, South Africa, 2University of the Western Cape, Department of Dietetics and Nutrition, Cape Town, South Africa, 1University of North Carolina, Gillings School of Public Health, Chapel Hill, USA

Abstract:

Background: The world is facing an obesity pandemic, coupled with dramatic increases of NCDs. The nutrition transition, with elevated consumption of ultra-processed foods has played a role in this. This is also true for South Africa (SA). Policies encouraging a healthier food environment are needed. Nutrient profiling models (NPMs) underpin these policies. Currently SA has a draft regulation (R429 of 2010) that proposes the use of the FSANZ NPM.

Aim: Evaluate the suitability of NPMs (Chile 2019, PAHO and FSANZ) to identify packaged foods high in critical nutrients in SA.

Methods: Observational data was collected at food retail stores to compile a database of the nutritional content of packaged food products available in the SA market place. The number and proportion of foods falling into either the compliant or non-compliant categories (by food category and overall) were used to identify the ability of the NPM to identify products that contained excessive amounts of critical nutrients (sugar, sodium and fats).

Results: A sample size of 7114 packaged products (5651 foods and 1463 beverages) was included. Various NPMs identified excessive amounts of either sugar, sodium, or fats to a different degree. The PAHO model was strictest, with 78.2% of products non-compliant; followed by Chile 2019 (62.6%) and then the FSANZ model (46.3%).

Conclusion: It is important that a comprehensive evaluation is done to ensure an appropriate NPM is adapted/adopted to underpin nutrition policies (such as front-of-package labeling, and restriction of marketing to children). This will assist South Africa in achieving SDG 3.

Level of Agreement between Nutrient Profiles and Argentinean Food Dietary Guidelines

Authors: MS Maria Victoria Tiscornia1, PHD Luciana Castronuovo1, BS Leila Guarnieri1, MPH Lorena Allemandi1

Affiliations: 1Fundación InterAmericana del Corazón Argentino, Buenos Aires City, Argentina

Abstract:

Background/aims: Nutrient Profiles model (NP) are an important tool for public health nutrition policies. The World Health Organization recommend assessing the validity of a NP comparing the way a model categorises foods with Food Dietary Guidelines (FDGs). This study aimed to assess the level of agreement of NP used in front-of-pack (FOP) labelling policies in Latin America with Argentinian FDGs.

Methods: Cross-sectional observational analytical study. NP used in front-of-pack(FOP) labelling in Latin America were selected. A list of local foods was classified using NP and FDGs in foods “to promote”, “to moderate”, “to limit” consumption. Statistical analysis was done by measuring the level of agreement (Cohen’s Kappa and Gwet’s AC1 ) between the NP classification and the FDGs classification of food items.

Results: A list of 1703 foods from 8 food and 48 food categories was classified with NP and FDGs. The NP with higher level of agreement with FDGs are the PanAmerican Health Organization (PAHO)´s NP (Gwet’s AC1=0.663), and Uruguay NP (Gwet’s AC1=0.651) with a sustancial agreement. Followed by Chile NP (Gwet’s AC1=0.558) and Ecuador NP (Gwet’s AC1=0.410) with a moderate agreement. At last with a discrete agreement Perú NP (Gwet’s AC1=0.373) and Bolivia NP (Gwet’s AC1=0.350)

Conclusions: This study represents an important step towards the adoption of a NP for Argentina that support the FDGs to promote an effective FOP labelling policy. Results show that PAHO NP and Uruguay NP should be considered in the design of public health nutrition policies for the prevention of Non Communicable Diseases.

Defining unhealthy food for regulating marketing to children- what are Australia’s options?

Authors: Ms Wendy Watson1, Ms Korina Richmond1, Ms Clare Hughes1

Affiliations: 1Cancer Council Nsw, Woolloomooloo, Australia

Abstract:

Background: Regulating food marketing to children is recognised worldwide as an important pillar in addressing childhood obesity rates. A robust definition of unhealthy food is required to underpin food marketing policy. WHO regional offices, including Western Pacific Region (WHO WPR) have developed nutrient profile models, however, in Australia there are two alternative models that could be considered; the Health Star Rating system (HSR) and a recent Council of Australian Government Health Council guide (COAG). The aim of this research is to compare different nutrient profiling criteria and critically analyse the advantages of each.
Methods: Two datasets, one of outdoor and the other television food advertisements were classified as prohibited/not prohibited to be advertised under the three nutrient profiling criteria. Under the WHO WPR and COAG models foods were classified as prohibited/not prohibited and a binary classification of ≤3.5 stars (prohibited) or ≥3.5 stars (not prohibited) was used for the HSR system.

Results: The presentation will highlight the key differences between each model in food advertisements prohibited/not prohibited and discuss practical implications of using each model.

Conclusions: This study identifies the practical implications of each nutrient profiling model by using real advertising data. An independently developed, easy to use nutrient profiling criterion is required to underpin food marketing to children regulation. Australia is well advanced with appropriate criteria. Political will is now required to incorporate criteria within government endorsed regulation.

Examining progress in reducing the sodium content of Canadian packaged foods

Authors: Dr. Anthea Christoforou1, Dr. Jodi Bernstein1, Prof. Mary L’Abbe1

Affiliations: 1University Of Toronto, Toronto, Canada

Abstract:

Background: Canadians consume excessive amounts of sodium, the majority of which comes from packaged, processed foods. In 2012, Health Canada published voluntary targets for reducing sodium in processed food by the end of 2016. The aim of this study was to evaluate the food industry’s progress towards these targets.

Methods: The analysis drew on the 2013 (n=9,199) and 2017 (n=10,646) cycles of the University of Toronto’s Food Label Information Program. Sodium content was obtained from products’ Nutrition Facts table. Differences in mean sodium content (mg/100g) overall and by food category were estimated using paired t-tests, to account for the nearly 40% of products that were consistent between cycles. The proportion of products meeting the 2016 benchmark targets was also calculated.

Results: Overall there was no significant difference in the sodium content of packaged foods from 2013 to 2017 (682mg/100g to 649mg/100g, p=0.20). This trend was consistent at the food category level with the exception of meat products for which there was a significant mean decrease in sodium (496mg/100g to 428 mg/100g, p=0.007) and mixed dishes where there was a significant increase (348mg/100g to 500mg/100g, p=0.003). The proportion of foods meeting the 2016 sodium targets increased slightly from 33.6% in 2013 to 37.3% in 2017.

Conclusion: Minimal efforts to reduce sodium over the last four years and the high proportion of products not meeting sodium targets calls into question the effectiveness of such voluntary programs and supports efforts for robust regulations to reduce dietary sodium in the Canadian population (SDG 3).

Mandatory salt reduction legislation in South Africa: Has it worked?

Authors: Professor Karen Charlton1, Dr Paul Kowal2, Prof Alta Schutte3, Dr Lisa Ware4, Dr Nadia Minicuci5, Dr Barbara Corso5

1University Of Wollongong, Wollongong, Australia, 2World Health Organization, Geneva, Switzerland, 3North West University, Potchefstroom, South Africa, 4University of Witwatersrand, Johannesburg, South Africa, 5Neuroscience Institute, CNR, Padova, Italy

Introduction: In June 2016, South Africa implemented legislation limiting maximum sodium levels in a range of foods in an attempt to curb the epidemic of hypertension in the country. This study evaluates whether salt intake has reduced following introduction of the policy.

Methods: Participants were recruited using a nested cohort design within the World Health Organization Study on global AGEing and adult health (WHO-SAGE). The SAGE-South Africa Wave 2 (W2; 2015-16) and Wave 3 (W3; 2018-19) cohorts consisted of n = 3180 and n = 2524 randomly selected households, respectively, across the country. 24-hour urine samples were collected in a random sub-sample in each wave, and creatinine, sodium and potassium excretion analysed. Comparison between complete 24hr urine collections in W2 (n = 476) and W3 (n =702) was conducted. Salt-behaviour questions were also administered.

Results: Median (IQR) age was 56 (23) y in W2 and 61 (15) y in W3. Median daily sodium excretion was 98.4 (79.4) mmol/day (equivalent to 5.83 (4.7) g salt/day) in W2 and 104.5 (87) mmol/day (6.19 (5.2) g salt/day) in W3 (P=0.593). In both waves, 37% met the WHO target of ≤5 g salt/day. Salt was added to food at the table always/often/sometimes by 59.5% in W2 and 65.6% in W3.

Conclusions: It is possible that food manufacturers had already reformulated products prior to W2 data collection. The stricter salt targets implemented in June 2019 are required to further lower population salt levels and efforts to reduce discretionary salt use are needed.
Supply and Demand Impact of the Food Labelling & Marketing Chilean Law

Authors: Dr Marcela Reyes1, Dr Lindsey Smith Taillie1, Dr Teresa Correa2, Dr Arantxa Colchero4, Dr Francesca Dillman Carpentieri4, Dr Guillermo Paraje5, Dr Barry Popkin3, Dr Camila Corvalan6

Affiliations: 1Institute of Nutrition and Food Technology, University of Chile, Santiago, Chile, 2Department of Nutrition, University of North Carolina Gillings School of Global Public Health Chapel Hill, North Carolina, Chapel Hill, United State of America, 3School of Communication, Diego Portales University, Santiago, Chile, 4National Institute of Public Health, , Mexico, 5School of Media and Journalism, University of North Carolina, Chapel Hill, United State of America, 6Business School, Universidad Adolfo Ibáñez, Santiago, Chile

Abstract: Background/aims: In June 2016, Chile implemented the first phase of obesity-preventive actions that included front-of-package warning-labels (FOPL), banning child-targeted marketing, and sales/provision at school of foods with high content of energy, sugars, saturated fats and sodium.

Methods: We analyzed pre and post-implementation data to assess the impact of the law on food reformulation, nutritional knowledge, attitudes and marketing exposure among preschooler’s mothers and adolescents from Santiago-Chile, national household food purchases (Kantar Worldpanel®), and central bank internal data for employment and wage.

Results: Regulation had a good compliance (95% FOPL and 50% in marketing restrictions). Preschooler’s mothers and adolescents understood the labeling (>90%) and improved ~50% food healthiness classification (p<0.05). The purchases of ‘High-in’ products decreased in 23% for beverages and 36% for breakfast cereals (p<0.05). Preschoolers and adolescents decreased ~50% their TV food-ad exposure (p<0.05). Food industry importantly decreased the amount of sugars among beverages, dairies and breakfast cereals, as well as the sodium for savory spreads, cheese and sausages (p<0.05), decreasing the percentage of regulated products between 50-90%. There were no significant shifts in employment or wages in the food manufacturing sector.

Conclusion: We observe that after the implementation of a package of regulatory actions that include warning FOPL, child-directed marketing restrictions and healthier school environments, the food environment is becoming healthier and the ability of people to make healthier food selection is improving. These results suggest that this package of actions is potentially successful in improving people’s diet although long-term effects need to be assessed after full implementation

Lessons learned; the five year review of the Health Star Rating system

Authors: Ms Jessica Down4

Affiliations: 1Australian Government Department Of Health, Canberra, Australia

Abstract: Background: The Health Star Rating (HSR) system is an interpretative front-of-pack (FoPL) nutrition labelling system that rates food products based on overall nutrient profile. The system was implemented in Australia and New Zealand in 2014 and has recently undergone a world-first formal review.

Methods: The aim of the review was to determine whether the system was achieving its objectives and suggest improvements if necessary. The review was undertaken by an independent consultant who reviewed 700 written submissions, reviewed monitoring data and research on nutrition labelling, liaised with technical experts on specific system issues and facilitated twelve stakeholder consultations.

Results: The review found general stakeholder support for the system but identified a number of areas for improvement. The final review report contains recommendations for improvement to the system, including governance and the algorithm, and discusses specific issues such as the treatment of fresh fruit and vegetables and of total and added sugars. Relevant Ministers will respond to the recommendations in late-2019.

Conclusions: FoPL systems have the capacity to improve health and wellbeing through individual diets and by improving the nutritional status of the food supply - aligned with SDG 3. The review is the first of its kind for a FoPL system and will have implications for the development and continuation of FoPL in Australia and New Zealand, and also across the world.

This presentation will discuss the five year review process and findings, the response to the review recommendations, and the lessons learned during the first five years of implementation.

A case study on nutrition labelling of packaged foods in Malaysia

Authors: Mr SH Ng1, Assoc. Prof. Bridget Kelly1, Prof. Dr. Heather Yeatman1, Prof. Dr. Boyd Swinburn3, Dr. Stefanie Vandevijvere4, Emeritus Prof. Dr. Mismail Noor1, Prof. Tilakavati Karupaiah3,5

Affiliations: 1Early Start, School of Health and Society, University of Wollongong, Wollongong, Australia, 2School of Population Health, University of Auckland, Auckland, New Zealand, 3Faculty of Hospitality, Food and Leisure Management, Taylor’s University, Subang Jaya, Malaysia, 4Dietetics Program, School of Healthcare Sciences, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, , Malaysia, 5School of Biosciences, Faculty of Health and Medical Sciences, Taylor’s University, Subang Jaya, Malaysia
Abstract:
Background: Nutrition information on food labels guides informed choices towards achieving healthy diets at the population level, especially when it includes nutrients of concern. However, tensions between public and commercial interests may impede policy processes and initiatives to create and promote healthy food environments. This study aimed to (1) benchmark nutrition labelling policies in Malaysia against the international practices, (2) map policy development against the international references, and (3) investigate barriers and facilitators in the policy processes.

Methods: The Food-Environment Policy Index protocol developed by the International Network for Food and Obesity/NCD Research Monitoring and Action Support (INFORMAS), guided the collection of evidence including the food labelling domain. Government stakeholders subsequently validated this information. Twenty-six independent public health experts evaluated the evidence and prioritised policy actions based on gaps in implementation. An historical document review of nutrition labelling policies, together with semi-structured interviews with key informants, explored the nutrition labelling policy processes in Malaysia.

Results: Experts rated the extent of implementation of nutrition labelling policies as ‘medium’ against international best practices. Nutrition labelling in Malaysia referenced CODEX development. Key issues identified in the nutrition labelling policy process included initiatives from the government, risk mitigation, influential events and negotiations with private industry.

Conclusion*: Policy analysis in nutrition labelling allows better strategizing of approaches to meet nutrition goals. This indirectly will facilitate materialisation of targets set in Sustainable Development Goal 2 (Target 3.4) and 3 (Target 2.2).

Are Australian Self-Substantiated General Level Health Claims Promoting Ultra-Processed Foods?

Authors: Dr Anita Lawrence

Affiliations: 1University of Melbourne, Parkville, Australia

Abstract:
Background: Nutrient profiling and degree of food processing (e.g. the NOVA system) are two contrasting approaches for assessing the ‘healthiness’ of a food. The Australian food regulatory system uses a food profiling system, the Nutrient Profile Scoring Criteria (NPSC), to assess the eligibility of a food to display a general level health claim.

Aim: To identify the types of food products using self-substantiated general level health claims and determine if any fall within the ultra-processed food classification of NOVA.

Methods: Details of all notified self-substantiated food-health relationships for general level health claims (on 20/6/19) were extracted from the FSANZ website and categorised. Company websites were investigated to identify foods using these health claims, and ultra-processed foods were identified.

Results: More than one third (51/143) of claims related to collagen. Products making claims included: nutritional supplements (tablets, powders, ‘gummies’ and liquids), 100% gelatine, snack bars and chocolate flavoured bone broth, and were all ultra-processed. Probiotic-related claims were the second most frequent type, accounting for 15% of listings. Products included: chocolate flavoured powdered supplement, meal replacement smoothies, artificially sweetened probiotic water, yogurt (plain and flavoured) and probiotic whole milk (plain and flavoured). Most, but not all, of these products were ultra-processed foods. Other main categories of claims included: Glycaemic Index 10%, fibre 10%, protein 6% and nuts 4%, most of which included ultra-processed foods.

Conclusions: General level health claims are providing marketing opportunities for many ultra-processed foods. This suggests that the current approach for self-substantiated health claims is sub-optimal for public health.

Comparison of guidance documents for the substantiation of health claims

Authors: Ms Sally McDonald1, Ms Kellia Chiu1, Professor Roger Magnusson2, Professor Lisa Bero1

Affiliations: 1Charles Perkins Centre, School of Pharmacy, Faculty of Medicine and Health, the University of Sydney, Camperdown, Australia, 2Sydney Law School, University of Sydney, Camperdown, Australia

Abstract:
General level health claims are statements made on food labels that refer to the relationship between the food and its effect on health. Under the Food Standards Australia New Zealand (FSANZ) food standard code, food industry may self-substantiate these claims using a systematic review to establish the food-health relationship. There is limited accountability as these reviews do not need to be submitted for assessment at the time of notification. There is also concern that these claims are not evidence-based, and essentially act as a marketing tool for food industry. We conducted a cross-sectional content analysis to compare the guidance documents for substantiation of health claims under FSANZ with methodology documents produced by the European Food Safety Authority (EFSA), the Food and Drug Authority (FDA) in the United States, and Codex Alimentarius, in addition to a document produced by the Ministry for Primary Industries in New Zealand (NZ) to supplement FSANZ documents. We used ROBIS 1.2 and AMSTAR 2 to appraise the quality of the systematic review methodology guidance. We identified eight documents with guidance for producing a systematic review of human studies to substantiate health claims. The documents produced by FSANZ and NZ provided more detailed systematic review methodology guidance, and met more quality domains of AMSTAR 2 than those produced by other organizations. Of note, FDA, EFSA, and NZ have approval processes for claims, while in Australia there is no consistent independent assessment of reviews. Further research will assess the quality of systematic reviews produced using these guidance documents.
"Whole grains" claims on food packages marketed in Brazil

Authors: Ms Giovanna Andrade¹, Dra. Lais Mais², Ms. Camila Ricardo³, Dra. Ana Clara Duran⁴, Dra. Ana Paula Martins⁵

Affiliations: ¹Departamento De Medicina Preventiva, Da Faculdade De Medicina Da Universidade De São Paulo (fmusp), São Paulo, Brazil, ²Center for Epidemiological Research in Nutrition and Health (NUPENS/USP), São Paulo, Brazil, ³Brazilian Institute for Consumer’s Defense (Idec), São Paulo, Brazil, ⁴Núcleo de Estudos e Pesquisas em Alimentação, Universidade Estadual de Campinas (NEPA/Unicamp), Campinas, Brazil

Abstract:
Background/aims: Although the nutrition claim “whole grains” can be found in packaged foods marketed in Brazil, the current legislation does not establish composition or labelling criteria to its use, which may confuse and misinform consumers and lead to inadequate food choices. Thus, the present study aims to assess the use of “whole grains” claims in food products marketed in Brazil, and to assess the nutritional profile of these products.

Methods: We used information from the packaging of food products sold in the five largest food retail chains in Brazil between April and July of 2017. We estimated the prevalence of food products with "whole grains" claims in their packages and evaluated their amount of whole grains using the list of ingredients. Additionally, we compared the nutritional profile of the products with and without claims for “whole grains” using the Pan American Health Organization (PAHO) criteria.

Results: About 19% of the labels evaluated presented “whole grains” claims. Between these products, 34.7% did not present whole grains among the top three ingredients of the products. These products also showed high proportions of refined ingredients (e.g. refined flour and sugar) in its composition and presented high critical nutrients content, according PAHO’s criteria.

Conclusion: Our results show the need to improve Brazilian regulation on whole grains. The legislation should establish minimum wholemeal flour content for products with “whole grain” claim and prohibit the use of claims in products with high critical nutrients content in order not to confuse or misinform the consumers.
3E – Civil society voice and advocacy

Rapid Fire Presentations

Advocacy coalitions and the transfer of nutrition policy to Zambia

Authors: Dr Jody Harris

Affiliations: 1Institute of Development Studies, Brighton, United Kingdom

Abstract:

We need to understand how policies are created and negotiated in countries if we want to turn our research into impact. This study explored how and why certain international nutrition approaches have found their way into national nutrition policy and practice in Zambia. Data were collected at national and international levels in the form of key informant interviews (70 interviews with 61 different respondents over six years); policy documents; and social network maps. As the data were explored and synthesised, a broad reading of the public policy literature suggested theories of policy transfer and advocacy coalitions would shed theoretical light on the emerging empirical findings.

Stunted growth in children and the need for multi-sectoral action are dominant ideas in the international nutrition community and are increasingly evident in Zambian nutrition policy. With its focus on multi-sectoral action, the recent nutrition policy narrative impinges directly on existing food security narratives. Dominant international narratives do not encounter a vacuum at national level however, and the nutrition policy sub-system has become split between a largely international coalition promoting multisectoral action on child stunting, and a largely national coalition focused on food security to address hunger. This has implications for either coalition progressing a coherent policy agenda for nutrition issues.

This study finds that we can understand policy processes through the application of multiple political science theories, allowing the generalization of findings from this case to other contexts. These concepts can be investigated wherever the nutrition system reaches down from international to national level.

Report Cards: The utilisation of community-collected data to increase state accountability

Authors: Ms. Arundhati Sridhar, Ms. Pradeepa Dube, Ms. Annette Fisher

Affiliations: 1ANANDI - Area Networking And Development Initiatives, Vadodara, India, 2The Institute of Development Studies (IDS), University of Sussex, Brighton, UK

Abstract:

Aims: Despite poor health/nutrition indicators in the most marginalised villages of the tribal belt of Gujarat, the community and the state continue to have limited interaction, as the language of health and nutrition data is increasingly not accessible to communities, and the community’s telling of health/nutrition shortfalls is seen as not valid by the state.

This enquiry focussed on the power of the data produced by community monitoring, social accountability, and empowerment.

Methods: An action research was conducted with first and second person enquiry groups in participatory action-reflection cycles. The co-researchers articulated the central question as: ‘How can we increase the utilisation of community-collected data to increase state accountability in more strategic and efficient ways?’

Results: Through a participatory process, a report card on health and nutrition indicators of the village was prepared for presentation in Gram Sabha (village council) meetings. This data was all collected and analysed by the health animators themselves, so there was a high ownership at the time of the presentation. There was also a high interest amongst community members who were able to see a composite picture of the health and nutrition indicators of the village and take relevant action.

Conclusion: By using community language to collect data, the community gains power collectively. If this data is then used with the system using the system’s language, then the system and community will perceive it as powerful and valid, leading to an increase in system responsiveness and an increase in individual and collective power and empowerment

Front-of-pack warning labels preferred by low education parents in Latin American countries

Authors: PhD student, MSc, RDN Sofia Rincón Gallardo Patiño, Angela Carriedo, Lizbeth Tolentino-Mayo, Jacqueline Araneda, Lorena Allemandi, Adriana Murillo, Simon Barquera

Affiliations: 1Department of Human Nutrition, Foods, and Exercise; College of Agriculture and Life Sciences; Virginia Polytechnic Institute and State University, Blacksburg, USA, 2World Public Health Nutrition Association, London, United Kingdom, 3Centro de Investigación en Nutrición y Salud; Instituto Nacional de Salud Pública, Cuernavaca, Mexico, 4Departamento de Nutrición y Salud Pública; Universidad de Bio-Bio, Chillán, Chile, 5Políticas de Alimentación Saludable, Fundación Interamericana del Corazón, Argentina, 6Escuela de Nutrición; Universidad de Costa Rica, San José, Costa Rica

Abstract:

Background: Overweight and obesity rates in Latin America are much higher than the global prevalence. Front-of-pack (FOP) nutrition label systems are gaining momentum in Latin America as a strategy to tackle obesity among children and adults. This
study investigates the usage and preference of three FOP nutrition labels among Argentinian, Chilean, Costa Rican, and Mexican parents.

**Methods:** From March to May 2016, a questionnaire was administered to 966 parents of elementary school aged children in Argentina (89), Chile (304), Costa Rica (258) and Mexico (315). Guideline Daily Amounts (GDA), traffic light (TL), and warning label FOP systems were compared and analyzed. Statistical analysis was conducted using frequencies and proportions. Median differences tests, ANOVAs and logistic regression models were performed. A thematic analysis of qualitative data was conducted using deductive process.

**Results:** Parents with low education levels and poor health conditions (i.e., overweight) preferred the FOP warning labels over the GDA and TL systems. The GDA FOP nutrition labels were preferred by parents with higher education levels. Overall, the TL system was preferred with no significant differences across countries.

**Conclusion:** FOP warning labels are preferred by parents with vulnerable conditions (i.e., low education levels and overweight) across four Latin American countries. An easily understandable, readable and acceptable label may facilitate usage by vulnerable groups to make healthy food purchases. These results have important policy implications by providing evidence to government policymakers to enact legislation to implement or enhance existing FOP nutrition label policies as a viable strategy to reduce obesity risk.

### Food Marketing Observatory (OPA): denouncing misleading and abusive food marketing in Brazil

**Authors:** Dr Lais Amaral Mais1, Mariana Ribeiro2, Mariana Gondo dos Santos1, Dr Ana Paula Bortoletto Martins1,3

**Affiliations:** 1Brazilian Institute for Consumer Defense (Idec), São Paulo, Brazil, 2São Camilo University Center, São Paulo, Brasil, 3Center for Epidemiological Studies in Health and Nutrition (Nupens), University of São Paulo (USP), São Paulo, Brasil

**Abstract:**

**Background/aims:** In Brazil, misleading and abusive marketing is illegal by the Consumer’s Defense Code (CDC) and the Resolution nº 163 of the National Council for the Rights of Children and Adolescents (Conanda), which helps to define abusive marketing. Yet, many food companies find a manner to publicize their products inappropriately, especially those high in fat, sugar and/or salt. To reinforce the law and raise population’s and judiciary power’s awareness, an online platform was developed to receive denounces about illegal food marketing.

**Methods:** A steering committee composed of researchers and advocates on food marketing developed the Food Marketing Observatory (OPA) website, with the aim to receive denounces about abusive or misleading food marketing and qualify them for the most appropriate judicial referral. We developed a series of documents, such as flowcharts, response models, reports and guides to organize OPA’s processes.

**Results:** From April to July, 2019 OPA received 317 denunciations: 57 about a research on a... 494 denounces: 234 about a monitoring from the International Baby Food Action Network (Ibfan Brasil) of illegal marketing of breast milk substitutes, and 26 from people who contributed spontaneously. The committee will discuss all denounces to define the most appropriate legal strategy.

**Conclusions:** The website aims to stimulate denounces about illegal food marketing. It is a contribution for the fiscalization of food marketing in Brazil, to raise population awareness about food consumption, and to strengthen the judiciary power for forwarding and judging illegal cases as a way to improve Brazilian food environment.

### Engaging with food regulatory policy: Don’t wait for ‘formal’ consultation?

**Authors:** Dr Bronwyn Ashton1, Associate Professor Cassandra Star1, Professor Mark Lawrence1, Professor John Coveney1

**Affiliations:** 1Flinders University, Adelaide, Australia, 2Deakin University, Melbourne, Australia

**Abstract:**

**Background/Aim:** Food regulatory policy influences food composition and availability. However, few public health nutritionists have the skills or opportunity to participate in policy development, and advocates are concerned that policies reflect commercial interests, rather than public health. This research aimed to understand how the policy ‘problem’ was represented in food regulatory policy decision-making in Australia, and the implications for public health nutrition engagement with policy development processes.

**Methods:** Bacchi’s ‘what’s the problem represented to be?’ discourse analysis method was applied to a case study of voluntary food fortification (VF) policy, developed by the former Australia and New Zealand Food Regulation Ministerial Council (ANZFRMC).

**Results:** Within 57 key documents used in the policy development, four major categories of stakeholder were identified. A period of ‘formal’ consultation revealed that citizen, public health and government stakeholders primarily represented VF as a ‘problem’ of public health, while industry stakeholders represented VF as a problem of commercial benefit. At the outset and conclusion of the policy process though, ANZFRMC represented VF as a problem of commercial benefit, suggesting the intervening consultation did not alter the outcome.

**Conclusion:** This research indicates that in food regulation, the ‘battle’ is often fought and won at the initial framing of the ‘problem’ in the earliest policy process stages. If public health nutritionists leave their participation until formal consultation stages, the battle may already be lost.
Australian adolescents’ perceptions of potential policy initiatives to reduce sugary drink consumption

Authors: Professor Caroline Miller1,2, Dr Kerry Ettridge1,2, Dr Belinda Morley3, Ms Joanne Dono1,2

Affiliations: 1University of Adelaide, Adelaide, Australia, 2South Australian Health and Medical Research Institute, Adelaide, Australia, 3Cancer Council Victoria, Melbourne, Australia

Abstract: Background/aims: Adolescents’ perceptions of and responses to potential policy options to reduce sugary drink consumption may contribute to potential effectiveness of these options among this group.

Methods: Adolescents’ support for 5 potential policy initiatives to reduce sugary drink consumption, demographics, body mass index, and knowledge of health effects were assessed via the 2018 National Secondary Students’ Diet and Activity survey (N=9102; age 12-17 years).

Results: Preliminary results (unadjusted, bivariate analyses) suggest highest support for on-product text labels warning of health effects (52%). Approximately one third were somewhat/strongly in favour of banning school sales of sugary drinks (30%) and TV advertising during children’s viewing times (27%); as well as a sugary drink tax (36%), with greater support for a tax when paired with investment in healthy weight programs (43%). Many adolescents were neither for nor against these options (36-47%) rather than somewhat/strongly against (12-28%). There was lower support (p<0.001) among males (7-11% absolute difference) and moderate-high consumers (4+ cups/week; 11-20% absolute difference). Perceptions of sugary drink consumption health effects (prompted: tooth decay, Type 2 diabetes, weight gain/obesity, heart disease) were moderate to high (53-72%), and were significantly associated with higher support for policy options (p<0.001; 15-39% absolute difference).

Conclusions and implications: Australian adolescents’ level of acceptance of policy options was substantially lower than Australian adults; however, they show greater neutrality in their response. Increasing knowledge of health effects of sugary drinks may increase receptiveness to potential policy measures to reduce consumption, with warning labels presenting a promising strategy for this group.

Australians’ consumption of sugary drinks, knowledge and appetite for government action

Authors: Prof Caroline Miller1,2, Ms Jo Dono1,2, Dr Kerry Ettridge1,2, Prof Melanie Wakefield4, Prof Simone Pettigrew5, Prof John Coveney5, A/Prof Sarah Durkin5, Dr Jane Martin6

Affiliations: 1South Australian Health and Medical Research Institute, Adelaide, Australia, 2University of Adelaide, Adelaide, Australia, 3Cancer Council Victoria, Melbourne, Australia, 4George Institute for Global Health, Sydney, Australia, 5Flinders University, Adelaide, Australia, 6Obesity Policy Coalition, Melbourne, Australia

Abstract: Background: Australia lacks a comprehensive public health response to over-consumption of sugary drinks. Our NHMRC-funded research program aimed to:

1) develop an in-depth understanding of how, when and why people consume sugary drinks;
2) measure community awareness of sugar content, health risks, and appetite for educative and regulatory intervention;
3) design and test warning labels for sugary drinks.

Methods:

1. National telephone survey; n=3430, aged 18+ years
2. Focus groups: young adults aged 18-24 years, 16 groups (n=104 participants); and parents of primary and secondary school aged children, 12 groups (n=82 participants)

Results: Consumption of sugary drinks among Australians is high, particularly young adult males. Daily consumers (vs non-daily and non-consumers) had a lower awareness of health risks. All 10 policy interventions that were presented had majority support; on-bottle text health warning labels was the most supported intervention (88% in favour).

Focus group participants were confused about the sugar content of drinks, had difficulty interpreting nutritional and exercise information, and viewed potential health risks as not personally relevant. On-bottle warning labels helped consumers to ‘stop and think’ about their own and their child/ren’s consumption. Clear, factual, and non-ambiguous information (e.g. sugar content pictogram) was most persuasive.

Conclusion and implications: On-bottle warning labels are a potentially useful intervention to inform and remind consumers of the potential consequences of over-consumption. They would also contribute to de-normalising over-consumption and improving the food environment. However, the content and execution of the label is important to delivering messages that have the greatest capacity for change.
Co-design of food security research with Indigenous Peoples in remote Australia

Authors: Dr Megan Ferguson1,2, Ms Clare Brown3, Ms Melinda Hammond3, Ms Kani Thompson2, Dr Leisa McCarthy4, Prof Bronwyn Fredericks1, Prof Amanda Lee5, Ms Dympna Leonard2, Dr Katherine Cullerton1, A/Prof Julie Brimblecombe1,6

Affiliations: 1University of Queensland, Brisbane, Australia, 2Menzies School of Health Research, Darwin, Australia, 3Apunipima Cape York Health Council, Cairns, Australia, 4Menzies School of Health Research, Alice Springs, Australia, 5James Cook University, Cairns, Australia, 6Monash University, Clayton, Australia

Abstract:
Background: Apunipima Cape York Health Council, a community-controlled organisation that provides health services to remote Indigenous communities, has called for action to address food security, informed by the communities it services in Cape York, North Queensland.

Methods: Health staff and academics co-designed a research strategy to support the development of a community framework to improve food security. We outline the opportunities and challenges for co-design of a strategy to deliver benefit, through a reflective process based on The Lowitja Institute Research for Impact Tool, designed to assess research impact with Indigenous Peoples.

Results: In line with the tool steps, we defined end users and their evidence needs, appraised research and community-level evidence and selected the design through a process of negotiation. Staff were engaged from the outset, though community engagement was challenged by funding timelines and resources, and the notion of setting expectations that may not be met. To address this, a participatory methodology was selected which includes a strong translation focus and elements of assessing benefit. The principles of Indigenous leadership, partnership, and capacity enhancement are strengths of the strategy.

Conclusion: Partnerships between peak health organisations and academics can strengthen research to deliver community benefit. This approach, undertaken in regional Australia, has application to global contexts in considering the creation of evidence that decision-makers can use to inform smarter decisions. Engaging community members in food security research will progress action towards ending hunger and achieving food security, improving nutrition, health and well-being and reducing intergenerational poverty amongst Indigenous Peoples.

Women’s Food Right – Agenda of Women’s Collectives for Social Protection

Authors: Ms Neeta Hardikar1, Ms Sheela Khant2

Affiliations: 1ANANDI - Area Networking and Development Initiatives, Devgadh Baria, India

Abstract:
In India a range of schemes and programs attend to social protection of vulnerable communities to prevent them from falling into states of abject poverty and malnutrition and to improve nutrition, productivity and food sovereignty. In ANANDI’s experience, the gaps in implementation of these program lead to vulnerable communities experiencing denial, social inequities and the power relations that impact their food security. The bureaucratic systems further distress the process of identification of the rights holder and violate rights. These gaps show that while there is recognition of malnutrition as a structural issue, the efforts of combating them lack the continuum of care, involvement of communities and enabling of women.

ANANDI and women’s collectives designed and implemented strategies of forming collectives of women in reproductive age and interacted with their families in “preparatory meetings” for accessing services of the Integrated Child Development Scheme (ICDS), before the formal roll out of the “Mamata Diwas” (Village Health Nutrition Day) every month. This process of nutrition education, preparatory meetings, campaign, public hearing and accessing public grievance redressal system have stirred up the functionaries and enabled women exercise their agency and access food under the government schemes collectively. In this paper we share strategies and tools of rural women in asserting their right for nutritional food security as represented in Sustainable Development Goal 2, 3 and 5. Community mobilization and education on nutritional food security has helped reduce high risk pregnancies, maternal and child mortality and improved service delivery and system’s accountability.

Achieving Global Nutrition Targets, through an increased investment in voice and equity

Authors: Ms Regina Keith1

Affiliations: 1University Of Westminster, London, United Kingdom, 2WPHNA, Peacehaven, UK, 3Cara International Consulting Ltd, Peacehaven, UK

Abstract:
Background: It is over forty years since health ministers met with WHO and UNICEF & followed a rational health policy approach to develop and consent to the Alma Ata Declaration (WHO 1978). The Declaration set a global commitment to achieve Health for All, by 2000. Based on the principles of equity and community participation in health planning & policy making through an intersectoral approach. However, there were many perceptions of what the Alma Ata approach was, and lack of resources invested into the overarching principles, resulting in the vision of Health for All not being achieved.

Which factors are supporting countries to achieve universal health coverage? Will the new Astana Declaration and SDG targets result in the right to health for all being achieved? Which approaches are reducing the gap between rich and poor? Pro-poor health financing strategies & social protection mechanisms are required.
**Methods:** The presentation presents evidence from 20 years of research and work completed by the presenter and organisations such as Save the Children, World Vision and University of Westminster. All publications have been peer reviewed.

**Findings:** Evidence demonstrates that services made available free at the point of access, through progressive taxation systems, are more pro-poor than other mechanisms (Save the Children 2008). Countries relying on informal payment mechanisms pull families into poverty and delay timely use of services (Keith et al. 2005). Countries that value and seek the voice of citizens and health workers in planning have improved health outcomes (WV 2009, Keith 2018).
3F – Tools and systems for monitoring or evaluating food systems and environments
Rapid Fire Presentations

Strengthening evidence-informed healthy store policy in remote Indigenous Australia

Authors: Dr Megan Ferguson1,2, A/Prof Catherine Mah3, Dr Anne Marie Thow4, Ms Melinda Hammond5, Prof Anna Peeters6, A/Prof Julie Brimblecombe7,2

Affiliations: 1The University Of Queensland, Brisbane, Australia, 2Menzies School of Health Research, Darwin, Australia, 3Dalhousie University, Halifax, Canada, 4The University of Sydney, Sydney, Australia, 5Apunipima Cape York Health Council, Cairns, Australia, 6Deakin University, Geelong, Australia, 7Monash University, Clayton, Australia

Abstract: Background: Aboriginal and Torres Strait Islander storeowners and retail organisations implement store policies in many remote communities with the aim of improving food security and health outcomes, alongside commercial outcomes. Policy-makers have highlighted that a better understanding of what is most effective, would assist in informing store policy.

Methods: A participatory policy priority-setting exercise was conducted with Aboriginal and Torres Strait Islander storeowners and retailers working in remote Northern Territory and North Queensland. Informed by a policy content and social network analysis, evidence of effectiveness and stores sales modelling, draft policy options aimed at positively shaping retail environments were presented. Stakeholders assessed the acceptability and feasibility of the draft suite of policies, modified and prioritised the policy content and proposed a dissemination plan.

Results: A series of co-designed, evidence-informed policies considered to be broadly acceptable and feasible for implementation in stores across remote Australia were prioritised. Priority areas for action and policy which are external to, though impact on, the store environment were also identified.

Conclusions: Co-design with retailers and other experts can result in evidence-informed policies that aim to shape the food environment and positively impact on the nutritional quality of food purchased in remote community stores, whilst maintaining sustainable businesses. This method is highly relevant to global populations in defining approaches to creating evidence-informed local food policies. Health-promoting retail policy will support Australia’s progress in achieving zero hunger and good health and well-being among Aboriginal and Torres Strait Islander people living in remote areas.

Canadian Report Card on Food Environments for Children: Five Years of Experience

Authors: Dr Kim Raine1, Krista Milford1, Dr. Katerina Maximova1, Dr. Candace Nykiforuk1, Dr. Dana Olstad2

Affiliations: 1University of Alberta, Edmonton, Canada, 2University of Calgary, Calgary, Canada

Abstract: Background/aims: The practice of eating is embedded in complex food environments that shape dietary patterns. Growing evidence implicates food environments in health-related outcomes. In 2015 we developed a Report Card to assess how food environments support healthy eating among Canadian children. Our aim is to share five years of experiences on benchmarking food environments to promote environmental change for healthier eating.

Methods: An evidence review and consultation with public health experts identified indicators of quality of children's food environments (physical, communication, economic, social, and political). Annually, content experts use public data to compare indicators to objective benchmarks, and to assign grades through a consensus process. Annual Report Cards release grades and policy recommendations. Media impressions are tracked. In 2018 we began engaging rural communities in developing mini report cards with locally-based recommendations.


Conclusions: Benchmarking food environments through an understandable tool may offer an effective means of influencing food environments for healthy diets, and for tracking change over time.

Reliability and validity of in-store environment measurements using the Store Scout App

Authors: Dr Emma McMahon1, Ms Rachael Jaenke1, Prof Julie Brimblecombe2

Affiliations: 1Menzies School Of Health Research, Brisbane, Australia, 2Monash University, Melbourne, Australia

Abstract: Background/aims: Health-enabling food environments are those that make healthy diets available, affordable, accessible and appealing. We developed the Store Scout mobile App to enable rapid assessment of the in-store food environment and feedback compared against best practice (scores 0-100; higher more health-enabling). We assessed inter-rater reliability and
construct validity of measurements using this tool in 1) 33 metropolitan Brisbane stores and 2) 20 NT/QLD remote community stores at baseline and follow-up as part of the Healthy Stores 2020 study (HS2020) which tested a merchandising strategy to reduce unhealthy food purchases.

**Methods:** Inter-rater reliability was assessed using Gwet’s agreement coefficient (AC) for measurement items and intraclass correlation coefficient (ICC) for scores. Construct validity was assessed using linear regression of change in scores and change in sales of unhealthy foods from HS2020 baseline to follow-up.

**Results:** 80% of measurement items (n=155/196) had good or very good inter-rater reliability (Gwet’s AC >0.61). ICC for Store Scout scores was 0.954 [95% CI 0.914-0.975], with median inter-rater difference of 4.4 (range 0-11.1). A one-point increase in Store Scout score was associated with increased unhealthy food and beverage purchasing (0.91 g/total MJ energy; 95% CI -1.34 to -0.48; p<0.0001, R squared 0.5207).

**Conclusions:** We found good inter-rater reliability of measurement items and scores when using Store Scout to assess the in-store environment. Increased Store Scout score, meaning the in-store environment was more heath-enabling, was associated with decreased purchases of unhealthy foods demonstrating construct validity. Store Scout can help track implementation of health-enabling food environments.

**A blueprint country profile for measuring progress on creating healthy food environments**

**Authors:** Dr Stefanie Vandevijvere¹, Dr Sally Mackay², Ms Erica D’Souza², Prof Boyd Swinburn²

**Affiliations:** ¹Scientific Institute Of Public Health, Belgium, Brussels, Belgium, ²The University of Auckland, Auckland, New Zealand

**Abstract:**

**Background/aims:** The International Network for Food and Obesity/NCDs Research, Monitoring and Action Support (INFORMAS) aims to benchmark national food environments. The first comprehensive study on the healthiness of food environments using INFORMAS protocols and methodology was conducted in New Zealand over the period 2014-2017.

**Methods:** Based on the New Zealand study, we propose a blueprint country profile to measure progress on creating healthy food environments, using a set of indicators developed for international comparisons.

**Results:** The country profile includes indicators on the extent of implementation of national food environment policies, food industry commitments to improve population nutrition and the strength and comprehensiveness of public sector settings' nutrition policies. In addition, the healthiness of the packaged food supply and health-related labelling on food products are assessed, as well as the healthiness of food environments in schools, supermarkets, fast food and takeaway outlets, hospitals, sport centres, and around schools. Food swamps, defined as areas with higher relative density of unhealthy food outlets, are identified, and food marketing to children on television, websites, social media and packages, in magazines, and in and around schools is measured. The cost differential between healthy and current household diets is calculated for different population groups.

**Conclusion:** New Zealand’s food environment profile is largely unhealthy, and there are inequalities in access to healthy food environments. It is anticipated that the proposed country profile can contribute to tackling unhealthy food environments in countries globally through increasing accountability of governments and the industry.

**The food system compass: an analytical tool**

**Authors:** Dr Joy Parkinson¹, Dr Julia Carins¹

**Affiliations:** ¹Griffith University, Nathan, Australia

**Abstract:**

**Background:** Changing the food consumption decisions and practices of a community to improve health requires action that is multi-level, multi-directional and coordinated. Creating capacity for action requires understanding of the actions of multiple inter-related stakeholders within an interdependent, interconnected, complex system.

**Aim:** To provide an analytical tool that assists program planners to map stakeholders and influencers and identify leverage points for change.

**Methods:** Critical review and synthesis of food consumption drivers.

**Results:** Food consumption decisions and practices are influenced by five key stakeholder groups, namely, individuals, marketers, the food industry, the health and medical industry and policy makers. We present a simplified framework—a food system compass—for use as an analytical tool to assist in planning for programs aimed at complex social and public health problems such as dietary-related NCDs. Taking a stakeholder approach, this framework allows for the identification and coordination of key stakeholders, and advocates for the co-creation of mutually beneficial value propositions. Consideration of all stakeholders at the planning stage provides capacity development opportunities involving more than program funders. The food compass positions change advocates, including social marketers, as identifiers and implementers of shared value. The compass situates social enterprise as an additional capacity builder, who can provide goods and services which neither the market nor the public sector are able to offer.
Mapping evidence and gaps in tools, metrics and methods for agriculture-nutrition research

Authors: Dr Samuel Boakye1, Mr Denny John1, Suneetha Kadiyala2, Ashrita Saran1, Dr. Thalia Sparling1,2, Dr Howard White3

Affiliations: 1Friedman School of Nutrition Science and Policy Tufts University, Boston, United States, 2London School of Hygiene and Tropical Medicine, London, United Kingdom, 3Campbell Collaboration, New Dehli, India, 4International Center for Evaluation and Development (ICED), Accra, Ghana

Abstract:
Background/aims: New tools, metrics and methods in agriculture-food systems and nutrition-health research proliferated in the last decade. We aim to map innovations onto conceptual frameworks, and highlight gaps and opportunities for future development.

Methods: We created an interactive Evidence and Gap Map (EGM) of new tools, metrics and methods used in agri-health research in the last ten years. We followed rigorous systematic search and screening procedures (according to Cochrane/Campbell criteria). Eligible reports were coded and mapped across thematic domains (rows) against types of tools, methods and metrics (columns). The map visualizes the number of reports in a cell, segregated by stage of development, which can then be opened, listing a bibliography. Users can filter the EGM by specific characteristics.

Results: We retrieved over 30,000 reports, reviewing over 1000 in full text. We included over 650 reports, representing hundreds of unique innovations. The most profuse areas of innovation were: dietary assessments; water-crop footprints; ecology and climate-related aspects on the agri-health pathway; network analysis and Bayesian models; and technological innovations. Gaps in innovation related to conflict of interest, markets, and food policy, governance, and trade policy. More specifically, few items related to emergencies, biofortification, food loss and waste, inequality, aspects of equity, and food environments.

Conclusions: There are clear innovation trends shown by the EGM. Gaps represent either areas where classical methods are sufficient to measure pathways or, alternatively, a need for innovation. The EGM can be used for specific interests and sectors to shape investments and structure new projects.

Exploring a novel approach to food mapping - case study in Niue

Authors: Dr Anne-Therese McMahon1, Ms Claire Walker1, Dr Joanna Russell1

Affiliations: 1University Of Wollongong, Wollongong, Australia

Abstract:
Building food security and resilience in Pacific Island communities’ foodways is necessary to face current and imminent human and planetary health imperatives. The first step to managing and being responsive to food security threats is to have an accurate and readily updated understanding of the food environment. However, the Pacific Island Nations in general have limited resources for monitoring and surveillance hence developing food mapping approaches that can be used to complement and strengthen other food consumption data sources such as Household Income and Expenditure Surveys (HIES) is vital. This study aimed to explore a method to support innovative photographic mapping of the food environment. A scoping literature review was completed to ascertain the methodological approaches used to visually analyse photographic data inclusive of photo elicitation, photo-voice and auto-photography. These methods were applied to over 1300 photographs identifying food from all main food access points in Niue, a small Pacific Island, collected using a smart phone in 2018. The novel analytical approach included recommendations on food mapping developed by the International Network for Food and Obesity/Non-communicable Research Monitoring and Action Support (INFORMAS) that enabled a systematic categorisation to be developed for food mapping of the environment. This approach to food mapping can be potentially adapted for other Pacific Island Nations for nimble and easy monitoring of changes within the foodways system for enhancing or responding to food security threats.

Mapping Obesogenic Food Environments in South Africa and Ghana: Implications for Governance

Authors: Linda Nana Esi Aduku1, Nana Ama Frimpong Ayapong2, Robert Aidoo3, Dr Reginald Adjeyet Annan3, Charles Apprey1, Andries Du Toit1, Mr Florian Kroll1, Jean-Claude Moubabarac6, David Neves1, David Sanders1, Prof Elizabeth Catherina Swart1, Dr Anne Marie Thow4

Affiliations: 1School of Public Health, University of the Western Cape, Cape Town, South Africa, 2Department of Dietetics and Nutrition, University of the Western Cape, Cape Town, South Africa, 3Department of Biochemistry and Biotechnology, College of Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, 4Menzies Centre for Health Policy, University of Sydney, Sydney, Australia, 5Institute for Poverty, Land and Agrarian Studies, University of the Western Cape, Cape Town, South Africa, 6Département de nutrition, Faculté de médecine, Université de Montréal, Montreal, Canada, 7Department of Agricultural Economics, Agribusiness & Extension, Faculty of Agriculture, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Abstract:
Background and Aims: In sub-Saharan Africa, urbanisation and food systems change contribute to rapid dietary transitions
promoting obesity. It is unclear to what extent these changes are mediated by neighbourhood food environments or other factors. This paper correlates neighbourhood food provision with household consumption and poverty in Khayelitsha, South Africa and Ahodwo, Ghana.

Methods: Georeferenced survey data of food consumption and provision were classified by obesity risk and protection. Outlets were mapped, density and distribution correlated with risk classes.

Results: In Khayelitsha, 71% of households exceeded dietary obesity risk thresholds while 16% consumed protective diets. Obesogenic profiles were less (26%) and protective more prevalent (23%) in Ahodwo despite higher income poverty in Khayelitsha. Here, income-deprived households consumed significantly (p<0.0000) less obesogenic and protective diets. Small informal food outlets dominated numerically but supermarkets were key household food sources in Khayelitsha. Although density of food provision in Ahodwo was higher (76/km²), Khayelitsha outlets (61/km²) provided greater access to obesogenic (57%Khayelitsha; 39%Ahodwo) and protective (43%Khayelitsha; 16%Ahodwo) foods. Consumption and provision profiles correlate more strongly in Ahodwo than Khayelitsha (rKhayelitsha=0.624; rAhodwo=0.862).

Conclusion: Findings suggest that risky food environments and poverty together promote obesogenic diets. Governance interventions that promote availability of affordable protective foods through roadside stalls and discourage retail of ultraprocessed and obesogenic foods through supermarkets and small shops could reduce obesity risk. The role of poverty in promoting obesogenic diets means that broader societal disparities must also be addressed, linking SDGs 1, 2, 3, 8 and 11.

Development of the Food Outlets Dietary Risk Assessment Tool

Authors: Claire Pulker1,2, Dr Gina Trapp1,4, Mark Fallows5, Dr Paula Hooper5, Heather McKee5, Dr Christina Pollard1,2

Affiliations: 1Curtin University, Bentley, Australia, 2East Metropolitan Health Service, East Perth, Australia, 4Telethon Kids Institute, The University of Western Australia, Nedlands, Australia, 5School of Population and Global Health, The University of Western Australia, Crawley, Australia, 6City of Vincent, Leederville, Australia, 7Australian Urban Design Research Centre, The University of Western Australia, Perth, Australia

Abstract: Background: Community food environments can influence food choice, diet and the risk of diet-related chronic disease. Current food outlet classifications do not accurately depict dietary risk. A robust classification of food outlets to assist public health planning and food regulation is needed. This study describes development of the Food Outlets Dietary Risk Assessment Tool (FODR) for use by environmental health officers (EHOs).

Methods: Academic literature and market reports were reviewed to critique existing classification systems and obtain data to inform the FODR tool to rate dietary risk for food outlets. Dietary risk assessment attributes for consumer-facing food outlets were identified. Attributes include: availability of nutrient-poor and nutritious foods; acceptability, appeal, and accessibility of the outlets (delivery options); type of business (measure of power and exposure); and were weighted according to level of impact. Face validity testing was completed on 13 food outlets.

Results: The FODR tool rated the following as low dietary risk (fresh produce outlet); medium dietary risk (independent supermarket, supermarket without alcohol, café); high dietary risk (two supermarkets which sell alcohol, pizzeria, four restaurants); and very high dietary risk (fast food outlet, bottle shop, pub/hotel).

Conclusion: The FODR tool provides an objective assessment of food outlets dietary risk based on pre-assigned weighted attributes. The complexity of the FODR tool was in its development, i.e. identifying the attributes on which to assign dietary risk. The simplicity is in its practical application, i.e. the assignment of four risk ratings, consistent with how EHOs manage food safety risk.

Web data mining: validity of a new tool for food retail data

Authors: Dr Leticia Cardoso1, PhD Mariana Menezes2, PhD Maria Pina1, Msc Vanderlei Matos1, PhD Amelia Friche3, PhD Waleska Caiaffa3, Dr Larissa Mendes1, Dr Milene Pessoa3

Affiliations: 1Oswaldo Cruz Foundation, Rio De Janeiro, Brazil, 2Universidade Federal Ouro Preto, Ouro Preto, Brazil, 3Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Abstract: Considering the challenge of having accurate data on food retail due to common problems related to secondary (difficult to access, compromised quality, data out of date, not georeferenced) and primary data source (costly, time-consuming), we propose an innovative method to get food retail data, through an interface that captures data from Google Earth (GE). The proposed method is relevant to non-commercial research use. The aim of this study is to test the validity of GE data in comparison to direct field observations (gold standard). A secondary aim is to test whether validity differed by type of food outlet and area vulnerability. The scope of the study included the municipality of Rio de Janeiro and Belo Horizonte, where a random sample of 150 census tract areas (with at least 50 households) stratified by Vulnerability Health Index were selected in each city. The test method: GE interface is based on the acquisition of the data of interest through services of the Google webservice (food retail data). We developed a R script to automate digital data acquisition from GE. We visited all the census tract areas collecting the data from direct field observation protocol guided. The results show sensitivity value was 0.77 (C195% 0.75 – 0.80) and Predictive positive value was 0.84(C195% 0.82 – 0.86). These values are higher for supermarkets, fast food and
convenience stores and lower for small and local markets. This method can be used to capture the food retail data in similar cities in Latin America.
Novel data sources for monitoring food and nutrition

Authors: Ms Frances Gibson¹, Ms Ruby Brooks¹, Ms Claire Sparke¹, Mr David Meere¹

Affiliations: ¹Australian Institute Of Health And Welfare

Abstract:

Background/aims: Food and nutrition monitoring informs policies, programs and services, in the aim of improving nutrition-related health. Effective monitoring requires timely, reliable, consistent and accessible data; however, existing data sources are often infrequently collected and can be subject to reporting error. Novel data sources, such as sales and purchase data, card transaction data, location data and data from smartphones and wearable technologies, could provide alternatives for food and nutrition monitoring.

Methods: To investigate the utility of novel data sources for monitoring food and nutrition through a review of the existing literature and demonstration analyses of supermarket sales and card transaction data.

Results: Novel data sources can be used to monitor trends in sales and purchases, compare food purchasing behaviour between population groups, monitor food affordability, and estimate aspects of diet quality. Strengths include timely availability of data, and continuous large-scale data collections. Limitations include questions around representativeness, and a possible lack of transparency in data collection and/or analysis methods.

Conclusions: Novel data sources can supplement traditional data used in food and nutrition monitoring. The inclusion of novel data sources can provide additional information to assist efforts to improve diet quality (including, for example, possible targets for reformulation or fortification). This can contribute to improved food security and nutrition, healthier lives, and sustainable consumption and production (Sustainable Development Goals 2, 3 and 12).

Significance to public health nutrition: Novel data can supplement traditional data in food and nutrition monitoring, providing the potential for improved policy development and accountability.
3G – Drivers of safe supportive environments (table top)

Table Top Presentations

Understanding gaps in Ghana’s at attempt at strengthening accountability for nutrition

Authors: Dr. Frank Mcavor

Affiliations: 1Hunger Alliance of Ghana, Accra, Ghana

Abstract:

**Background:** Malnutrition is no longer an issue for countries to tackle alone. Considering the threat to health and productivity, WHO adopted nine nutrition targets for 2025. But latest reports show most are off-track and none are making progress on the full suite of targets. Targets such as adult obesity and anaemia have proven to be insurmountable for every country. Experts and practitioners are now looking for ways to turn promises into action.

According to the Ghana Zero Hunger Strategic Review report (2017) which was launched by His Excellency the President of Ghana in May 2018, there are many identified gaps in the approach Ghana has adopted to address malnutrition problems over the years. Several inefficiencies identified in the national and sectorial level policies, strategies and plans are indicative that Ghana is yet to adopt a more holistic and effective approach to tackle malnutrition in the country.

**Results:** Some of these gaps identified are as follows;

- Inadequate understanding of national policies, strategies and plans by those who are expected to implement them at the regional and district level mainly due to inadequate sensitization and engagements with actors at this level.
- Inadequate capacity in terms of numbers and quality at the district level to implement nutrition policies, plans and programmes.
- Inadequate funding for nutrition plans, projects and programmes by the government at district level

**Conclusions:** Increasingly, organizations working in the food and nutrition sector, including civil society organizations have recognized that malnutrition requires multi-sectoral solutions. It is a public health issue, but it cannot be solved without collaboration from various allied sectors including agriculture, the food industry, sanitation, finance, and gender development.

The study has identified the best way to understand this issue of malnutrition, would be to examine how the issue plays out in the communities with high burdens of malnutrition.

Determining community readiness to address health issues in remote Australian Indigenous communities

Authors: Clare Brown, Kirby Murtha, Cara Laws, Tiffany Williams, Emma Fehring, Kani Thompson

Affiliations: 1Apunipima Cape York Health Council, Cairns, Australia

Abstract:

**Background:** The Healthy Communities project aimed to engage local government and community stakeholders to create supportive environments for health in Cape York communities in Far North Queensland. Community readiness to address sugary drink consumption, tobacco smoking and physical inactivity was assessed to guide project direction.

**Methods:** To assess how “ready” a community was to take action on specific health issues, we adapted a Community Readiness Assessment tool which used a 9-point scale to produce a score across five dimensions (community knowledge of the issue; community climate; leadership; community knowledge of efforts; resources related to the issue). A score of 1 indicated very low level of readiness for change (no awareness) and 9 indicated very high level of readiness (community ownership)

**Results:** Consideration of community readiness for change was important in ensuring that the range of project activities were appropriately tailored to a community’s level of readiness, increasing the chance of success. Low readiness for change highlighted the need for awareness raising activities such as information sharing with community groups and provided insight into why strategies that required higher level of readiness, such as local policy development and infrastructure changes, were difficult to implement and sustain.

**Conclusion:** Assessing community readiness to address specific health issues is an important step in working with communities to develop meaningful health initiatives that promote good health and well-being which consider community priorities. It allows communities to guide the level and type of support required from health organisations to facilitate movement towards self-determination.

Bal Poshan Shikshan Kendra: A community-based, community-led model of nutrition education

Authors: Ms. Arundhati Sridhar, Ms. Jyotsna Jadeja

Affiliations: 1Anandi - Area Networking And Development Initiatives, Vadodara, India

Abstract:

**Background:** According to the National Family Health Survey (NFHS) 4, at least one in every three children under 6 in Gujarat is...
under-nourished. The World Health Organisation (WHO) recognizes that ‘improved exclusive breastfeeding practices and adequate and timely complementary feeding practices’ may help bridge much of the gap. Indian studies add a third factor: the control of the high frequency of common infections like diarrhea and fever that significantly interrupt growth.

Methods: ANANDI, along with the local women’s collectives in three districts of Gujarat, has been running the Bal Poshan Shikshan Kendra for the past six years- a community-based, community-led center where caretakers of all children between the ages of 6 months and 3 years come together for two per day to feed children. The idea is that a community nutrition education is most effective through demonstration and peer-learning, so the center is located in a home collectively decided as most convenient for everyone, and is run by turn by the community. Locally available foods and food systems are championed and promoted.

Results: There has been a direct transference of learning from the center to the home: most children are eating more frequently, in larger quantities and in greater variety the food that is being cooked at home. There have also been fewer reported cases of diarrhea among the children in this age group. Overall, the community has a high ownership of the center and the nutritional status of their children through this model of behavioral change around nutrition practices.

Insights on food insecurity in the Pacific

Authors: Dr Penny Farrell1, Dr Anne Marie Thow2, Prof Joel Negin1

Affiliations: 1The University of Sydney, Sydney, Australia, 2Menzies Centre for Health Policy, Sydney, Australia

Abstract:
Background/Aims: Largely owing to the nutrition transition, NCDs cause 75% of deaths in the Pacific and many countries face a double burden of malnutrition. Progress on SDG 2 indicates that the Pacific is the only region globally where the proportion of stunted children has not fallen. However the State of Food Security and Nutrition in the World 2019 Report and official updates on SDI 2.1.2 report the Pacific region as the only region for which there is no data on food insecurity.

There is evidence for a link between food insecurity and the consumption of inexpensive, high-calorie packaged foods in the development of obesity in low- and middle-income settings, and this is concerning for Pacific populations because of the combination of the: i) shift in diets towards these foods; ii) rapidly growing NCD rates; and iii) lack of data on food insecurity. Our research aimed to start to address this knowledge gap.

Methods: We measured food security in Samoa and Solomon Islands using an adapted Radimer/Cornell measurement tool, and by studying patterns of food acquisition and apparent consumption in two national datasets.

Results: Food insecurity was reported by the majority of study participants. Diet patterns were unhealthy overall, with particularly low fruit and vegetable consumption and high consumption of processed and starchy foods. Especially vulnerable groups identified included those with low incomes.

Conclusions: Our research provides valuable insights about a region that is at risk of being left behind as the world works towards progress on SDG 2.

Learning, Teaching, Practice - Developing a common understanding of sustainability in nutrition

Authors: Dr Judith (Jude) Maher1, Dr Michele Verdonck4, Dr Theresa Ashford5, Dr Sarah Burkhart1

Affiliations: 1University Of The Sunshine Coast, Maroochydore, Australia

Abstract:
Background: Sustainability is a complex concept, with diverse and multifaceted definitions depending on the context, area or scope of application. In professional nutrition practice, the term sustainability may relate to micro professional practices; considerations of client social and economic welfare; or global considerations that incorporate social, environmental and economic dimensions. This diversity of application has led to limited consensus of what sustainability means in university curriculum. As such, integrating sustainability into nutrition curriculum has been problematic. Without a common understanding of sustainability and insight into what sustainability looks like, or should look like in practice, our nutrition workforce may be under prepared for the challenges we face in the future.

Methods: At the University of the Sunshine Coast (USC, Australia), we investigated the meaning of sustainability and nutrition practice implications using an action research framework. We engaged students studying nutrition or dietetics at USC (n=95) to share their perspectives and their familiarity with key concepts of sustainability. In addition, we interviewed USC nutrition academics (n=7) and discussed the integration of sustainability in curriculum. Lastly, we interviewed nutrition professionals across the continuum of practice (n=10) to understand sustainability in practice. This data was synthesised into a digital artefact representing the key themes and common understandings across these three stakeholder groups.

Results: The digital artefact is designed to assist students to contextualise sustainability themes in their learning and for academics to integrate sustainability into relevant curriculum and teaching experiences. Conclusion: We share our digital artefact with you, inviting your insight and critique.
Influencing factors of school food environments in urban Ethiopia

Authors: Mrs Ursula Trubswasser1, Mrs Elise Talsma1, Mrs Selamawit Ekubay2, Mrs Edith Feskens1, Mr Kaleab Baye1

Affiliations: 1Wageningen University, Division of Human Nutrition and Health, Wageningen, Netherlands, 2Center for Food Science and Nutrition, Addis Ababa University, Addis Ababa, Ethiopia

Abstract:
Background: Malnutrition affects a large portion of the adolescent population in Ethiopia. Thirty-six percent of adolescent girls and 66% of boys are thin. Overweight and obesity in Ethiopia is concern in urban populations of higher wealth quintiles. The main objective of this study was to assess adolescents’ perception of their school food environment.

Methods: Twelve high schools have been selected in from six sub-cities in Addis Ababa. From each school, 20 students aged 15-19 years have been randomly selected, of which a total of 229 students were interviewed about their dietary behaviour and food environment perceptions. In addition, in 0.5km radius around each school, food and drink advertising and food outlets were assessed.

Results: On average there were 218 food outlets and 123 food or drink advertisings around each school. Most of the advertising (89.9 %) is of ultra-processed foods, mostly sugar-sweetened beverages (SSB). SSB were visibly positioned in 26.3% of the outlets and fresh fruits and vegetables in 17.9% of outlets. Most students (85%) perceived snack foods to be highly available. More than half of the students do not perceive that there is a lot of advertising in their neighborhoods, but perceive advertising to be unhealthy. The majority of the students spend their pocket money on SSB, candy or fried foods.

Conclusion: Students appear to be surrounded by unhealthy food advertising, of which they might not necessarily be aware. Their food choices could be influenced by food availability and advertising, but more analysis would be needed to confirm this.

A policy brief for Australian governments in addressing childhood obesity

Authors: Li Kheng Chai1, Clare Collins1, Chris May1, Robyn Littlewood2, Tracy Burrows1

Affiliations: 1University Of Newcastle, Callaghan, Australia, 2Children’s Health Queensland Hospital and Health Service, Brisbane, Australia

Abstract:
Background: Childhood overweight and obesity currently impacting 25% children aged 5-17 years in Australia. However, there were only nine identified tertiary child weight management services across Australia, some with waiting lists up to 12 months. Australian public health services are insufficient to meet the needs for personalised child weight management and particularly restrictive for families who live in rural regions.

Methods: Telehealth can be used for delivering child weight management intervention as a standalone treatment or to complement other services that exist in community and clinical practice by offering personalised dietary intervention to families.

Results: Telehealth will likely reduce healthcare cost and the rate of failure-to-attend (FTA) as the online appointments are more convenient to access, especially for families who live a fair distance away from the health service. Telehealth can be used by clinicians to increase health service capacity and extend reach to rural regions, while reducing time and cost associated with clinicians travelling for home visits and service outreach. This will also reduce the loss of clinicians’ time related to FTA and thereby increase health services’ efficiency and productivity. This approach has the potential to scale up the provision of dietary services which are low cost and easily accessible.

Conclusions: Policy interventions that have been identified as most pressing for Australian governments in addressing obesity include: Establishment of a national obesity taskforce; Adoption of a whole-of-government obesity prevention and treatment strategy; and Provision of sustainable and effective remotely delivered child obesity treatment interventions (e.g. telehealth weight management services).

International infant feeding indicators: findings from the MINA-Brazil birth cohort study

Authors: Dr Marly Cardoso1, Dr Lalucha Mazzucchetti1, Ms Paola Mosquera1, Dr Alicia Matijasevich2

Affiliations: 1University Of Sao Paulo, Sao Paulo, Brazil, 2Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil

Abstract:
Background/aims: This study aimed to describe the frequency of and factors associated with infant feeding indicators in the first year of life among Amazonian infants from the MINA-Brazil birth cohort study.

Methods: Information on socioeconomic conditions of the mothers, including a 24h recall on typical infant food frequency intakes were collected for 774 children, aged 10-15 months. The infant feeding indicators were defined based on the WHO recommendations and the frequency of intake of ultra-processed products (UPP) according to NOVA classification. Associations were examined using multiple Poisson regression with robust variance (PR; 95%CI).

Results: Overall, 69% of the studied population were continuously breastfed. The proportions of young children having daily intake of iron rich foods and UPP were 86.0% and 87.3%, respectively. The minimum dietary diversity was reached by 37.2% of the children who were being breastfed and by 28.3% of the infants who were not being breastfed. Children from mothers older
than 21 years and in the lowest tertile of the wealth index were more likely to meet the dietary diversity, whereas children using bottle feeding (PR: 1.50; 1.12-2.00) and eating UPP (PR: 2.26; 1.34-3.90) were at risk of not reaching the minimum dietary diversity.

**Conclusions:** These results highlight that infant feeding indicators among Amazonian children are considerably below the WHO guidelines. Since the infant feeding practices has long-lasting effects on later health in childhood, the use of bottle-feeding and the consumption of UPP should be used as an adverse dietary indicator early in life.
3H – Family nutrition education and support
Rapid Fire Presentations

Helping new mums to breastfeed - before their baby is even born

Authors: Joy Cooke¹, Roslyn Giglia, Chris McCafferty¹, A/Prof Theresa O’Sullivan¹

Affiliations:¹Edith Cowan University, Joondalup, Australia, ²Glengarry Private Hospital, Duncraig, Australia, ³FoodBank, Perth Airport, Australia

Abstract:
Background and aim: The use of antenatal colostrum expression in the weeks prior to birth may help improve long-term breastfeeding, but few large-scale studies exist. Typically, antenatal colostrum expression instruction relies on face-to-face education, making large interventions costly. We aimed to determine whether an expert online instructional video can improve knowledge and confidence around antenatal colostrum expressing.

Methods: With feedback from our community committee and an International Board Certified Lactation Consultant, we developed an instructional video on antenatal expressing and storage of colostrum. Pregnant women were asked to complete a questionnaire pre and post-watching the instructional video online.

Results: Ninety five pregnant women completed both pre- and post-questionnaires. Total antenatal colostrum expression knowledge scores improved after watching the video, from a mean of 3.05 ± 1.70 correct out of a maximum of 7, to 6.32 ± 0.76 (p < 0.001). Self-reported confidence around hand expressing in pregnancy also improved from an average ranking of not confident (2.56 ±1.17, out of a possible 5) to confident (4.32 ±0.80, p < 0.001). Almost all women (98%) reported that they would recommend the video to a friend or family member if antenatal colostrum expression was suggested by their healthcare provider

Conclusions: Findings suggest that the use of an online expert video is an acceptable and effective way to educate pregnant women in antenatal colostrum expression. The video makes large trials investigating this practice more affordable, and has potential to be a useful tool to help improve long term breastfeeding rates.

Intensive Counseling Enhance Intention and Behavior toward Nutrition Awareness Program in Indonesia

Authors: Dr Trias Mahmudiono¹, Ms. Aulidina Dwi Mustafyan⁴, Ms. Stefania Widya Setyaningtyas⁵

Affiliations: ¹Department Of Nutrition, Faculty Of Public Health, Universitas Airlangga, Surabaya, Indonesia

Abstract:
Family nutrition awareness is related to children’s nutritional status. However, the family nutrition awareness practices in Indonesia are still low. This study aims to determine effect of intensive nutrition counseling in improving intention and behavior toward application of family nutrition awareness among mothers of underweight children in Indonesia. Fifty-eight mothers of underweight under-five children were assigned to either control or intervention group. The control group received educational material only. Intensive nutrition counseling about family nutrition awareness was given to intervention group weekly for a month. Before and after the treatment sessions, both groups were assessed for intention level and behavioral family nutrition practice. Participants were rated level of intention using 11 questions using Likert scales. Behavioral practices were gained using statements choices. Both study groups showed better enhancement in intention and behavioral practice of family nutrition awareness. The average score for intention in applying appropriate family nutrition practice in control and intervention group were 50.14 and 45.97, respectively (p<0.001) at the baseline. At the end of the study, the greater improvement of intention scores was found in intervention group (64.79 vs. 58.41; p<0.001). The enhancement in behavior practice was also found greater in intervention group. There was accordingly improvement as much as 2.03 and 3.69 (p=0.001) in control and intervention group.

Women’s age and eating intention and behavioral practice of family nutrition awareness.

Authors: Dr Lydiah Waswa⁴, Ms. Bárbara Fróes¹, Dr Lydiah Waswa³, Dr. Johnny Mugisha⁴, Dr. Jeninah Karungi⁴, Dr. Elizabeth Kamau¹, Dr. Thomas Hilger⁵, Prof. Dr. Ernst-August Nuppenau⁵

Affiliations: ¹Justus Liebig University Giessen, Center for International Development and Environmental Research (ZEU), Senckenbergstr. 3, 35390 Giessen, Germany, ²Justus Liebig University Giessen, Institute of Nutritional Sciences, Wilhelmstr. 20, 35392 Giessen, Germany, ³Egerton University, Department of Human Nutrition, Egerton, Kenya, ⁴Makerere University, School of Agricultural Science, College of Agricultural and Environmental Sciences, Kampala, Uganda, ⁵University of Hohenheim, Institute of Agricultural Sciences in the Tropics (Hans-Ruthenberg-Institute) (490), Garbenstr. 13, 70599 Stuttgart, Germany

Abstract:
Question: Does nutrition education (NE) impact on time-use and dietary diversity of women and children in Kapchorwa District, Uganda, and Teso South Sub-County, Kenya?
Background: Two cross-sectional agriculture-nutrition surveys were conducted, targeting 830 farm households with children aged below five years. Women Dietary Diversity (WDDS) and Child Dietary Diversity Scores (CDDS) were calculated based on data from 24h-dietary-recalls. Time use was assessed based on 24h-physical-activity-recalls. NE was conducted and partly linked with agriculture extension (AGNE).

Speaker position: The results showed that a gendered division of labour. Beyond the time spent on farming, women were engaged in child care and domestic activities. They had significantly less free time than men.

The age of the mother explained partially the variance in ∆WDDS but differently in both countries. In Uganda children of the NE group showed an increase in CDDS (Mdiff=0.31 point). Differences in ∆eating time of mothers was related to CDDS (p=0.045).

The analysis of the results in Kenya confirmed that participation in AGNE/NE resulted in an increase in women’s dietary diversity scores. The changes on scores were higher in the AGNE (Mdiff=0.580 points, p=0.013) and NE groups (Mdiff=0.613 points, p=0.007) when compared to the control group. The eating time of mothers in Kenya was positively associated with CDDS after the intervention.

Justification: The results indicate that the more time mothers spent eating/feeding their children, infants’ diets became more diverse. Thus, more attention should be given to gender-time-use in agriculture and nutrition intervention to enhance impact of nutrition education and agriculture interventions.

Translating knowledge into policy and action: Lessons from the Infant Program

Authors: Dr Rachel Laws1, Dr Penny Love1, A/Prof Kylie Hesketh1, Prof Elizabeth Denney-Wilson4, Prof Karen Campbell1

Affiliations: 1Institute For Physical Activity And Nutrition, Deakin University, Geelong, Australia, 2Sydney University School of Nursing and Sydney Local Health District, Sydney, Australia

Abstract:
Background/aims: One in five Australian children are overweight or obese by age two. Despite the increased research interest in child obesity prevention, few programs are scaled up and implemented in routine practice, creating a knowledge to action gap. This presentation aims to share key lessons in the Victoria wide scale up of the Infant program.

Methods: This 5 year project involving 10 practice and policy partners will evaluate the real-world implementation of the previously trialled Infant Program, a Maternal and Child Health Nurse mediated program delivered in established first-time parent groups. The program aims to improve parents’ knowledge and skills around promoting optimal energy balance behaviours. Researchers used a detailed reflective journal of interactions with practice and policy partners over the first year of the project, documenting key issues in the establishment of systems to facilitate program scale up. Thematic qualitative analysis of journal entries has been undertaken.

Results: Key issues identified in program scale up included developing a co-production relationship between researchers and practitioners/policy makers, ensuring equity of access to the program and resourcing implementation. In order to integrate the program into routine service delivery without specific program funding, key policy leverage points will need to be identified to drive organisational commitment and as well as having clear definitions of program ‘success’ locally including data on cost effectiveness.

Conclusions: This study will provide important new insights into the ‘how to’ of program scale up which is critical to reducing the knowledge to action gap in public health nutrition education.

Effect of Peer Support Groups (M2M&F2F) on IYCF Practices in Somalia

Authors: Dr Joseph Seriki1, Dr Leila Abdullahi1, Mr Ali Sheikh, Mohamed1, Mr Elijah Kipkech Kipchumba1

Affiliations: 1Save The Children International, Somalia/Somaliland Country office, Nairobi, Kenya

Abstract:
Background: Recommended Infant and Young Child Feeding (IYCF) practices could contribute significantly in reducing childhood malnutrition and improving child survival.

Objectives: To assess the effects of peer counselling by Mother to Mother (M2M) and Father to Father (F2F) Support Group on IYCF practices in three districts in Somalia.

Methodology: The study followed a quasi-experimental approach. Kismayo was selected to receive both M2M and F2F support groups, Adaado received M2M support group while Armo received F2F groups. To improve validity, control groups were selected in Adaado and Armo districts. Suitable lead mothers and fathers were selected and trained to facilitate the IYCF sessions. The study was conducted for three months (September-November 2018) with standard 12 IYCF sessions. Two-wave panel data was collected among intervention and control groups including 250 caregivers. The study utilizes difference in difference odds ratio to assess effects.

Results: Overall both the M2M and/or F2F interventions showed improvement on IYCF knowledge and practices. In Kismayo where we had both interventions i.e M2M and F2F introduced, the IYCF knowledge and practices improved more than when only one intervention i.e. F2F or M2M was introduced. The fathers were very excited to be involved in the IYCF training which was contrary to the routine which mothers only received the training occasionally.
Recommendaons: There is a need to scale up the M2M and F2F session across Somali regions to improve IYCF practices due to different roles that mother and father play in the household i.e. decision maker and caregiver respectively.

Scale-up of CUPS; a nutrition program engaging vulnerable families

Authors: Ms Judith Myers1, Dr Elisha Riggs1, Dr Joanne Tarasuik3, Ms Dheepa Jeyapalan1, Ms Sue West1

Affiliations: 1Murdoch Children’s Research Institute, Melbourne, Australia, 2Playgroup Victoria, Melbourne, Australia, 3Save the Children, Melbourne, Australia

Abstract:
Background: Despite guidelines promoting healthy eating and physical activity, approximately ¼ Australian children experience overweight or obesity, potential precursors to obesity in adulthood and diet-related NCDs.

As families experiencing inequalities encounter challenges accessing, understanding and applying child-nutrition information, we co-designed The Confident and Understanding Parents (CUPS) approach, embedded within Supported Playgroups. Supported Playgroups are informal play-based opportunities for parents and young children; with facilitators (who may be bicultural workers) employed to engage vulnerable families. This complex intervention leverages trusting relationships between facilitators and parents in a safe, supportive environment to communicate, model and enact child nutrition messages using a strengths-based approach.

Methods: Piloted in over 20 diverse Australian communities evaluation included pre-/ post-measures of knowledge, confidence and practices of playgroup facilitators and parents. Qualitative data were collected via debriefing discussions and ethnographic observations during playgroups. Thematic analyses of qualitative data and statistical quantitative analyses were conducted.

Results: Facilitators gained knowledge and confidence, modelled healthy eating practices in playgroups and had intentional discussions during social interactions, effecting changes in parent’s knowledge, confidence, attitudes and nutrition practices.

Facilitators and families deemed the approach feasible and acceptable, which has been adopted by a major NGO for rapid scale-up across Australia. Rigorous evaluation will consider why and how the approach works, beyond implementation science alone.

Conclusions: Scale-up learnings will provide holistic understanding of the nuances of effective health promotion in a culturally-safe, supportive environment for families experiencing inequalities. Learnings will have broader application; informing high-quality nutrition-education strategies within public health nutrition complex interventions.

Tackling the childhood obesity burden: implementation of a co-designed, culturally-tailored prevention program

Authors: Ms Jessica Hardt1, Mr Elkan Tanuvasa3

Affiliations: 1Children’s Health Queensland Hospital And Health Service, South Brisbane, Australia

Abstract:
Background/Aims: The rates of overweight and obesity among Australian children has doubled in the last two decades, with 1-in-4 Queensland children overweight or obese. Culturally-diverse population groups continue to suffer the worse health of the nation. Maori and Pacific Islander (MPI) communities exhibit a higher prevalence of obesity and chronic disease, due to lack of and poor access to culturally-tailored health services.

Methods: In response to the MPI obesity burden, a team of consumers, health professionals and cultural-advisory members collaborated to co-design a first-of-its-kind, culturally-tailored community-based childhood obesity prevention program. The program aims to improve the behaviours of participants, through the cultural delivery of 8-weekly sessions covering healthy eating, physical activity, screen time and positive parenting practices.

Results: The co-design methodology has resulted in outstanding levels of engagement and trust, leading to acceptance, ownership and translation into significant satisfaction from the MPI community, "it’s so great to have programs tailored to our own way of living to live healthier lives”. Pilot results indicate 75% of families increased their vegetable consumption, with a reduction in BMI observed as an average across the cohort (54% children, 52% adults).

Conclusions: Evaluation of co-designed initiatives will develop a framework to incorporate multimodal delivery and scalability to many cultural groups. The health system will have the ability to reach every child across Queensland, regardless of location or cultural background. Initiating change on a systems-level to improve health service delivery will promote sustainable practice, significantly reduce inequity and improve health outcomes of Australia’s most vulnerable populations.
4A – Community engagement through social media and public health campaigns
Rapid Fire Presentations

**A Co-Designed mHealth Programme to Support Healthy Lifestyles in Māori and Pasifika**

Authors: Dr Cliona Ni 1, Dr Lisa Te Morenga2, Dr Ridvan Tupai-Firstone3, Ms Jacqui Grey4, Dr Yannan Jiang5, Dr Andrew Jull6, Associate Professor Robyn Whittaker7, Dr Rosie Dobson1, Ms Sally Dallhouse6, Mr Tevita Funaki6, Ms Emily Hughes6, Ms Akarere Henry6, Ms Layla Lyndon-Tonga4, Ms Crystal Pekepo6, Mr Darrio Penetito-Hemara6, Ms Megan Tunks6, Dr Marjolein Verbiest1, Ms Gayl Humphrey5, Ms Jodie Schumacher4, Ms Debbie Goodwin1

Affiliations: 1University Of Auckland, Auckland, New Zealand, 2Victoria University of Wellington, Wellington, New Zealand, 3Massey university, Wellington, New Zealand, 4Toi Tangata, Auckland, New Zealand, 5South Waikato Pacific Islands Community Services Trust, Tokoroa, New Zealand, 6The Fono, Auckland, New Zealand

**Abstract:** The OL@-OR@ mHealth programme was co-designed with Māori and Pasifika communities in New Zealand to support healthy lifestyle behaviours.

**Methods:** A two-arm, cluster randomized controlled trial was conducted with 34 Māori and 35 Pasifika communities. Between February and August 2018, 1451 adults were enrolled (intervention n=726, control n=725), of whom 1224 (84%) completed the 12-week follow-up. Communities were randomly assigned to either the intervention or a waitlist control. The intervention group received the OL@-OR@ mHealth programme (smartphone app and website). The control group received a control version of the app (data collection only). The primary outcome was adherence to health-related guidelines measured using a self-reported composite health behaviour score (physical activity, smoking behaviour, alcohol intake, and fruit and vegetable intake) at 12 weeks. Secondary outcomes included holistic health and wellbeing status and engagement with the OL@-OR@ app.

**Results:** There were improvements in adherence to health-related behaviour guidelines over time. However there was no significant difference between intervention and control groups in adherence at 12 weeks: 57.3% versus 56.8%, OR 1.13 [95% CI, 0.84 to 1.52], P=0.42. In a pre-specified per-protocol analysis, intervention participants who engaged with the programme, i.e. set at least one behaviour change goal (n=147/574, 26%), were more adherent to guidelines than control participants: 63.9% versus 56.8%, OR 1.88 [95% CI, 1.19 to 2.98], P=0.007.

**Interpretation:** A co-designed mHealth programme did not improve adherence to health-related behaviour guidelines amongst Māori and Pasifika, although individuals who engaged with the programme showed significant improvement relative to controls.

**Developing a scalable m-health intervention to improve the nutrition of school lunchboxes**

Authors: Dr Rachel Sutherland1,2,3,4, Ms Alison Brown1,2,3,4, Dr Nicole Nathan1,2,3,4, Mrs Lisa Janssen5, Ms Clare Desmet5, Ms Renee Reynolds1, Associate Professor Luke Wolfenden1,2,3,4

**Affiliations:** 1School of Medicine and Public Health, University Of Newcastle, Callaghan, Australia, 2Hunter New England Population Health, Wallsend, Australia, 3Hunter Medical Research Institute, New Lambton Heights, Australia, 4Priority Research Centre for Heath Behaviour, University of Newcastle, Callaghan, Australia

**Abstract:** Globally, a significant number of children bring a packed lunch from home for consumption at school. However, every year more than six million serves of discretionary foods are packed in Australian lunchboxes, impacting on health and educational outcomes. We report the development and effectiveness of a scalable intervention that has been piloted, optimised and evaluated at a population level.

**Methods:** A five step program of work has been undertaken including: 1) formative research to identify parental barriers and behaviour change techniques (BCT) that underpin the m-health lunchbox intervention to support parents to pack healthy lunchboxes; 2) a pilot RCT to evaluate acceptability, feasibility and potential efficacy; 3) intervention optimization prior to a fully powered trial; 4) hybrid effectiveness-implementation trial and; 5) evaluation of potential dissemination methods for scale-up.

**Results:** The lunchbox intervention targets five common parental barriers to packing healthy lunchboxes including time, cost, convenience, child preference and knowledge. BCT’s were incorporated into the intervention delivered using an existing school-communication app. A pilot RCT (n=1200) found an increase in mean lunchbox energy from ‘healthy’ foods (79.21 kJ,p=0.04), a decrease in mean lunchbox energy from discretionary foods (-211.6 kJ,p=0.05) and was acceptable to 95% of parents. Optimized lunchbox messages then were incorporated into the hybrid implementation-effectiveness trial currently being conducted in schools (n=36) across NSW, Australia. Results from the hybrid RCT and dissemination trials (completed by end 2019) will be presented.

**Conclusion:** This scalable m-health intervention has the potential for population-wide effects on the nutritional quality of school lunchboxes.
To read or not to read: A survey of healthy eating blogs

Authors: Mrs Rebecca Mete1, Dr. Jane Kellett1, A/Prof Rachel Bacon1, A/Prof Alison Shield1, Dr Kristen Murray2

Affiliations: 1University Of Canberra, , Australia, 2Australian National University, , Australia

Abstract:
Background: Dietitians are using blogs to disseminate healthy eating information to a broader audience. Yet, little is known about whether consumers engage with this platform and its effectiveness to communicate healthy eating and nutrition messages.

Aims: To determine whether adults read healthy eating blogs and to explore the reasons why (or why not).

Methods: A cross-sectional online survey was adopted. Data collection occurred between December 2017-March 2018 and August 2018 to December 2018. The survey included 9 open and 9 closed questions. Adaptive logic was used to tailor questions based on responses.

Results: A total of 187 participants were included for analysis. Participants were mostly female (79%), well-educated with a university degree (72%) and predominately residing in urban and city areas (82%). A total of 53% of participants reported reading healthy eating blogs. Reasons for reading healthy eating blogs included receiving practical information, perceived credibility and alignment with dietary choices. The main reason participants reported not reading healthy eating blogs was because they were not considered a credible source of nutrition information.

Conclusion: Many consumers, particularly educated women living in city/urban areas, are proactively seeking healthy eating information online. Blogs appear to be a commonly used platform for accessing this healthy eating information. This provides an opportunity for the dietetic profession to utilise blogs as a tool to support the dissemination of healthy eating information to consumers. Consumers report utilising blogs when they perceive these to provide accessible and practical information, credible, and connected with their own views.

Can corrective advertising counter persuasive effects of unhealthy food advertising on parents?

Authors: Associate Professor Helen Dixon1,2,3, Ms Maree Scully1, Professor Melanie Wakefield1,2

Affiliations: 1Centre for Behavioural Research in Cancer, Cancer Council Victoria, Melbourne, Australia, 2Melbourne School of Psychological Sciences, The University of Melbourne, Parkville, Australia, 3School of Psychology, Faculty of Health Sciences, Curtin University, Bentley, Australia

Abstract:
Background/Aims: Commercial marketing of children’s food products has been scrutinised as a potential contributor to the childhood obesity epidemic and for its role in promoting excess consumption of energy-dense and nutrient-poor (unhealthy) foods. This study will improve our understanding of how typical advertising for unhealthy child-oriented snack foods influences parents. It will also test the efficacy of corrective advertising in bolstering parents’ resistance to being misled by such product advertising and encouraging parents to make healthier food choices on behalf of their children.

Methods: In an online experiment, 1,500 parents will be randomly assigned to one of five conditions: (i) Non-food ad (control), (ii) Conventional confectionery ad, (iii) Pseudo-healthy snack food ad, (iv) Conventional confectionery ad + corrective ad (v) Pseudo-healthy snack food ad + corrective ad. Following exposure to their assigned advertisements, parents will be shown different types of snacks, including those promoted in the food advertisements (confectionery, pseudo-healthy snack) and the corrective advertisement (whole fruit snack). Parents will nominate which product they would prefer to buy, then rate each product’s level of healthiness and sugar content.

Results: Data for this project is being collected in July/August 2019, with results available for presentation at the conference in 2020. Analyses will examine effects of product advertising and corrective advertising on parents’ preferences and perceptions concerning children’s snack foods.

Conclusions: Results will contribute to the global body of knowledge on the impacts of marketing of unhealthy food products and help inform efforts to counter these impacts and promote healthier eating.

Formative Research to inform LiveLighter® campaign development

Authors: Gina Ambrosini1, Ellen Hart1, Kelly Kennington1, Michael Murphy2

Affiliations: 1Cancer Council WA, Perth, Australia, 2MMResearch, Melbourne, Australia, 3Western Australian Department of Health, Perth, Australia

Abstract:
Background/Aims: Funded by the Western Australia Department of Health, LiveLighter® is a TV-led campaign run by Cancer Council WA (CCWA) that aims to reduce the burden of chronic disease caused by overweight/obesity, poor diet, and physical inactivity. In 2019, CCWA commissioned exploratory research to inform the development of new creative materials for the LiveLighter® advertising campaign that will elevate the urgency for action, while also being acceptable, credible and salient to the target group.
Methods: West Australian’s aged 25–64 years will be recruited, with quotas for metropolitan and regional participants, age and gender. Groups will also be segmented by gender and self-reported weight status. Discussion topics will revolve around Health Belief factors that relate to weight, and will use stimulus from existing Australian and overseas obesity prevention campaigns.

Results: Fieldwork will take place in September 2019 and results will be presented that highlight:

• concerns that prompt a shift from pre-contemplation to contemplation;
• current attitudes towards policy-related topics
• the effectiveness of “why” and “how” in relation to campaign messages, and recommendations for how these messages should be balanced in creative executions, media type, and supporting information;
• Provide recommendations for campaign creatives that are most likely to be successful in prompting behavioural change.

Conclusion: Beyond the LiveLighter® campaign, there is limited evidence available that indicates what the most effective messages are in obesity prevention. This exploratory research will add to this evidence base, and will be invaluable in the design of campaigns in other jurisdictions to ensure maximum population impact.

Development of the LiveLighter® Dude Food resource for Australian men

Authors: James Dimmock1, Anne Finch3, Ellen Hart1, Ben Jackson2, Kelly Kennington1, Gael Myers1, Lennon Smartt2, James Stevens-Cutler1

Affiliations: 1Cancer Council WA, Subiaco, Australia, 2School of Human Sciences, University of Western Australia, Nedlands, Australia

Abstract: Background/Aims: When compared to Australian women, Australian men have higher rates of overweight and obesity and poorer health behaviours. Specifically, Australian men are less likely to meet intake recommendations for fruit and vegetables, and are more likely than women to exceed alcohol consumption recommendations and consume sugary drinks daily.

Methods: Funded by the Western Australian Department of Health, LiveLighter® is a TV-led campaign run by Cancer Council WA (CCWA) that aims to reduce the burden of chronic disease caused by overweight and obesity, poor diet, and physical inactivity. Men are targeted by the LiveLighter® campaign through advertising creative and the use of targeted media channels. However, women predominantly engage through accessing the LiveLighter® website, social media pages and resources. To address the poor uptake of campaign resources by men, it was decided that a specific resource called Dude Food be developed.

The Dude Food resource was developed in consultation with the MAN v FAT program, which is a successful, weight-loss focused, soccer league aimed at men. MAN v FAT organisers provided input into the content of the resource, and program participants will participate in a focus group to provide feedback on a draft of the resource.

Results: The new resource will be launched in late 2019 with results on the success of the development process, key learnings and uptake of the resource expected in early 2020.

Conclusions: Australian men can be a hard to reach group in health promotion. The identification of effective strategies to target this group is needed.

Evaluation of the LiveLighter® healthy weight campaign 2012-2018

Authors: Dr Belinda Morley2, Tegan Nuss1, Associate Professor Helen Dixon1, Professor Melanie Wakefield1, Ellen Hart3, Kelly Kennington1, Dr Gina Ambrosini1

Affiliations: 1Cancer Council Victoria, Melbourne, Australia, 2Cancer Council Western Australia, Subiaco, Australia, 3Western Australian Department of Health, East Perth, Australia

Abstract: Background: Funded by the Western Australian Department of Health (WA, from June 2012), LiveLighter® social marketing campaign includes paid television advertising and policy advocacy.

Methods: Cross-sectional telephone population surveys of WA adults undertaken prior to launch (Baseline: n=1,003) and following each campaign phase: ‘Toxic Fat’ (2012: n=3,507); ‘Sugary Drinks’ (2013: n=1,009); ‘Toxic Fat and Sugary Drinks’ (2014: n=1,003); ‘Junk Food’ (2016-17: n=1,252); ‘Sugary Drinks’ (2018: n=751).

Results: The ‘Sugary Drinks’ waves (2013, 2014, 2018) showed the highest population exposure. Reported sugary drink consumption (1+ p/wk) decreased in 2016-17 compared to baseline (60% cf. 49%; p<0.001) and was maintained in 2018 (43%; p<0.001). Though almost half of adults incorrectly reported fruit and vegetable intake recommendations, the proportion meeting vegetable recommendations (5+ p/day) increased in 2018 (11% cf. 16%; p<0.05). Negative stereotypes about overweight did not change. LiveLighter® onset was associated with increased public knowledge of overweight as a cancer risk factor (41% cf. 52%; p<0.001) and has been maintained across campaign phases (59%; p<0.001), though still lower than for other chronic diseases (e.g., type 2 diabetes 87%).

Conclusions: The simple lifestyle change message of the ‘Sugary Drinks’ campaign particularly resonated with the target audience. Despite increased vegetable consumption, intake remains low and along with knowledge of the recommendations is

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Public health campaign evaluation linking sugary drinks, unhealthy weight and cancer risk

Authors: Dr Belinda Morley¹, Tegan Nuss¹, Helen Dixon¹, Jane Martin¹, Rebecca Cook¹, Alice Bastable¹, Alison McAleese¹, Craig Sinclair¹, Professor Melanie Wakefield¹

Affiliations: ¹Cancer Council Victoria, Melbourne, Australia

Abstract:
Background: Developed and launched in Victoria, Australia (October 2018), the 13 Cancers mass media campaign aimed to highlight the link between being above a healthy weight and increased risk of thirteen cancers, and to motivate Victorians to avoid sugary drinks to help achieve or maintain a healthy weight.

Methods: A controlled cohort design with pre-campaign telephone surveys of adults 25-59 years undertaken in the campaign state (Victoria, N=850) and non-campaign states (all other states combined except Western Australia, N=850) using a landline/mobile sampling frame, with 72% surveyed post-campaign (N=1,220).

Results:
• Sugary Drinks Calculator completions increased by 179% compared to the previous period; during the campaign:
  - over 22,000 views of the landing page during the campaign, an increase of over 4000%
  - average time spent on the page reduced from over four minutes to under thirty seconds, with 10% of people continuing on to other Sugary Drinks campaign pages
  - Sugary Drinks Calculator completions increased by 179%

Conclusions: The campaign increased knowledge of the link between overweight and cancer and successfully communicated the various types of sugary drinks, beyond soft drink, that are less traditionally understood to have a high sugar content. Findings provide evidence of the utility of a healthy weight and lifestyle mass media campaign to influence knowledge and behavioural intentions regarding sugary drink consumption, unhealthy weight and cancer risk.

Beyond the survey - the use of web metrics in campaign evaluation

Authors: Jenny Atkins¹, Ellen Hart¹, Kelly Kennington¹, James Stevens-Cutler¹

Affiliations: ¹Cancer Council of WA, Perth, Australia

Abstract:
Background/Aims: There is an increasing reliance on digital platforms to improve audience reach and engagement in public health campaigns. Funded by the Western Australian Department of Health, LiveLighter® is a TV-led campaign run by Cancer Council WA (CCWA) that aims to reduce the burden of chronic disease caused by overweight, obesity, poor diet, and physical inactivity. The campaign uses websites and social media platforms to extend campaign messaging. By driving people to these platforms through the campaign, tangible campaign outcomes can be measured through website and social media metrics.

Methods: WA’s LiveLighter® Sugary Drinks (ran September-December 2018) campaign had a dedicated website landing page with additional information and a “sugary drinks calculator”. Google analytics were used to assess landing page visits, average time spent on the landing page, and completions of the “sugary drinks calculator” during the campaign. These results were compared to the previous period.

Results: Compared to the previous period; during the campaign:
• there were over 22,000 views of the landing page during the campaign, an increase of over 4000%
• average time spent on the page reduced from over four minutes to under thirty seconds, with 10% of people continuing on to other Sugary Drinks campaign pages
• Sugary Drinks Calculator completions increased by 179%

Conclusion: Utilising website metrics allows organisations to see how campaign messaging can influence people to further engage with campaign information. Organisations can then use this information to support future campaign design and evaluation.

Perceptions of women from under-resourced communities participating in a nutrition education program.

Authors: Ms Georgina Pujol-Busquets Guillén¹, Doctor James Smith¹, Doctor Kate Larmuth¹, Doctor Sergi Fàbregues², Doctor Anna Bach-Faig³

Affiliations: ¹Division of Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, ²Department of Psychology and Education, Universitat Oberta de Catalunya (UOC), Barcelona, Spain, ³FoodLab Research Group (2017SGR 83), Faculty of Health Sciences, Universitat Oberta de Catalunya (Open University of Catalonia, UOC), Barcelona, Spain
Abstract:
Scientific evidence suggests that low-carbohydrate high-fat (LCHF) diets may be effective for managing non-communicable diseases (NCDs). Eat Better South Africa (EBSA) is an organization which has run LCHF nutrition education programs for women from low-income mixed-race communities. This study is part of a larger project to evaluate the EBSA program to improve participants’ health. Three focus group discussions (FGDs) were held with 18 women who had taken part in an EBSA program between 2015 and 2017, to explore their perceptions and to identify the facilitators and barriers they faced to implement and sustain dietary changes. Thematic analysis of the focus groups was conducted using NVivo 12 software and five main themes were identified. Women mentioned that they decided to enroll in the program because they suffered from NCDs and believed the program would improve these conditions. Most women said that the diet made them feel less hungry and more energetic and felt they improved their health. Although most of the women reported maintaining their knowledge about nutrition, they spoke of numerous socio-economic challenges which made it difficult for them to follow EBSA’s recommendations, such as work status, safety issues in the community, and lack of support from relatives and doctors. Hence, women felt they needed more support from EBSA after the program. Some of the social determinants that affected these women’s ability to change their health behavior are also NCD risk factors and these should be assessed if the program is to be improved for other communities.
4B – Capacity needs for School based nutrition education

Food and nutrition education competencies for children and youth

Authors: Dr. Joyce Slater¹, Dr. Tony Worsley²

Affiliations: ¹University of Manitoba, Winnipeg, Canada, ²Deakin University, Melbourne, Australia

Abstract:
Epidemic rates of obesity and chronic diseases such as diabetes are in part the result of poor dietary patterns in global populations. In addition, social media, ultra-processed food production and consumption, and culinary de-skilling have negatively affected food relationships. Yet public health responses are mainly focused on reductionist interventions such as nutrition labels and altering individual ingredients/nutrients (e.g. sugar and salt). Comprehensive food education for children and youth is warranted to cope with the complexity of the modern food system; however, guidance to age-appropriate knowledge, attitudes and skills is lacking. Using the Food Literacy Competencies for Young Adults, we applied a modified Delphi technique to develop age-appropriate food literacy competencies for children and youth 2-18 years. Opinion from fifteen experts in five countries provided input on a draft set of competencies organized into three domains: Functional, Relational and Systems Competencies. Feedback was collected via an online survey using a mix of open and closed items to assess support for the draft competencies. Included in the final competencies were those with 75% agreement (agree/strongly agree) and competencies felt to be missing by 50% or more of respondents. The Food Competencies for Children and Youth Framework provides a robust set of milestones demonstrating the breadth of knowledge and skills required to cope in today’s food environments. The Framework can be used to communicate the importance of evidence-based food education. It can also be used by school and community-based educators to advocate for, and develop programs and policies focused throughout childhood and adolescence.

The need for integrated school food education

Authors: Professor Tony Worsley¹

Affiliations: ¹Institute For Physical Activity And Nutrition, Deakin University, Australia, ²Burwood, Australia

Abstract:
Background: Challenges facing global populations with respect to food and nutrition include: the industrialisation of the food supply, the marketing of harmful food products, threats to ecological bases of food systems, the dissemination of dubious food and nutrition information, rising social inequity, changes in family roles and functions, and changes in nutrition science. Food and nutrition education has a potential and significant role in helping citizens engage with this complex food system.

Problems: Nutrition education has been pursued in many settings around the world for decades, particularly in primary and secondary schools. Much of this has been in the form of short-term interventions as part of various, and often fragmented, health and nutrition curricula that have focused on the acquisition of declarative knowledge of nutrition. Government indifference has often eroded food and nutrition education in recent decades. Further, the effects of teachers’ education strategies are under explored.

Possible Solutions: The recognition and adoption of food literacy curricula that integrate nutrition knowledge with the acquisition of a variety of food and citizenship skills could foster the acquisition of agency, critical consumption and citizenship. Strategies are required to determine the learning needs of children (and adults) at various developmental stages and social contexts, promote food education standards and competencies, teacher professional development and recognition, and hold governments and other institutions to account.

School food in the Pacific: Understanding capacity to create more supportive environments

Authors: Dr Sarah Burkhart¹, Ms Ann Hayman², Ms Fiasili Lam³, Ms Breanna Jones¹, Professor Steven Underhill¹, Dr Dana Craven¹

Affiliations: ¹University of the Sunshine Coast, Maroochydore, Australia, ²Food and Agriculture Organization of the United Nations Sub Regional Office for the Pacific Islands, Apia, Samoa

Abstract:
Background/aim: Provision of food in schools, related policy, and activities (school food programmes; SFP) create a supportive environment and may contribute to several Sustainable Development Goals (SDG) (specifically 1 -5, 8, 10 and 12). However, the status of SFP in the Pacific region is unknown. The aim of this study was to identify and analyse current use of, and capacity for, SFP in Pacific Island countries.

Methods: A scoping review identified current, previously used, and planned SFP in 14 countries in the Pacific region. A capacity needs assessment was conducted with stakeholders from education, agriculture and health sectors using online questionnaires and interviews. Challenges and solutions, the ability to support SFP through enabling environments, organisations and individuals within functional capacities of policy, knowledge, partnerships and implementation were explored.

Results: While stakeholders recognized a need for SFP, limited SFP were identified. Existing SFP lack some strategies important for success including use of supportive policy, explicit links with nutrition education and inclusive procurement and value
chains. The local food environment, resources, geographical location, knowledge capacity and communication at regional and country level limit use of SFP.

**Conclusions:** While SFP can benefit schools and the wider community, capacity in the Pacific region is limited. Improved access to knowledge, methods of communication, resources (human, financial, physical) and assistance to develop and monitor policy will likely improve capacity for SFP and contribution to relevant SDG in this region.

### School Food Environment in Australian Primary Schools

**Authors:** Dr Claire Margerison1, Jaime MIN SING1, Professor Tony Worsley1, Dr Alison Booth1

**Affiliations:** 1Deakin University, Institute of Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Geelong, Australia

**Background:** Although there have been some recent changes regarding school food policies and eating environments, very little is known or published about the positive or negative aspects of current school food environment.

**Aim:** To explore the various aspects of the school food environment in Australian primary schools.

**Methods:** Australian primary school teachers and parents/primary carers of primary school children in Australia, will be surveyed on the school food environment and governance of school eating occasions. Data will be collected via online surveys.

A mixed methods survey with open and closed ended questions will be used for each group (teachers and parents) collecting quantitative data on the timing, environment and rules or policies surrounding eating occasions and qualitative data on expectations, perceptions and suggestions. Quantitative data will be analysed using simple descriptive statistics. Content/thematic analysis of qualitative data will be via Leximancer and/or NVivo.

**Results:** Parent and teacher surveys are being conducted from July to October 2019. Descriptive data will be presented regarding the time, supervision and monitoring of lunch and the prevalence of canteens and school gardens.

**Conclusions:** Benefits include a clear understanding of parents and teachers expectations and experiences of the school food environment. These may be used to inform policy to improve food environment in primary schools.

### School Garden Programs in Australian Primary Schools

**Authors:** Dr Alison Booth1, Dr Claire Margerison1, Ms Nina Tanner1, Professor Anthony Worsley1

**Affiliations:** 1Deakin University, Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Geelong, Australia

**Abstract:**

School food garden programs show promise in improving food skills, knowledge, attitudes and dietary behaviours in school children. However, little is known about the uptake of school gardens in primary schools, how they are utilised in schools, and if and how they are linked with the curriculum.

**Aim:** The aim is to assess the use of school food gardens in Australian primary schools.

**Methods:** Australian primary school teachers will be surveyed, using closed and open ended questions, about the use of school food gardens in their school. Respondents who state their school has a food garden will be asked: why they have a food garden; how the garden is used; who looks after the garden; how students are involved with the garden and how often; which grades levels are involved with the garden; whether the food grown is cooked or prepared and consumed and if so, by who and how often; and if the garden is incorporated in the curriculum, how.

**Results:** This survey is being conducted from July-October 2020. Descriptive data will be presented and will provide insight into the prevalence of school food gardens in Australian primary schools and will describe some of the main uses of the gardens and the links with the school curriculum.

**Conclusions:** Results will inform recommendations to improve existing use of school food gardens to ultimately enhance food education, health and well-being of school children.

### OzHarvest’s school-based FEAST (Food Education and Sustainability Training) program: A pilot study

**Authors:** Ms Fay Karpouzis1, Dr Rebecca Lindberg1, Dr Adam Walsh1, Clinical Associate Professor Smita Shah2, Ms Amelia Berner3, Professor Kylie Ball4

**Affiliations:** 1Deakin University, Burwood, Australia, 2The University of Sydney, Sydney, Australia, 3OzHarvest, Alexandria, Australia

**Abstract:**

Unhealthy and unsustainable diets make a large contribution globally to the burden of obesity and non-communicable diseases, with concurrent environmental degradation. Poor dietary behaviours, including low fruit and vegetable (F&V) consumption and high intake of energy-dense, nutrient-poor foods, are a major public health concern, affecting Australian children.
Aim: To test the feasibility of FEAST, aimed at improving nutritional literacy, food waste awareness, and environmental responsiveness.

Design: Pre-test/post-test design, using mixed methods to collect quantitative and qualitative empirical data.

Setting and Participants: In 2018, 4 NSW schools and 11 classes (Grades 5-6, 8-12 years) participated (n=382).

Intervention: FEAST is a new, 10-week, curriculum-aligned program, designed by OzHarvest. FEAST is integrated with lessons mapped to the Australian Curriculum, embracing STEM learning areas and cross-curriculum priority of sustainability.

Results: Post-FEAST student surveys indicated a 6-7% increase in F&V consumption with 95% reporting confidence in preparing, cooking and storing food. Teachers reported high satisfaction with FEAST, observing children eating more F&V and less discretionary foods during school meal breaks. Hands-on cooking activities were the most valuable component, helping students to better understand how to prepare nutritious foods, reduce food waste and eat sustainably.

Conclusion: Given the challenges of promoting healthy diets and sustainable eating practices, FEAST is well-positioned to play a key student-engagement role, recognised by the UN Global Compact Network in Australia as a program capable of delivering on the SDGs 2, 3, 4, 9, 12, 13, and 17. A cluster-RCT has been designed to quantify the effectiveness of FEAST in 2020.

A food education program for developing students’ sustainable food practices

Authors: Dr Sandra Fordyce-Voorham1, Ms Leanne Compton2

Affiliations: 1Mentone Girls’ Grammar School, Mentone, Australia, 2Victorian Curriculum and Assessment Authority, Melbourne, Australia

Abstract:

Background/Aims: To report on a new senior secondary school food education course that builds students’ capacity to make fair and sensible food choices aligned with sustainable food practices. The VCE Food Studies course implemented in Victorian schools in 2017 scaffolds students’ knowledge and food preparation skills acquisition over two years.

Methods: A mapping of the course content demonstrates how the key knowledge and key skills facilitates students’ understanding of how they can achieve their own dietary requirements and those of others through a plant-based diet founded on the Australian Guide to Healthy Eating model. Feedback obtained from teacher focus groups provides interim evaluation of the course content and its future direction.

Results: Preliminary evaluation of the VCE Food Studies course was measured against an evidence-based food literacy model designed to help food education teachers develop and evaluate their skills-based programs in secondary schools. Teacher feedback showed that the new course met teachers’ expectations and supported the delivery of a viable and responsive program relevant to students’ vocational and academic needs. Future iterations and evaluation of the course will strengthen these findings.

Conclusions: To the best of our knowledge, this is the first review and reporting of the VCE Food Studies, a course purpose built for students to become discerning global food citizens. These preliminary findings align with Recommendation 20 (Action Area 3) and provide a benchmark for what a well-designed food education program in secondary schools might look like nationally and potentially, globally.

FAO’s vision on school-based food and nutrition education

Authors: Melissa Vargas1

1Food and Agriculture Organization of the United Nations (FAO), Rome, Italy

School-based food and nutrition education (SFNE) is globally recognized as a crucial strategy in the package of essential actions for improving the health and nutrition of schoolchildren and adolescents. However, much traditional SFNE work is still largely underfunded, does not deliver intended results and remains disconnected from other key interventions that aim to strengthen benefits at the food, nutrition, environment and education nexus.

In the context of the SDGs and the evolving challenges faced by Member Countries, FAO has embarked on a 3-year process to identify and address the main challenges affecting the methodological quality, scope and impact of SFNE interventions and their fruitful integration within school systems in low and middle-income countries (LMICs). The process involved a global study and a scoping review of SFNE practices in LMICs, two international expert consultations and the analysis of programmatic best practices and lessons learned relevant to SFNE.

As a result, FAO has adopted a new vision for SFNE and developed a suite of resources to help countries and organizations in designing, implementing and evaluating holistic and effective interventions in this area. Such resources underpin key principles and recommendations to develop critical food and nutrition competences in the whole school, to empower children and adolescents to drive their own learning processes and to be agents of change in their local food systems, and to elicit stronger linkages between SFNE and food environment policies and interventions.
Optimisation of m-health messages to improve the nutritional quality of school lunchboxes

Authors: Ms Alison Brown1,2,3,4, Dr Rachel Sutherland1,2,3,4, Dr Nicole Nathan1,2,3,4, Mrs Lisa Janssen1, Mr Christophe Lecathelinais1, Ms Nayerra Hudson1, Ms Amelia Chooi1,2, Dr Kathryn Reilly1,2,3,4, Ms Renee Reynolds1,2, Ms Alison Walton1, Associate Professor Luke Wolfenden1,2,3,4

Affiliations: 1 School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, 2 Hunter New England Population Health, Wallsend, Australia, 3 Hunter Medical Research Institute, New Lambton Heights, Australia, 4 Priority Research Centre for Health Behaviour, University of Newcastle, Callaghan, Australia

Abstract: Background: Parents play a key role in the packing and contents of school lunchboxes and the overall health and wellbeing of children. A pilot trial of an m-health based intervention to improve the nutritional quality of school lunchboxes showed promising results. This study aimed to optimise lunchbox messages to maximise the potential effect of the intervention, prior to a fully powered randomised controlled trial (RCT).

Methods: A cross-sectional computer assisted telephone interview (CATI) was conducted with parents of primary school-aged children. A series of messages to encourage the packing of healthy lunchboxes were developed, aligned to constructs of the Health Belief Model (HBM). Participants were read one message, at random, for each HBM construct after which they were asked to rate their intention to pack a healthy lunchbox.

Results: Overall, the HBM construct of benefits scored higher than all other constructs (p<0.001), whilst the lowest scoring HBM construct was barriers. For the HBM construct of severity, messages linking nutrition to specific chronic disease risk scored higher than messages about general health benefits (p=0.021). Under the HBM construct of susceptibility, statistics on tooth decay scored significantly higher than statistics about healthy foods (p=0.035) and unhealthy foods (p=0.006) in lunchboxes.

Conclusion: The results of this study provide guidance on the optimisation of messages. Focussing on the benefits of behaviour change as opposed to the barriers may assist in increasing the impact and reach of parents in an effort to improve the nutritional quality of school lunchboxes and the overall health of children.

Critical food literacy: a case study of K-12 educators in Vancouver, BC

Authors: Dr Kerry Renwick1, Dr Lisa Powell

Affiliations: 1 University Of British Columbia, Vancouver, Canada

Abstract: Recent decades have bought increased interest among Western countries in “knowing where food comes from,” and in particular, in fostering this knowledge among urban children and youth. In North American programs aiming to increase engagement with food and agriculture among young people in urban K-12 schools have proliferated, administered either directly by classroom teachers or in partnership with community organizations; such programs are often framed as “food literacy education.” Much of this work has drawn from a conceptualisation of food literacy that long-emphasized individual knowledge and skills around choosing, growing, and preparing food, however there is growing interest in developing a capacity for understanding the power structures of food systems, and participating in efforts to transform them or “critical food literacy”. The transformation of food systems requires food sovereignty where the rights of communities to define their own food and agriculture systems, with a focus on ecology and social justice are emphasised. This presentation will discuss research that is currently in progress, which seeks to understand relationships between critical food literacy and efforts to transform food systems, through the framework of food sovereignty. Based in Vancouver, BC, this research draws from several initiatives providing in-school educational programming related to gardening, cooking, composting, and other activities related to food systems over the past 10-15 years. Positioning the research in Vancouver was seen as important because it is home to diverse groups working on increasing environmental sustainability and social justice in food systems more broadly.

Online nutrition short course increases early years’ educators’ role adequacy and legitimacy

Authors: Dr Ruth Wallace1, Ms Ainslie Sartori1, Ms Ros Sambell1, Dr Johnny Lo1, Professor Amanda Devine1

Affiliations: 1 Edith Cowan University, Joondalup, Australia

Abstract: Background: Early Childhood Education and Care (ECEC) services provide an underutilised public health setting where the eating habits and health of 1.3 million Australian children are influenced. ECEC staff are keen to adopt healthful practices, but report a lack of training and confidence, compromised by poor perceptions of their role legitimacy/adequacy. We aimed to improve these perceptions by providing a tailored, online, evidence-based nutrition education course for ECEC staff.

Methods: A randomised controlled study design was used. Constructs were measured at baseline; intervention participants were remeasured on course completion, controls 1-month after registration. GLM examined differences within and between groups, adjusted for years of work experience (<10 y vs >10y).

Results: 100 participants (Intervention, n=52, Control, n=48) completed the survey. The majority were aged >36 years (81%), female (98%), >10 years’ experience (58%), who provided all or some food for children (78%), and 55% making a conscious effort to always provide healthy food. The intervention group significantly improved compared to control for one legitimacy
item: Nutritional requirements (P<0.001); and some role adequacy items: Working knowledge in nutrition (P=0.001); Confidence to encourage parents to make healthy choices (P=0.006); Knowledge of risks associated with unhealthy diets (P=0.009), where participants with <10y experience benefited most from the course (P<0.001).

Conclusion: This course had a positive impact on ECEC role legitimacy and adequacy perceptions resulting in more informed and confident staff better able to provide healthy eating environments essential for optimal child health in support of the Sustainable Development Goal: ‘good health and wellbeing’.
Trade policy, which directly affects access to unhealthy or healthy commodities. It is well recognised within the global health community that policy coherence across all levels of government at the national and international level is required to address NCDs. To date, however, there has been little coherence between health and trade policy, with reference to national policy making processes. One of the driving factors behind these outcomes are the ideas and interests of those writing the rules. This paper explored political and corporate agendas behind the Regional Comprehensive Economic Partnership (RCEP) – a mega regional trade agreement currently under negotiation between sixteen countries in the Asia Pacific region. Drawing primarily from an Australian perspective, we analysed policy documents and food industry submissions to the Australian government related to RCEP, as well as leaked RCEP text, to build an understanding of the publicly available political and corporate agenda for RCEP in Australia.

Key issues examined include tariff liberalisation targeting expansion of the meat and dairy industry; restrictions on regulations seeking to intervene in the market; expansive intellectual property rules that limit farmers' rights to save and share seeds; and commitments on foreign investment in manufacturing, agriculture and fisheries which go beyond anything yet agreed among the negotiating countries. The projected impacts of these changes for population nutrition in the region are discussed.

Identifying impediments to a healthy, sustainable and just food system produced by RCEP and opportunities to rewrite the rulebook provides nutrition advocates with actionable ways to influence the trade and investment system to promote nutrition.

Trade Agreements & Policy Space for Food Environment Regulation: Actors and Institutions

Authors: Ms Kelly Garton1, Dr. Anne Marie Thow2, Dr. Boyd Swinburn1

Affiliations: 1University Of Auckland, New Zealand, 2University of Sydney, Camperdown, Australia

Abstract:

Background/aims: Addressing SDGs 2 and 3 requires regulation of food environments to reduce malnutrition in all its forms and prevent dietary NCDs. However, international trade and investment agreements (TIAs) can pose barriers to national policy development and implementation to regulate food environments. This study sought to determine the roles and interests of actors and institutions in this policy space, and the ways in which they exert influence.

Methods: We conducted a stakeholder analysis, drawing on 22 interviews conducted with global stakeholders on nutrition policy. We used thematic analysis to describe and categorise the interests of different actors and institutions that factor into trade- or investment-related policy space, the terms of their involvement and the ways in which they exert influence in global trade policy, with reference to national policy making processes.

Results: Analysis revealed a framework of networked actors and institutions that moderate the potential of TIAs to constrain policy space. This aspect of global nutrition governance is reminiscent of a “regime complex” including institutions such as domestic government ministries, civil society organisations, the World Health Organization and its regional offices, the World Trade Organization and International Court for Settlement of Investment Disputes, and transnational food industry. Actors used both formal mechanisms of influence, for example through Investor State Dispute Settlement mechanisms, and informal (persuasive power).

Conclusions: This analysis of stakeholder interests and mechanisms of influence suggests leverage points and opportunities for strategic engagement by public health actors, to minimise potential barriers to food environment regulation due to TIAs.

Power asymmetries, policy incoherence and noncommunicable disease control - a qualitative study

Authors: Dr Belinda Townsend1, Dr Samantha Battams2

Affiliations: 1School of Regulation and Global Governance, Australian National University, Canberra, Australia, 2Southgate Institute, Flinders University, Adelaide, Australia

Abstract:

Background/aims: Noncommunicable diseases (NCDs) kill 40 million people each year and are the cause of 70% of global deaths annually. Proximal risk factors include tobacco use, physical inactivity, the harmful use of alcohol and consumption of unhealthy food, which are shaped by the social and economic conditions of daily life, known as the social and commercial determinants of health. It is well recognised within the global health community that policy coherence across all levels of government at the national and international level is required to address NCDs. To date, however, there has been little coherence between health and trade policy, which directly affects access to unhealthy or healthy commodities.

Trade and investment liberalisation influences every component of the food system. From agricultural production to marketing and distribution, the rulebook produced by trade and investment agreements directly affects the sustainability of the system, the nutritional quality of its outputs, and the quality of life of its labourers and livestock. One of the driving factors behind these outcomes are the ideas and interests of those writing the rules.
Methods: This paper explores policy actors’ views of the challenges in achieving coordinated and coherent NCD policy across health and trade sectors. It draws on an analysis of interviews (n = 18) with key actors, using a policy framework that focuses on ideas, power and the ‘deep core’ of neoliberalism.

Results: We identify the role of competing frames, power asymmetries and interests in constraining policy coherence. Tobacco control was highlighted as one area of generally successful coherence internationally. In contrast, alcohol and nutrition were identified as areas with little coherence. Industry power, the role of evidence, presence of absence of a treaty, the extent of coordinated advocacy and leadership by intergovernmental organisations were key factors influencing coherence.

Conclusions: In light of these constraints, the role of advocacy by non-governmental organisations was highlighted as the key for much-needed policy change.

Why do some health issues receive attention in trade negotiations over others?

Authors: Dr Belinda Townsend¹, Professor Sharon Friel¹, Dr Ashley Schram¹

Affiliations: ¹School of Regulation and Global Governance, Australian National University, Canberra, Australia

Abstract: Background/aims: Trade agreements facilitate the supply of unhealthy commodities including alcohol, highly-processed foods and tobacco. As new regional trade agreements have expanded their rule-making into domestic regulatory spaces, their potential public health impacts have intensified. Overall, there is a striking lack of coherence between government’s health and trade objectives.

Methods: Using the Trans-Pacific Partnership (TPP) agreement negotiations as a case study, we sought to identify the factors that enabled or constrained the elevation of health onto the government’s negotiating agenda. We were guided by the following questions: to what extent did health arguments get onto the Australian government’s negotiating agenda? What factors enabled or constrained the inclusion of health considerations? Were there differences in receptiveness to health issues and if so why?

Twenty five qualitative semi-structured interviews were conducted with key government and non-government policy actors including five politicians, five government officials, five industry body representatives, five civil society representatives, one trade union representative and four academic experts.

Results: We find that the domestic issues of protecting regulatory space for tobacco and existing medicines policy did get onto the Australian government’s agenda during the negotiations while other health issues (e.g. nutrition and alcohol) did not. We explore the reasons for this using Shifman and Smith’s framework of determinants for political priority, exploring the role of ideas and ideology, actors, political context, political processes and health issue characteristics.

Conclusions: Findings point to potential areas of leverage for advancing more health issues such as protecting space for nutrition regulation onto government agendas.

Trade policy and the space for nutrition: Stories of challenge in Vietnam

Authors: Ms Jody Harris¹, Ms Phuong Hong Nguyen², Ms Phuong Huynh³, Ms Tuyen Huynh⁴, Ms Thien Thi My Mai⁵, Ms Anne-Marie Thow⁶

Affiliations: ¹IDS, Brighton, UK, ²IFPRI, Washington DC, USA, ³NIN, Hanoi, Vietnam, ⁴CIAT, Hanoi, Vietnam, ⁵QUT, Brisbane, Australia, ⁶U.Sydney, Australia

Abstract: Vietnam is undergoing nutrition transition, with undernutrition remaining a concern among vulnerable populations and overweight and NCDs rising. Into this context comes a newly-signed mega free trade agreement, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), ratified by Vietnam in 2018. Trade policy has significant implications for national food environments and national public health policy space, and thus to either enhance or block pathways to achieving the SDGs, but these implications are rarely acknowledged in the creation of either trade or nutrition policy. This study aimed to understand the impacts of the CPTPP on policy space for addressing food environments for improved nutrition and health in Vietnam.

The study analysed Vietnamese food and health policy relating to nutrition against provisions of the CPTPP, drawing on existing literature to identify implicit or explicit constraints or protections for nutrition policy space. We coded policy tensions according to a key nutrition action framework and interviewed key informants from trade and nutrition sectors in Vietnam to identify 1) understanding of the potential implications of the CPTPP for nutrition policy, 2) views on implications, and 3) barriers and opportunities for change.

Building on previous work, this study found that closing space for public health policy, including nutrition, is likely to constrain the Vietnamese government’s ability to implement policy. In particular, provisions on technical barriers to trade and regulatory coherence. Trade policy has the opportunity to enhance pathways to achieving the SDGs and improve nutrition; these should be acknowledged in global and national policy negotiations.
MERCOSUR: Facilitator or an obstacle for the implementation of FOP policies?

Authors: LLM Belen Rios1, PhD Luciana Castronuovo1, MPH Victoria Tiscornia1, MPH Lorena Allemandi1, JD Berenice Cerra1, Lawyer Cecilia Cury2, MPH Lais Amaral2, PhD Ana Paula Bortoletto2

Affiliations: 1Interamerican Heart Foundation Argentina, Buenos Aires, Argentina, 2IDEC, Sao Paulo, Brazil

Background/aims: National regulations on nutritional labels are usually harmonized with MERCOSUR resolutions. This situation has been used by the industry and some governmental institutions as an obstacle to move forward with front of packaging (FOP) labeling in Argentina and Brazil.

The main goal of this study is to generate evidence to promote an effective FOP nutrition labeling policy in Brazil and Argentina and to encourage political dialogues in other member countries of the Southern Common Market (MERCOSUR).

Methods: Descriptive, cross-sectional study including the analysis of the legislation in Argentina and Brazil regarding food labelling, the analysis of MERCOSUR’s and CODEX Alimentarius’ potential implications, obstacles and facilitators, and the analysis of the international regulatory framework. Sources of information include: official national and regional websites (eg, infoleg, MERCOSUR, WTO) and revision of legal texts (laws, decrees, resolutions, international treaties, etc.).

Results: Belonging to regional blocks would not be an impediment for countries to advance in FOP regulations for food and beverages. The implementation of the labeling policy would thus be legally viable. Harmonization with the MERCOSUR regulations would not imply any obstacle to regulation at the national level, due to the flexibility granted by international trade instruments. These flexibilities are recognized in the framework of international trade agreements and even in the MERCOSUR legal framework.

Conclusion: Member states of MERCOSUR are empowered to advance with national legislation in order to protect the right to health of the population, even if it implies disharmonization with regional regulation.

Harnessing the investment community to support obesity prevention and sustainable food systems

Authors: Ms Ella Robinson1, Dr Gary Sacks1, Ms Larissa Barrows2, Dr Rachel Carey1, Dr Christine Parker2

Affiliations: 1Deakin University, Melbourne, Australia, 2The University of Melbourne, Melbourne, Australia

Abstract:

Background: Responsible investment (RI), in which ethical, social and governance (ESG) concerns are incorporated into investment decisions, is a potentially powerful tool for encouraging action from the corporate sector in relation to ESG issues. In Australia, there is a limited understanding of the extent to which urgent public and planetary health issues like obesity, nutrition and sustainable food systems are incorporated into RI decision-making.

Methods: A desktop review of current practice was conducted, focusing on key Australian RI funds and their approach to obesity, nutrition and sustainable food systems. Relevant information from policy documents, websites, and annual reports was systematically extracted and analysed. Key stakeholders within the RI community were invited to participate in in-depth semi-structured interviews.

Results: In Australia, several leading RI funds consider obesity, nutrition and sustainable food system issues within their investment decision making, albeit in a limited way. These issues make up only a minor component of their overarching investment approach. Stakeholders in the RI community highlighted a number of barriers and enablers for incorporating obesity, nutrition and sustainable food systems into their decision-making frameworks.

Conclusions: The responsible investment community is increasingly recognising the value in addressing issues like obesity, nutrition and sustainable food systems, from both an investment risk and shareholder value perspective. Appropriate mechanisms to incorporate these issues into investment decision-making need to be embedded within existing investment systems. Engaging with the responsible investment community has significant potential to address targets within the United Nations Sustainable Development Goals and improve population and planetary health.
Addressing Childhood Obesity in First Peoples in Queensland: Health Worker Perspectives

Authors: Ms Megan Boswell1, Dr Lisa Vince2, Ms Heidi Atkins3, Associate Professor Robyn Littlewood4, Professor Lauren Williams2

Affiliations: 1Griffith University, Gold Coast, Australia, 2Menzies Health Institute, Griffith University, Gold Coast, Australia, 3Queensland Child and Youth Clinical Network, Children’s Health Queensland Hospital and Health Service, Brisbane, Australia

Abstract:

Background: Obesity disproportionately impacts Australia’s First Peoples children compared to children of other descent (14% vs 7%). Addressing this health gap is of critical importance for both short- and long-term health. Aboriginal and Torres Strait Islander Health Workers (AHWs) are well placed to address the issue of childhood obesity in First Peoples in Queensland, however little is known about their current perspectives or practice.

Methods: AHWs in Queensland were invited to participate in a cross-sectional online survey (25 items) investigating their perspectives on childhood obesity, barriers to discussing the issue with families and clinical practice behaviours (i.e. screening, identification, referral and treatment). Survey completers were then invited to participate in an in-depth telephone interview.

Results: Forty-five AHWs completed the survey (36% aged 45-54 years; 80% female; 31% from an inner regional location). Majority (91%) agreed that addressing childhood obesity was an important part of their role. AHWs were less likely to agree that obesity was in issue in First Peoples compared to all children (67% vs. 80%). From the eight completed interviews, AHWs described experience in their role as a key enabler and family resistance to change and lack of support services as a key barrier to discussing the issue with families. Clinical practice behaviours for identification and treatment of childhood obesity did not align with current recommendations.

Conclusions: Results from this research could inform the development of training initiatives for AHWs to optimise screening, identification and treatment of obesity in Australia’s First Peoples children. The research project was conducted by a collaboration of researchers from Griffith University, the Queensland Children’s Hospital, Queensland Child and Youth Clinical Network and Children’s Health Queensland (CHQ). The Daru Mugaru Working Group was consulted for recruitment of study participants from the Aboriginal and Torres Strait Islander health workforce within CHQ, and the Indigenous Health Coordinator and the Principal Policy Officer at CHQ were also consulted in the conduct of the research. Participants voluntarily agreed to take part in the study to assist in contributing to the better health of all Aboriginal and Torres Strait Islander children with obesity. Ethics approval was granted for the outcomes from this study to be disseminated through scholarly work.

Early identification of childhood overweight and obesity – whose responsibility is it?

Authors: Mrs Kamila Davidson1, Dr Helen Vidgen1, Professor Elizabeth Denney-Wilson2, Professor Lynne Daniels1

Affiliations: 1Queensland University Of Technology, Brisbane, Australia, 2The University of Sydney, Sydney, Australia

Abstract:

Background: In Australia, there is little clarity regarding the responsibility for routine weight status assessment of children despite it being recognised as the first step in identification and management of overweight and obesity. While the national “Obesity Guidelines” recommend primary health care professionals to assess weight status during consultations this does not occur in practice which leaves parents, by default, responsible.

This research aimed to determine how to improve early identification of overweight in children.

Methods: Two studies, with health professionals and parents, were conducted using a case study of a regional town. Data was collected and analysed guided by the COM-B framework.

Results: The lack of structure or support to assist routine assessing of weight status results in primary health care professionals having little ownership for its undertaking. Parents see themselves as responsible and check some of children’s physical measurements.

Conclusions: Changes are urgently needed in order to improve early identification of overweight. Introduction of universal program for routine weight status assessment to improve early identification of overweight, and to connect families with management services should be considered. It is necessary to clearly outline who is responsible for this assessment and provide education about this check to address misconceptions, improve its acceptance and undertaking.

Significance to public health nutrition

Early identification of childhood overweight must be improved so that families can commence addressing this health issue early. This will ensure that children are given the best opportunity for good health and well-being now and in the future.
GROWNUT: Experiences from capacity building for public health nutrition in DR Congo

Authors: Dr Anne Hatley1, Professor Mala Ali Mapatano2, Dr Christiane Horwood3, Researcher Lyn Haskins5, Professor Paulin Mutombo2, Dr Marie-Claire Muyer4, Professor Thorkild Tylleskär5, Professor Ingunn MS Engebretsen

Affiliations: 1Centre of International Health, University of Bergen, Bergen, Norway, 2Kinshasa School of Public Health, University of Kinshasa, Kinshasa, DR Congo, 3Centre for Rural Health, University of KwaZulu-Natal, Durban, South Africa

Abstract:

Background: Building local research capacity is important to develop applicable, evidence-based public health nutrition interventions in low-income countries. GROWNUT is a partnership between universities of Kinshasa, Bergen (UiB) and KwaZulu-Natal (UKZN), supported by DRC Ministry of Health, aiming to develop a Masters and PhD programme in Nutritional Epidemiology at Kinshasa School of Public Health (KSPH).

Methods: GROWNUT was launched in 2014. A Masters and PhD curriculum was designed comprising 18 modules, with English as the medium of instruction. Modules employed a variety of interactive teaching methods, and were led by experts from Kinshasa, UiB and KZN. A rural research site was established in Kwango Province, DRC, where students completed an internship and undertook data collection.

Results: Forty-one Master students enrolled in four cohorts during 2014-2018, including 15 students supported by GROWNUT bursaries. To date, 30 students have completed their Master degree, 10 are in progress and one student failed; two PhDs were completed and two are in progress. Most students were co-supervised, with the main supervisor from KSPH and a co-supervisor from UKZN or UiB. Degrees were awarded by KSPH. Several graduates have obtained senior positions in DRC Ministry of Health, KSPH and in the clinical field. Research findings have been presented to local communities and stakeholders at a symposium held at the rural research site.

Conclusion: GROWNUT demonstrates how universities working together and sharing skills can successfully establish a Masters and PhD programme, effectively developing skills in nutritional epidemiology. This approach could be applied to other research fields.

Mothers’ perceptions of infant feeding counselling at South African primary care clinics

Authors: Dr Tanya Doherty2, Dr Christiane Horwood3, Mrs Lyn Haskins5, Ms Vuyolwethu Magasana5, Dr Ameena Goga5, Dr Nigel Rollins5

Affiliations: 1Centre For Rural Health, University Of KwaZulu-natal, Durban, South Africa, 2Health Systems Research Unit, South African Medical Research Council, Cape Town, South Africa, 3School of Public Health, University of the Western Cape, Cape Town, South Africa, 4Department of Paediatrics, University of Pretoria, Pretoria, South Africa, 5Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, Geneva, Switzerland

Abstract:

Background: Optimal breastfeeding practices can reduce infant and child mortality, so it is important for health workers (HWs) to support breastfeeding. In South Africa in recent years, changes to infant feeding guidelines as a result of the HIV epidemic, have led mixed messages and confusion among health workers about how to support breastfeeding.

Methods: A qualitative study was undertaken to explore mothers’ experiences of infant feeding counselling from health workers during pregnancy, delivery and after the baby was born. Focus group discussions (FGDs) were conducted in primary health care clinics with mothers of infants aged less than six months. Analysis followed the thematic framework approach.

Results: Twelve focus group discussions were conducted, with a total of 67 mothers participating. Mothers reported that breastfeeding messages during the antenatal period focused rigidly on the importance of exclusive breastfeeding, to the exclusion of other messages to support continued breastfeeding. At delivery, some mothers reported receiving practical support to initiate breastfeeding. However, in the postnatal period when mothers experienced breastfeeding challenges, including breast health problems, perceived lack of sufficient breastmilk and pressure from family members to add other foods or fluids, advice was often incorrect or absent. HWs appeared blind to context in which mothers make breastfeeding decisions at home, leading to mothers reporting that they felt unable to raise concerns and misled HWs about mixed feeding practices for fear of reproach.

Conclusion: HWs providing infant feeding counselling should improve individualized support to mothers in the postnatal period and address common breastfeeding challenges.

Coaching as a capacity building strategy: a case study of Alive & Thrive Nigeria

Authors: Oluwaseun Okediran4, Oluwatoyin Oyekun1, Dr Adaeze Oramalu5, Mrs Karina Lopez-Enye1, Mr Awotunde Williams1

Affiliations: 1Save The Children, Abuja, Nigeria, 2FHI, , , 3Alive & Thrive, , , 4Bill & Melinda Gates Foundation, ,

Abstract:

Background: Nigeria constitutes 1% of the world population but accounts for 10% of the world’s maternal and under-five mortality rates (NDHS 2013). It is estimated that 52,900 Nigerian women die yearly from pregnancy-related complications with increased chances of dying from pregnancy and childbirth. In Nigeria only 21% of pregnant women and mothers of children
under 2 access services at the health facilities while 39% seek care from traditional birth attendants (TBA). The preference for services of the less skilled TBAs is attributed to better interpersonal relationships and patient-centered care demonstrated.

Method: As part of the global efforts of the Alive & Thrive(A&T) Project, in Nigeria it seeks to increase the uptake of nutrition services by women by improving Health Workers(HWs) knowledge of appropriate Infant Young Child Feeding(IYCF) practices and interpersonal communication(IPC) Skills to engage and provide mothers of children under 2 with targeted and timely services. HWs receive weekly (2-4hours) coaching sessions by a coach who after observing the HWs interaction with clients attending ante-natal classes (ANC), identifies gaps towards strengthening and improving the quality of services.

Results: anecdotal feedback shows appreciation for the participatory process which enables the services providers to maximize their potential through learning on the job rather than being taught and increased acceptance in HWs providing nutrition services. In total 2,300 health workers have been trained on IYCF/IPC and about 4m coaching sessions conducted.

Conclusion: Incorporating coaching into capacity building efforts for HWs in work-setting enhances knowledge, skill and self-efficacy leading to positive behavior change.

Community Health Workers: Incentives versus salaries

Authors: Ms Shamiso Moyo1

Affiliations: 1Independent Consultant, Bulawayo, Zimbabwe

Abstract:

Question: Should community health workers (CHWs) remain as volunteers or should they be made into paid workers within the health system?

Background: CHWs are an increasingly important component of health systems worldwide delivering a wide range of health interventions. They provide critical support to ministries of health in areas where human resources are scarce at the community level. They are volunteers who receive allowances and not paid salaries, despite their work being invaluable within communities.

Speaker’s position on the question: Having worked on programmes that work with CHWs, the issue of incentives versus salaries should not be ignored. Being a volunteer, does not bring food on the table for the family and this bears down on the volunteers’ performance at large.

Justification of position: It may be worthwhile for governments to do a cost benefit analysis of keeping CHWs as volunteers versus paying them salaries (against the health indicators they support in) as one of the key concerns raised by CHWs is poor remuneration (Busza et al, 2018; Kambarami et al, 2016) and this inevitably affects CHW performance.


Training non-health workers in IYCF-E

Authors: Mrs Michelle Pensa Branco1, Ms. Jodine Chase1, Ms. Carole Dobrich1

Affiliations: 1Safelyfed Canada, Mississauga, Canada

Abstract:

Infant and young child feeding in emergencies is a cross-cutting issue requiring coordination across multiple functional areas to meet the needs of infants and young children (0-24 months) and pregnant and lactating women (PLW). Sensitizing and orienting staff and volunteers to IYCF-E practices is critical to ensuring seamless welcome and continuity of care to these vulnerable populations.

Canada has no effective national or provincial level IYCF-E strategy or policy in place, though the Baby-Friendly Initiative (Community Health) includes an IYCF-E indicator under Step 10.

As part of a project designed to build IYCF-E capacity in the Regional Municipality of Wood Buffalo in northern Alberta, SafelyFed Canada drew on orientation materials produced by the IFE Core Group on its Operational Guidance v. 3.0 and on interviews with key stakeholders. Training modules could be used with front-line staff as well as management and executive teams. Content included breastfeeding supports/enabling environments, appropriate complementary feeding and triage and referrals to reduce the risks of artificial feeding.

Pre- and post-testing as well as participant evaluations identified gaps in knowledge and informed planning for future training needs. Pre-existing bias and misinformation about infant feeding were apparent across functional areas, underlining the need for strong procedures and policies to support appropriate care. In particular, we identified practical strategies for risk reduction that can be implemented with non-specialist helpers in a high mixed feeding population as well as improved data collection to quantify and analyze the impact of disasters in these vulnerable populations.
An integrated curriculum to build Indigenous cultural capability in public health nutrition

Authors: Ms Julia McCartan1, Ms Andrea Bryce2, Ms Janeane Dart1, Ms Liza Barbour1, Dr Aimee Dordevic1, Dr Nicole Kellow1, Associate Professor Julie Brimblecombe1

Affiliations: 1Monash University Department of Nutrition, Dietetics and Food, Notting Hill, Australia

Abstract:

Background: In 2014, the Australian Department of Health released the Aboriginal and Torres Strait Islander Health Curriculum Framework which recognises the health disparities experienced by Aboriginal peoples. It identifies the pivotal role of higher education providers in creating a health workforce that practices respectfully with Aboriginal peoples and contributes to realising the SDG of reducing inequality for good health and wellbeing.

Methods: A Nutrition Department Indigenous Curriculum Working Group was established in 2016 at a university in Melbourne, Australia. The working group provides a central point to enhance Indigenous health teaching and has scaffolded the learning outcomes of the Framework across all levels of learning in its undergraduate and Masters curricula.

Results: Since its establishment, 26 new Indigenous-focused curriculum activities have been integrated across 13 undergraduate and six postgraduate nutrition and dietetics units. Research led by the working group found a statistically significant shift (p = 0.001) in students' self-rated cultural capability scores after exposure to the Indigenous curriculum. Working group members have also designed, implemented and published an unfolding case study which prepares students for real-life public health nutrition practice situations in engaging stakeholders in Indigenous contexts.

Significance to PHN: Indigenous peoples have maintained sustainable food systems for millennia. This curriculum working group model is an effective approach to strengthen public health nutrition students' capacity to work with Indigenous populations. The integrated curriculum supports, motivates and inspires students to learn about Indigenous health and prepares them for a career of culturally capable public health nutrition practice.

Development and testing of a “Zero-Stunting” scorecard for use at sub-national level

Authors: Professor Lisanne du Plessis1, Professor Scott Drimie1, Mrs Angela Coetzee2, Professor Joyce Kinabo3, Mrs Marna Smuts1, Mr Romeo Bhebhe1

Affiliations: 1Stellenbosch University, Faculty of Medicine and Health Sciences, Department of Global Health, Division of Human Nutrition, Cape Town, South Africa, 2Stellenbosch University, Faculty of Economic and Management Sciences, Sustainability Institute, Stellenbosch, South Africa, 3Sokoine University of Agriculture Department of Food Technology, Nutrition and Consumer Sciences, Morogoro, Tanzania

Abstract:

Introduction: SDG 2 calls for the end of all forms of malnutrition and urge countries to meet international targets of reducing the number of stunted children by 40 percent by 2025.

Aim: To develop and test a “Zero Stunting” scorecard for use by governments in Africa at sub-national/provincial level to assess commitment for stunting reduction.

Methods: Prototype development and initial testing was done in the Western Cape Province, South Africa. The draft scorecard include indicators grouped in three domains: law, policy and finance to identify and assess programmes implemented in various areas of food control; political economy; food systems; education; nutrition; water, sanitation and environment; health; social protection; finance and governance. In-depth interviews conducted with provincial government officials helped gauge, inter alia, the availability of data, relevance and usefulness of the scorecard and indicators, applicability and capacity.

Results: Data required for populating the scorecard in this province is mostly available. Participants described the tool as a valuable mechanism to address stunting in a multi-sectoral way. The tool also highlights opportunities for improving data collection and usage. Internal and external validity testing in Gauteng province, South Africa and Bulawayo, Zimbabwe is ongoing. Further testing in Tanzania and Ghana will follow.

Conclusion: A scorecard focussed on addressing childhood stunting holds potential to spark broader discussion. This could include facilitating the effective use of data to monitor stunting prevalence, gauging political commitment and informing policy, programme implementation and governance.

4E – Multi-stakeholder governance and management of influence
Rapid Fire Presentations

Global nutrition governance: key challenges during the UN Decade of Action

Authors: Dr Phillip Baker

Affiliations: 1Institute for Physical Activity and Nutrition, Deakin University, Melbourne, Australia

Abstract:

Background: Strengthened governance is a key explanatory factor for why nutrition improves at national and sub-national levels. High-level political commitment, effective coordinating bodies, civil society participation in decision-making, and well designed and funded policies are several features of strong governance. Yet few studies have focused on defining the global nutrition system (GNS) and diagnosing key governance challenges and opportunities for system strengthening at this level.

Aim: This study aims to: understand how the GNS has evolved in terms of key actors, institutional arrangements and normative focus; identify key governance challenges within this system; make recommendations for strengthening GNS governance during the United Nations (UN) Decade of Action on Nutrition.

Methods: Qualitative analysis including data sourced from a workshop with officials from UN nutrition agencies, international NGOs and academics; key informant interviews; and documentary sources. A conceptual framework comprising several governance concepts – actors, spaces, norms, resources and accountability – guided the analysis.

Results: Several observations emerged. The GNS was defined as the web of actors engaged in global collective actions to attenuate the causes, manifestations and consequences of malnutrition. The GNS has evolved a complex set of actor arrangements and institutions, with multiple spaces of dialogue and decision-making and public-private hybridity; strong normative tensions exist within the system, notably concerning the role of the private sector; the expanded number of spaces for dialogue and decision-making has increased, creating challenges for participation and accountability.

Conclusions: These findings generate several insights for informing strengthening GNS governance during the UN Decade of Action.

Accountability within multi-stakeholder governance: examining philanthropic foundations’ engagement in Indian nutrition governance

Authors: Megan Arthur

Affiliations: 1Global Health Policy Unit, School of Social and Political Science, University of Edinburgh, Edinburgh, United Kingdom

Abstract:

Background: Tensions exist between global nutrition and development governance norms of multi-stakeholder engagement alongside accountability and conflict of interest management (Swinburn et al. 2015; WHO & FAO 2018). Philanthropic foundations have prominent positions as non-state actors engaged in nutrition governance, however questions have been raised regarding implications of their engagement for systems of accountability (Birn and Richter, 2018). This project aims to illuminate tensions between norms of multi-stakeholder approaches and accountability for nutrition governance by examining the engagement of philanthropic foundations in national-level nutrition governance in India.

Methods: Qualitative case studies were conducted of the engagement of Tata Trusts and the Bill & Melinda Gates Foundation (BMGF) based on semi-structured interviews with 67 individuals, focusing on the perceptions of key stakeholders within the national nutrition policymaking landscape in India. Analysis followed an interpretive approach to thematic analysis of interview transcripts.

Results: Findings indicate a lack of clarity and contradictions among key stakeholders’ perceptions of accountability mechanisms for philanthropic foundations’ engagement in national nutrition governance in India. Challenges include an informal and network-based policy advocacy environment, the role of individual leadership, and limitations on civil society monitoring and transparency.

Conclusions & significance: In the context of the SDGs’ partnership agenda (goal 17), challenges created by pluralist policymaking environments for accountability systems require additional theorisation. This project makes an empirical contribution by illuminating institutional ambiguity and transparency challenges within the engagement of philanthropic foundations in national-level nutrition governance in India that shapes the design of public policies and regulatory interventions for malnutrition.
Bridging barriers to advance multisector-approaches to improve nutrition and health in Nepal

**Authors:** Dr Santosh Gaihre¹, Dr Heather Morgan²

**Affiliations:** ¹Nutrition Innovation Centre For Food And Health (niche), Ulster University, Coleraine, United Kingdom, ²University of Aberdeen, Aberdeen, United Kingdom

**Abstract:**

**Background:** Understanding stakeholders’ perceptions is crucial to the development and implementation of any intervention. However, a structured approach to eliciting stakeholder insights into complex, multisector issues of nutrition and health is lacking in many low and middle-income countries (LMIC). This qualitative, workshop-based participatory study explores stakeholders’ experiences of developing and implementing multisector interventions to provide transdisciplinary lessons for future developments in LMIC.

**Methods:** Participants were purposely selected based on their involvement in the multisector intervention. Participants with interests in nutrition, household environment and health were brought together to participate in a series of discussions on issues relating to nutrition and health in Nepal. All group discussions were audio-recorded and transcribed, and a thematic qualitative analysis performed to identify relevant themes.

**Results:** The government’s ongoing Multisector Nutrition Plan, stakeholders’ willingness to work together, availability of local infrastructure for cross-institutional inputs and increasing global movement towards transdisciplinary approaches were identified by the 33 workshop participants, representing 23 organisations. Fragmentation, lack of practice-based evidence, limited transdisciplinary knowledge, short-term funding and lack of knowledge-sharing mechanisms were identified as barriers. Stakeholders suggested methods to bring about success included: improved knowledge, both amongst policy-makers and implementers, of food security and its linkage with nutrition; investment in collaborative evidence-based practice; and strengthened transdisciplinary collaboration throughout the intervention development and implementation process.

**Conclusions:** This study suggests that multisector approach needs to adapt to take into account the experiences and views of the stakeholders concerned. The paper lays foundations for future transdisciplinary working to support realisation of the recommendations.

**Evidence-based governance intervention improved First 1000 Days outcomes in two Philippine towns**

**Authors:** Mr. Axell Alterado¹, Ms. Elenneth Anne Chan¹, Ms. Angelique Santos¹

**Affiliations:** ¹Zuellig Family Foundation, Paranaque City, Philippines

**Abstract:**

**Background:** More than 3 million Filipino children experienced growth disruption, placing the Philippines 9th among the 14 countries that contributed to 80% of the global stunting burden. While there are known interventions to improve nutritional outcomes, efforts towards improving First 1000 Days indicators are fragmented in numerous Philippine towns. Hence, the need to inspire urgency among local officials, harmonize fragmented efforts, and prioritize First 1000 Days.

**Methods:** In 2017, the Zuellig Family Foundation piloted a two-year modular program to improve health leadership and technical capacity of local officials and program implementers in two geographically challenged towns. Using the results of local level surveys and the developed Nutrition Action Scorecard patterned from the WHO’s 6 Building Blocks of the Health System, they were guided on the integrated governance and inter-sectoral service delivery for First 1000 Days.

**Results:** External assessments validated the 22% reduction of stunting prevalence among 0-23 month old children from 19.2% in 2017 to 15% in 2019. Anemia also lowered by 34% in pregnant women and 30% in children. Improvements in leadership and technical competencies and overall local nutrition systems functionality were also documented. But First 1000 Days information management must be strengthened and programs in food, sanitation, and behavior change must be mainstreamed.

**Recommendations:** Sectoral convergence in geographically challenged towns can be championed by the mayor. Because First 1000 Days is an abstract concept for local officials, well-structured learning environment and tools should be provided. Greater support is needed in areas of food security, sanitation, and behavior change.

**Conflict of interest in Brazilians Legal Framework for Early Childhood**

**Authors:** Marília Albiero¹, Paula Johns¹, Lais Amaral Mais³, Phd In Public Health Camila Maranha¹,² Ana Paula Bortoletto Martins³

**Affiliations:** ¹ACT Promoção da Saúde, Rio de Janeiro, Brazil, ²UFF, Rio de Janeiro, Brazil, ³IDEC, São Paulo, Brazil

**Abstract:**

The Legal Framework for Early Childhood, approved in 2016, establishes guidelines for the formulation and implementation of public policies for early childhood in Brazil. During its construction, as a Bill 6998/13, the theme of children’s advertising was widely debated, but at the end of the process, the final wording was softened. The objective of this study was to analyze conflicts of interest (COI) in this formulation process regarding the theme of advertising, using Thompson (1995) as a reference. Documentary research and semi-structured interviews were carried out. The study was approved by the Ethics Committee of the Faculty of Public Health of the University of São Paulo (Nr 2,338,071). From the cross-referencing of the documentary research data and the seven interviews with representatives of civil society and government, it was possible to identify COI
Abstract

Introduction: An emerging body of evidence is revealing the use of harmful corporate practices from sectors including tobacco, alcohol, food, gambling, oil and pharmaceutical industries, among others. It is important that individuals and organisations in international organisations, governments, academia and civil society are equipped to tackle these threats to health. Our study aim was to identify existing mechanisms, as well as examples where these mechanisms have been implemented, for addressing and managing the influence of corporations on policy, research and practice and promote and protect public health.

Methods: We conducted a scoping review, where we searched peer-reviewed publications and government, international organisations and civil society reports.

Results: For governments, we identified a wide range of mechanisms such as donations to political parties, financial and Minister’s diaries disclosures and freedom of information processes. In addition, there are universities who refuse funding from the tobacco industry; some make transparent the interactions between their staff members, students and corporations. Among other mechanisms, many universities, scientific journals and professionals association across the globe have conflicts of interest policies.

Discussion: The current situation, where interactions between the industry and third parties in the public sector often are the default approach in public health, is perhaps challenging, but there is scope (and need) for change. If adopted more widely, many of the mechanisms described in this manuscript could contribute to efforts to prevent and control NCDs, by limiting and managing the influence that vested interests could have on public health policy, research and practice.

Cutting through commercial influence: Governing the commercial determinants of NCDs

Abstract

The noncommunicable disease (NCD) crises is driven by unhealthy commodity industries, who not only ensure the supply and demand for their products, but heavily influence their regulation through capturing government agencies. There has been little empirical research done on how states handle the commercial determinants of health, especially the influence of commercial interests in NCD governance, and there is even less understanding on how low- and middle-income countries respond to this challenge. This research aims to understand how unhealthy commodity industries can be governed in a way to minimize harm to health. New empirical evidence on tobacco governance in Fiji and in Vanuatu offers some insights about the conditions in which health concerns could be elevated even when strong commercial and political influence is present: (1) using economic framing by highlighting the socioeconomic costs of NCDs, (2) applying political pressure using international authority coupled with mobilized community voices, (3) widespread network building among different government agencies, political parties, and sectors, and (4) utilizing the policy and legislative processes through government consultations, lobbying with Members of Parliament, participating in Parliamentary Standing Committee hearings, and submitting government budget proposals.

Consideration of Values when Setting Priorities in Nutrition Research: Guidance For Transparency

Abstract

Setting priorities in nutrition research requires the engagement of various stakeholders with diverse insights. Consideration of what matters most in research from a scientific, social, and ethical perspective is not an automatic process. Systematic ways to explicitly define and consider relevant values are lacking. The aim of this study is to develop guidance for value consideration when setting priorities in nutrition research.

A mapping review was conducted to identify the existing priority setting exercises in nutrition research. The values found in each priority setting exercise were extracted using qualitative content analysis and organized a framework. The framework has been further validated through a stakeholder consultation.
Obesity prevention: Challenging the food regulation system to do more

Authors: Ms Holly Jones

Affiliations: 1Australian Government Department Of Health, Canberra, Australia

Abstract:
Background: The Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) has agreed that supporting public health objectives to reduce chronic disease related to overweight and obesity is a priority for the food regulation system. Initial work within this priority area focussed on food labelling to support consumers to make informed choices, and there is more that could be done in the food regulation system to contribute to achieving this objective.

Methods: During 2018 and 2019 stakeholder engagement was undertaken to explore, critique and prioritise potential actions for the food regulation system to support overweight and obesity prevention. Stakeholders consulted included public health sector, the food industry and Government officials within the health sector and food regulation system.

Results: A proposal was submitted for the Forum’s consideration in June 2019. The proposal suggested potential actions and partnerships which could occur within the Food Regulation System to more strongly contribute towards reducing chronic disease related to obesity. Proposed actions included exploring the potential for compositional limits on certain foods and drinks, and strengthening partnerships with key stakeholders and other regulators.

Conclusions: This work recognised that the food regulation system alone cannot reduce the rising prevalence of overweight and obesity and associated chronic diseases. By contributing to a multi-sectorial and coordinated approach the food regulation system can support chronic disease prevention objectives. This will also support the achievement of Sustainable Development Goal (SDG) three relating to good health and wellbeing.

Development of a National Obesity Strategy for Australia

Authors: Ms Simone Braithwaite, Dr Dru Armstrong, Dr Vicki Gedge, Ms Annette Birt, Mr Roger Meany, Mr Mark West

Affiliations: 1Queensland Department Of Health, Herston, Australia

Abstract:
Background: In October 2018, Australia committed to develop its first national obesity strategy (the Strategy). With most Australian adults now overweight or obese, this provided a significant opportunity to drive transformative change to prevent unhealthy weight.

Methods: The first phase of Strategy development involved initial consultation and analysis of the physical activity, healthy weight and food systems to develop a conceptual framework. This provided a sound theoretical platform to underpin the second phase of Strategy development – defining priority actions through public consultation and Australian and international evidence and practice reviews.

Results: The theoretical framework is based around 11 core (interlinked) ‘clusters’ of system influencers of healthy weight. Through application of sustainable development and equity lenses and embedding broader systems thinking – the framework enabled a more holistic and integrated approach to guide the strategy’s development. It helps provide an understanding of the intrinsic, reciprocal relationships between food and physical activity systems, human and planetary health, all critical considerations for a comprehensive healthy weight strategy. Scaling up current efforts, being innovative, embedding environmental sustainability and influencing the broader social and commercial determinants of health are integrated within the strategy.

Conclusion: The Strategy strengthens governance, embeds accountability and increases capacity beyond health to influence weight, nutrition and physical activity-related outcomes in Australia. The holistic approach addresses inequities and considers sustainability from the outset through fundamental integration of SDGs, with the potential to make a real difference to developing sustainable change in systems and support all Australians to achieve a healthy weight.
Challenges in using dietary patterns research in dietary guideline development

Authors: Kate Wingrove¹, Professor Mark Lawrence¹, Professor Sarah McNaughton¹

Affiliations: ¹Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia

Abstract: Dietary guidelines should be informed by systematic reviews of the best available evidence, including evidence from nutrient-based, food-based, and dietary patterns research. A variety of dietary pattern assessment methods are used, which may influence the ability to synthesise evidence for use in dietary guideline development. The aim of this study was to critically examine four challenges arising from their application and reporting in dietary patterns research. To ensure evidence from dietary patterns research can be synthesised, standardised approaches for the application and reporting of dietary pattern assessment methods are needed. These challenges have implications for the use of evidence from dietary patterns research in dietary guideline development.

Critically examining nutrition classification schemes for policy actions: A narrative literature review

Authors: Sarah Dickie¹, Dr Julie Woods¹, Dr Phil Baker¹, Professor Mark Lawrence¹

Affiliations: ¹Deakin University, Burwood, Australia

Abstract: Policy actions such as front-of-pack labelling and restrictions on food advertising have been recommended to help reduce the global burden of diet-related non-communicable disease and support the achievement of Sustainable Development Goal 3. Many nutrition policy actions require the identification of ‘healthy’ or ‘unhealthy’ foods and beverages; however, no standard metric exists for this purpose. A narrative literature review was conducted with the aim of critically reviewing all nutrition classification schemes (NCSs) developed to assess the health potential of individual foods. Three key research questions were addressed: i) What NCSs exist? ii) How effective is each NCS at assessing the health potential of individual foods? and iii) What are the policy outcomes?

Methods: A systematic search of the literature was completed and the NCSs identified were classified and critically examined against a ‘fit-for-purpose’ framework that is structured around characteristics aligned with nutrient-, food-, or diet-based exposures.

Results: A total of 45 NCSs were identified meeting the inclusion criteria. Of these, 36 were nutrient-based, 3 food-based, and 6 dietary-based. Nutrient-based NCSs significantly outweighed other methods, however analysis through the ‘fit-for-purpose’ framework identified a misalignment between the nutrient-based approach and the assessment of individual foods, as often only a limited selection of nutrients was evaluated. Evidence on the application of food- and diet-based NCSs to nutrition policy actions was limited.

Conclusions: Further research is needed to elucidate a better ‘fit-for-purpose’ approach to the nutrition classification of foods for policy actions, potentially including food-based and diet-based aspects.

Policy to reduce free sugars and their effect on non-nutritive sweetener availability

Authors: Mrs Cherie Russell¹, Professor Mark Lawrence¹, Dr Phillip Baker¹, Dr Carley Grimes¹

Affiliations: ¹Deakin University, Burwood, Australia

Abstract: Dietary risk factors are major contributors to the global burden of disease. Excessive free sugar consumption has been linked with obesity, diabetes and tooth decay. Policy actions such as reformulation and sugar taxes have been recommended to address this problem. Substituting non-nutritive sweeteners (NNS) for sugar is one activity that may reduce free sugar. Concerns have been raised about the public health risks and benefits of NNS. This review aimed to investigate the...
relationship between policy actions to reduce free sugar consumption and their effect on the trends of NNS in the food supply over time.

**Methods:** A narrative review of peer-reviewed and grey literature was undertaken using a combination of search terms related to the study aim.

**Results:** Policy actions intended to reduce free sugar consumption that may influence NNS intake included sugar taxes, education and behavioural interventions. Other influences included demand for low-sugar products and manufacturers pre-empting policy through voluntary reformulation. Though many regions are under-researched, NNS consumption is increasing globally. Due to a paucity of research, it is unclear whether NNS is increasing in the food supply. Nonetheless, the diversity of NNS varieties is expanding, and are being added to a growing number of consumable categories.

**Conclusions:** Policy actions to reduce free sugar consumption appear to increase intakes of NNS, though their effect on food supply trends is under-researched. Further research is needed to determine whether NNS is increasing in the food supply and, given the unclear risks of these additives, how health outcomes are impacted.

**Determinants of support for food policies targeting sugar and unhealthy food marketing**

**Authors:** Prof Simone Pettigrew¹, Ms Liyework Dana¹, Ms Alison McAleese², Ms Alice Bastable³, Mr Steve Pratt³

**Affiliations:** ¹Curtin University, Perth, Australia, ²Cancer Council Victoria, Melbourne, Australia, ³Cancer Council WA, Perth, Australia

**Abstract:** Self-regulatory approaches to food reformulation and food marketing have had very limited success, resulting in increasing calls for mandated requirements. The extent of public support for regulatory change is an important determinant of governments’ willingness to introduce new policies, making it important to monitor community sentiment on these issues. The aim of the present study was to identify factors associated with Australians’ support for (i) a tax on sugar sweetened beverages, (ii) the mandatory inclusion of added sugar information on product packages, (iii) banning the location of fast food outlets near schools, and (iv) banning the sponsorship of children’s sport by unhealthy food and beverage companies. An online survey was administered to 2,010 adults, with quotas used to generate a well-distributed sample. Large majority support was found for mandatory sugar labelling and banning fast food outlets near schools, while only around half of respondents approved of a tax on sugar sweetened beverages and a sponsorship ban for children’s sport. The only consistent predictor of support for both sugar-related initiatives was extent of awareness of healthy lifestyle campaigns. There were three predictors that were common across both child-related initiatives: older age and compliance with intake guidelines for fast food and sugar sweetened beverages. Gender was only significant for one initiative (females were more likely to support mandatory added sugar labelling). Results did not differ by socio-economic status. The relatively small number of significant predictor variables for each potential policy indicates a lack of well-defined consumer segments that would oppose these initiatives.

**Scaling-up policies to reduce salt and sugar consumption in the Pacific Islands**

**Authors:** A/Prof Gade Waqa¹, Prof Colin Bell², Dr Anne-Marie Thow³, Prof Steven Allender², Dr Tom Lung⁴, Prof Mark Woodward¹, Dr Kris Rogers¹, A/Prof Jacqui Webster⁴

**Affiliations:** ¹The George Institute for Global Health, University of New South Wales, Sydney, Australia, ²GLOBE Centre, Deakin University, Melbourne, Australia, ³Menzies Centre for Health Policy, Sydney, Australia, ⁴Fiji National University, Suva, Fiji

**Abstract:** Non-communicable diseases are a crisis in the Pacific Islands and poor diets are contributing significantly to this. In response, Pacific Island leaders are implementing a range of food policies and regulations including taxes on salt and/or sugar and regulations for salt levels in processed foods. Our 5-year collaborative research project will advance knowledge of how to scale up food policy interventions in these countries. We will engage government ministries and civil society in Fiji and Samoa to implement and evaluate evidence-informed interventions to reduce salt and sugar consumption. Specific objectives are to: (1) establish baseline diets, food sources and diet-related bio-markers; (2) engage stakeholders through group model building to map dietary causes of hypertension and diabetes and catalyse action on reducing salt and sugar consumption; (3) comprehensively monitor the process and impact of implementing these policies and (4); measure cost effectiveness. The main implementation science questions we will discuss are: (1) ‘which policies are the most feasible for reducing salt and sugar in the Pacific islands?’ and (2) ‘what are the factors that lead to effective implementation of policies to reduce salt and sugar consumption?’ This presentation will focus on the Systems Thinking in Community Knowledge Exchange (STICKE) tool to influence policy. In addition to providing new evidence to support evidence-based policy making, an additional output will be the development of a low-cost, low tech, sustainable, scaleable system for monitoring food consumption and biomarkers for diet-related health outcomes, which is fundamental to the achievement of the nutrition SDGs.

**A government policy to create a healthier food environment: retrospective policy analysis**

**Authors:** Dr Helen Trevena², Dr Michelle Crino¹, Mr James Wayte², Clare Green², Dr Margaret Thomas³, Dr Anne-Marie Thow²

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Abstract:
Introduction: Since 2017, New South Wales (NSW) Health has been implementing a state-wide healthy food and drink provision policy. This retrospective policy analysis uses a political science approach to consider how the policy got onto the agenda, key influences in its development, what lessons were learned during the process, and how this learning can inform future design of similar policies elsewhere.

Methods: Documentary data was collected for the period 2007-17 from printed media, official government sources. Two theoretical frameworks were used: Bacchi’s ‘what the problem is represented to be’ and Kingdon’s Multiple Streams Theory to generate insights on policy development and the influences in decision making. Data was organised, categorised, extracted, and further categorised using a deductive approach to determine trends and changes over time (the manifest content), and to interpret the underlying meanings in the text (the latent content). Preliminary findings will be validated with government stakeholders in group interviews.

Results: Preliminary findings indicate childhood overweight and obesity was consistently framed with physical exercise the primary solution. Where healthier food environments were proposed it was in relation to restricting the promotion of junk food. The ‘complexity’ of the problem and multifaceted solutions that respected choice were core themes of official government policy documents. Full results will be available end 2019.

Conclusion: This analysis provides key learnings for the future design of similar policies to establish standards to make healthy diets accessible in public facilities (ICN2 Framework for Action), which can be applied in a range of countries and contexts.

A food literacy framework to describe the capabilities needed for sustainable eating

Authors: Dr Helen Vidgen

Affiliations: 1Queensland University Of Technology, Brisbane, Australia

Food literacy describes the knowledge, skills and behaviours required to plan and manage, select, prepare and eat foods to meet needs including protecting diet quality through change and strengthening dietary resilience over time. It is conceptualised as the scaffolding the empowers individuals, households, communities and nations to effectively navigate personal, local and global food systems and environments. The empirical research which informed the model identified that greater food literacy increases the certainty, choices and pleasure of eating well, rather than being driven by the motivation of reducing disease risk, indicating it has a role beyond biological health. This presentation will:

- Describe the role of food literacy across Decade of Nutrition Action Areas, in improving the capacity of:
  - Individuals through nutrition education and information for behavioural change (action area 3)
  - Households through safe and supportive environments for nutrition at all ages (action area 2)
  - Global and local communities for sustainable, resilient food systems for healthy diets (action area 1), and
  - Citizens to demand strengthened governance and accountability for nutrition (action area 6)

First steps in realising this will be discussed by:

- Describing the conceptual model of the relationship between food literacy and food intake, diet quality, sustainable diets, food security, and traditional foodways.

- Synthesising findings across recent international studies to develop measures of food literacy, and to explore its relationship to food intake.

A qualitative analysis of government-led nutrition policies in Australian public facilities

Authors: Ms Emilie Sparks, Dr Annet Hoek, Dr Gary Sacks, Dr Luke Wolfenden, Dr Jason Wu, Ms Jenny Reimers, Ms Kirstan Corben, Mr Michael Moore, Dr Cliona Ni Mhurchu, Dr Jacqui Webster

Affiliations: 1The George Institute for Global Health, UNSW, Newtown, Australia, 2Deakin University, Burwood, Australia, 3University of Newcastle, Newcastle, Australia, 4Victorian Health Promotion Foundation (VicHealth), Carlton, Australia, 5The University of Auckland, Auckland, New Zealand

Abstract:
Background: Public facilities provide a unique opportunity to improve population health through provision of healthier foods and drinks. In Australia, each state and territory government has its own nutrition guidelines or regulations for public facilities. This study aimed to assess and compare the components and designs of nutrition policies in Australian public facilities to understand their potential impact.

Methods: Nutrition policies in public facilities were identified by searching health and education department websites for each Australian state and territory government. This was supplemented by data from relevant websites (e.g. Food Policy Index
Australia. A monitoring and evaluation framework was used to extract data and a qualitative analysis of the design and content of nutrition policies was performed.

**Results:** Twenty-seven public facility nutrition policies were identified across eight states and territories in Australia. Most policies in health facilities and public schools were mandatory, and most workplace policies were voluntary. Twenty-four policies included nutrient criteria, and 22 had guidelines for catering/fundraising/advertising. While most included implementation guides or tools and additional supporting resources, less than half included tools/timelines for monitoring and evaluation.

**Conclusions:** While nutrition policies in public facilities present an opportunity to create healthy eating environments and improve population health, the design of these policies in Australia, including missing components, lack of accountability mechanisms and jurisdictional differences, may be a barrier to implementation and prevent the policies having their intended impact. Ensuring these nutrition policies require public facilities to provide healthy foods and drinks will contribute towards achieving nutrition-related sustainable development goals.

**Consumer perceptions and the food supply impact of Canadian mandatory front-of-package labels**

**Authors:** Prof. Mary L'Abbe, Dr. Anthea Christoforou, Beatriz Franco-Arellano, Dr. Jodi Bernstein, Christine Mulligan, Laura Vergeer

**Affiliations:** 1University Of Toronto, Toronto, Canada

**Abstract:**

**Background:** FOP nutrition labelling has become a core component of policy recommendations to address the growing burden of diet-related NCDs globally. Health Canada recently published regulations requiring the mandatory display of ‘high-in’ FOP symbols for saturated fat, sodium and sugars. The objective of this work was to examine the consumer response to, and food supply impacts of such a label in Canada.

**Methods:** A) An online survey (n=1,997 participants, nationally representative) was conducted to assess consumers’ perceptions of nutrition labelling, categorized by their health literacy levels. B) Products in the Food label Information Program (FLIP) 2013 (n=15,277) database of pre-packaged foods were assessed according to published Canadian criteria for mandatory FOP symbols and compared against criteria based on both positive and negative nutrients in the Food Standards Agency Australia, New Zealand’s (FSANZ) voluntary FOP summary system.

**Results:** FOP symbols had a greater effect than other nutrition labelling on consumers’ perceptions of product healthfulness and purchase intentions, particularly amongst those with lower health literacy. Applying mandatory FOP label criteria to FLIP revealed that 61.7% of products would require a symbol. There was 87.2% agreement between these products and those considered “unhealthy” under FSANZ criteria.

**Conclusion:** We found FOP labeling can provide equitable nutritional guidance, across literacy levels (SDG 1) and that mandatory regulations for nutrient specific FOP labeling are as sensitive as the FSANZ summary system (which also includes positive nutrients) in identifying unhealthy foods (SDG 3). This work provides important empirical evidence supporting mandatory FOP labeling for healthy food selection.

**National policy actions for childhood overweight and obesity prevention: an international perspective**

**Authors:** Dr. Wakako Takeda, Ms Warita Lorpaiboon, Mr Punyathorn Jeungsmarn

**Affiliations:** 1Institute For Population And Social Research, Mahidol University, Phutthamonthon, Thailand, 2Mahidol University International College, Phutthamonthon, Thailand

**Abstract:**

**Background:** Preventing Childhood overweight and obesity (COO) is an emerging policy agenda in many countries and communities. Over the last decades, a number of policy actions have been planned and implemented at global, national, state, and community levels. However, not all policy actions have been implemented and some actions have been discontinued. There are few systematic investigations on recent COO policies worldwide.

**Aim:** This study aims to synthesize experiences of national policy actions for COO prevention around the world, and examine barriers and facilitators to implementing policy actions for COO prevention.

**Method:** Academic articles and grey literature about nationwide policies and programs related to COO prevention are gathered systematically through academic and non-academic databases. Quantitative and qualitative content analysis is conducted to map the policy actions based on the WHO’s Ending Childhood Obesity (ECO) commission’s recommendations and synthesize experiences of policy actions for COO prevention including barriers and facilitators of the implementation of policy actions.

**Contribution:** The study shows barriers and facilitators to implementing national policy actions and proposes key policy domains in which the public health nutrition community should pay more attention to.
4G – Systems engagement for nutrition
Rapid Fire Presentations

Two year outcomes for the WHOSTOPS community-based childhood obesity prevention RCT

Authors: Prof Steven Allender1, Mr Nic Crooks1, Associate Professor Liliana Orellana2, Dr Kristy Bolton1, Ms Penny Fraser1, Mr Andrew Brown3, Ms Ha Le4, Ms Janette Lowe4, Dr Kayla de la Haye5, Dr Lynne Millar4,6, Professor Marj Moodie1,3, Professor Boyd Swinburn4, Professor Colin Bell1, Dr Claudia Strugnell1

Affiliations: 1Global Obesity Centre, Deakin University, Geelong, Australia, 2Biostatistics Unit, Deakin University, Geelong, Australia, 3Deakin Health Economics, Deakin University, Geelong, Australia, 4Southern Grampians and Glenelg Primary Care Partnership, Hamilton, Australia, 5Department of Preventive Medicine, University of Southern California, Los Angeles, United States of America, 6Australian Health Policy Collaboration, Melbourne, Australia, 7Australian Institute for Musculoskeletal Science, University of Melbourne and Western Health, Melbourne, Australia, 8School of Population Health, University of Auckland, Auckland, New Zealand

Abstract: Background: We report on the two-year outcomes of the Whole of Systems Trial of Prevention Strategies for Childhood Obesity (WHOSTOPS) stepped-wedge cluster randomised trial which aims to build community capacity to apply systems thinking to the prevention of childhood obesity in South West Victoria, Australia.

Methods: Five communities were randomly allocated to intervention at baseline, the remaining five communities joined the intervention in after two years. Measured height and weight (Year 2, Year 4 and Year 6) and self-reported behavioural data (Year 4 and Year 6) were used to examine changes in overweight/obesity prevalence and associated risk behaviours.

Results: More than 70% of government and independent primary schools from the study communities consented to participate in routine surveillance in 2015 (42/59) and 2017 (44/58). High (>79%) student participation rates were achieved through the application of an opt-out approach to routine measurement (2015 = 1,794 participated/2,263 invited; 2017 = 1,972 invited/2,388 participated). Significant reduction in overweight/obesity (-3.0%, p = 0.037) was observed in the first five intervention communities within two-years, and a non-significant decline in control communities (-1.5%, p = 0.557); no significant difference between groups was observed. Significant increases in fruit (>2 serves/day), sugar-sweetened beverages (SSB) (≥1 day) and water consumption (≥2 glasses/day) recommendations was observed for intervention girls and declines in takeaway (≥2 times/week) and SSB among control girls. Negative declines in self-rated psychosocial health among control girls was also observed.

Conclusions: Interim trial results point to early positive movement in the prevention of childhood obesity within WHOSTOPS communities.

A National Nutrition Network has potential to support system-change for ECEC services.

Authors: Mrs Ros Sambell1, Dr Ruth Wallace1, Dr Leesa Costello1, Dr A Devine1

Affiliations: 1Edith Cowan University, Joondalup, Australia

Abstract:

Introduction: A system-change is required to facilitate healthy food environments in Australian Early Childhood Education and Care (ECEC) services. Currently 1.3 million children access ECEC, providing opportunities to influence children’s food preferences, optimise nutrition to reduce obesity and chronic disease risk. The National Nutrition Network – ECEC works collaboratively to affect change as knowledge brokers.

Methods: Semi structured interviews were undertaken with national and international Network members at two time points via an online communication platform. Interviews were transcribed, uploaded to NVivo and thematically analysed.

Results: Members had increased knowledge of ECEC practices/procedures around nutrition and health, increased awareness of; related activities in all jurisdictions, others’ roles in supporting the sector, key jurisdictional stakeholders, research and resource development. There was increased potential for the Network’s expert capacity across jurisdictions to support food provision advocacy in the sector, however, there was concern relating to their workload capacity to action required tasks. Knowledge sharing among members through collaborative projects was demonstrated. The collegial nature of a shared altruistic purpose, passion, enthusiasm, and national collaboration motivated members continued engagement. Opportunities for members to network with experts and reduce duplication of research and resources was realised. Members shared a mutual respect and thought the Network had significant potential.

Conclusion: This National Network has the potential to influence system-change through a collegial environment that shares an altruistic vision, aligns with the intrinsic purpose of the members and builds capacity for knowledge sharing to influence systems; ultimately improving the health outcomes for children in ECEC.
Promoting water as drink of choice in Melbourne using a partnership approach

Authors: Ms Dana Thomson1, Dr Debra Hopkins2, Dr Daryll Archibald2, Ms Petra Bagell1, Dr Hassan Vally1

Affiliations: 1North East Healthy Communities, Melbourne, Australia, 2Department of Public Health, La Trobe University, Melbourne, Australia

Abstract:
Background: Sugary drinks are significant contributors to poor diet, decreased community health and health disparities. Globally, community-based collaborations are proving effective in repositioning water as the drink of choice. Concurrently, collective impact is gaining traction as a framework for partnerships driving change on complex issues. In Melbourne, North East Healthy Communities, a primary care partnership, has been leading a collective impact-inspired approach to enable healthy drinks choices across three local government areas.

Methods: Our journey to date has included joint priority-setting and planning with community health, local government and other community organisation representatives, the formation of a North East Healthy Drinks Alliance, and a shared commitment to a healthy drinks charter. Current actions include: advocacy, creating supportive environments, behavioural nudges, and supporting community action. The Alliance has also partnered with La Trobe University to support regional monitoring and evaluation.

Results: We are seeing strengthened governance and accountability for healthy drink action and more supportive environments for water consumption. Our approach has led to new partners from outside the health sector joining our alliance. We have also attracted additional funding and have had an increase in healthier drink interventions being trialled. Data-sharing and collaborative community engagement has also provided insights into local opportunities to support healthy drink choices.

Conclusions: We are encouraged by the results the Healthy Drinks Alliance have achieved so far. From our early experiences, success requires long-term investment in the partnership, adaptability to suit local context, experimentation, and strong researcher-program staff relationships to support ongoing monitoring and evaluation.

Transforming food environments for health: local government workers' perspectives on current capacity

Authors: Ms Ana GOWREA1, Professor Amanda Devine2, Ms Ros Sambell1, Dr Stephanie Godrich1

Affiliations: 1Edith Cowan University, Joondalup, Australia

Abstract:
Background/aims: With growing concerns about chronic disease and obesity rates; increasing food insecurity; junk food outlets outnumbering healthy alternatives; and, prime agricultural land being lost to urban development, local governments globally are called to improve food environments, however, little is known of their current capacity to act on this. Through the lens of local government (LG) workers, this study explored the LG capacity to foster food environments that support healthier eating for all community members.

Methods: Case studies from two diverse LGs in Western Australia. Data were collected via interviews (n=8) with senior workers. Organisational capacity constructs for leadership, resources, partnerships, community engagement, workforce and organisational development, community ‘intelligence’, project management were assessed on 5-point scales using Hughes and Margett’s assessment and averaged across each LG.

Results: Preliminary results indicate that senior workers in ‘progressive’ LGs thought their organisation had significant leadership capacity to drive change but cited workforce size and composition; and community engagement were most limited. Capacity assessments suggested investments on program evaluation, health research and surveillance were also limited. One site cited significant resource investment in staff and programs, while another identified local community leadership as their greatest assets.

Conclusions: Direct, detailed insights from those in LG can help inform capacity building initiatives that foster accountability; facilitate food systems thinking; and focus policies and actions towards sustainable local access and availability of safe and nutritious food. This study provided the formative data to develop an online action planning guide for LG in Western Australia.

Food and nutrition education within Australian primary schools: A curriculum gap

Authors: Dr Penelope Love1, Dr Alison Booth2, Dr Claire Margerison2, Professor Caryl Nowson1, Dr Carley Grimes2

Affiliations: 1Deakin University, Geelong, Australia, 2Deakin University, Burwood, Australia

Abstract:
Background: Schools are regarded as a key setting for obesity prevention, providing an opportunity to reach a large number of children, frequently and over a prolonged period, through formal and informal opportunities to learn about health behaviours. However, the low value placed on health versus academic achievement is a barrier to effective implementation of food and nutrition education.

Methods: This study used a qualitative exploratory approach to explore the views of teachers and key health and education sector stakeholders regarding opportunities for food and nutrition education within the Australian primary school setting. To
the best of our knowledge, this is the first study to explore this topic from the perspectives of state-level coordination and development through to local-level implementation and support within the Australian primary school context.

**Results:** Only 2.6% of the Victorian Curriculum related to food and nutrition education, taught through Health and Physical Education, and Technologies. Stakeholders considered child health a priority, and schools an ideal setting for food and nutrition education. Barriers included a lack of strategic policy alignment, limited leadership and coordination, a ‘crowded curriculum’, and poor availability of shelf-ready resources with explicit curriculum links.

**Conclusion:** A cross-curricula approach was regarded as a viable means to integrate food and nutrition content into an ‘overcrowded’ curriculum. Such an approach is a policy issue, and requires collaboration between health and education sectors. Support to enable the delivery of food and nutrition content within schools is also essential and the value of a dedicated workforce for this needs consideration.

**Government Capacity to Restrict Marketing of Unhealthy Products in the Americas Region**

**Authors:** PhD student, MSc, RDN Sofia Rincón Gallardo Patiño

**Affiliations:** 1Virginia Tech, Blacksburg, United States

**Abstract:**

Industry marketing of unhealthy food and beverage products is a wicked challenge and a significant driver of unsustainable behaviors, poor diet quality, obesity and non-communicable diseases (NCDs). The 2030 Sustainable Development Goal 3 (SDG3) recognizes the need to reduce NCDs risks to promote health and well-being for all. National governments require robust and comprehensive policies to meet the World Health Organization (WHO) target to restrict the marketing of food and non-alcoholic beverage products to children and adolescents up to age 18 years. National policies implemented by governments will also help to achieve several NCD Action Plan targets, including no increase in childhood overweight and a halt the rise of diabetes and obesity in adults.

This study assesses the national government capacity of 35 countries in the Americas Region, including North, Central and South America, through a web-based questionnaire. The questionnaire was piloted and adapted from the WHO Global Survey to Assess National Capacity to prevent and control NCDs. Questions were developed based on the WHO’S 2012 Evaluation Framework to implement the recommendations on the marketing of foods and non-alcoholic beverage to children. The tool examines three components of national government capacity building: public health infrastructure; policy status; and health information systems, monitoring and evaluation.

The results are used to develop a responsible marketing index for governments to address existing capacity gaps for this challenge. Findings inform opportunities, challenges and progress in the America’s Region to promote healthy food environments for children to achieve global targets.

**Discrepancies in support for nutrition policies in Alberta, Canada**

**Authors:** Melissa Fernandez, Jennifer McGetrick, Candace Nykiforuk, Kim Raine

**Affiliations:** 1School of Public Health, University of Alberta, Edmonton, Canada

**Abstract:**

**Background:** Discerning attitudes towards policies helps target actions to influence policy adoption among decision-makers. The purpose of this study was to assess support for healthy eating policies among policy influencers (PI) and the general public (GP) in Alberta, Canada.

**Methods:** In 2017, a random sample of 1500 members of the GP and 157 PIs from a census sample completed surveys that included 15 questions about potential healthy eating policies. Differences in support between the GP and PIs were assessed with χ².

**Results:** Support was significantly greater for 10/15 policies among the GP compared to PIs (p< .05). Subsidizing healthy foods and beverages, mandating space for healthy foods and beverages in recreational facilities, and restricting sugary drink sales in public facilities had 31, 25, and 18 percentage points lower support, respectively, among PIs compared to the GP (p<.0001). Programs to educate the public about healthy food choices and adequate breastfeeding facilities in public buildings had the highest support among both groups (>87%). Restricting or banning new fast food drive-through restaurants had the lowest support among both groups (<37%).

**Conclusion:** Support for policies that ensure access to healthy food are paramount to improving nutrition and align with sustainable development goals for good health and well-being. Large discrepancies between the GP and PIs signal an opportunity to target advocacy efforts towards public health nutrition policies that already have high support among constituents. Policies with high support and agreement between the GP and PIs are low-hanging fruit to push forward to adoption.
Public opinion on nutrition policy options: regional and urban Australians perspectives

Authors: Dr Katherine Cullerton¹, Dr Michael Waller², Prof Amanda Lee¹

Affiliations: ¹School of Public Health, University Of Queensland, Herston, Australia

Abstract:
Background: There has been no regulatory or legislative nutrition reforms in Australia during the past decade despite evidence demonstrating their effectiveness. One reason cited for this lack of action is concern that such measures will not be acceptable to the community. Limited qualitative studies of public attitudes towards nutrition policy have occurred in Australia. Of those undertaken, the findings are limited by participants from mostly urban locations with an interest in the topic.

Methods: We undertook street intercept interviews to explore nine different policy options with members of the public. Descriptive and logistic regression analysis were used to analyse the quantitative data and framing analysis was used to analyse the qualitative data.

Results: Seventy six people from five cities/towns (population range: 2 million-2000) were interviewed. Participants were evenly distributed across urban and regional locations, age and education level. Most participants supported the full range of policy options presented. However there were increased levels of support for clearer labelling on food products and media campaigns, and lower levels of support for reformulating food products and a 20% tax on sugar-sweetened beverages. The qualitative data indicated that much of the support or opposition towards the polices was justified by participants based on the value of ‘fairness’.

Conclusion: The findings of this study suggest there is broad public support for the Australian government to use a variety policy options to address nutrition-related diseases. These results provide valuable insights that can be used when advocating for the adoption of public health nutrition actions.

Strengthening public support for healthy eating policy through values-based messaging

Authors: Mark Chenery¹, Jane Potter¹

Affiliations: ¹VicHealth, Melbourne, Australia, ²Common Cause Australia, Canberra, Australia

Abstract:
Background: Healthy eating advocates use a variety of messages and frames to describe healthy eating and to build public support for healthy eating-related policies. Little research currently exists to inform which messages are most effective.

Methods: Values-based messaging is an approach where strategic communications are intentionally framed to tap into people’s intrinsic values. This approach has been used extensively in environmental and climate change advocacy to build engagement and support for action.

Developing values-based messaging for healthy eating involved public discourse analysis and advocate interviews, which identified dominant frames and values that advocates, opponents and the public use to communicate about healthy eating and related policies. From this analysis, values-based message frames were developed and then tested with a nationally representative sample of Australians to identify which frames were most effective.

Results: Advocates often use conflicting message frames to communicate with the public about healthy eating and related policies. Some of these frames are more promising than others when evaluated from a values and cognitive framing perspective, while others are counter-productive.

Conclusion: The lack of consistent and strategic approaches to messaging used by healthy eating advocates undermines the public’s ability to understand messages and the sector’s ability to present a clear and compelling narrative on the need for evidence-based policy action.

Significance to public health nutrition: This research helps the public health nutrition workforce to strengthen consistent framing of healthy eating messages to improve public awareness and garner community support for effective policy action

Tipping the Scales - development and dissemination of an obesity prevention consensus

Authors: Ms Jane Martin¹, Professor Anna Peeters²

Affiliations: ¹Obesity Policy Coalition, Melbourne, Australia, ²Deakin University, Melbourne, Australia

Abstract:
Background: This paper describes the rationale and process used to develop an obesity prevention consensus platform in Australia.

Aim: The aim of the developing the Tipping the Scales group and report was to overcome a key barrier to progress for obesity prevention policy – a perceived lack of consensus. The desired outcome was the identification of key feasible and critical actions for obesity prevention, which had the support of a range of stakeholders.

Methods: We convened an expert advisory group of key influencers in the obesity prevention field, representing a range of organisations, to develop agreed key components of a national obesity prevention strategy for Australia.
A literature scan to synthesise key evidence-based national and international statements was undertaken, collated with headings developed around key policy themes. Within each of the key policy areas, a number of potential actions were identified as relevant. These, plus an evidence summary were provided to the expert group, who were asked to prioritise each broad policy area and rank their rank policy actions, considering key criteria.

Results: Eight specific policy actions were clearly identified as the most critical and feasible initial components of strategy. These were placed into a broader framework, including fundamental foundational elements that should accompany these actions, including leadership, equity and monitoring.

Conclusions: This example illustrates partnerships (SDG17) to promote health and wellbeing (SDG 3).

This platform has had considerable focus and dissemination, including through the media, endorsement in recommendations by a government committee and inclusion in political policy platforms.
4H – Safe and supportive family

Rapid Fire Presentations

Consumer perceptions and industry trends related to plant-based beverages

Authors: Dr Rivke Haryono1, Ms Melissa Cameron1

Affiliations: 1Dairy Australia, Melbourne, Australia

Abstract:

Background: Plant-based beverages are often promoted as healthier or more sustainable alternatives to milk and their availability and choice is increasing. The purpose was to explore industry sales from recent years, together with reasons for consumption. We also analysed the nutritional profile and ingredients list of plant-based beverages compared to milk.

Methods: A quantitative survey of Australian adults (n=1,856) assessed reasons for consumption. Weighting ensured gender and age representativeness. Domestic sales (volume) were calculated for each year using supermarket sales data. Nutrition information (ingredient list and nutrient content/100g) was also collected for plant-based (soy, almond, coconut, rice, oat and macadamia; unflavoured varieties; n=44) and milk products available in retail outlets in Victoria.

Results: Between 2007 to 2018, there was a small increase in the sale of plant-based beverages, from 5 to 7%. In contrast, milk held 91% of the total supermarket share in 2018. Of those who purchased these products, over half of respondents (54%) did so because they perceived them to be healthier than milk. Sixty-seven percent of plant-based beverages contained added sugar (2.7 ± 1.1g).

Conclusions: Despite popular belief, sales of plant-based beverages are not exceeding that of milk. Concerningly, respondents indicated consuming these products as they are healthier, despite lacking the natural nutrition of dairy. The issue of how to deal with plant-based products marketed as alternatives to dairy has gained world-wide attention and a holistic review of this space is required to ensure consumers can make informed purchase decisions without compromising health.

Family meals: exploring the gaps between eating together and health outcomes

Authors: Ms Georgia Middleton1, Ms Fairley Le Moal1, Assoc. Prof. Rebecca Golley1, Dr Karen Patterson1, Prof. John Coveney1

Affiliations: 1Flinders University, Bedford Park, Australia, 2Institut Paul Bocuse, Ecully, France

Abstract:

Background/aims: The family meal has been recognised as an important part of family life for decades. Numerous studies demonstrate the benefits of family meals for children and adolescents. However, majority of this research is observational and cannot provide causal links between family meals and health.

Methods: A systematic literature search of five databases conducted in 2018 identified intervention studies investigating the relationship between family meals and health, and qualitative studies exploring experiences of the family meal.

Results: Only two of the nine identified interventions showed significant differences in family meal frequency or quality. While there were some significant differences in nutrition outcomes between control and intervention groups, all but one intervention involved other targets aside from the family meal. The seventeen qualitative studies identified multiple barriers to the family meal and reported family connection, communication and passing on of values as the main perceived benefits of the family meal.

Conclusion: While intervention research is needed, and shows promising results, there is a gap between the identified benefits and barriers to the family meal, and current intervention strategies. Interventions that are informed by qualitative literature and exclusively target the family meal are needed to further investigate the link between family meals and health outcomes.

Significance to PHN: Family meals pose a unique opportunity for interventions that optimise nutritional health. Identifying the components of the family meal that are most achievable and beneficial to health outcomes provides an evidence-base to inform programs to help families achieve these outcomes through the family meal.

Food Choices: Perceptions and Experiences of Fathers With Children Under 12 Years

Authors: Food&Mood Centre, Deakin University Sara Campolonghi, Dr Renée Otmar2, Dr Adam, D. Walsh3, Prof Trisha Dunning4, Dr Karen Campbell5, Dr Adrienne O’Neil6, Dr Anu Ruusunen7

Affiliations: 1Deakin University, School of Medicine, IMPACT SRC, Food & Mood Centre, Geelong, Australia, 2Deakin University, School of Medicine, Faculty of Health, 3Australia, 3Deakin University, School of Exercise and Nutrition Sciences, Institute for Physical Activity and Nutrition (IPAN), Burwood, Australia, 4Deakin University, School of Nursing and Midwifery, Geelong VIC, Australia; Barwon Health, Kitchener House, The Geelong Hospital, Geelong, Australia, 5Deakin University, School of Medicine, IMPACT SRC, Food & Mood Centre, Geelong, VIC Australia; The University of Melbourne, Melbourne School of Population & Global Health, Melbourne, Australia

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Abstract:

Background/aim: Previous literature has established the importance of paternal diet, feeding and modelling in influencing children’s eating behaviour; however, an understanding of what shapes fathers’ food choices and their contribution to the family food context is currently lacking. This study aims to explore perceptions and experiences of Australian fathers about food, eating and personal food choices.

Methods: Semi-structured, in-depth interviews with individuals (n. 20) playing an active fathering role with children aged 1 to 12, resident in urban contexts (metropolitan and regional), have been conducted using a flexible question guide and artefacts (photos). Focus groups (4-6 people each) will be conducted with different participants. A qualitative, inductive approach has been followed.

Results: Data collection and analysis in progress. Results will be presented. Emerging themes from interim data analysis include: Enablers, barriers, motivations to food choices (Upbringing; Life events; Being a parent); Change/evolution (Growing up/Ageing, Becoming a father, Awareness); Personal attitudes/approaches to food and food choices (Health oriented; Moderation and variety; Relationship food-health). No differences found between Metropolitan and Regional areas.

Conclusions: This study provides an in-depth insight into fathers’ understanding of food, eating and health, enablers and barriers to healthy eating, and fathers’ role in the family food context.

Significance to public health nutrition: Knowing more about fathers’ discourses on food and eating may help detecting specific issues, trends and approaches useful to implement more targeted and effective policies and interventions for healthy eating. Findings may also bring insight to the gender-based literature around eating and food choices.

Knowledge and involvement of fathers in complementary feeding of children in Zimbabwe

Authors: Ms Shamiso Moyo1, Ms Nikki Schaay4

Affiliations: 1UNIVERSITY OF THE WESTERN CAPE, CAPE TOWN, SOUTH AFRICA

Abstract:

Background: The role of fathers in complementary feeding has not been explored in Zimbabwe. To date, local research studies that have explored the role of parents in infant and young child feeding have tended to focus firstly, more on the mothers than the fathers and secondly, more on breastfeeding than complementary feeding practices which begin from 6 months of age.

Purpose of study: To explore the knowledge and extent of involvement of fathers in the complementary feeding of children 6 to 23 months in Zimbabwe.

Method: A qualitative approach with 10 fathers with children aged 6 to 23 months was used. Local key informants were used to validate information given by fathers. Thematic analysis was used to identify emergent themes.

Results: Notable change in behaviour among the fathers in comparison to what they did 10 years ago. Fathers did support their wives with certain household activities. Some fathers are still mindful of how the predominant culture defines as a father’s role in child feeding.

Major conclusion: Implications for policy makers regarding father involvement in complementary feeding highlighted by study. New insight into the literature describing the knowledge and involvement of fathers in complementary feeding for fathers in Zimbabwe has been obtained.

Mothers’ Perception and Roles on Feeding Obese Pre-School Aged Children

Authors: Mr Intan Yusuf Habibie1, Mrs Fuadiyah Nila Kurniasari2, Ms Rifka Noerfaadilla Alvianda3

Affiliations: 1Brawijaya University, Malang, Indonesia, 2Brawijaya University, Malang, Indonesia, 3Brawijaya University, Malang, Indonesia

Abstract:

Background and Aims: The rising prevalence of childhood obesity has become a public health concern worldwide. The influence of social norms, family dynamics, cultural values, mother’s knowledge and healthcare system are important factors that contribute to childhood obesity. This study was undertaken to examine mothers’ perception and their role, to what extent they take the action to overcome their child’s obesity.

Method: Phenomenology approach was taken to reveal the phenomena in Mojolangu District, Malang City, East Java Province Indonesia. In depth interviews using semi-structured guidelines with 11 mothers were carried out with their obese children. The interviews were recorded and thematic content analysis was used in this study.

Results: Two main themes emerged in this study: regulating the eating behaviors of obese children and letting the diet of obese children to themselves. The former includes limiting snacking and limiting the milk consumption of the children. Meanwhile, the mothers’ case of letting the diet of obese children happens due to the fact that mothers gave up the child care because of the competing interest in the household.

Conclusion: When addressing eating behaviors among obese children, mothers’ knowledge in feeding their child is critical. Inclusion of considering cultural norms and making a supportive environment for children is also important for effective health
program and policy development. More emphasis could be placed on nutrition education to pre-school children in playgroup education since it can become an important corridor to deliver nutrition education to raise knowledge and mothers’ awareness.
Promoting nutrition in grandparent care: Reflections from parents and grandparents

Authors: Ms. Lauren Carpenter¹, Professor Lisa Gibbs¹, Associate Professor Anthea Magarey²

Affiliations: ¹University of Melbourne, Carlton, Australia, ²Flinders University (retired), Adelaide, Australia

Abstract:
Background/Aims: Grandparent care is the most common type of informal childcare used for preschool aged children. Despite this, little is known about the influence of this care environment on early childhood nutrition. This study aimed to a) describe influences that grandparent care environments have on child nutrition from the perspective of grandparents and parents; b) identify opportunities to promote nutrition in the grandparent care environment.

Methods: Eleven semi-structured interviews were conducted with four grandparents, two grandparent pairs and five parents. Grandparents cared for their preschool aged grandchildren for at least five hours each week. Analyses were informed by the socio-ecological model of health, family systems theory and guided by grounded theory.

Results: An ecological model demonstrating multiple levels of influence on nutrition in the grandparent care environment was developed. Past experiences of grandparents as well as communication and mutual respect between parents and grandparents emerged as key influences on children’s nutrition. Grandparents drew on their own experiences and were conscious of the influence that their actions had on both their grandchild and the child’s parents. Parents were conscious of balancing their child’s nutritional needs whilst not denying grandparents the opportunity to play the traditional role of treat giver.

Conclusions: Open communication and mutual respect between parents and grandparents contribute to an optimal grandparent care environment which promotes good nutrition in early childhood. Opportunities exist for implementing nutrition promotion strategies in this environment, however the complexities and multiple levels of influence in this environment need to be considered.

Culturally Tailored Nutrition Education - Does it Change Behaviours in Migrants and Refugees?

Authors: Ms Hong Do¹, Mrs Lyn Hamill¹, Lindiwe Mpala¹, Millicent Okuto¹, Dr Joy Parkinson², Mr Roy Tsang¹

Affiliations: ¹Ethnic Communities Council of Queensland, Brisbane, Australia, ²Griffith University, Brisbane, Australia

Abstract:
Introduction: People from migrant and refugee backgrounds in Australia have higher chronic disease risk than the Australia-born population (1). These risks are associated with diet, physical activity, smoking and alcohol consumption behaviours. Ethnic Communities Council of Queensland, a member of the Healthier Queensland Alliance, through their chronic disease prevention strategy, implement ‘My health for life’, a culturally tailored, lifestyle modification program. Bilingual multicultural health workers deliver six sessions, including nutrition education.

Methods: Questionnaires and program resources were translated and pilot tested on targeted cohorts (Arabic, Cantonese, Mandarin, Vietnamese and simple English). Questionnaires capture participants’ anthropometric, physical activity and food consumption (fruit, vegetables, sugar-sweetened beverages) data. Questionnaires were administered at sessions 1, 5, and 6. Data analysis compares sessions 1 and 5.

Results: The proportion of participants (n = 568) consuming two serves of fruit daily and consuming five serves of vegetables daily increased (35.4 to 51.9%; 5.9 to 15.8% respectively). The proportion of participants rarely consuming sugar sweetened beverages also increased (9.4 to 24.9%). On average, CALD participants achieved 1.7% body weight loss, and 2.2% waist circumference reduction. Additionally, the proportion of participants experiencing mental distress reduced from 7.6% to 2.8%.

Conclusion: Culturally tailored programs delivered over six months can change dietary and physical activity behaviour, resulting in reduced weight and waist circumference. These reductions contribute to prevention of non-communicable diseases, which is particularly important to these vulnerable communities.
5A – Knowledge Fair – Maternal nutrition, influences and effects

Rapid Fire Presentations

Decision Tool for Transitioning from Iron-Folic-Acid to Multiple-Micronutrient Supplements for Pregnant Women

Authors: Ms Jennifer Busch-Hallen1, Ms Allison Verney1, Prof Bahman Kashi2,3, Ms Zuzanna Kurzawa2, Dr Dylan Walters1

Affiliations: 1Nutrition International, Ottawa, Canada, 2Limestone Analytics, Kingston, Canada, 3Queen’s University, Kingston, Canada

Abstract:
New international research on effectiveness of multiple-micronutrient supplements (MMS) in pregnancy has reignited global efforts to transition from iron-folic-acid supplements (IFA) to MMS in LMICs. However, policy-makers often require country-specific data on incremental health impact, costs and cost-effectiveness of such a shift to inform decisions and budget allocations. The objective of this project was to design a user-friendly and evidence-based knowledge translation tool for policy-makers to access country-level data on implementing MMS.

This new online modelling tool provides policy-makers in LMICs with access to data on the health impact, cost and cost-effectiveness of MMS versus IFA. The modeling draws on evidence of the effects of MMS from recent published systematic reviews (Smith et al. 2019; Keats et al. 2019) and cost-effectiveness studies (Kashi et al., 2019), and the open access design allows users to enter country-specific target population, intervention unit costs, and other parameters, as desired for the introduction of MMS.

The tool presents additional health impact in terms of survival, nutrition outcomes (e.g. averted low birth weight (LBW), preterm births, and small gestational age), and disability-adjusted life years (DALYs) averted, plus projected scale-up costs and cost-effectiveness compared to long-standing IFA programs. This tool is being used in African and Asian countries to inform decision making aimed at accelerating progress towards ending malnutrition (anemia, LBW and stunting).

CONCLUSION: This tool enables countries to be better equipped to make policy decisions for domestic resource mobilization related to optimizing health gains from micronutrient supplementation during pregnancy and forecasting progress towards the SDGs.

Birth outcomes in urban slums of Nairobi Kenya, following maternal nutrition education

Authors: Ms Carolyn Kemunto Nyamasege1, Dr. Elizabeth Kimani-Murage2, Professor Yukiko Wagatsuma3

Affiliations: 1Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan, 2Maternal and Child Wellbeing, African Population and Health Research Center, Nairobi, Kenya, 3Faculty of Medicine, University of Tsukuba, Tsukuba, Japan

Abstract:
Background: Preterm delivery, low birth weight, small for gestational age is a major public health problem. This study assessed effects of maternal nutrition education on birth outcomes.

Methods: A randomized, controlled trial was conducted by the African Population and Health Research Center from 2012 to 2015 in two of Nairobi’s slums. Mothers were recruited during pregnancy and followed till the baby turned one year. We analyzed the birth outcomes of 482 mother-child pairs in the control and 425 in the intervention group who had received monthly and weekly nutrition counselling on antenatal nutrition, and good hygienic practices from a trained community health worker. We performed logistic regression to determine the associations.

Results: The mean gestation age at birth of all the children was 38.4±3.9 weeks while the mean birth weight was 3.24±0.52 kg with significantly higher proportion (27.6%) of preterm and low birth weight (6.7%) babies born in the control than in the intervention group (23.2%, 2.5% respectively). Male children in the intervention group were born significantly taller by 0.92cm than the control group. The intervention group had lower risk for low birth weight, preterm delivery and small for gestational age, while children born in Korogocho slums, maternal mid-upper arm circumference of < 23cm, maternal height <154.5cm and <4 antenatal care visits were some of the factors that increased risk of poor birth outcomes.

Conclusion: Nutrition education and counseling during pregnancy improved birth outcomes hence need to policy makers to implement the intervention in high risk areas like informal settlements.
Identifying and ranking drivers of low birth weight in Papua New Guinea

Authors: Doctor Michelle JL Scouller1,2, Dr Elizabeth Peach1, Dr Philippe Boueuf1,2, Ms Eliza Davidson1,2, Dr Herbert Opi1, Dr Helen Wei1, Ms Pele Melepi1, Mr Hadlee Supsup1, Ms Ruth Fidelis1, Ms Kerryanne Tokmun1, Professor Andrew Valley1,2, Dr Lisa M Valley1,2, Dr Steven G Badman3, Dr Leanne Robinson1,2, Dr Elissa Kennedy1,2,4, A/Professor Catriona Bradshaw1,4, Dr Paul A Agius1,2,4, Professor William Pomat1, Professor Peter Siba1, Professor Brendan Crabb1,2, Dr Christopher Morgan1,2,4, A/Professor Freya Fowkes1,2,4, Professor James G Beeson1,2,4

Affiliations: 1Burnet Institute, Melbourne, Australia, 2University of Melbourne, Melbourne, Australia, 3Burnet Institute, Kokopo, Papua New Guinea, 4Monash University, Melbourne, Australia, 5Papua New Guinea Institute of Medical Research, Goroka, Papua New Guinea, 6The Kirby Institute, Sydney, Australia, 7Melbourne Sexual Health Centre, Melbourne, Australia, 8Monash University, Melbourne, Australia, 9Papua New Guinea Children’s Research Institute, Melbourne, Australia, 10HMHB Study Team, Melbourne, Australia

Abstract:

Background: Papua New Guinea (PNG) has the fourth highest rates of stunting globally, being born small is the biggest risk factor for infant mortality and stunting, yet the nature and relative importance of key drivers of reduced birth weight in PNG are unknown. To address this, we established a cohort of pregnant women to identify drivers of reduced birth weight, including low birth weight (LBW; <2.5kgs).

Methods: 699 pregnant women attending their first antenatal clinic were enrolled, an interview conducted and biological samples collected. Samples were tested for haemoglobin, micronutrients (ferritin, zinc, vitamin A, calcium, vitamin D, folate and B12), reproductive tract infections (RTIs), malaria (by qPCR) and inflammation (CRP).

Results: Adverse pregnancy outcomes were common, including 11% babies LBW and many women experienced a high burden of disease: 69% iron deficient (ferritin<15ng/ml: 447/644), 82% anaemic (483/587), 12% malaria positive by qPCR (75/608), 15% (101/693) had a mid-upper arm circumference of ≤23cm, and most women had at least one sexually transmitted infection or bacterial vaginosis (342/502, 68%). Results for other micronutrients (ferritin, zinc, vitamin A, calcium, vitamin D, folate and B12), associations with birth weight and modelling of multi-morbidity interactions will be presented.

Conclusion: This comprehensive report goes provides substantial insight to addressing the knowledge gap of drivers of LBW in PNG and identifies an urgent need to improve health and nutrition in pregnancy. Further research is critical to understand the complex interactions of multi-morbidity in pregnancy and the impact on birth weight, stunting and other outcomes.

Determinants of dietary behaviour among pregnant women: the Healthy Beginnings study

Authors: Dr Sarah Taki1,2,3, Dr Huilan Xu1, Ms Karen Bedford1, A/Professor Li Ming Wen1,2,3

Affiliations: 1Sydney Local Health District, Sydney, Australia, 2Sydney School of Public Health, University of Sydney, Charles Perkins Centre, Camperdown, Australia, 3The Centre for Research Excellence in the Early Prevention of Obesity in Childhood (EPOCH CRE), Camperdown, Australia

Abstract:

Background/Aims: Poor adherence with dietary guidelines during pregnancy has implications on the mother’s health and is also a risk factor influencing their child’s dietary behaviour. The Communicating Healthy Beginnings Advice by Telephone (CHAT) study is a large randomised controlled trial implemented in New South Wales targeted at early obesity prevention supporting mothers from 3rd trimester until 3 years of the child’s age. This study aimed to assess dietary behaviours in accordance with the dietary guidelines during pregnancy and the relationships between these behaviours and demographic characteristics. This study intends to identify dietary behaviours of women from various sociodemographic backgrounds to address the Sustainable Development Goals 3 (Improve health and wellbeing) and 10 (reduce inequalities)

Methods: Upon recruiting participants to the CHAT study, they completed a telephone survey (Baseline). An analysis of the cross-sectional baseline survey data from CHAT study was conducted. Participants were asked questions on their demographic background and dietary behaviour including vegetable and fruit intake, processed meat, snacks, soft drink, sugary drinks and fast food.

Results: Overall, 1155 participants completed the baseline survey. Participants who reported consuming <2 serves of vegetables and fruit, soft drinks, sugary drinks and fast food were more likely to be younger than 30 years, born outside of Australia, unemployed and of lower educational status.

Conclusions: Overall, the study indicates that there are still existing socioeconomic disparities in dietary behaviour among pregnant women. Researchers need to consider developing programs targeting women at a higher risk and offer support pre-pregnancy and during early pregnancy.

Blended approaches towards accelerating nutrition outcomes for improved maternal and child health

Authors: Mr. Businge Richard1, Mr Irongo Daneil1, Mrs. Sheila Garry4, Mrs. Nakyanzi Teddy1

Affiliations: 1World Vision, Busia, Uganda

Abstract:

Background: Malnutrition accounts for over 45% maternal and child mortality in Uganda. The UN decade of Action on Nutrition, urges stakeholders to strengthen efforts towards malnutrition based on six areas for nutrition action. World Vision is
implementing a 5 years project across Busia district, aimed at reducing maternal and child mortality, leveraging approaches that ensure social protection and nutrition education. This write-up highlights results from employing 4 approaches in addressing malnutrition.

Methodology: A baseline conducted in 2017 and a midterm in 2019, employed mixed quantitative and qualitative methods including a two(2) stage cluster sampling design. Approaches included; Timed and Targeted Counseling engaging Community Health Workers to deliver health and nutrition messages to households, Grandmother inclusive care groups to influence nutrition practices, strengthening of governance structures for nutritional coordination and male support groups to positively influence household nutrition decisions.

Results: At baseline, nutrition indicators including; percentage of severely food insecure households, Proportion of Mothers of children under 2 who ate food from 5 + groups, percentage of children 6-23m who had the minimum acceptable diet and percentage of children 6-59m who are underweight scored 72.79%, 48.13%, 9.81% and 23.30% respectively. At midterm, these indicators improved by and stand at 48.38%, 64.87%, 41.57% and 13% respectively.

Conclusion: Maximizing impact from the decade of actions on nutrition in multicultural settings like Uganda requires a combination of low cost and contextualized community based approaches.

Maternal ultra-processed food consumption and infants’ microbiota: PIPA Longitudinal Study, RJ, Brazil.

Authors: Ms Nathalia Naspolini1, Dr Priscila Pereira Machado2, Dr Carmen Fróes1, Dr Josino Costa Moreira1, Dr Armando Meyer3

Affiliations: 1Oswaldo Cruz Foundation, Rio De Janeiro, Brazil, 2Center for Epidemiological Research in Nutrition and Health, University of Sao Paulo, Sao Paulo, Brazil, 3Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

Abstract:
Background: Evolving evidence has shown the negative impact of food processing on the gut microbiota. However, few studies have addressed the effect of maternal diet to the offspring microbiota development.

Objective: This study aims to analyze the consumption of ultra-processed food among pregnant women of a birth cohort in Rio de Janeiro, Brazil. Design: Cross-sectional data from PIPA study, 2017. Diet was assessed via a qualitative 79-item food frequency questionnaire. Food groups and subgroups comprised by the regular consumption of non-ultra-processed foods (non-UPF) and ultra-processed foods (UPF) were described according to socio-demographic characteristics. Also, non-UPF and UPF scores, reflecting simultaneous regular intake of more than one group/subgroup, were described. Dietary diversity of non-UPF diet fraction was described according to FAO guidelines.

Setting: Public Birthing Center in Rio de Janeiro, Brazil. Participants: Pregnant women (n 142). Results: Up to 60% of the pregnant women reported simultaneous consumption of at least three non-UPF-groups, however, only 25% reported consuming at least four different food groups of the FAO guidelines. Among the UPF-score, 27% of the participants described consumption of at least two UPF-subgroups.

Conclusions: Study shows a high weekly consumption of UPF-subgroups and a low dietary diversity of the non-UPF fraction of the diet. The independent effect of maternal UPF consumption and dietary diversity on infants’ microbiota will be addressed in upcoming analysis.

High serum folate concentrations during pregnancy in the MINA-Brazil birth cohort study

Authors: Dr Marly Cardoso1, Dr Paulo Neves1, Dr Maira Malta1, Dr Luciana Tomita3

Affiliations: 1School of Public Health, University Of Sao Paulo, Sao Paulo, Brazil, 2School of Medicine, Federal University of Sao Paulo, Sao Paulo, Brazil

Abstract:
Background/aims: Folic acid supplements (FAS) before the conception and through the first trimester of pregnancy have been used in prenatal care for prevention of neural tube defects. However, recent data on gestational folate levels are scarce, and some evidence suggests that the excess folate status in pregnancy may affect long-term health outcomes of the offspring. This study describes the serum folate ranges in a cohort of Amazonian pregnant women with mandatory folic acid flour fortification.

Methods: We enrolled 587 pregnant women, mean age 24.7 years, living in the urban area of Cruzeiro do Sul, Western Brazilian Amazon. Lifestyle characteristics, including the use of FAS (5mg/day), and biochemical data were collected in the second and third trimesters in pregnancy. Serum folate concentrations (ng/mL) were measured by HPLC.

Results: Overall, 372 of 497 (78.48%) pregnant women reported taking FAS; 90 (15.3%) missed this information. The median values and interquartile ranges of serum folate among women using FAS at the 2nd (12.8, 9.3-18.8) and 3rd (10.1, 7.3-14.2) trimesters in pregnancy were higher when compared with nonusers (10.1, 7.4-15.1; 8.6; 6.1-12.9), respectively, P = 0.017. The use of FAS was not associated with gestational malaria, maternal anaemia at delivery and new-born birth weight.

Conclusions: Mandatory fortification and supplement use could contribute to increased serum folate levels in Amazonian pregnant women. Our findings suggest the revision of the dose of folic acid in prenatal supplements to provide health benefits while avoiding the risk of excessive folic acid exposure during the pregnancy.
5B - Workshop

Ultra-processed foods: theory, findings, and global policy implication

Authors: Dr Carlos Monteiro1, Dr Mark Lawrence2, Ms Priscila Pereira Machado1, Dr Maria Laura Louzada1, Dr Priscila Machado1, Dr Phillip Baker2, Dr Euridice Steele1

Affiliations: 1Center For Epidemiological Research In Nutrition And Health, University of Sao Paulo (NUPENS/USP), Sao Paulo, Brazil, 2Institute for Physical Activity and Nutrition, Deakin University (IPAN/Deakin), Melbourne, Australia

Abstract:
Background: The role of ultra-processing, in contributing to changes in global food systems and consequent impacts on human health, well-being and environmental sustainability is receiving increased attention among policy-makers, researchers and publics at-large. The increasing production and consumption of ultra-processed foods (UPF) has to be checked, confronted and reversed as part of the work of the UN Decade of Action on Nutrition.

Aims:
• Sensitise the public health nutrition community into the role of ultra-processing in contributing to changes in global food systems and impact on human health, well-being and environmental sustainability.
• Provide tools to increase the confidence and skills in the use of the NOVA system to devise policies, investigate dietary patterns, advise people, and media coverage.
• Understand potential strengths, weaknesses, opportunities and threats (SWOT) regarding the further adoption and application of NOVA system to nutrition policy actions and country contexts.

Process:
• Introduce the NOVA food classification system, with emphasis on what are UPF and how to identify them.
• Present global trends, patterns and drivers of UPF consumption.
• Present the literature on impact of UPF on health and environment.
• Discuss policy and research implications of the UPF consumption to address the challenges of the UN Decade of Nutrition:
  • Interactive section: participants will be divided into small groups to conduct a SWOT analysis on the furthering the worldwide adoption and potential application of the NOVA system into policies (suggested by the organizers) in support of the UN Decade of Action on Nutrition.

5C - Workshop

Why and how inequity matters for nutrition (Including GNR launch)

Authors: Professor Sharon Friel1, Dr Nicholas Nisbett1, Dr Philip Baker2, Dr Jody Harris1

Affiliations: 1Institute of Development Studies, Brighton, United Kingdom, 2Deakin University, Melbourne, Australia, 3Australian National University, Canberra, Australia

Abstract:
While much nutrition research deals with aspects of inequity – such as poverty or the disempowerment of women – the nutrition field has only partially addressed equity in its research and action to date. Other issues – such as marginalisation through disability or sexuality, the social gradient rather than the gap, or the deeper ideological, social and political causes of malnutrition – are often relegated to a black box of ‘basic determinants’ and far less studied.

Equity matters for nutrition because dealing with the drivers of inequity and ensuring the policy decision-making processes are inclusive of the needs of all groups has the potential to address malnutrition in a more sustainable way. Acknowledging this need and opportunity, the Global Nutrition Report (GNR) in 2019 takes the theme of ‘nutrition equity’, and offers new evidence from a spectrum of disciplines and sectors which together provide improved ways of understanding and acting to address nutrition inequities.

This workshop brings together researchers on food and nutrition equity to launch the 2019 GNR in Australia, present new work on equity in our field, and engage with the public health nutrition community on how we can collectively address nutrition inequities in support of the Sustainable Development Goals and United Nations Decade of Action on Nutrition. Interactive activities and discussions are designed to identify research, policy and practice priorities and ways forward for understanding and addressing the inequity underpinning malnutrition.
5D - Workshop

Transforming food environments within the Nutrition Decade: commitments, needs and what works

Authors: Ms Stineke Oenema¹, Dr Francesco Branca²

Affiliations: ¹UN System Standing Committee on Nutrition, Rome, Italy, ²World Health Organization, Geneva, Switzerland

Abstract:
The world faces enormous challenges in nourishing its growing population while assuring the health and sustainability of the planet. Highly processed foods and meat-based diets are becoming more available everywhere, displacing healthier plant based traditional diets and disrupting food systems. Current industrial food production practices are unsustainable and major contributors to the decline of biodiversity, land degradation, water extraction, and pollution and climate change. This needs to urgently change. Food environments can serve as useful entry points to transform food systems.

There is not yet an agreed-upon definition of food environments. Current thinking converges towards a combination of external and personal domains influencing people’s food choices, attitudes and habits, and thus their nutritional and health status. While food availability, prices, vendors, product properties, marketing and regulation design the food environment externally, a healthy food environment depends on personal aspects such as geographical accessibility, affordability, convenience and desirability. It is thus imperative that food environments meet the needs of all people to reverse the malnutrition trend while promoting environmental protection and planetary health.

The proposed workshop will explore in detail all these issues, share concrete examples of positive transformation of food environments and highlight the SMART commitments already done by countries during the Nutrition Decade to facilitate and accelerate this transformation. By actively interacting with participants, the goal is to build capacity and raise awareness of nutrition professionals so as they can be influencers and actors of change by proposing, monitoring and demanding the implementation of such commitments.

5E - Workshop

Strengthening a global network for public health nutrition action

Authors: Professor Fran Baum¹,²,³, Dr David Legge²,⁴, Prof David Sanders¹,², Dr Claudio Schuftan³

Affiliations: ¹School of Public Health, University of the Western Cape, Cape Town, South Africa, ²Peoples Health Movement, Cape Town, South Africa, ³Southgate Institute for Health, Society & Equity, College of Medicine and Public Health, Flinders University, Adelaide, Australia, ⁴La Trobe University, Melbourne, Australia

Abstract:
Aims:
1. Explore strategies for strengthening networking, solidarity and collaboration across and among various networks and social movements working on health, food and nutrition;
2. Extend regional and global solidarity and collaboration on issues related to food, nutrition and health impacts of unhealthy corporate practices and government policies

Background: Peoples Health Movement seeks to build a strong global movement around Health for All, strengthening analysis and activism on national and global drivers of ill-health.

PHM’s strategies are informed by political economic analyses of national and global forces reproducing inequalities in health and nutrition, including critical policy engagement, alternative information and movement building.

Process: Main questions framing the workshop process are:

• what are the opportunities for strengthening networking, solidarity and collaboration across CSO networks and social movements addressing food and nutrition?
• what strategies can guide such movement building, in particular:
  o priority campaign issues?
  o networking, governance, communications?
  o grassroots activism?
  o critical policy engagement?
  o capacity building? and
  o knowledge generation and sharing?
5F - Workshop

Managing conflict of interest in nutrition policy: Strengthening governance and accountability

Authors: Prof Jeff Collin¹, Ms Paula Johns²

Affiliations: ¹University Of Edinburgh, Edinburgh, United Kingdom, ²ACT Promoção da Saúde, Rio de Janeiro/Sao Paulo, Brazil

Abstract:
Background/aims: Developments in nutrition governance under the SDGs are characterised by competing pressures and priorities. Hence WHO’s development of a tool to support member states in managing conflicts of interest is occurring alongside increasing commitments to partnership and engagement with commercial sector actors. This workshop aims to examine such tensions, and to explore how coherence for health and sustainable development can be promoted by strengthening governance and accountability across policy, research and advocacy contexts.

Methods: The session will begin with an international panel of 4 speakers from across government, civil society and international organisations, discussing experiences including in (i) seeking to apply the WHO conflict of interest tool in Brazil and (ii) testing its applicability in the context of small island states in the Caribbean. Following an open discussion of key challenges arising for effective management of conflict of interest, polling software will be used to capture perspectives from a diverse audiences of academics, advocates and officials (using easily accessible software via laptops or smartphones).

Results:
The discussion and interactive exercises will provide results regarding:
- identified strengths and weakness of the WHO tool in strengthening nutrition governance
- priorities for promoting its further development and wider testing
- consideration of implications for approaches to managing conflicts of interest in research and advocacy contexts.

Conclusions: Following the workshop, a blog/commentary will highlight lessons learned in testing the WHO tool and emergent challenges and opportunities for better managing conflicts of interest, promoting effective governance and enhancing accountability

5G - Workshop

Accountability processes stimulating actors to create healthy and sustainable food systems

Authors: Dr Stefanie Vandevijvere¹, Dr Gary Sacks³, Dr Sally Mackay², Dr Lana Vanderlee⁴

Affiliations: ¹Scientific Institute Of Public Health, Belgium, Brussels, Belgium, ²The University of Auckland, Auckland, New Zealand, ³Deakin University, Melbourne, Australia, ⁴University of Waterloo, Waterloo, Canada

Abstract:
Aims: Improving tools and processes for supporting and holding to account actors to create healthy and sustainable food systems.

Background: The International Network for Food and Obesity/NCDs Research, Monitoring and Action Support (INFORMAS) developed and implemented the Healthy Food Environment Policy Index (Food-EPI) and the Business Impact Assessment on Obesity and Population Nutrition (BIA-Obesity) to hold governments and the industry to account for their actions to create healthy food environments. The Food-EPI has been implemented in 25 countries and the BIA-Obesity in 6 countries.

Process: The Food-EPI and BIA-Obesity will be presented, as well as several innovations (i.e. implementation at the local level, taking into account the double burden of malnutrition etc.) and challenges encountered. Due to policy inertia in relation to implementation of obesity prevention policies, and several common drivers and solutions to global health problems (obesity, undernutrition, climate change), the existing tools need to be adapted to encompass current food systems. Participants will work in small groups, either on Food-EPI or BIA-Obesity led by a facilitator familiar with the tools. Participants will review existing indicators of the tools and propose advances to the processes of implementation.

Capacity building: Participants will have opportunity to explore how these tools and processes can be used in their countries and potential adaptations to address current food systems. The tools and processes will be updated based on the ideas generated at the workshop and the real-world considerations of the use of the tools within different country contexts.
Poster Presentations – P3

P3.001 – Planning, preparing and providing healthy menus in NSW Early Childhood Services
Authors: Jaclyn Coffey1, Lara Hernandez1, Christine Innes-Hughes1, Professor Chris Rissel1
Affiliations: 1NSW Office Of Preventive Health, Sydney, Australia

Abstract: Munch & Move is a program that reaches over 3,500 early childhood education and care (ECEC) services in NSW, Australia. ECEC services are an important setting for obesity prevention and the development of healthy eating habits. Services participating in the NSW Health Munch & Move program are supported locally by health promotion officers to provide adequate nutrition for children through policy and menu development based on the NSW Health 'Caring for Children - Birth to 5 years (Food, Nutrition and Learning Experiences) resource.

In addition to on the ground support, NSW Health provides professional development to cooks and service leaders through face-to-face Healthy Menu Planning workshops. The workshops support services to provide nutritious meals to children and plan healthy menus that align with the Caring for Children guidelines. The workshops address a potential gap in expertise as ECEC cooks in NSW do not require formal healthy menu planning qualifications.

As of 30 June 2019, 74 workshops have been delivered providing professional development to 1,771 ECEC service staff from 938 NSW services. An evaluation will examine whether the workshops impact cooks’ skills, knowledge and confidence to plan healthy menus, intention to change, and identify enablers and barriers to providing nutritious meals in this important setting. This presentation will describe the audience reached and present the evaluation findings.

P3.002 – Associations between the Mediterranean diet and cognition: Cross-sectional analysis.
Authors: Dr Fiona O’leary1, Ms Hollie Prince1, Ms Amanda Eldridge1, Dr Sue Radd-Vagenas1, Ms Yian Noble1, Dr Yorgi Mavro1, Ms Yareni Guerrero Ayala1, Professor Henry Brodaty2, Professor Perminder Sachdev2, Mr Kenneth Daniel1, Professor Nicola Lautenschlager3, Ms Tiffany Chau2, Professor Kay Cox2, Dr Megan Heffernan2, Professor Michael Valenzuela1, Professor Victoria Flood1, Professor Maria Fiatarone Singh1
Affiliations: 1The University Of Sydney, Camperdown, Australia, 2University of New South Wales, Sydney, Australia, 3University of Melbourne, Parkville, Australia, 4University of Western Australia, Crawley, Australia

Abstract: Background: Dementia is a growing problem and strategies for prevention are required. Studies from Mediterranean countries show consistent benefits of a Mediterranean diet on cognitive outcomes, however, results in Western countries are inconsistent. We investigated the association between adherence to a traditional Mediterranean dietary pattern and cognitive performance in a Western population.

Methods: Cross-sectional analysis of pilot data from the Maintain Your Brain (MYB) randomised controlled trial.

Participants: 162 participants, aged 55-77 years, enrolled in the MYB pilot study who had full nutrition and cognition datasets.

We analysed baseline descriptive characteristics of the population, assessed scores on seven cognitive tests and adherence to the traditional Mediterranean dietary pattern including aspects of cuisine, determined by the Mediterranean Diet and Culinary Index (MediCul) tool. We investigated associations between total MediCul score and cognition scores using linear regression models adjusted for potential confounders.

Results: Mean age was 65.7 years (SD 5.2), mean MediCul score was 53.2/100 (SD 12.8) and 57.4 % were female. After adjusting for age, sex, education, additional confounders such as medical conditions with established links to cognition and accounting for multiple comparisons, no associations between MediCul scores and cognition were found.

Conclusion: We found no evidence of any associations between adherence to a Mediterranean diet and cognitive tests at baseline in this sample. More research is required to determine the effects of a Mediterranean diet on cognition in Western countries.

P3.003 – Mediterranean diet and physical activity: A cross-sectional analysis.
Authors: Ms Amanda Eldridge1, Dr Fiona O’leary1, Ms Hollie Prince1, Dr Sue Radd-Vagenas1, Dr Yorgi Mavro1, Ms Yareni Guerrero Ayala1, Ms Yian Noble1, Professor Henry Brodaty2, Professor Perminder Sachdev2, Professor Nicola Lautenschlager3, Ms Tiffany Chau2, Associate Professor Andrew Hayen3, Professor Kay Cox2, Ms Jacinta Meiklejohn1, Professor Victoria Flood1, Professor Maria Fiatarone Singh1
Affiliations: 1The University Of Sydney, Camperdown, Australia, 2University of New South Wales, Sydney, Australia, 3University of Melbourne, Parkville, Australia, 4University of Western Australia, Crawley, Australia

Abstract: Background: As dementia currently has no pharmacological cure, lifestyle interventions that target modifiable risk factors to delay onset have gained momentum. This study explores the cross-sectional association of two potentially protective behaviours for dementia risk: Mediterranean diet adherence and physical activity.

P3.004 – Associations between the Mediterranean diet and physical activity: A cross-sectional analysis.
Authors: Associate Professor Andrew Hayen3, Professor Kay Cox2, Ms Jacinta Meiklejohn1, Professor Victoria Flood1, Professor Maria Fiatarone Singh1
Affiliations: 1The University Of Sydney, Camperdown, Australia, 2University of New South Wales, Sydney, Australia, 3University of Melbourne, Parkville, Australia, 4University of Western Australia, Crawley, Australia

Abstract: Background: As dementia currently has no pharmacological cure, lifestyle interventions that target modifiable risk factors to delay onset have gained momentum. This study explores the cross-sectional association of two potentially protective behaviours for dementia risk: Mediterranean diet adherence and physical activity.
Methods: A cohort of community-dwelling Australian adults (55-77 years, n=173) provided self-reported data on Mediterranean diet adherence via the Mediterranean Diet and Culinary Index (MediCul), a 50-item online tool and physical activity behaviours using the Harvard Alumni and International Physical Activity Questionnaire. Associations were explored using logistic regression analyses.

Results: Mean age was 65.8 years (SD 5.2), and 53.8% were female. Mean MediCul score was 52.6/100.0 (SD 13). Low-to-moderate proportions of the sample participated in physical activity of any type or intensity level, with 38% undertaking no physical activity and the proportion decreasing as intensity increased from light activity (46%), to moderate (33%), and strenuous (23%). Every 1-point increase in MediCul score was associated with a 2.9% increased likelihood of participation in light physical activity (OR: 1.029, 95% CI: 1.002-1.057, p=0.036). No significant associations were found between MediCul score and moderate activity, strenuous activity or resistance training, in adjusted models.

Conclusions: Adherence to a Mediterranean diet and exercise participation was low in this sample. We found only a modest positive association between light physical activity and diet. Synergistic effects of diet and exercise have been demonstrated in cross-sectional studies, however, more studies are required to explore the clustering of these protective behaviours and their impact on reducing dementia risk.

P3.004 - Association between Nutrition-Sensitive Agriculture and the Nutrition Status of Children (6-59 Months)

Author: Ms Given Chipili, Prof John MSuya, Ms Renata Pacific, Ms Zahra Majili

Affiliations: 1Mukuba University, Kitwe, Zambia, 2Sokoine University of Agriculture, Morogoro, Tanzania

Abstract:
Background: Low nutritional value food is associated with poor growth in children below the age of five. Low-income household may improve the nutrition status of children by growing nutrient dense crops. To date no study Zambia has focused on nutrition-sensitive agriculture and the nutrition status of children below the age of five.

Aim: The aim of this study was to access the association between nutrition-sensitive agriculture and the nutrition status of children aged 6-59 months in rural Zambia.

Methods: We examined associations between crops grown in households and height-for-age (HAZ), Weight-for-age (WAZ) and weight-for-height (WHZ) Z-scores in children age 6-59 months of Kapiri-Mposhi district in the Central Province of Zambia. T-test was performed to compare means values of various indicators of nutrition status (Z-scores) for different categories of test variables. The test variables considered here were crops grown by households.

Results: The prevalence of Stunting, underweight and wasting was 21%, 9% and 2% respectively. There was an association for the clustering of these protective behaviours and their impact on reducing dementia risk.

Conclusion: We concluded that nutrition-sensitive agriculture is likely to improve growth in children aged 6-59 months in low-income rural communities.

P3.005 – Sex differences in dietary behaviours and cardio-metabolic disease in seven low-and-middle-income countries

Authors: Glennis Andall-Bereton, Krishna Aryal, Rifat Atun, Gladwell Gatgecha, Pascal Geldsetzer, Mongal Singh Grung, Lindsay Jacks, Jen Manne-Goehler, Ms Briar Mckenzie, Joseph Alvin Santos, Lela Sturua, Lindiwe Tsabedze, Sebastian Vollmer, Jacqui Webster, Mark Woodward

Affiliations: 1The George Institute for Global Health, UNSW, Sydney, Australia, 2Department of Global Health and Population, Harvard T.H. Chan School of Public Health, Boston, United States, 3Massachusetts General Hospital, Boston, United States, 4Health Research and Epidemiology Unit, Ministry of Health, Thimphu, Bhutan, 5Non-Communicable Disease Department, National Center for Disease Control and Public Health, Tbilisi, Georgia, 6Division of Non-Communicable Diseases, Kenya Ministry of Health, Nairobi, Kenya, 7DFID/NHSP3/MEOR, Abt Associates, Lalitpu, Nepal, 8Swaziland Ministry of Health, Mbabane, Switzerland, 9Non-Communicable Diseases, Caribbean Public Health Agency, Port of Spain, Trinidad and Tobago, 10Department of Economics and Centre for Modern Indian Studies, University of Göttingen, Göttingen, Germany, 11The George Institute for Global Health, University of Oxford, , United Kingdom, 12Department of Epidemiology, Johns Hopkins University, Baltimore, United States

Abstract:
Background: Obesity and diabetes are increasing in low-and-middle-income countries (LMICs), with prevalence differing by sex. As diet is a modifiable risk factor we investigated sex differences in dietary behaviours and their relationship with waist circumference (WC) and diabetes, exploring the need for targeted nutrition interventions.

Methods: Nationally representative surveys of adults from Bhutan, Eswatini, Georgia, Guyana, Kenya, Nepal and St Vincent and the Grenadines (2013-2017) were included. Three dietary behaviours were investigated: good salt behaviour, meeting WHO fruit and vegetable (F&V) recommendations and use of vegetable oil in cooking. Generalized linear models were used to investigate the influence of dietary behaviours on WC and diabetes, with interactions by sex explored. Models were adjusted for socioeconomic and behavioural factors.

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Results: 24,332 people were included. More women than men reported positive salt behaviours (31.3% vs. 27.2% p-value <0.001), yet less met F&V recommendations (13.2% vs 14.8%, p-value<0.05). More women than men had a high WC (41.4 vs 41.0%, p-value<0.001) and had diabetes (6.7% vs. 9.4%, p-value<0.001). F&V intake was associated with WC for men, with 9.5% having a high WC compared to 13.1% among those who met F&V recommendations. For diabetes, people reporting poor salt behaviour were 1.5% less likely, and those not using vegetable oil in cooking were 0.9% more likely to have diabetes, with no interaction by sex.

Conclusion: Small sex differences were observed for dietary behaviours and the interaction of F&V with WC. Further research is required to explore the need for targeted nutrition interventions, aiding in addressing the health and equality SDG's.

P3.006 - Participants’ perceptions of the Cook Chill Chat nutrition and social inclusion program

Authors: Sophie Wright-Pederson¹, Dr Deanne Condon-Paoloni², Dr Joanna Russell³, Berbel Franse¹, Kelly Hayes², Helen Tran¹

Affiliations: ¹Healthy Cities Illawarra, Fairy Meadow, Australia, ²University of Wollongong, Wollongong, Australia

Abstract:

Background: Cook Chill Chat (CCC) was a six-week cooking and food education program that aimed to increase social connectedness, and improve well-being, nutrition knowledge and cooking skills among disadvantaged groups within the Illawarra-Shoalhaven region, Australia. Health Promotion Officers trained volunteer facilitators from community organisations to assist in running the programs and then support ongoing social cooking sessions after the six-weeks. This project contributes to the Sustainable Development Goals in good health and well-being, aiming to reduce premature mortality from non-communicable disease and promote mental health and well-being.

Aim: This investigation aimed to evaluate the implementation of CCC.

Methods: Qualitative data were collected from participants using focus groups 6 months after formal program completion while groups continued to meet in an informal structure. Twelve CCC programs were conducted within 10 community organisations during 2015-2017. Overall 109 participants commenced in one of the twelve programs, with 92 continuing at 6-months. Fifty-eight participated in the focus groups.

Results: CCC participants reported high levels of program satisfaction, identifying flexible delivery, ability to tailor the program to specific community needs, use of volunteer facilitators, and support from Health Promotion Officers and community organisations, as contributors to positive program outcomes and sustainability. Participants identified the weekly $5 cost was a potential barrier.

Conclusions: The implementation evaluation of CCC showed that key factors in sustaining a program, focused on improving nutrition and social well-being, were flexibility and responsiveness to specific community needs, training and support for volunteer facilitators, and support from local community organisations in community settings.

P3.007 - Importance of traditional food access for Aboriginal chronic maintenance haemodialysis peoples health

Authors: Mr Beau Cubillo¹

Affiliations: ¹Monash University, Melbourne, Australia

Abstract:

Aims/background: To demonstrate from the perspective of an Aboriginal person how important traditional food access is for the overall health and well-being of a person. As well as identify the accessibility barriers to traditional food post relocation from remote regions of the Northern Territory Australia to Darwin City. The process of relocating is often distressing and disconnects people from their country, family and important traditional food sources.

Methods: A qualitative phenomenological study design with semi structured interviews. Data interpretation is conducted by an Aboriginal researcher and a senior academic with 20 years of experience in the Aboriginal health context. The data analysis method is an inductive thematic analysis approach with an Indigenist knowledges interpretation lens to construct and reaffirm an Indigenous view.

Results: Traditional food is an important part of Aboriginal people’s identity in the Northern Territory of Australia and is strongly connected to the social, emotional, spiritual and physical health and well-being of a person. Access to traditional food post relocation from remote communities to Darwin city presents both enablers and barriers which include mobility, local knowledge, social support networks, commercial access and economics.

Conclusions: The results from this study highlight the importance of traditional food and the need for it to be approached in a holistic health and well-being model. In order for Indigenous people to achieve the ‘good health and well being’ sustainable development goals status, social protection and promotion of the Indigenous traditional food systems and cultural connection needs to be acknowledged and supported.

First Nations People: Appropriate ethics and individual consent by each participant have been obtained that allows for the sharing of de-identified information obtained in the study. The participants in this study have been referred to as Aboriginal or Indigenous Australians it is acknowledged that these terms may not be accepted by all. The lead researcher of this study is an
Aboriginal researcher who is accepted and recognised as a member and traditional owner in several Aboriginal nations (Larrakia and Wadjigan) within the Northern Territory of Australia.

**P3.008 - Exploring the effectiveness of current interventions to address undernutrition in India**

Authors: Miss Olivia Williams

Affiliations: 1University Of Westminster, London, United Kingdom

Abstract:

**Background:** India is home to a quarter of the world’s undernourished population (194.6 million) and over a third of the world’s underweight children. Food policy in India has been slow to transition out of its focus on staple grain provision and into a multi-sectoral approach to nutrition security. Indian policy continues to focus on energy and calorie deficiencies neglecting a balanced diet to address chronic micronutrient malnutrition. However, with anaemia prevalence rates over 75% in poorer states, a reform in the current food distribution system and micronutrient supplementation schemes is urgent.

**Methods:** This project uses a scoping review to evaluate the use of a cash transfer system against the existing food distribution schemes in place to reduce undernutrition for mothers and neonates.

**Results:** The Targeted Distribution System (TPDS) and conditional cash transfer social protection schemes currently operating have critical gaps in inclusion and exclusion leaving women and girls particularly disadvantaged and are failing to improve the nutritional status of the poor. The current TPDS is exacerbating micronutrient deficiencies and the supplementation programmes in place are functioning poorly.

**Conclusions:** The priority for the Indian government should be to create a system of income support and economic security for those most vulnerable to undernutrition, so people can rely less on the TPDS. Reformation of the food distribution system to create a more diverse diet and a non-conditional maternity benefit should be considered to provide women and the next generation with adequately diverse nutrition.

**P3.009 - Promoting social connection and food security among nutritionally vulnerable older adults**

Authors: Ms Ju-Lin Lee, Dr Catherine Milte, Ms Annie Grant, Dr Rebecca Lindberg, Ms Emily Davison, Ms Laura Clarnette

Affiliations: 1Your Community Health, Preston, Australia, 2Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia

Abstract:

**Background:** Food security is a basic human right. In the City of Darebin, Melbourne, the proportion of the population experiencing food insecurity is higher than the state average, especially among older adults at risk of social isolation. The Social Food Project (SFP) aims to improve nutrition and food literacy and reduce the impact of food insecurity and social isolation, through community meals in an area of public housing facilitated by a community development officer with support from health professionals. This study collected baseline evaluation data of the SFP.

**Methods:** Mixed-methods data were collected through a facilitated survey and field notes to measure food literacy, nutrition and social outcomes of eight participants who regularly attend the SFP. Nutrition outcomes included a food variety score and core food group consumption informed by 24-hour recall.

**Results:** Half of the participants reported positive changes to their eating since first attending the SFP. Food literacy measures showed 63% of participants plan meals ahead of time and of those who cook at home, 75% stated they can cook a wide variety of meals. Yet, the average food variety score was 15 out of 32 and only one participant had consumed food from all five core food groups the previous day. Social connections were reported to be made with 75% of participants through SFP.

**Conclusions:** Contributing to Sustainable Development Goal 2: Zero Hunger, this provides evidence of a local community action that targets the nutritionally vulnerable, by embedding nutrition and health education into a social connection project.

**P3.010 - Moderate physical activity measured by step-count and metabolic alterations in schoolchildren**

Authors: Dr. César Octavio Ramos García, Professor Hector Ochoa González, Professor Roberto Paulo Orozco Hernández

Affiliations: 1University of Guadalajara (CUTonala), Tonalá, Mexico, 2Western Institute of Technology and Higher Education (ITESO), Guadalajara, Mexico

Abstract:

**Background/aim:** To assess and relate moderate physical activity (MPA) determined by steps counted in the school period, with abnormal triglyceride values and blood pressure in 6 to 11 year old children

**Method:** Serum triglycerides were determined by blood sample, systolic and diastolic blood pressure, and steps during the school period were also determined. For the diagnosis of alterations in triglyceride and blood pressure values, percentile references of the IDEFICS (Identification and prevention of dietary and lifestyle induced health effects in children and infants) were used. To convert steps to moderate physical activity, Burns 2016 proposal was used (20 minutes of MPA equals 3700 steps). It was considered as an exposure value that schoolchildren will perform at least 20 minutes of MPA, that is equivalent to 1/3 of the WHO recommendation (the school context is equivalent to approximately 1/3 of the active day of a schoolchildren).
Results: 349 schoolchildren from 6 to 11 years old were evaluated. Of which 15.1% performed more than 3700 steps. On those schoolchildren, the risk of presenting abnormal triglyceride values decreased 70.9% (OR 0.2909; CI 0.1104-0.767), as well as elevated blood pressure, which presented a 56.8% risk decrease (OR 0.4323; CI 0.2142, 0.8726).

Conclusion: This study provides evidence on the impact of physical activity on metabolic disorders in schoolchildren, and on the possibility of setting physical activation objectives based on steps taken to treat these disorders. On the other hand, sep-count is presented as a simple and effective analysis system for monitoring MPA.

P3.011 - Food security related to depression and anxiety predisposition among undergraduate Mexican students

Authors: Dr. César Octavio Ramos García¹, Dra. Laura Leticia Salazar Preciado¹, Dra. Karla Janette Nuño Anguiano¹

Affiliations: ¹University of Guadalajara (CUTonalá), Tonalá, Mexico

Abstract:
Background/Aim: Several studies have described the impact that Food Insecurity (FIS) has on different factors at a physical, mental and social level, which is also observed in young adults and adolescents. The aim of this study was to describe the association of food insecurity in undergraduate Mexican students with the presence of depression and anxiety predisposition.

Materials and methods: An online survey was applied to 910 young students. FIS was assessed by the Latin American and Caribbean Food Security Scale (ELCSA). To asses depression predisposition, the Patient Health Questionnaire (PHQ-9) was used. And for anxiety the Generalized Anxiety Disorder Scale (GAD-7) was applied.

Results: A food insecurity (FIS) rate of 54.8% was observed, of which 26% was low, 16% moderate, and 13% severe FIS. Regarding to depression and anxiety predisposition, in was observed in 54.8% and 71% of the subjects respectively. 35.5% of the students presented simultaneously depression and anxiety predisposition. That variable was contrasted with FIS, obtaining an OR of 3.259 (95% CI, 1.663-5.093)

Conclusions: This study indicates that predisposition of depression and anxiety among undergraduate Mexican students is highly related to living with food insecurity. Food insecurity is a matter of great concern for national and international health agencies, since it not only has implications on nutritional, but also mental health.

P3.012 - Defining “discretionary” foods and drinks

Authors: Ms Alice Knight¹

Affiliations: ¹Australian Government Department Of Health, Canberra, Australia

Abstract:
Background: The Australian Dietary Guidelines recommend limiting the intake of foods high in saturated fat, added salt, added sugars and alcohol, known as ‘discretionary foods and drinks’ (DFAD). However, evidence suggests low levels of understanding of the term DFAD. The Department of Health commissioned the National Health and Medical Research Council to review the understanding and use of the term DFAD across various settings and policy environments.

Methods: An expert working group comprising nutrition and public health experts was established to oversee the work. A rapid review of the literature was undertaken to determine understanding of the term by policy makers, health professionals, educators, industry and consumers. A subsequent rapid review considered the implications of developing a comprehensive definition(s) for DFAD.

Results: The term DFAD is relatively well understood and applied by dietitians/nutritionists, non government organisations and government preventive health sectors, but less so by other public health professionals, those from a science/social science backgrounds, non-health professionals, the food regulatory sector and industry.

Conclusions: Evidence of low rates of understanding of the definition, intent and application of the term DFAD suggests greater effort needs to be invested in promoting and disseminating the evidence based recommendations of the Australian Dietary Guidelines, and translation of them into policy and practice.

Definition(s) for DFAD should be implementable, consider implications across various settings and policy environments, and serve to inform future public health interventions in Australia.

P3.013 - Women's willingness to participate in a nutrition education program in South Africa.

Authors: Ms Georgina Pujol-Busquets Guillén¹, Doctor James Smith¹, Doctor Kate Larmuth¹, Doctor Sergi Fàbregues¹, Doctor Anna Bach-Faig¹

Affiliations: ¹Division of Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, ²Department of Psychology and Education, Universitat Oberta de Catalunya (UOC), Barcelona, Spain, ³FoodLab Research Group (2017SGR 83), Faculty of Health Sciences, Universitat Oberta de Catalunya (Open University of Catalonia, UOC), Barcelona, Spain

Abstract:
Background: In South Africa, women suffer high rates of non-communicable diseases (NCDs) due to lack of education, access to
health care, gender disparities, and poor diets. Nutrition education (NE) programs targeting participants’ needs can be an effective tool to improve health outcomes. Eat Better South Africa (EBSA) is an organization that provides NE programs based on low-carbohydrate high-fat (LCHF) diets for women from under-resourced South African communities to improve their health. This qualitative study investigated the needs and perceptions of potential participants to explore their willingness to participate and understand factors that might affect their diet.

**Methods**: Five focus groups were held with a total of 54 women from a community where EBSA is planning an intervention, and data was analysed by thematic analysis.

**Results**: Most of the women said they suffered from NCDs and expressed a desire to become healthier but mentioned difficulties such as financial constraints and lack of support from family and doctors. Women didn’t know about the EBSA program although some had heard about LCHF diet and described it as an expensive diet. Most women showed interest in participating in the program on condition that it was affordable to them and their families.

**Conclusions**: Potential conflict in family meal arrangements, lack of support from doctors and access to certain foods are anticipated challenges. For an intervention in this community, EBSA will need to find a balance between quality and affordability of recommended foods, and will have to engage with participant’s doctors and relatives to encourage support.

**P3.014 - Nutrition Education and Fruit and Vegetables Intake Diversity in Children: Pilot Study**

**Authors**: BS, MSc, PhD (c) Gabriela Fretes Centurión, BS, MSc Gladys Estigarribia Sanabria, BS Patricia Ríos Mujica, MD, MSc, PhD Gloria Aguilar Barreto, BS Laura Joy Ramírez, BS Sandra Franco Giménez, PhD Fernando Pizarro Aguirre, BS, MS, PhD Shrikant Bangdiwala, BS, MSc Laura González Céspedes

**Affiliations**: 1Friedman School of Nutrition Science and Policy, Tufts University, Boston, United States, 2Instituto Regional de Investigación en Salud (IRIS), Universidad Nacional de Caaguazú, Paraguay, 3Instituto de Nutrición y Tecnología de los Alimentos, Universidad de Chile, Santiago, Chile, 4McMaster University, Hamilton, Canada

**Abstract**: Childhood obesity is a major global public health problem. Improving children diets have been proposed as a strategy to prevent this problem. The overall purpose of this study was to assess the effect of a pilot nutrition education program on schoolchildren’s fruit and vegetables (FV) intake diversity.

**Methods**: Cluster randomized controlled trial of a pilot nutrition education intervention in 16 schools (8 intervention, 8 controls) of Caaguazú, Paraguay. The intervention consisted on structured nutrition education sessions developed for 6 months and implemented in-class by nutritionists. Schoolchildren FV intake diversity was measured using a score constructed with dietary data. Multivariate linear regression, ordered logistic regression and logistic regression models were conducted.

**Results**: A total of 1,095 schoolchildren were analyzed. The analysis did not find a significant effect of the intervention on FV intake diversity. However, scoring higher on physical activity was the most important predictor of having a higher FV intake diversity (ordered logistic: OR: 1.66; CI: 1.28, 2.17; logistic: OR: 1.64; CI:1.25, 2.16). Age, female, grade, BAZ (z-score), body fat and zone were not significant at 5% level. When FV intake were considered individually as dependent variables, zone, female and grade were significant in the ordered logistic models.

**Conclusions**: The pilot nutrition education intervention failed to find a statistically significant impact on schoolchildren’s FV intake diversity. Results from this study suggest the need for longer-term multi-component interventions including children, parents and school community as well as modifications in the school food environment to improve access to FV in schools.

**P3.015 - Family food providers’ perceptions of food industry practices.**

**Authors**: Professor Tony Worsley, Ms Gozde Aydin, Dr Claire Margerison, Dr Alison Booth

**Affiliations**: 1Institute For Physical Activity And Nutrition, Deakin University, Australia, 2Instituto de Nutrición y Tecnología de los Alimentos, Universidad de Chile, Santiago, Chile, 3Instituto Regional de Investigación en Salud (IRIS), Universidad Nacional de Caaguazú, Paraguay, 4McMaster University, Hamilton, Canada

**Abstract**: The economic transition in the Asia Pacific region has led to a burgeoning middle class with new food practices and higher risk of NCDs. Little is known about their dietary habits or their views of the food supply.

**Background**: The Families and Food survey examined the dietary views and experiences of family food providers. In this paper their views of industry practices are examined.

**Aim**: The Families and Food survey examined the dietary views and experiences of family food providers. In this paper their views of industry practices are examined.

**Methods**: In late 2013 and early 2014, a detailed, cross sectional online survey was administered among approximately 800 household food providers in each of five urban areas in West Java, Shanghai, Singapore, Vietnam and Melbourne in 2013-2014. Household food providers were asked: How much do you approve or disapprove of the following industry practices? 19 practices were rated on 5 point scales (from Strongly Disapprove to Strongly Approve) Regional ratings were compared through chi square tests.

**Results**: Fruit and vegetable marketing, milk and dairy products, fresh meat were supported. Retailing of confectionery, industry sponsorship of children’s sports and education, vending machines in schools, fast food outlets near schools, and soft drink advertising aimed at children were generally opposed. High support for industry sponsored nutrition education in Vietnam and Indonesia and high support for industry sponsorship of children’s sports and education in Vietnam, Shanghai and West Java were found. Other major findings will be described.
Conclusion: Whilst there is strong support for healthy industry practices in the Region there remains a need for greater health promotion efforts and regulation of industry in some populations.

P3.016 - Knowledge, attitudes and practices of mothers about complementary feeding in children under 2 years old, in Maputo City.

Authors: Erica Manuel1, Dr Francisco Mbofana2

Affiliations: 1Higher Institute of Health Sciences, Maputo, Mozambique, 2National Council for the Fight against AIDS, Maputo City, Mozambique

Abstract:
Eating habits are formed in childhood and mothers are responsible for the formation of these eating habits and if they or caregivers do not have knowledge on this subject, it can lead to inappropriate eating habits. Inadequate attitudes and practices can lead to health problems, such as chronic malnutrition and obesity, extending into adult life. Objective: to evaluate the knowledge, attitudes and practices of mothers about complementary feeding in children under 2 years old. Methods: This is a descriptive, cross-sectional study with a quantitative approach. The study will consist in a sample of 341 mothers, of which 171 mothers from the 1º de Maio Health Center and an equal number at the Polana Caniço Health Center in 2019 year. Systematic probabilistic sampling. A survey will be carried out on mothers who present themselves to the Healthy Child Consultation during data collection, through a structured questionnaire. Analysis and interpretation of the data will be performed in the SPSS statistical program. The research protocol has already been approved by the Institutional Committee of Bioethics of the Faculty of Medicine, Eduardo Mondlane University and is in the data collection phase.

Conclusion: Contribution to the design of national strategies aimed at improving the knowledge, attitudes and practices of the group to be studied, observing the following, Adequate child psychomotor growth and development; Energy and nutritional needs met; Reduction of morbidity and mortality in infancy; Reduction of financial expenditure and Improvement in nutritional status in general.

P3.017 - Validity of a Nutrition Knowledge Questionnaire (AUS-R NKQ) in Australian University Students

Authors: Ms Courtney Thompson1, Dr Helen Anna Vidgen1, Prof Danielle Gallegos1,2, Dr Mary Hannan-Jones3

Affiliations: 1School of Exercise and Nutrition Sciences, Faculty of Health, Queensland University Of Technology, Kelvin Grove, Australia, 2Centre for Children’s Health Research, Institute of Health and Biomedical Innovation, South Brisbane, Australia

Abstract:
Background: Nutrition programs often focus on the development of nutrition knowledge to influence dietary habits and behaviours (1). Determining the effectiveness of nutrition interventions requires a measurement of change in knowledge, most commonly assessed by a questionnaire (3). Despite changes in national nutrition recommendations, public health nutrition guidelines and food availability, a review of the literature has indicated a lack of current, validated nutrition knowledge questionnaires for Australia since 2008 (4,5). This study aimed to measure validity and reliability of a nutrition knowledge questionnaire in an Australian university sample.

Methods: Ninety-three undergraduate nutrition and engineering students at Queensland University of Technology completed an online nutrition knowledge questionnaire to measure validity. Nineteen students were contacted a week later to assess reliability.

Results: Nutrition students scored consistently higher in each section and for the questionnaire overall (M=100.53,SD=7.82) compared to engineering students (M=80.13,SD=10.17), t(91)=10.86,p=<0.001). Internal reliability of the questionnaire was high (α=0.92) as was test-retest reliability (r=0.98,ICC(2,1)=0.99).

Conclusions: The AUS-R NKQ is valid and appropriate for measuring the effectiveness of public health nutrition interventions within a university setting.

P3.018 - Emerging communities – how are we bridging the communication gap?

Authors: Kym Perkins1, Barbara Radcliffe1, Edwin Lubari1

Affiliations: 1Metro South Health, Queensland Health, Logan Central, Australia

Abstract:
Background: Many people settling in Australia on humanitarian visas have poor food literacy and unique nutrition information needs. Available nutrition resources are often text-heavy, generic education materials or direct translations of these materials. Literacy rates (in any language) are often low in emerging communities, especially for women who have cultural responsibility for food purchase and preparation. English is often the first language in which people become literate. Using simple English pictorial resources supports English language literacy and builds capacity to navigate a new food system. The Healthy New Communities program co-designs food literacy education materials using a range of formats that meet the cultural and English literacy needs of this group.

Methods: A literature review, stakeholder consultations and a checklist for developing effective resources for culturally and linguistically diverse communities was developed and used in reviewing existing resources and creating new video and written
resources. Staff received training in developing simple English resources and video production, while English language educators and multicultural nutrition experts and community members provided feedback on resources.

Results: Pictorial simple English videos (n=10) were created on food safety, school lunchboxes and drink choices, with accompanying written resources (n=5), including capacity-building videos targeting service providers. Community members reported understanding and recalling key messages.

Conclusions: Simple English nutrition resources ensure inclusive and equitable quality education for emerging communities (Sustainable Development Goal 4). It is important to consider the quality and cultural appropriateness of nutrition resources when promoting healthy eating within emerging communities.

P3.019 - Evaluation of consumption of nutritional supplements by gymnasts at Planet Health Gymnasium in Maputo city

Authors: Erica Manuel¹, Mrs Yara Ngovene¹

Affiliations: ¹Higher Institute of Health Sciences, Maputo City, Mozambique

Abstract:
The search for better physical fitness and health maintenance has led to the practice of various physical exercise modalities in gyms, namely bodybuilding, and sometimes looking for fast means to achieve the desired results.

Objective: evaluate the consumption of nutritional supplements of gymnasts at Planet Health Gymnasium in Maputo city.

Methods: A pilot study utilizing an online survey was conducted among pregnant and postpartum women in rural mountain communities of North Carolina (n=21). Descriptive statistics were computed.

Results: the sample was mainly characterized by male bodybuilders (62%), aged between 18 and 24 years old (53%) and by the full undergraduate level (43%). When asked about the reasons for the practice of bodybuilding, most of the answers presented aesthetic and maintenance reasons. One-third of respondents said they consume nutritional supplements. Among the reasons for the consumption of these supplements, it was highlighted the improvement of the sports performance, complement to the alimentary diet and the increase of muscle mass. Consumers reported increased use of protein supplements and amino acids (90%). 40% of consumers reported taking it on their own initiative and only 20% had a nutritionist’s advice. They were indicated as main places of acquisition of the supplements, the store of supplements and the supermarkets, both with 40%, and pharmacies with 20%.

P3.020 – Health behaviors and beliefs among pregnant women in rural communities.

Authors: Mrs. Sarah Stroup¹, Dr. Abigail Stickford², Dr. Danielle Nunnery²

Affiliations: ¹Appalachian State University, Charlotte, United States, ²Appalachian State University, Boone, United States

Abstract:
Background/Aims: Given inadequate nutrition and unhealthy lifestyle choices are associated with increased chronic disease risk and suboptimal maternal and fetal outcomes during pregnancy, adequate knowledge about these subjects is critical.1 This study aims to quantify nutrition and physical activity information women receive from HCPs during pregnancy and identify information women still need.

Methods: A pilot study utilizing an online survey was conducted among pregnant and postpartum women in rural mountain communities of North Carolina (n=21). Descriptive statistics were computed.

Results: Women became more concerned with healthy eating (55.6%, n=10), but fatigue (47.6%, n=10), cravings (71.4%, n=15), and financial restraints (58.8%, n=10) impacted dietary choices. Weight gain (88.9%, n=16) and energy levels (88.9%, n=16) were motivating factors to improving lifestyle choices. Women received information from HCPs (70.6%, n=12) about dietary supplements (52.4%, n=11), folate (47.6%, n=10), and alcohol use (47.6%, n=10), and wanted information about iron (28.6%, n=6) and calorie requirements (23.8%, n=5). Obstetricians were the most trusted source of information (23.8%, n=5). Despite not having enough time (38.1%, n=8), women demonstrated knowledge of physical activity recommendations and were physically active (76.2%, n=16).

Conclusions: This research contributes to increasing evidence concerning health related information needs and identification of nutrition and physical activity knowledge gaps among pregnant women in an effort to improve education efforts and subsequent maternal and fetal outcomes. 52.4%, n=11)

P3.021 - Public policies on childhood obesity in Brazil, Italy and Wales

Authors: Renata Costa de Miranda¹, Laura Di Renzo², Antonino De Lorenzo³, Regina Maria Vilela³, Roberta Sonnino⁴

Affiliations: ¹Department of Preventive Medicine, Faculty of Medicine, University of São Paulo, Sao Paulo, Brazil, ²Department of Biomedicine and Prevention, Faculty of Medicine and Surgery, University of Rome Tor Vergata, Rome, Italy, ³Department of Nutrition, Federal University of Paraná, Curitiba, Brazil, ⁴School of Geography and Planning, Cardiff University, Cardiff, Wales/UK

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Background/aims: In the last decades, developing and developed countries have likewise been struggling against childhood obesity. Brazil, Italy and Wales (UK) have been singled out for spending a similar percentage of their Gross Domestic Products (2.4-3.0%) in obesity costs. This study aims to compare obesity action plans present in these countries and analyze their public policies to tackle childhood obesity.

Methods: According to the recommended actions proposed by the 2016 report of the Commission Ending Childhood Obesity (WHO), a literature review was undertaken from 2016-2018 on online official documents, including act plans, bills, and policies coming into force, concerning childhood obesity.

Results: Welsh and Brazilian governments presented specific obesity action plans, while the Italian plan addressing obesity was not specific, approaching generally non-communicable diseases. Regarding childhood obesity, Welsh government assumed a protective role when compared to the others, which presented a more liberal discourse. Concerning pregnancy and early ages care, all countries had well described policies on antenatal care, breastfeeding and weaning, but only Wales focused on fathers’ health before and during conception. Policies on nutrition education and school meals were better defined by Brazil and Italy, while only in Wales a food-related tax was presented. Although analyzed countries had some policies on food marketing regulation and nutrition labelling, it still needed to progress.

Conclusions: Each government showed weakness points to overcome. Therefore, accountability systems should be strengthened in order to influence private sector and civil society for improving development and implementation of policies on childhood obesity.

P3.022 - Prevalence of breastfeeding and associated factors in Goiania/go – Brazil

Authors: Mrs. Aida Bruna Camozzi1, Ms. Júlia Braga1

Affiliations: 1Pontifícia Universidade Católica De Goiás, Goiânia, Brazil

Abstract:
This study aimed to identify the prevalence of breastfeeding and associated factors in a region of Goiânia/GO, Brazil. It is an observational cross-sectional study carried out in health units in the region and the sample consisted of mothers of children under 1-year-old. A structured questionnaire was used as a data collection tool with closed questions about consumption of breast milk, tea, water, other milks and the use of pacifiers and bottles on the previous day. The characterization of the demographic profile of the child, mother and of the breastfeeding was performed by means of absolute and relative frequency. The comparison of the child’s age range with breastfeeding was performed using the Post hoc chi-square test. There was a good prevalence of breastfeeding (91.5%), but exclusive breastfeeding did not reach the recommended rate (42.4%), with early introduction of other foods in the 0-6 months period and 53.4% of the mothers reported having breastfed the first hour of life. In this study, 44.4% of the children aged 0 to 3 months had already been drinking water, 34% had consumed teas and 25.4% had used other milk, 35.6% had used bottle and 39% had used pacifiers and these factors interfered directly in the prevalence of exclusive breastfeeding. It is perceived the need to establish and implement policies to encourage breastfeeding in basic health care in this region by promoting support to mothers and procedures for care to improve the nutritional and health status of children.

P3.023 - Introdunction of complementary food’s situation in the northwest region of Goiania/go-Brazil

Authors: Mrs. Aida Bruna Camozzi1, Ms. Julia Braga1

Affiliations: 1Pontifícia Universidade Católica De Goiás, Goiânia, Brazil

Abstract:
This study aimed to identify the situation of the introduction of complementary feeding in the Northwest Region of Goiânia/GO-Brazil. It is an observational cross-sectional study carried out in health units in the region and the sample consisted of mothers of children under 1-year-old. A questionnaire structured with closed questions about healthy and unhealthy food consumption in the previous day was used as a data collection tool. The characterization of complementary feeding was performed by means of absolute and relative frequency. The comparison between the child’s age group and the consumed foods was performed using the Post hoc chi-square test. It was verified that the majority of the sample started consuming healthy foods like vegetables and fruits after 6 months and the texture of the preparations was adequate for the age group. In this study it was identified the early introduction of unhealthy foods: 13.9% of the children aged 3-6 months had already consumed sugar-sweetened foods and 13.9% cookies and salty snacks, and between the ages of 9-12 months, 81.7% consumed cookies and salty snacks, 78.3% sugar-sweetened foods, 43.3% processed juice and 16.7% soda, such foods contain large amounts of sugar, fat and colorings and should be avoided especially in the first years of life. It is perceived the need to establish and implement policies to encourage the introduction of adequate complementary feeding in this region by promoting support to mothers and procedures for care with a consequent improvement in the nutritional status, health and quality of life of the child.

P3.024 - Evaluating the impact of a suite of resources developed to combat fussy eating.

Authors: Amy Bonnefin1, Helen Dirkis1, Ana Renda1, Sarah Taki2

Affiliations: 1Sydney Local Health District, Camperdown, Australia, 2University of Sydney, Camperdown, Australia

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Abstract: 
Background and Aims: Fussy eating is a common problem during childhood ranging from 8% to 50% of children and involves a restricted diet, especially of vegetables. Establishing healthy eating behaviours in young children has long-term benefits for their health. Currently only 18% of 2-4 year old, and 65.5% of 5-11 year old children in New South Wales, Australia are meeting the recommendations for vegetable intake.

We are aiming to assess the impact of a suite of fussy eating resources developed for parents, childhood educators and children.

Methods: Three month quasi-experimental comparison study involving 20 early childhood education and care centres in inner Sydney.

Results: Results will be presented at the congress.

Conclusions: We wish to explore whether this suite of fussy eating resources is making a positive impact on parent/carer confidence and feeding practices; and child eating behavior. As fussy eating is a prevalent issue, the results will have implications in the area of nutrition and health promotion and the resources could potentially be rolled out to make a greater impact on the targeted population.

To our knowledge, there has been no intervention done before that combines a suite of resources for parents, educators and children, reinforcing evidence based messages, targeting fussy eating.

P3.025 - What is needed to support Mothers to successfully Breastfeed !

Authors: Decalie Brown

Affiliations: 1Health, Katoomba, Australia

Abstract:
What is needed to support mothers to successfully breastfeed? This is a critical question to answer today as it impacts the infants health immediately he/she is born. With minimal National Breastfeeding policies in place in many counties globally, parents today require even more consistent and comprehensive support from skilled Child & Family Health Nurses, IBCLC’s International Board certified Lactation Consultants, Midwives and peer to peer mothers to support them as they navigate their journey through to successfully breastfeed their infants. The WHO recommendations are to exclusively breastfeed their infants to 6 months old then with complementary foods continue breastfeeding to 2 years. Ideally, having LHD’s to be committed to deliver services in parents home or clinics does require commitment to breastfeeding education, beginning in schools, through to the Antenatal and postnatal periods and beyond. The commitment to provide the best health outcome for the mother and the baby long term and will fulfill past Recommendation for actions 20 & 25 and ultimately strengthen the primary health systems. Infants are a life time commitment of caring not just by parents but by health organisations to ensure an optimal health is obtained. Health Organisations, endorsing Baby Friendly Health Initiatives BFHI practices within the hospital and Community sends a clear message of commitment to parents. Exploring the SDG’s 2 & 3 Zero hunger and Good health and well-being will demonstrate consistent and evidence based breastfeeding education and practices that will impact the global health significantly and support a healthy outcome throughout life.

P3.026 - Food habits, Life style and pattern of NCDs in Urban Bangladesh

Authors: Professor Mohammad Rezaul Karim, Mr. Ashitava Halder, Mr. M. Anisul Islam, Dr. Nusrat Jahan Mona

Affiliations: 1North South University, Dhaka, Bangladesh

Abstract:
Background: Bangladesh is facing high disease burden of NCDs. NCDs are estimated to account for 59% of all deaths in Bangladesh. In Bangladesh, approximately 20% of adult and 40%-65% of elderly people suffer from hypertension and 6.9% for diabetes.

Aim: To assess the status of non-communicable diseases and pattern of food habit and lifestyle of the urban adult population of Dhaka metropolitan city.

Method: It was a cross-sectional study. The target population was household head aged 18 or more; male or female; population. The sample size was 768 households and the study was done on 2018. Data were collected by face to face interview with pretested questionnaire.

Results: Among the respondents, prevalence of hypertension diagnosed by doctor or health worker was 23% and 23% for diabetes. Study findings showed that more than one third 39% of male and more than 63% female were obese. Studies revealed that among the respondents only 43% ate adequate amount of fruits. The rate of involvement in regular physical activities were also very low 22% and prevalence of smoking amongst the male respondents was high 35%.

Conclusion: Studies revealed that prevalence of hypertension, diabetes and obesity were high amongst adult population as well as risk factors for NCDs such as lower intake of fruits, physical inactivity, and smoking were high as well. To lower prevalence and minimize the occurrence of NCDs, awareness campaign and community interventions on healthy food habit and lifestyle, to promote physical activities should be commenced strongly in urban population.
P3.027 - Understanding food security and food sovereignty among the San in New Xade

Authors: Tebogo T. Leepile¹, E Jovel¹, CD Karakochuk¹, JL Black¹, A Takada²

Affiliations: ¹University of British Columbia, Vancouver, Canada, ²Kyoto University, Kyoto, Japan

Abstract: Background: Food security and food sovereignty are central discourses in the dynamic and ever-evolving pursuit of explaining the global complexity of hunger. According to the Food and Agriculture Organisation, “food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Food security is essentially built on four pillars: availability, access, utilization and stability. Food sovereignty, on another hand, advocates for the participatory, democratic rights of communities to self-determine and control their food systems. The San People of New Xade in Ghanzi District are part of the broader Indigenous population of Botswana; they were relocated from the Central Kalahari Game Reserve in the early 1990s.

Methods: A qualitative inquiry, including a focus group discussion and in-depth interviews with key participants, was undertaken to better understand their knowledge, attitudes, and perceptions on food security and food sovereignty in a historical and contemporary context.

Results: Presently, hunting and gathering have significantly diminished mainly due to climate change, long distances, and prohibiting environmental legislation. Moreover, state social-welfare programs considerably contribute to the subsistence of livelihoods.

Conclusion: Food sovereignty is critical to expedite food security; targeted food and health interventions should acknowledge their traditional knowledge and practices including land access.
6A – Achieving sustainable healthy diets
Rapid Fire Presentations

Can Australians adhere to principles of the Mediterranean Diet? A scoping review.

Authors: Dr Anthony Villani1, Dr Evangeline Mantzioris2

Affiliations: 1University of the Sunshine Coast; School of Health and Sport Sciences, Sunshine Coast, Australia, 2University of South Australia; School of Pharmacy and Medical Sciences, Adelaide, Australia

Abstract: Background and Aims: The paradigm of assessing dietary patterns as a determinant of disease risk is the cornerstone of the Australian Dietary Guidelines (ADGs). However, recent trends in poor diet quality and prevalence of non-communicable disease (NCD) raises concerns. Adherence to a Mediterranean diet (MedDiet) is associated with a substantial reduction in the risk of multiple NCDs. Our aim was to examine, synthesize, and develop a narrative review which explores the efficacy and adherence to a MedDiet adopted in clinical trials conducted in Australia. We also offer insights to the transferability of this dietary pattern to the Australian population.

Results: We report on a total of seven clinical trials conducted in Australia with sample sizes ranging from 27 to 137 middle-aged and older adults. Consistent with previous literature, studies included in the present review reported improvements in glycemic control, reductions in cardiovascular disease risk markers, improved cognition and depressive symptomology. All clinical trials reported impressive and sustained adherence to the MedDiet intervention, albeit with the use of aggressive, yet successful strategies to facilitate dietary compliance.

Conclusions: The transferability of a MedDiet to Australia is attractive, albeit challenging due to customary dietary behaviours. Nevertheless, adapting a MedDiet to satisfy a population’s nutritional requirements and traditional customs warrants further exploration. We present arguments into the possibility of translating key dietary principles of the MedDiet which could be used by policy makers in the next iteration of the ADGs.

Agrobiodiverse food systems: Building better diets from the ground up

Authors: Mr. Chris Vogliano MS, RD1,2

Affiliations: 1Massey University, Wellington, New Zealand, 2Bioversity International, Rome, Italy

Abstract: Background/Objectives: Indigenous food systems of Pacific Island countries contain vast genetic, biological and cultural diversity. Unfortunately, globalization is fueling a nutrition transition away from local and traditional foods in favour of imported foods, leading to a dramatic rise in non-communicable diseases. We aimed to assess how the nutrition transition away from traditional, biodiverse foods and towards imported foods is influencing the health of rural Solomon Islanders.

Methods: This study assessed the sustainability of diets among indigenous villagers living in a rural village on Rendova Island in the Solomon Islands through qualitative focus group discussions (n=86) and household nutrition questionnaires (n=30). We conducted 30 repeated quantitative 24-hour household dietary recalls, which assessed the diet quality, food diversity, and sourcing of each ingredient. We also assessed annual food insecurity levels (FAO-FIES) and anthropometrics.

Results: Our results found that 60% of participants were overweight or obese, and the average body fat percentage was 31%. Diet patterns were reliant on ultra-processed imported foods such as white rice, taiyo (canned tuna), biscuits, sugar, and sugary drinks. Diet quality was low in protein (53.3% of EAR), vitamin A (80%), iron (30%), calcium (96%), and thiamine (86%). Participants who consumed a wider range of homegrown and wild collected foods had significantly improved nutrient intakes.

Discussion: Particular varieties of traditional foods in the Solomon Islands are excellent sources of missing essential nutrients in Pacific Islander’s diets. Leveraging the power of nutrient-dense, locally adapted, biodiverse foods can help mitigate malnutrition and food security

Brazilian local farmers’ vegetable potential within a Short Food Supply Chain

Authors: Dr Vanessa Mello Rodrigues1, Dr Suellen Sechhi Martinelli1, Dr Greyce Luci Bernardo1, Mrs Bárbara Dias Lino1, Dr Jeffery Bray2

Affiliations: 1Nutrition in Foodservice Research Centre (NUPPRE), Federal University of Santa Catarina, Florianópolis, Brazil, 2Bournemouth University, Bournemouth, United Kingdom

Abstract: Background/aims: Short Food Supply Chains (SFSCs) are food systems characterised by a few or no intermediates between the producers and consumers, with minimal geographical distances (DEVERRE & LAMINE, 2010). For family farmers, the SFSCs constitute an excellent opportunity, as they produce 70% of food consumed in Brazil, but do so using under 25% of country’s agricultural land (FAO, 2013). The aim of this study was to explore Brazilian family farmers’ views on their potential to supply vegetables within a SFSC.
Methods: Previous research identified main themes to be incorporated within an interview schedule. Key stakeholders were recruited and comprised six farmers who commercialise their production via different channels (agroindustry, boxes, permanent markets, itinerant markets, restaurants, and schools). Results were grouped and produced a description of the system.

Results: All farmers lived in the place of production, together with their family. The farmers produced partially or totally organically, some of them agro-ecologically. The variety of foods produced was vast, including leafy and non-leafy vegetables, tubers, seasonings and fruits. The respondents were consistent when pointing out the main difficulties of production related to the manpower. There were no main issues regarding the sales, which seem to be enough according to the amount produced. Farmers referred to be interested and have the capacity of increasing the production of vegetables.

Conclusions: Most respondents have great potential for production, but face difficulties with manpower. An improvement of the communication with consumers regarding the healthy and community benefits of consuming locally produced vegetables is necessary.

Repairing a broken food system with biodiversity for food and nutrition

Authors: Dr Danny Hunter1

Affiliations: 1Bioversity International, Rome, Italy

Abstract: Background: Why has our food system come to rely on such a narrow range of food species of poor nutritional value? Today three staple crops account for more than 50% of calories consumed while we continue to disregard the huge diversity of nutrient-rich plant species utilized by humanity throughout history. Such agricultural biodiversity can transform food systems, provided evidence, policy and action are better connected. The Biodiversity for Food and Nutrition (BFN) project, undertaken in four countries and officially launched at the Rio WPHN Conference in 2012 set out to demonstrate how to do this.

Method: A multistakeholder and interdisciplinary biodiversity mainstreaming approach, raising awareness of a diverse range of nutritious foods, and linking national research, strategies and policies and markets was piloted in the four BFN countries, Brazil, Kenya, Sri Lanka and Turkey.

Results: Research highlights the significant nutritional value of neglected and underutilized agricultural biodiversity in these countries. By linking this knowledge to policies, markets and improved desirability these countries have demonstrated how to mobilize these resources for healthier, diverse diets and more sustainable food systems including their integration into national Food-Based Dietary Guidelines, public food procurement, school feeding programmes and sustainable gastronomy and tourism.

Conclusion: The BFN approach, including the resources and tools produced, provides a unique roadmap for other interested countries to replicate efforts to better mainstream agricultural biodiversity for healthier diets and more sustainable, resilient food systems in meeting the challenges of malnutrition and environmental sustainability in the 2030 sustainable development context.

Where to from here: Actions and insights from local food system actors.

Authors: Ms Rosalind Sambell1, Mr Benjamin Konigsdorfer1, Dr Lesley Andrew1, Dr Stephanie Godrich1, Professor Amanda Devine1

Affiliations: 1Edith Cowan University, Joondalup, Australia

Abstract: Background/aims: Large scale modern farming practices can negatively impact the environment. Environmental impacts include soil degradation, reduction in water quality, deforestation, desertification and biodiversity loss. Although clean sustainable practice is within reach, food systems are slow to adopt sustainable methods due to entrenched practices. Regenerative farming is an adapted farming practice that minimises soil harm, allowing land rehabilitation at a rate equal to food production demand.

Methods/Results: A workshop with 122 people from various sectors was held in Perth, Western Australia, to gather multi sectorial participant insights and actions relating to sustainable agriculture and regenerative farming practices (n=46, 37.7%). Producers and Educators represented the majority of respondents (n=23, 50%). Analysis of action statements illustrated there was comfort that others shared a vision for an adaptive sustainable food system (n=28), support for future sustainability (n=27) and facilitation of participant empowerment (n=31). Action statements demonstrated; participants willingness to self-educate to support sustainable principles; meet with funders/stakeholders to affect change and influence policy through government. Thematically evidence of optimism and collective future action was conveyed.

Conclusion/SDG link: Participants were optimistic and voiced advocacy for sustainable farming methods utilising education, practice and policy strategies. Empowering individuals to act locally to promote farming as a contribution to the repair of the current food system will support the health of the people and the planet. Sustainable food production can reduce environmental impact and foster Australian food security. This research supports Sustainable Development goals 3, 11, 13, and 15.
The role of local governments in promoting healthy and environmentally sustainable diets

Authors: Mrs Liza Barbour1, Dr Rebecca Lindberg2, Dr Julie Woods3, Professor Karen Charlton4, Associate Professor Julie Brimblecombe5

Affiliations: 1Monash University, , Australia, 2Deakin University, , Australia, 3University of Wollongong, , Australia

Abstract: Background: Our current food system is contributing to poor health outcomes, climate change and the depletion of natural resources, threatening our planet’s ability to sustain the growing global population beyond 2050. To achieve many of the Sustainable Development Goal (SDG) targets, transformative efforts are required to achieve healthy, equitable and sustainable food systems, from production to consumption. The EAT-Lancet Commission has defined a healthy and sustainable diet, and evidence suggests that manipulating our local food environment is an effective way to modify population-level dietary behaviour.

Aim: This scoping review will describe the types of policy interventions that local governments, across the globe, are currently implementing to promote the uptake of healthy and sustainable dietary behaviours.

Methods: Searching peer-reviewed publications (five databases) and the grey-literature (targeted websites, open-source databases and stakeholder consultation) will reveal relevant published literature and policy documents. Included papers will describe local-government policies implemented within signatory cities of the Milan Urban Food Policy Pact, focus on urban settings, span low-middle-high income countries and will be published after 2015.

Results: Policy interventions will be categorised by type, intended outcome (healthy and sustainable dietary behaviour), use of evidence in policy-making process and efficacy of the policy, where evaluation data is available.

Conclusion: With urbanisation increasing, local governments within urban cities are under pressure to implement effective interventions to meet targets within the SDGs and the Paris Agreement. This research can guide local governments towards evidence-based policy interventions to strengthen local food systems and promote healthy and environmentally sustainable dietary behaviours.

Development of a Sustainable Diets Curriculum for use in Diverse Community Settings

Authors: Dr. Bailey Houghtaling1, Dr. Selena Ahmed2, Dr. Carmen Byker Shanks3, Mr. Virgil Dupuis3

Affiliations: 1Louisiana State University Agcenter, Baton Rouge, United States, 2Food and Health Lab at Montana State University, Bozeman, United States, 3Salish Kootenai College, Pablo, United States

Abstract: Background: Advancing sustainable food systems and consumer demand for sustainable diets are necessary to achieve Sustainable Development Goals 1, 2, 3, 5 ,10, 12, 13, 14, and 15 by 2030. This work aimed to develop a sustainable diet curriculum that could be implemented in a contextually-appropriate manner across a variety of communities.

Methods: Sustainable food system experts and community members from the Flathead Nation outlined priority areas for curriculum development. The goal was: to introduce consumers to sustainable diets and food systems concepts and to build capacity for behavior change and system advocacy to advance healthy and sustainable diets for all. Nine educational sessions were implemented in 2018 and developers received feedback for improvement. Curriculum was restructured to focus in-depth on less topics and designed for broader community applications.

Results: The final curriculum includes nine, one-hour lessons: Sustainable Diets and One Health; Mindful Eating; Harmony of the Whole (grains); Food Sovereignty; Food as Medicine; Celebratory vs. Everyday Foods; Plant vs. Animal Protein; Food Environment and Empowered Shopping; and Making the Most of Time and Resources. Hands-on educational sessions focus on learning objectives with reflection and goal setting opportunities. Guides are provided for educators to select community-specific recipes reflecting sustainability goals for weekly food examples.

Conclusion: More emphasis on sustainable diet education is required. The curriculum works to build knowledge and raise awareness of broader socio-political issues regarding sustainability. Future work should target health educators for feedback on the acceptability, appropriateness, and feasibility of implementing the curriculum in diverse communities.

Sustainable Healthy Diets Guiding Principles

Authors: Dr Trudy Wijnhoven1

Affiliations: 1Food and Agriculture Organization of the United Nations (FAO), Rome, Italy

Under the auspices of the United Nations Decade of Action on Nutrition, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) jointly organized an international expert consultation on sustainable healthy diets in July 2019. The experts reviewed the concept of diets that support reaching goals of health and well-being while also considering the evidence about economic, social, and environmental sustainability. The consultation developed 16 principles for sustainable healthy diets to guide action under the Nutrition Decade and for achieving the Sustainable Development Goals. In brief, the aims of sustainable healthy diets are to achieve optimal growth and development of all individuals and support functioning and physical, mental, and social wellbeing at all life stages for present and future generations; contribute to preventing all forms of malnutrition (i.e. undernutrition, micronutrient deficiency, overweight and
obesity); reduce the risk of diet-related non-communicable diseases; and support the preservation of biodiversity and planetary health. Sustainable healthy diets are dietary patterns that promote all dimensions of individuals’ health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable.
6B – Resilient food systems for Infant and early childhood nutrition
Rapid Fire Presentations

Correlation between breastfeeding indicators and breastmilk substitutes consumption in a multi-country investigation

Authors: Dr Paulo Augusto Neves¹, Dr Giovanna Gatica-Domínguez¹, Dr Aluisio Jardim Barros¹, Dr Cesar Gomes Victoria¹

Affiliations: ¹International Center For Equity In Health, Federal University of Pelotas, Pelotas, Brazil

Abstract: Background: At individual-level, introduction of infant formula is a barrier to optimal breastfeeding. There is no evidence, however, that national levels of consumption of formula or of other breastmilk substitutes are negatively associated with breastfeeding indicators in low and middle-income countries (LMICs).

Methods: We analyzed infant feeding indicators in 90 LMICs with national surveys since 2010. For infants aged 0-5 months, we studied exclusive breastfeeding, use of formula and of other types of non-human milk. For children aged 12-15 months, we estimated the prevalence of continued breastfeeding. Pearson correlation coefficients among feeding indicators and with log-transformed per capita gross domestic product (log GDP) were calculated.

Results: Log GDP was inversely correlated with exclusive breastfeeding (r=-0.37, p<0.0001) and with breastfeeding at 12-15 months (r=-0.74, p<0.0001), but showed a strong positive correlation with formula use (r=0.70, p<0.0001) and a weak direct correlation with other types of non-human milk GDP (r=0.25, p=0.01). Formula consumption at 0-5 months was strongly and inversely correlated with breastfeeding at 12-15 months (r=0.79, p<0.001), whereas the correlation between other milk use and continued breastfeeding was less marked (r=-0.40, p<0.001).

Conclusion: Formula use is positively correlated with GDP and negatively correlated with continued breastfeeding in LMICs. Given the multiple health benefits of breastfeeding and the costs and hazards associated with formula and other milk consumption, urgent action is needed to tackle the drivers of commercial infant formula use in order to protect, promote and support breastfeeding, achieving the Sustainable Development Goal on child malnutrition and under-five mortality.

Greenhouse gas emissions from milk formula: breastfeeding as a sustainable food system

Authors: Dr. Jai Prakash Dadhich¹, Mr Alessandro Iellamo, Julie P Smith¹, Adlina Suleiman

Affiliations: ¹Breastfeeding Promotion Network of India (BPN), Pitampura, India, ²Australian National University, Canberra, Australia, ³National Defense University of Malaysia, Kuala Lumpur, Malaysia

Abstract: Background and aims: Policy debate on integrating sustainability objectives into national food policies and dietary recommendations remains focused on modifying meat and dairy in adult diets. Global sales of commercial milk formula products are booming, especially in Asia Pacific countries. This study aims to estimate greenhouse gas emission impacts of milk formula production for retail sales in selected Asian Pacific countries.

Methods: Life cycle assessment was used to estimate emissions per kg of milk formula, using GHG emission factors for key ingredients, and based on FAO Codex Alimentarius manufacturing guidance. Annual retail sales volume data for 2012 – 2017 was from Euromonitor International. Analyses are for six countries (Australia, South Korea, China, Malaysia, India, Philippines).

Results: Annual emissions per kilogram of milk formula products exceed 3.95 to 4.04 kg CO2 eq. Milk formula sold in the six countries in 2012 was equivalent to around 7 billion miles driven in a car. Aggregate emissions were highest for follow-up milk formula products which dominate sales growth. Projected emissions for 2017 for milk formula retailed in China alone exceed 4 million tonnes CO2 eq.

Conclusion and significance to public health nutrition: Breastfeeding is fundamental to sustainable food systems and healthy diets. National dietary guidelines on IYCF should be updated to include its importance for food sustainability (R8). Empowering women to breastfeed strengthens localised food production, and reduces food waste and insecurity (ICN2 R9 and R11). The Global Strategy on Infant and Young Child Feeding identifies policies and programs to enable breastfeeding (R28).

Resilient food systems for infants: policy for breastmilk sharing in Australia

Authors: Ms Libby Salmon¹, Professor (Associate) Julie Smith¹, Professor Sharon Friel¹

Affiliations: ¹Australian National University, Canberra, Australia

Abstract: Background: Calls to reduce global neonatal mortality by expanding breastmilk banking (SDGs 2 and 3) and breastfeeding (ICN2) conflict with escalating global sales of infant formula. Dietary dependence on formula exposes infant nutrition to climate change pressures on intensive agriculture, signalling food security gaps for infants.
The emergence of breastmilk sharing in communities facilitated by social media can be conceptualised as local resistance to industrialised infant feeding and an innovative response to policy failures to support breastfeeding. However, policy makers perceive community milk sharing as an infectious disease risk rather than an indicator of food system resilience.

**Aim:** To determine the role of breastmilk banking and community milk sharing in Australian infant food systems.

**Methods:** A qualitative study of social and legal regulation of breastmilk banking and sharing used content analysis of policy and interviews with key actors (women who shared breastmilk, milk banks, policy makers and health professionals, N= 95) to examine rewards, awareness, motivations and pathways for breastmilk sharing.

**Results:** Breastmilk sharing subverts structures that maintain formula feeding and delivers the social support needed to breastfeed and empower women as primary producers of optimal infant nutrition and nurture. Analysis of pathways to share milk reveals opportunities to strengthen safe, equitable infant feeding at population scales.

**Conclusions:** Infant feeding policy that embraces and manages risk for different forms of milk sharing might address perceived policy conflicts between breastfeeding, milk sharing, public health and trade, with beneficial effects on lifetime risks for NCDs and maternal health.

### Early return to work disrupts infant feeding plans among informally working mothers.

**Authors:** Miss Silondile Luthuli1, Dr Christiane Horwood1, Mrs Lyn Haskins1, Miss Sphindile Mapumulo1, Dr Nigel Rollins2

**Affiliations:** 1Center For Rural Health, University of KwaZulu-Natal, Durban, South Africa, 2Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, Geneva, Switzerland

**Abstract:**

**Background:** Informal work is the dominant form of work globally, and most working women work in the informal sector, but little is known about childcare and infant feeding practices in this population.

**Methodology:** A longitudinal mixed-method cohort study design was employed. Twenty-four pregnant women were recruited at health clinics and followed-up at points of transition from pregnancy until they returned to work after the baby was born. In-depth interviews, focus group discussions, and quantitative questionnaires were used to collect data. Descriptive and framework analysis methods were used for data analysis.

**Findings:** Most mothers planned to work until their last weeks of pregnancy and stay at home for 2-3 months post-delivery to breastfeed. However, after delivery many mothers found they were unable to meet household financial obligations or to provide for the child, forcing them to return to work. Early return to work disrupted mothers’ infant feeding plans so that they introduced formula milk and solid food earlier than planned. Some mothers stopped breastfeeding on returning to work while others took their children to work to continue breastfeed. A few mothers maintained breastfeeding by expressing breastmilk to feed the child while she was working. Family members, grandparents, and elder members of the community provided the strongest support for childcare after the mother returned to work.

**Conclusion:** There is a need for strategies to empower informally working mothers, who are without access to maternity protection, and enable them to address challenges, balance work and childcare priorities, and implement their feeding plans.

### Infant and Young Child Feeding in Emergencies - Milk Sharing and Wetnursing

**Authors:** Alessandro Iellamo, Dr Julie Smith1

**Affiliations:** 1Research School of Population Health, Australian National University, Canberra, Australia, 2Save the Children, UK, London, United Kingdom

**Abstract:**

**Background/Aims:** The Infant and Young Child Feeding in Emergencies Guidance (OG-IFE,2017) calls for a comprehensive approach to the protection, promotion and support of recommended infant and young child feeding practices. Protecting breastfeeding is crucial, as is the feeding of infants who are not breastfeeding. National legislation and regulation may need strengthening to improve food supply resilience (ICN2 R12), particularly for emergencies and disasters when milk sharing or wetnursing may be a high priority for the survival of infants.

This presentation aims to identify key legislation and regulation relating to milk sharing and wetnursing in selected countries, and analyse its implications for food security and IYCF-E.

**Methods:** Legislation and other documents relating to regulation of human milk sharing and wetnursing were identified for 25 countries. Settings include high, middle and low income countries, geographic region, breastfeeding culture and exposure to humanitarian emergencies.

**Results:** Countries with a strong breastfeeding culture are more food supply resilient especially where safe milk sharing and wetnursing is practiced. Lack of legislative and regulatory clarity on policies and procedures for protecting optimal IYCF in these situations is evident in many countries.

**Conclusions:** Strategies to protect women and infants in emergencies require preparedness measures to protect, support and promote breastfeeding. This includes planning for the nutrition and care of breastfed and non-breastfed infants. Legislative
clarity protecting safe milk sharing and wetnursing in a culture which values breastfeeding is an important step to developing protocols for humanitarian emergencies. There is an urgent need to increase compliance with the International Code.
Child undernutrition in the Philippines: the impact of disasters and food insecurity

Authors: Dr Erlidia Llamas-Clark

Affiliations: 1University Of The Philippines - Philippine General Hospital, Ermita, Philippines

Abstract:
Background: In the Philippines, increasing extreme weather events (EWE) due to an evolving socio-economic environment and climate change has triggered threats of food insecurity and ill-health. The 2009 EWEs Tropical Storm Ketsana and Typhoon Parma in the Philippines was used as a case study.

Objectives: To determine the association of household food security and child undernutrition, describe the coping strategies households, mothers and children exposed to the flooding disaster, and describe the responses of the local government to preserve health and nutrition.

Methods: A mixed method study in 13 flood-affected villages, 18-24 months post-disaster using questionnaires to assess child, maternal and household food security was done. The health and nutrition status of 946 children and key informant and maternal in-depth interviews were done. Statistical analyses using Chi square, McNemar tests and logistic regression alongside thematic analyses were undertaken.

Result: Child underweight was 27.3% while stunting was 36.7%. Children, mothers and households were more food insecure post-flood. Despite several coping strategies were used and assistance, food insecurity prevailed. Children, mothers and households who were perceived as food secure, 24.6% (p=.010), 24.1% (p=.006) and 20 % (p=.001) showed children who were underweight. Of households perceived as food secure, 28.9% (p=.001) of children were stunted.

Conclusion: Child undernutrition can be an indirect consequence of EWE exposure. The interplay of socio-demographic and economic factors must be considered. With climate change, safeguarding household food security with initial response together with continuing multidisciplinary health and nutrition policies and programs is needed.

Operationalizing local children nutrition surveillance system: The Philippines’ Operation Timbang revisited, the case of Abra de Ilog

Authors: Mrs. Ma Anna Rita Ramirez1, Mrs. Rowena Viajar1, Ms. Glenda Azana1

Affiliations: 1Department of Science and Technology - Food and Nutrition Research Institute, Taguig City, Philippines

Abstract:
Background: Malnutrition among Filipino children persists; underscoring the value of nutritional assessment procedures. In the Philippines, this is carried out at the local level in its annual Operation Timbang [weigh] (OPT or OPT Plus). Local government unit officials observed higher malnutrition prevalence rates in nutrition survey reports of the Department of Science and Technology’s Food and Nutrition Research Institute (DOST-FNRI) compared with its OPT. A revisit of the OPT provided evidence on the comparability of the two data sets and sources of variance analyzed.

Objectives:
1) describe municipal level assessment of OPT in 10 barangays of Abra de Ilog municipality;
2) identify facilitating and hindering factors in OPT; and
3) compare OPT results with DOST-FNRI local nutrition survey in Abra de Ilog and identify potential sources of variance therefrom.

Methods: Primary data were collected using focus group discussions and key informant interviews. Height and weight data were collected using standard methods of anthropometry.

Results: The OPT/OPT Plus is the mass weighing of 0-71 months old children, including height measurements conducted during the first and fourth quarter of the year in Abra de Ilog. It was found that facilitating factors were availability of calibrated equipment, latest master list, local government support and budget. Lack of manpower, work overload, low honoraria, low work commitment, uncooperative mothers and high turnover of barangay [village] nutrition scholars hindered OPT implementation. The Abra de Ilog 2016 OPT Plus and the 4th quarter “OPT” reported lower malnutrition prevalence rates than the DOST-FNRI local survey.

Conclusions: Significant differences in the two data sets could misguide program implementation. As an outcome of Sustainable Development Goal No. 2 of Zero Hunger, potential misclassification of nutritional status and misreporting of malnutrition prevalence rates have implications for the mapping of malnutrition, hence delivery of targeted nutrition intervention packages.

Enhancing Nutrition Resilience in Northern Nigeria through Nutrition Sensitive Food Assistance Program

Authors: Dr Adaeeze Ogadaee, Oramalu1, Mr Andrew Simbwa1, Oluwatoyin Oyekenu1, Karina Lopez-Enye1

Affiliations: 1Save The Children, Abuja, Nigeria

Abstract:
Background: The humanitarian crisis in the Northeastern region of started in 2009 and is now one of the most severe in the world today, with over 14 million people affected by the insurgency and an estimated 7.1 million people in need of
humanitarian assistance in 2019. The prevalence of Global Acute Malnutrition (GAM) in 2015 increased from 6% in 2010 to 1.5%, peaking in 2012 at 13.8%, exclusive breastfeeding rate (EBF) was 17% and minimum acceptable diet was 12.9.

Method: Save the Children with funding from USAID provides food assistance through restricted vouchers to 58,990 households which is complemented with access to quality lifesaving services for management of acute malnutrition for children under-5 and pregnant and lactating women (PLW) as well as access to services preventing under-nutrition for the most vulnerable, focusing on IYCF-E through community-based support groups(1,658 mothers’ groups established, conducted 9,612 cooking demonstration sessions and provided 1-1 nutrition counseling for 26,807 PLW) to holistically drive behavior change and improve the nutrition status of households.

Results: The reduced Coping Strategies Index (rCSI) reduced from 20.86 in 2009 to 10.51 in 2018, indicating reduced reliance upon negative coping strategies to meet household food needs. Within the same timeframe, the Household Hunger Scale (HHS) reduced from 71% to 17%. The average Household Dietary Diversity Score (HDDS) increased from 3.54 to 6.50, while the Food Consumption Score increased from 29 to 54.56.

Conclusion: Through monthly food assistance, the program improved food security across the key indicators among supported households.

Commercial squeeze pouches: The modern paradox of system dependant infant feeding

Authors: Dr Catharine Fleming1,4, Ms Kaitlyn Hockey3,4, Ms Libby Salmon2

Affiliations: 1School of Science and Health, Western Sydney University, Campbelltown, Australia, 2 School of Regulation and Global Governance, Australian National University, Canberra, Australia, 3School of Medicine, Western Sydney University, Campbelltown, Australia, 4Translational Health Research Institute, Western Sydney University, Campbelltown, Australia

Abstract:

Background: Encouraging the early development of healthy eating habits prevents diet-related chronic disease. It is well understood that highly processed foods contribute calories, sugars, salt and fats that are key risk factors for NCDs. Commercial pureed baby foods in ready-to-use squeeze pouches emerged in the global food market around 2012. The long-term effects of this ubiquitous packaging on baby food marketing, consumption and the quality of infant diets is unknown.

Aim: to determine the nutritional content of all commercial squeeze infant food pouches in Australian supermarkets.

Methods Analysis of nutritional content and texture (puree vs lumps) of squeeze pouch products was conducted using FoodWorks 9. Product composition was given a Nutrition Profile Index (NPI) Score and compared with Australian Dietary Guidelines.

Results: 228 products were analysed across 14 manufacturers. Total sugar content ranged 0.8 to 16.8 (g/100g), 23 % (n=53) of products had added sugars, 18% (n=41) had added fruit juice, 74% (N= 168) had added fruit puree. Saturated fat content ranged from 0-4.6 Fat (g/100g), sodium 0-69 (mg/100g) and dietary fibre 0-3.5(g/100g). The NPI scoring system found only 1 product to be nutritionally adequate.

Conclusions: Dependence on commercial infant food squeeze pouches high in free sugars, saturated fat and low in dietary fibre risks long term diet-related metabollic conditions from infancy. The market driven commercial baby food system is rapidly changing the dietary intake of infants 4-6 months of age, jeopardising the SDG 2: end hunger and malnutrition, including over-nutrition for vulnerable infant populations.
6C – Developing Community capacity
Rapid Fire Presentations

Food Next Door: from food literacy to citizenship on a college campus

Authors: **Associate Professor Nanna Meyer**, **Instructor Alyssa Shrader**, **Sports Dietitian Bethany Frieler**

Affiliations: **1University of Colorado (UCCS), Colorado Springs, United States, 2University of Oregon, Eugene, United States**

Abstract:

**Background:** In 2014 the University of Colorado Colorado Springs transitioned its food services to self-operation away from a corporate system. This resulted in an initiative called Sustainability, Wellness & Learning (SWELL;www.uccs.edu/swell). In 2015, SWELL launched a student-run “local & sustainable” food establishment called Food Next Door (FND). Nutrition students engage in the cyclical process from sustainable food production, procurement, menu design, preparation, and service to resource recovery.

**Purpose:** This study aimed at evaluating experiences of FND by customers, volunteers, and leads.

**Methods:** 10 returning customers, 7 recurring nutrition graduate/undergraduate volunteers, and 3 graduate student assistants (leads) participated in interviews. Audio-recorded interviews were transcribed and analyzed to identify themes and sub-themes.

**Results:** Themes progressed from customers highlighting FND’s fresh, flavorful food, knowledgeable and passionate staff, and personal transformation as reasons for eating at FND. Volunteers identified greater awareness of food for cooking and plant-based nutrition, acquiring new knowledge and skills using locally grown food, and deepening their connection to food, each other, and to where food comes from. Leads reported gaining managerial skills, the opportunity for peer teaching, improving agrarian and culinary knowledge and skills from working with local food systems, and transforming food values to promote advocacy.

**Conclusions:** FND provides students with experiential learning that builds food and farm literacy, shifts values, and transforms students into food citizens. Agriculture and culinary training in local food systems advance public health nutritionists, as they learn to connect healthy diets to sustainable production in community settings, potentially impacting several UN Sustainable Development Goals.

Capacity development in public health community nutrition interventions: a multiple case study

Authors: **Ms Louise van Herwerden**, **Associate Professor Claire Palermo**, **Associate Professor Dianne Reidlinger**

Affiliations: **1Monash University, Clayton, Australia, 2Bond University, Robina, Gold Coast, Australia**

Abstract:

Community nutrition interventions have an integral role in improving population health outcomes. Community capacity is a critical mechanism for developing community nutrition interventions that involves intricate social processes and is complex to assess. This study sought to explore and describe factors influencing community capacity development during a three-year public health community nutrition intervention. A longitudinal qualitative multiple case study approach was undertaken. Data collection included semi-structured interviews with ten community volunteers at multiple intervention time points (total 24) and document analysis of program newsletters and a community activities report (n=22). Interview transcripts and documents were analysed separately using thematic and content analysis. Codes and categories between the two data sources were then compared and contrasted to build themes. Community capacity development was influenced by community “change agents” ability to develop partnerships, think strategically and their motivational drive. The interactions between the change agents and key community stakeholders propelled community capacity development. Time constraints, exhaustion or ‘burn out’ and lack of organisation strategic endorsement, influenced capacity development across all cases. Practitioners working with communities should focus on identifying motivated change agents, support them to think strategically (through formal and informal learning opportunities) and encourage them to develop strong local partnerships for capacity development. Funding bodies need to be explicit about capacity goals when organisations receive grants to implement community-based interventions, to ensure strategic endorsement and support for capacity development exists.

Foodways and food environment in low-income South African communities: ”citizen science” and ethnography

Authors: **Robert Dover**, **Abby King**, **Estelle Lambert**, **Feyi Odunitan-Wayas**, **Kufre Joseph Okop**, **Thandi Puoane**

Affiliations: **1University of Cape Town Research Centre for Health through Physical Activity Lifestyle and Sport, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, 2Stanford Prevention Research Center, Stanford University, Palo Alto, United States, 3Department of Anthropology, University of Antioquia, Medellin, Colombia, 4School of Public Health, University of the Western Cape, Cape Town, South Africa**

Abstract:

**Purpose:** South Africa is a middle-income country, but nearly 50% households are food-insecure. Despite this >60% of women
and >30% of men are either overweight or obese. We aimed to develop an understanding of how foodways and food environments contribute to the co-existence of obesity and food insecurity in South Africans, living in low-income settings.

Methods: We report on 21 household ethnographic interviews concerning foodways, and 16 neighbourhood food environment walks, conducted by “citizen scientists” using the Stanford Neighborhood Discovery Tool. Participants were recruited from a longitudinal cohort (Modeling the Epidemiological Transition) of persons living in a low-income community in South Africa. All interviews were conducted in home languages, translated, transcribed and analysed using standard qualitative methods.

Results: Ethnographic interviews highlighted the importance of food, from both a sustenance and social perspective (“eating time allows for conversation between us”). Women visited many shops to get best prices, even if it meant going back, but all said husbands would only shop in one store. Most women reported that they learned to cook from their elders and that it was “expected of a girl child”. Informal traders and shop owners are an important part of the food system. Neighbourhood food walks highlighted issues of safety, proximity and convenience, food hygiene, street food, limitations for food cold storage, the importance of meat, and an appreciation for “treats”.

Summary: Foodways are a product of socio-cultural experiences and economic and environment constraints. Interventions to improve them must be based on local context and “lived experiences”.

Engaging communities in monitoring local food environments: Experiences of stakeholders

Authors: Ms Breanne Aylward1, Ms Krista Milford1, Dr. Kate Storey1, Dr. Candace Nykiforuk1, Dr. Kim Raine1

Affiliations: 1University Of Alberta, School Of Public Health, Edmonton, Canada

Abstract: Background: Children are increasingly exposed to food environments that have negative impacts on their diet and health. Evidence supports the use of interventions that involve whole communities, use multilevel strategies, and consider multiple settings to promote healthy eating. However, there is insufficient evidence addressing how to best implement such community-based interventions. Because local stakeholders are key players in creating and implementing self-sustaining community-based interventions, understanding their experiences may provide implementation insights.

Aims: Local Environment Action on Food (“LEAF”), aims to stimulate local action in changing food environments by engaging stakeholders in collecting local data and developing context-specific recommendations. The research aims to assess if, and how, LEAF facilitates the creation of local food environments that support healthy eating.

Methods: A qualitative collective case study design using semi-structured interviews with a purposeful sample of approximately 25 stakeholders explores LEAF stakeholder experiences of collecting food environment data and creating change. Document analysis aids in contextualization of interview data. Data collection and analysis are iterative, following Stake’s phases of direct interpretation, categorical aggregation, correspondence and patterns, and naturalistic generalizations.

Results: Preliminary findings suggest that integrating local knowledge and working across sectors to create recommendations for action on food environments produces a context-specific tool to ask for changes at the local level.

Conclusions: Engaging local stakeholders in monitoring food environments can promote local action to improve food environments that promote healthy eating. As such, they can build local capacity for the development of sustainable public health nutrition interventions.

Nurturing Women’s Health Rights Champions

Authors: Ms Neeta Hardikar1, Ms Reeta Parmar1

Affiliations: 1ANANDI - Area Networking and Development Initiatives, Devgadh Baria, India

Abstract: In ANANDI’s work with the most marginalized communities for improving survival and nutritional status of children and women in reproductive age through communityisation of health and nutritional services, pair of Bhaneli and Ganeli women are capacitated to lead and take forward the community education. Bhaneli- Ganeli in Gujarati means – literate and wise. Young literate women with experienced middle age women pair to understand issues, prepare communities for collective action.

ANANDI has devised capacity building modules for their perspective building on gender equality, human rights of women and children, political economy, constitutional rights, role of state in protecting rights of marginalised along with understanding on issues of health and nutrition. In past two decades this “pair” of educators, mobilisers and leaders have championed the cause of their own communities.

ANANDI nurtures these leaders with mutual respect and admiration for knowledge and skills through formal education and lived experiences of women. They together foster oral traditions as well as the world of “written” world. In this workshop ANANDI would like to share their folk forms adapted for organising of communities for health and nutrition rights along with rights as citizen. The process of demystification of technical skills and formal education system has transformed the “Bhaneli-Ganili” leader women in their personal lives, now they enable otherwise anxious and self-conscious women of their own communities to negotiate with state and families, confidently.

This model of leadership building is effective and sustainable for community action on issues of public health and human rights.
Connecting Women who have the Power to Heal their Communities

Authors: Ms Fiona McKenzie¹

Affiliations: ¹Queensland Country Women’s Association Country Kitchens, Brisbane, Australia

Abstract:
The Queensland Country Women’s Association Country Kitchens program now in its fifth year demonstrates leadership to build capacity in a wide range of societal transformations. We thought big– from an idealised conceptual plan the program has delivered a range of differentiated and localised strategies across the state of Queensland. Driven by a capacity to help and passion for empowering women.

The QCWA a volunteer member based organisation, successful for community action over the past 98 years, is embracing health at a state-wide level in over 70% (n=240) of branches - delivering at least one health promotion initiative (focused on food and nutrition literacy), many women into their eighth decade powering out cooking classes for our youngest generation.

Collectively, the branches represent the communities across the regional, rural and remote Queensland. The QCWA as a member of the Associated Country Women of the World actively addresses initiatives with each of the Sustainable Development Goals. The Country Kitchens program affords an innovative opportunity to demonstrate leadership as a not-for-profit organisation in this space.

As public health nutritionists, we have needed to be adaptable, flexible, innovative and resilient. Have we developed capacity in these communities sufficiently to establish a sustainable nutrition promotion program?

What Enables Healthy Nutrition Behaviours in Rural, Regional, and Remote Queensland Communities?

Authors: Mrs Tanya Thwaite¹, Doctor Susan Williams¹, Associate Professor Kate Ames², Doctor Jenni Judd³, Ms Fiona McKenzie¹

Affiliations: ¹CQUniversity, North Rockhampton, Australia, ²CQUniversity, Brisbane, Australia, ³CQUniversity, Bundaberg, Australia, ⁴Queensland Country Women’s Association Country Kitchens, Brisbane, Australia

Abstract:
Background/Aims: People living in regional, rural, and remote (RRR) locations are more likely to experience food insecurity, which is associated with high intakes of energy dense foods, low intakes of fruit and vegetables, low dietary diversity and additional risk of nutrition-related health conditions. Accessibility (food access, food literacy, resources) and social interaction are recognised enablers of healthy nutrition behaviours. The Queensland Country Women’s Association (QCWA) Country Kitchens (CK) program engages and upskills women to build capacity of communities to adopt healthy lifestyles. Using an assets-based approach, this study aimed to capture the voices of women in RRR communities to explore enablers of healthy nutrition behaviours.

Methods: This study was conducted across four contextually different RRR locations in Queensland (Mt Isa, Condamine, Dalby, Miles). Utilising a sequential design, data was collected via photo elicitation, telephone interviews, and participatory workshops between March and May 2018. Data was recorded, transcribed verbatim, and thematically analysed.

Results: Enablers of healthy nutrition behaviours were identified at individual (nutrition education, cooking and food production skills, socialisation of food, adaptation to environment) and community (partnerships, resources, communication, social interaction) levels. The CK program was identified as an enabler of food literacy, food access, positive food environments, social inclusion and community collaboration.

Conclusions: Women living in RRR areas are adaptive to the demands and contexts of their communities and utilise a range of food literacy skills to develop healthier nutrition behaviours. The QCWA CK program is connecting individuals with their communities and creating sustainable change to nutrition behaviours within RRR communities.

Maternal influence on daughter’s cooking related meanings and practices

Authors: Dr Vanessa Mello Rodrigues¹, Ms Ana Cláudia Mazzonetto¹, Ms Isabelle Schroeder Le Bourlegat¹, Mr. José Luís Guedes dos Santos¹, Ms Moira Dean², Ms Giovanna Medeiros Rataichesck Fiates¹

Affiliations: ¹Nutrition Postgraduate Program, Nutrition in Foodservice Research Centre (Núcleo de Pesquisa de Nutrição em Produção de Refeições - NUPPRE), Federal University of Santa Catarina, Florianópolis, Santa Catarina, Brazil, Florianópolis, Brazil, ²Institute for Global Food Security, Queen’s University Belfast, Belfast, United Kingdom

Abstract:
Background: Mothers are gatekeepers of the transmission of food related meanings and practices to their children, but little is known about how they transmit cooking related issues. Aim: Understand the intergenerational transmission of cooking related meanings and practices.

Method: A life course perspective and a constructivist grounded theory approach were used in order to present a substantive theory. The study was carried out in southern Brazil with 27 women.
Results: The core category Finding my own way in the kitchen is explained by four other categories, which show that daughters implicitly and explicitly learn from mothers the idea of cooking responsibility; that mothers influence daughters by the way they involve children in the kitchen and by the feelings they express regarding cooking; that daughters learn cooking practices observing mothers cooking, cooking together, receiving instructions and eating their mother’s food. Finally, daughters recreate what they learned from the mother according to their own life trajectories, social and historical context, and the people they interact with.

Conclusion: Public health interventions designed to encourage cooking need to challenge the view that the activity is solely a woman’s responsibility, as well as communicate to mothers that their influence goes beyond cooking practices, and include their attitudes and the feelings they express.

Feasibility and acceptability of disseminating lunchbox messages to parents through mobile apps.

Authors: Mrs Lisa Janssen1, Mrs Renee Reynolds1, Dr Rachel Sutherland1,2,3,4, Dr Nicole Nathan1,2,3,4, Dr Rebecca Wyse1,2,3,4, Mr Christophe Lecathelinais1, Dr Kathryn Reilly1,2,3,4, Ms Alison Walton1, Dr Luke Wolfenden1,2,3,4

Affiliations: 1Hunter New England Population Health, Wallsend, Australia, 2Priority Research Centre for Health Behaviour, University of Newcastle, Callaghan, Australia, 3Hunter Medical Research Institute, New Lambton, Australia, 4School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, 5Mid North Coast Local Health District, Coffs Harbour, Australia

Abstract:

Background/aims: Given the high number of discretionary foods packed in school lunchboxes, improving the nutritional content of lunchboxes has the potential to improve child diet. However, traditional methods of engaging parents in lunchbox programs have had minimal success. This research aimed to assess the feasibility and acceptability of using mobile phone apps to disseminate healthy lunchbox messages to parents.

Methods: In 2015, a Computer Assisted Telephone Interview (CATI) was conducted with parents to assess likely use of a hypothetical app. In 2016, a second CATI was conducted with primary school principals to assess current use of school-based mobile apps and acceptability of disseminating healthy lunchbox messages via an app. Both CATI's were conducted in NSW, Australia.

Results: Of 228 parents surveyed, 79% were interested in using a lunchbox app with the majority (76%) indicating they would use the app at least weekly. Parents were most likely to use the app for: ideas and tips for packing a healthy lunchbox (85%); information regarding new lunchbox products (79%); and, links to websites for additional information (76%). Of 196 principals surveyed, 59% currently use a school-based mobile app to communicate with parents. The provision of lunchbox messages to parents via the app appeared an acceptable model of delivery for principals.

Conclusions: School-based mobile apps may represent an innovative way of delivering lunchbox messages to potentially overcome the significant barrier of parent engagement in lunchbox programs. Increased parent engagement may have an impact on childhood obesity and contribute to good health and well-being.

WBTI Australia – grass roots action for a safe, supportive breastfeeding environment.

Authors: Ms Naomi Hull1

Affiliations: 1WBTI AUS, Ashgrove, Australia

Abstract:

Background: To enable the systematic analysis of a nation’s progress against the Global Strategy for Infant and Young Child Feeding, the International Baby Food Action Network developed an easy to use assessment tool, titled The World Breastfeeding Trends Initiative (WBTI) (www.worldbreastfeedingtrends.org). This assessment tool has been used in approx. one hundred countries around the world so far, to benchmark their existing infant feeding policies and programs. The results can be used as a way to highlight the gaps that exist and celebrate the strengths, but also as a tool for future advocacy, with the intention to revisit the assessment in three-five years’ time.

Method: In Australia, in 2017 a group of academics, clinicians and advocates came together to complete this assessment for Australia. A core group was formed, and the assessment undertaken. Data has been collected and scoring is complete and a report published mid 2018 https://www.worldbreastfeedingtrends.org/wbti-country-report.php.

Aims and Significance: This presentation will share with the audience the background of the WBTI, and the final results for Australia. Delegates will hear how the WBTI-Australian assessment has invigorated grass roots advocacy to protect, promote and support breastfeeding (recommendation 29-33), hence contributing to a safe and supportive environment for nutrition (Action Area 5).

The presentation will also include discussion around the impact of the results highlighting Australia’s strengths and gaps in governance and accountability in infant feeding policy along with the group’s plans for future advocacy and reassessment.
Community assessment of local food environments: Community advocacy to local governments

Authors: Susana Jiles Castillo, Kathleen Bubriski

Affiliations: 1Popular Education for health Foundation EPES, Santiago, Chile

Abstract: In 2016, Chile implemented a food-labeling law to regulate the labeling of food products with harmful ingredients, prohibiting the marketing of these products to children under the age of 14, as well as the marketing and sale of such products in schools. We recognized the need to evaluate the law’s implementation, and to create a database of information on food environments in educational settings and health clinics in the community.

The community assessment utilized popular education methodology, which recognizes the community’s own capacity to analyze their food environments and elaborate proposals for change. Forty-five individuals representing 30 local municipal institutions (education and health care) and community organizations, participated in this six-month process.

The participants collectively drafted 26 measures with the goal of improving local nutrition and health, which were used as a resource for advocacy at the community level. Following the assessment, we designed a campaign to analyze local food environments as a means of safeguarding the right to quality and sustainable food via actions to raise awareness of the issue within communities and local governments.

This process created networks and coordination at the local level, recognizing the community’s capacity to construct a proposal appropriate to their local context. It also demonstrated the structural factors affecting the health and environment of the community, while facilitating a collective discourse promoting food and nutrition as a right. The community proposed strategies and improvements for the implementation of local public policies that consider social, political, economic and cultural conditions.
6D – Political economy of food systems and dietary change
Rapid Fire Presentations

Processed foods and the nutrition transition: global trends, drivers and political economy
Authors: Dr Phillip Baker1
Affiliations: 1Institute for Physical Activity and Nutrition, Deakin University, Melbourne, Australia
Abstract: Background: Scientists and policy-makers are paying increased attention to industrial processed foods as an important contributor to the global nutrition transition and burden of disease. However, contemporary changes in the global processed food supply and associated drivers are not well understood, especially in low- and middle-income country contexts. Nor is the role of the transnational processed food industry in shaping food systems in ways that promote consumption.

Aims: This study analyses global trends and patterns in processed food markets and, examines the food systems drivers explaining observed trends and variations between countries and regions, including the role of transnational food companies.

Methods: Mixed method synthesis involving descriptive statistics of processed food and beverage sales from 205 countries categorised as high, upper-middle, lower-middle and low-income; review of academic and grey literature to understand food systems and political economy drivers.

Results: Processed food and beverage markets are declining or stagnating in many high-income countries, but rapidly expanding in upper-middle and lower-middle income countries. Income growth, urbanization, young and growing populations, workforce changes and increasing demand for convenience are important drivers of this transition. However, this also reflects differences in the policies and regulations adopted to attenuate the harms of processed foods, and the commercial and political activities of the transnational food industry in the context of food systems globalization.

Conclusion: Processed foods are playing an important role in the global nutrition transition, with important implications for global health and worldwide policy responses during the UN Decade of Action on Nutrition.

Diet-related fiscal policy: employment implications for food-supply sectors
Authors: Ms Sarah Mounsey1, Dr Anne Marie Thow1, Professor Lennert Veerman1, Professor Stephen Jan3
Affiliations: 1University Of Sydney, Sydney, Australia, 2Griffith University, Gold Coast, Australia, 3The George Institute, Sydney, Australia
Abstract: Introduction/Background: Evidence for the impacts of diet-related fiscal policy for addressing suggest well designed taxes and targeted subsidies not only drive changes in consumption of unhealthy foods and beverages for improved health, but also generate revenue. However, consideration of the impacts of these fiscal measures beyond health by public health researchers and policy actors is minimal. There is little public health evidence for the economic effect of taxes and subsidies on outcomes relating to the food supply chain; in particular, on agriculture, employment and industry.

Research Question: What are the cross-sectoral economic implications of diet-related fiscal policies in relation to the food supply chain: agriculture, employment and industry?

Methodology: This systematic review will use a comprehensive search of eight key bibliographic databases, including MEDLINE, EMBASE, Global Health, SCOPUS, EBM Reviews complete, Proquest Central, ECONLIT and Google Scholar. Relevant grey literature will also be reviewed. Studies will be found using defined inclusion/exclusion criteria. Data will be extracted using defined characteristics. Quality and bias will be detailed for the individual studies using the Cochrane Handbook of Systematic Reviews of Interventions. The results will be categorised by economic effects on agriculture, employment and industry.

Findings: The review indicates that fiscal policy interventions to improve chronic disease are likely to impact employment and the food industry.

Policy Implications: The evidence from this review will inform (1) designing fiscal policies to improve diets in ways that minimise potential negative impacts on economic sectors, and (2) development of complementary policies to mitigate any potential negative impacts.

What drives NCD-related fiscal reform in low and middle-income countries?
Authors Ms. Lana Elliott1,2
Affiliations: 1Queensland University of Technology, Brisbane, Australia, 2James Cook University, Townsville, Australia
Abstract: Background: The burden associated with non-communicable diseases (NCDs) is disproportionately shouldered by individuals in low- and middle-income countries (LMICs). In response, the global health community has identified a series of so-called cost-effective fiscal health reforms specially targeted to LMICs. However, uptake of these policies has been sporadic.
**Methods**: This scoping review seeks to analyse the factors which favour or preclude the elaboration of NCD-related fiscal health reform in LMICs. Utilising a systematic approach and drawing on the policy triangle for theoretic grounding, this review identifies contextual, procedural, content and stakeholder related factors which motivate or stall reform in this space.

**Results**: Results indicate that critical analysis of this emerging field remains in its infancy, with just 11 of the review’s 76 papers more than a decade old. Identified papers highlight a concentration of tobacco control-specific literature (62% of total papers) to the detriment of those covering diet-focused measures. Policy strategies were heavily focused on the coverage of negative impositions including industry interference and conflicts of interest within government. By contrast, very few sources critically review context and procedural-related factors and there was a general absence of governance, power or political economy analyses.

**Conclusion**: Policy analysis of NCD-related fiscal health reform is heavily skewed to analysing particular policy domains of predominantly tobacco issues. Addressing SDG 3.4 requires recognition of diet as a significant contributor to NCDs. This demands an urgent need for in-depth exploration of the political economy of reform targeting diet-related NCD risk factors.

**Malawi’s food security: two decades of agriculture’s trends and challenges, new perspectives.**

**Authors**: Miss Karolina Rodriguez

**Affiliations**: 1WPHNA, London, United Kingdom

**Abstract**: As food security deteriorates worldwide, leadership decisions over the determinants of undernutrition aggravate the issue. In Malawi, over the past two decades, this is reflected in a slow reduction of the prevalence of stunting. At the household level, dependency on a single staple for feeding and income makes them both sensitive to climate and policy change. Despite large agricultural programmes and donor support, Malawians still suffer seasonal hunger. This study aims to explore agricultural solutions for food insecurity in Malawi using local knowledge.

**Methods**: A qualitative strategy of inquiry using Interpretative Phenomenological Analysis (IPA) allowed collecting participants’ testimonies using Participatory Learning and Action (PLA) approach and interviews. These enabled to determine trends, identify challenges in food security, strategies and views on positive solutions. The research process empowers participants and offers the ability to inform policy planning.

**Results**: The answer to improving food security through agriculture in Malawi is complex. This explains why local authorities and international organizations’ efforts have had a slow impact on sustainable changes to the situation. So far, Malawi’s issues might have not been addressed adequately.

**Conclusion**: The agricultural solutions proposed by participants suggest the need for investment to address the underlying causes of undernutrition. This supports existing knowledge of the interrelationship between appropriated nutrition and economic development. Malawi’s situation serves as an example, that decisions about land possession, market structure, prices, governance, food production and distribution can lead to semi-starvation. In result this feed into the cycle of chronic undernutrition, poverty and inequality.

**The political challenge of reducing meat production and consumption: A narrative review**

**Authors**: Ms Katherine Sievert1, Professor Mark Lawrence1, Dr Phillip Baker1

**Affiliations**: 1Institute for Physical Activity and Nutrition (IPAN), Deakin University, Burwood, Australia

**Abstract**: Diets high in red meat contribute substantially to environmental degradation and the global burden of chronic disease. Reports from IPCC, WHO-IARC and the Eat-Lancet Commission have called for significant dietary meat reduction, especially in high-income settings. However, this presents a major yet underinvestigated political challenge given strong cultural preferences for meat and the economic importance and power of the meat industry.

**Aims**: To identify proposed policy actions for reducing the health and environmental harms of red meat, and to understand the political barriers and opportunities for achieving these actions.

**Methods**: A narrative literature review. Literature were included if identifying a proposed or existing relevant policy action, or relevant political economy enablers or barriers. Data were coded using a combined food systems and political economy framework.

**Results**: 116 studies were included. Most proposed policy actions were environmentally focused. Suggested actions included agro-technology investments, taxes, consumer labelling, and meat substitution to alternative proteins. Existing trade agreements, rising income growth and globalisation, along with strong opposition/lobbying from the meat industry were identified as barriers to policy adoption. Political enablers were infrequently examined. Few studies considered policies within a food systems framework; most were isolated interventions.

**Conclusions**: Attenuating red meat production and consumption will contribute to achieving the Sustainable Development Goals (especially Goals 2, 3, 12 and 13). However, despite the contested nature of the issue the political feasibility of these actions is not currently well understood. Understanding these political challenges can help to inform new research and action for driving meat reduction.
Breastfeeding economics – using knowledge on costs, benefits and incentives for policy change.

Authors: Dr Julie Smith¹, Dr Dylan Walters², Dr JP Dadhich³, Emeritus Professor George Kent⁴

Affiliations: ¹Australian National University, Canberra, Australia, ²Nutrition International, Ottawa, Canada, ³Breastfeeding Promotion Network of India, Pitampura, India, ⁴University of Hawaii, Honolulu, United States

Abstract:
Breastfeeding economics – using knowledge on costs, benefits and incentives for policy change.

Aims/Learning Objectives:
1. To equip participants with knowledge, skills and tools for using ‘breastfeeding economics’ in public health advocacy and policy change.
2. Gain familiarity with key concepts and evidence on the economic value and determinants of breastfeeding.
3. Build capacity in using online tools to assist breastfeeding advocacy and policy decisions

Background: Money is the language of policymakers. A growing body of evidence highlights the economic value to society of breastfeeding, including for health systems, human capital and productivity. There is also increased understanding of how economic and financial incentives affect breastfeeding. Breastfeeding has economic opportunity costs (time) for women, some programs provide free or low cost formula, and women face inappropriate marketing tactics. However, pro-breastfeeding policies and interventions, like counselling, can be effective in increasing breastfeeding. Paid maternity leave improved breastfeeding in Australia, and may have the same effect elsewhere. Despite this, financing for breastfeeding policies and interventions remains low worldwide. Tools to estimate the financing needs for enabling policies and interventions are available as are tools for costing the potential health and economic benefits from increased breastfeeding.

Process: Experts will provide 15-20 minute presentations on concepts, evidence and tools. In interactive segments, participants will be guided to apply tools to draft policy briefs suitable for local advocacy using a workshop template.

Translation and capacity building

The workshop will

• Build capacity in using online economic modelling tools to assist breastfeeding policy advocacy and investment decisions

• Resource participants to apply tools to prepare policy briefs suitable for local advocacy.

Improved accounting for breastfeeding as health care in food and nutrition statistics

Authors: Dr Julie Smith

Affiliations: ¹Australian National University, Canberra, Australia

Abstract:
Background/Aims: Time is an important resource. Preventative health care is provided by households and the market sector but policy makers focus on the latter. Breastfeeding is an important example. Women’s time investments in breastfeeding remain poorly recognised as both food and preventative health care despite being central to the evolved food system for infants and young children. Policies promote breastfeeding, yet global sales of milk formula are booming. This is consistent with the general invisibility of women’s productive work in economic statistics and its under-resourcing by governments. Feminist economic analysis calls attention to the need for better frameworks and data to inform policymaking.

Method: This paper uses the example of breastfeeding to provide a feminist economic critique of internationally significant statistical frameworks for measuring economic activity and health care investments, the System of National Accounts (SNA) and the System of Health Accounts (SHA).

Results: Applying gender analysis to these global statistical systems using the example of breastfeeding reveals important conceptual gaps and bias in food and health statistical systems. Important non-market investments in preventative health behaviours like breastfeeding are invisible to policymakers despite their importance for public health nutrition.

Conclusion and Recommendation: The visibility of crucial health care activities within current statistical frameworks needs improvement (ICNZ RS) to achieve coordinated policy approaches, better policy information systems, resourcing of key preventative health activities, and effective implementation of maternity protection and health policies.

Preventative health policy should be informed by feminist economic analysis and time use data on non-market economic activity.
The political economy of sugary drinks taxation. Lessons from Latin America

Authors: London School of Hygiene and Tropical Medicine Angela Carriedo1, MPH, PhD Adam Koon2, MPH Luis Manuel Encarnación3, BA, MPA, MA, DPhil Kelley Lee4, PhD Gorik Ooms LicJur5, PhD Diego Da Silva4, BA, MA, PhD Julia Smith4, BA, MSc, PhD, Richard Smith5, BSc, MPH(Hons), PhD, Helen Walls3

Affiliations: 1World Public Health Nutrition Association, London, United Kingdom, 2Department of International Health, Johns Hopkins University School of Hygiene and Tropical Medicine, Washington D.C., United States, 3London School of Hygiene and Tropical Medicine, London, United Kingdom, 4London School of Economics, London, United Kingdom, 5Faculty of Health Sciences, Simon Fraser University, Toronto, Canada, 6College of Medicine and Health, University of Exeter, Exeter, United Kingdom

Abstract:
Sales in Latin America of ultra-processed foods and sugar-sweetened beverages increased by almost 50% between 2000 and 2013. Evidence suggests diet-related non-communicable diseases (NCDs) like obesity and diabetes are rapidly rising as a result. International organizations and public health advocates have called on governments to increase action on NCDs by implementing policies addressing key risk factors notably tobacco use, alcohol consumption, unhealthy diets, and physical inactivity. Calls for action suggest “multi-sector” and “multi-stakeholder” approaches involving civil society and the private sector, including transnational corporations. While the focus has often been on forming “partnerships” of public and private sectors, how to ensure the primacy of public health goals remains a major governance challenge. This paper analyses this governance challenge using the experiences of Chile, Mexico, and Colombia regarding the taxation of sugar-sweetened beverages. The three countries offer useful comparisons given their similar political and economic systems, institutional arrangements and regulatory instruments. This paper conducts a qualitative synthesis of the existing empirical evidence applying a political economy analysis to identify successes and failures during the policy process to adopt and implement the tax. The findings suggest that a major constraint was the political influence of transnational corporations. The paper concludes that governance arrangements advocating partnerships with private sector actors should recognise the asymmetry of power among actors. If deemed appropriate, such arrangements should adopt clear mechanisms to ensure transparency and accountability of all partners. Support of governmental entities, grassroots groups, and civil society groups in NCD prevention policies is also needed.
6E – Changes in stakeholders’ opinions towards a healthy beverage

Rapid Fire Presentations

Food environment interventions to improve adult diet and health equity: umbrella review

Authors: Dr Sarah Gerritsen¹, Isla Dunn¹, Professor Jim Mann², Professor Cliona Ni Mhurchu³

Affiliations: ¹School of Population Health, University Of Auckland, Auckland, New Zealand, ²School of Medicine, University of Otago, Dunedin, New Zealand, ³National Institute for Health Innovation, University of Auckland, Auckland, New Zealand

Abstract:

Background: This study aimed to review the international evidence on scalable, population-level interventions within food environments that a) improve adult diet, and b) improve equity of health outcomes.

Methods: An umbrella review was conducted December 2018, covering English-language systematic reviews in Scopus and Cochrane Library Databases from 2007 to 2018. Two authors assessed inclusion/exclusion criteria and extracted data following the PRISMA protocol.

Results: Of 1169 papers, 33 systematic reviews met inclusion criteria. Several food environment interventions were consistently identified to have moderate to strong evidence that they improve adult diet: taxation of unhealthy foods/beverages, subsidizing healthy food, effective front-of-pack labeling of pre-packaged foods/beverages, reformulation of foods to reduce salt content, and reducing density of fast-food restaurants in lower socioeconomic areas. Weaker evidence (mostly due to methodological issues) was found for: environmental interventions in workplaces, limiting food marketing to adults, product availability/placement in-store, and reducing portion sizes. There was weak evidence that the following improved adult diet: menu labeling in restaurants, and density of fast-food restaurants or supermarkets generally. Little international research examined the impact on equity.

Conclusions: Modifying the food environment holds significant promise to improve population diet and reduce non-communicable diseases. In the UN Decade of Action on Nutrition, governments should consider policies consistently found to improve adult diet, and with the most promise to reduce health inequities, i.e. sugar-sweetened beverage tax, subsidizing healthy food, reducing density of fast food outlets in areas of high deprivation, mandatory labeling of pre-packaged foods and beverages, and salt-reduction through food reformulation.

Policies influencing healthy food availability in local government-owned sporting facilities

Authors: Ms Devorah Riesenbergs¹, Dr Miranda R Blake¹, Ms Tara Boelsen-Robinson¹, Professor Anna Peeters¹, Associate Professor Adrian J Cameron¹

Affiliations: ¹Deakin University, Global Obesity Centre (GLOBE), Institute for Health Transformation, School of Health and Social Development, Faculty of Health, Geelong, Australia

Abstract:

Background: Sporting facilities owned or managed by local governments (LGs) can promote health by providing nutritious food and drinks for sale. Whether LGs’ food provision policies, attitudes and practices support this is unknown. This study assessed the policies, attitudes and practices of local governments in Victoria, Australia relating to obesity prevention and the provision of healthy food in their sporting facilities

Methods: An online survey was e-mailed to health and wellbeing managers in all Victorian LGs (n=79) between July-November 2018. Closed and open-ended questions assessed council healthy food provision policies relating to sport and recreation facilities and the priority councils give to obesity prevention.

Results: Forty-nine of 79 LGs completed the survey. Councils reported that obesity prevention and promotion of healthy food and drink consumption were moderate to high priority. Fifty-six percent of LGAs reported that the priority they give to healthy food promotion had increased over the past year. Sixty-nine percent of LGs had made changes to increase the healthiness of food and drink available in their facilities. LGs in less disadvantaged areas, with larger populations and more facilities had made more healthy changes.

Conclusion: The majority of Victorian LGAs report that their intention to change the availability of healthy food and drink in sports and recreation facilities has increased over the past year. However, most councils report action is still required to achieve their goals of healthier communities. Greater support for smaller councils and those in socioeconomically disadvantaged areas may help provide a supportive environment for improved health.
Food environment reform in local government community venues

Authors: Claire Hyland¹, Megan Sauzier¹, Tristan Schwartzkopff³, Jessica de Vries¹, Nadine Radin¹, Corinne Hunt², Jenny Atkins¹, Craig Johnson¹

Affiliations: ¹Western Australian School Canteen Association Inc. (WASCA), East Perth, Australia, ²South Metropolitan Health Service, Murdoch, Australia, ³Cancer Council Western Australia, Subiaco, Australia, ⁴City of Mandurah, Mandurah, Australia

Abstract: Background/aim: Community venues, including sport, recreation and entertainment venues are an ideal setting for health promotion and food environment reform. Whilst venues promote healthier lifestyles through physical activity, there is often a disconnect with the food and drinks offered. Collaboration between health promotion agencies and consistent messaging can create positive change in community venues.

Methods: Mandurah Aquatic and Recreation Centre (MARC) transformed their food environment. MARC worked with South Metropolitan Health Service (SMHS) to implement Fuel to Go & Play, an initiative of the WA School Canteen Association (WASCA), funded by Healthway. Fuel to Go & Play uses a traffic light system to rate food and drinks based on their nutritional value, aiming for menu targets of >40% green items (e.g. fruit, water) and <30% red items (e.g. sugary drinks, deep fried food).

Results: MARC is the first WA local government recreation centre engaged in Fuel to Go & Play to reach healthy menu targets and green choices predominantly feature in display cabinets.

MARC received a Healthway grant to transform the café by replacing junk food advertising. Café barriers, wall stickers and screens now display Cancer Council WA’s Eat Brighter LiveLighter message promoting fruit and vegetables.

A case study video showcasing the successful strategies at MARC was developed to motivate and inspire other community venues.

Sales data monitoring and analysis is now underway to measure change.

Conclusion: Collaboration enabled food environment reform at MARC. This practical and applicable model is evidence for other local government operated community venue food environments.

Healthy point-of-purchase marketing could be an important component of nutrition programs

Authors: Mrs Jenny Atkins¹, Paige English¹, Ellen Hart¹, Kelly Kennington¹, Geoff Langton³, Cameron Mack², James Stevens-Cutler¹

Affiliations: ¹Cancer Council of WA, Perth, Australia, ²Initiative, Perth, Australia

Abstract: Background/Aims: Funded by the Western Australian Department of Health, LiveLighter® is a TV-led campaign run by Cancer Council WA (CCWA) that aims to reduce the burden of chronic disease caused by overweight/obesity, poor diet, and physical inactivity. Point-of-Purchase (POP) advertising was employed for two distinct campaigns: Eat Brighter LiveLighter® (EBLL) and Sugary Drinks. EBLL ads use colourful imagery of fruit and vegetables (F+V) to encourage adults to buy more F+V, while the Sugary Drinks ads reveal the number of teaspoons of sugar in various types of drinks to encourage adults to decrease their consumption of these beverages.

Methods: The EBLL POP ads ran for four weeks (October-November 2018), while the Sugary Drinks POP ads ran for eight weeks (September-December 2018). Both POP ads ran at a leading independent retailer across ten of their regional WA stores. Animated ads ran on multiple digital screens in-store. Fixed screen locations were decided by each store.

Results: In stores where the EBLL POP ads appeared, F+V sales increased, while stores where no ads appeared experienced a decline in sales over the same period of time. In stores where the Sugary Drinks POP ads appeared, sugary drinks category sales declined by a larger amount than in stores where no ads appeared.

Conclusion: Point-of-purchase (POP) displays may influence consumers’ decisions and should be considered within the overall strategy for interventions that endeavour to make healthy changes to food environments. Due to these findings LiveLighter® continues to use POP advertising as part of its media channel structure.

Healthy food and drink in NSW Health facilities: success in policy implementation

Authors: Ms Tarli O’Connell¹, Ms Leonie Cranney², Dr Margaret Thomas², Dr Michelle Crino¹, Ms Megan Cobcroft³, Ms Elizabeth Munn¹

Affiliations: ¹NSW Ministry Of Health, St Leonards, Australia, ²Prevention Research Collaboration, Sydney School of Public Health, The University of Sydney, Sydney, Australia

Abstract: Background: Across New South Wales (NSW), over 950 food outlets operate in public health facilities. These outlets are dominated by unhealthy choices. In June 2017 the NSW Ministry of Health launched a policy to increase the availability and promotion of healthy food and drinks for staff and visitors in health facilities. The policy is implemented and monitored at scale, across 18 Local Health Districts (LHDs).
Methods: To monitor progress with implementation, annual state-wide audits are conducted in all food outlets using a validated tool and set of 13 indicator practices. In 2018 outlets were assessed on practice 1, the removal of sugar-sweetened drinks (SSDs); in 2019 outlets were assessed on all 13 practices, which relate to product availability, product quality, portion size and marketing. A qualitative study of implementation approaches was conducted in 2019.

Results: The 2018 audit found 89% of outlets had removed SSDs. In 2019 this increased to 96% and, of the 13 practices assessed, nine were implemented by 80% or more outlets. The change in practices from baseline is being analysed. Factors contributing to implementation success include prioritisation by Chief Executives, skills and commitment of implementation staff, and receptiveness of retailers to change.

Conclusions: This policy achieved a high level of implementation in a short period of time. The policy provides a model for creating supportive environments for nutrition and for delivering the ICN2 recommendation to establish standards to make healthy diets accessible in public facilities. The model can be applied in various countries and contexts.

Piloting health-promoting pricing interventions: outcomes from Victorian aquatic and recreation centres

Authors: Oliver Huse¹, Christina Zorbas², Liliana Orellana³, Miranda Blake¹,³, Alethea Jerebine⁴, Megan Ferguson⁵,⁶, Claire Palermo⁷, Tara Boelsen-Robinson¹,³,⁸, Anna Peeters¹, Julie Bramblecombe⁶,⁷, Marj Moodie¹,³,⁸, Kathryn Backholer¹

Affiliations: ¹Deakin University, Geelong, Australia, Global Obesity Centre, School of Health and Social Development, Institute for Health Transformation, Geelong, Australia, ²Deakin University, Geelong, Australia, Biostatistics Unit, Geelong, Australia, ³School of Public Health and Preventive Medicine, Monash University, Clayton, Australia, ⁴YMCA Victoria, Melbourne, Australia, ⁵The University of Queensland, Brisbane, Australia, ⁶Menzies School of Health Research, Darwin, Australia, ⁷Department of Nutrition, Dietetics and Food, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Australia, ⁸The Boden Institute of Obesity, Nutrition, Exercise & Eating Disorders, Charles Perkins Centres, University of Sydney, Camperdown, Australia, ⁹Deakin University, Geelong, Australia, Deakin Health Economics, School of Health and Social Development, Institute for Health Transformation, Geelong, Australia

Abstract:
Background: Retailers can improve population diets by making healthier options more affordable. This study aimed to pilot three health-promoting food and beverage pricing interventions, co-developed with retailers, in aquatic and recreation centre settings.

Methods: Three aquatic and recreation centre managers in Victoria, Australia, were recruited to co-develop and pilot pricing interventions. Interventions were implemented in January 2019 for 15 weeks. Interrupted time series analysis was used to estimate the impact of pricing interventions on unit sales of healthy and unhealthy foods and beverages. Customer exit surveys assessed support for, and awareness of, interventions. Interviews with food retail managers explored the process and perceived outcomes of intervention implementation.

Results: Interventions included: i) ‘healthy combo deals’ (discounted healthy bundles); ii) increasing the price of selected unhealthy options and reducing the price of selected healthier options, and; iii) tailored ‘healthy combo deals’ at specific times. The latter two interventions resulted in significant decreases in the proportion of sales classified as unhealthy and significant increases in the proportion of sales classified as healthy. Customer surveys revealed low levels of awareness but high levels of support for pricing interventions. Café managers did not identify any significant challenges to implementation or maintenance of interventions, although staff engagement was identified as a key factor for successful ‘marketing-based’ interventions.

Conclusions: Health-promoting food and beverage pricing interventions can be readily implemented in sports and recreation settings with broad customer support. Two of the interventions piloted are promising and may contribute the improvement of population diets across the life course.

Kicking goals with healthy food environments in WA sports clubs

Authors: Ms Cassandra Bordin¹, Ms Megan Sauzier¹, Mrs Michelle Riekie¹, Mrs Claire Hyland¹, Mrs Jessica de Vries¹, Ms Grace Stanton¹, Ms Brianne James²

Affiliations: ¹Western Australian School Canteen Association Inc. (WASCA), Perth, Australia, ²Healthway, Perth, Australia

Abstract:
Background: At the heart of Western Australian communities are 975 registered clubs. Focusing on healthy food and drink policies and practices in sports clubs, particularly environmental changes, has the potential to influence over 453,000 members. Creating a healthy and supportive environment aims to improve member and spectator wellbeing.

Methods: The Healthy Sporting Club Program developed by Healthway and partnering with WA School Canteen Association (WASCA), engaged clubs during the winter 2019 season. The program aimed to increase healthy food and drink canteen options, reduce sugary drinks and unhealthy brands/messages and up-skill staff in offering healthier items.

Grants (up to $4,000) could be used for canteen equipment; capacity building; and water initiatives (e.g. water bubbler). Clubs were required to complete the Fuel to Go & Play Community Venues Online Training; work towards achieving >40% green (fruit, sandwiches, water) and <30% red (sugary drinks, chips) items on menus; implement a policy addressing food and nutrition; and educate members about healthy eating.
Results: Fifty-one clubs, reaching over 35,000 members and spectators, participated in the program. WASCA provided advisory services to clubs including menu/recipe assessments; policy support; factsheets; communication material for club newsletters and social media; site visits; and promotional resources.

By November 2019, evaluation data will measure training completion, policy implementation; change in green and red items overall awareness of healthy eating and program satisfaction.

Conclusion: Early results indicate increasing the capacity of canteen staff and members can improve healthy food and drink options and create supportive nutrition environment in sports clubs.

Changes in stakeholders' opinions towards a healthy beverage intervention in sporting facilities

Authors: Ms Devorah Riesenbergs, Dr Miranda R Blake, Associate Professor Adrian J Cameron, Ms Tara Boelsen-Robinson, Professor Anna Peeters

Affiliations: 1Deakin University, Global Obesity Centre (GLOBE), Institute for Health Transformation, School of Health and Social Development, Faculty of Health, Geelong, Australia

Abstract:
Background: Sporting facilities promote health through physical activity, yet sell and promote unhealthy food options. Retailer and staff perceptions that customers prefer unhealthy beverage options may impede healthy changes to beverage offerings. This study aimed to evaluate the impact of a healthy beverage retail intervention in Victoria, Australia on changes in customer and staff attitudes and acceptability towards the intervention.

Method: Customers and staff from eight local government areas were eligible to complete different surveys investigating the perceived need for healthy beverage options before (June-September 2018) and after (June-September 2019) interventions to limit sugary drink availability or remove them from display in council-owned sporting facilities.

Results: 1100 customers and 166 staff (management, facility staff) completed baseline surveys. Seventy-eight percent of customers and 83% of staff agreed these facilities should promote healthy eating. Forty-four percent of staff believed promoting healthy eating is a high priority in their facility and stated that had increased over the past year (51%). Eighty-four percent of customers believed that their community needs to implement change to reduce sugary drink consumption. Yet, 38% of staff and 60% of customers believe removing sugary drinks form these facilities will not help reduce community consumption. Pre- and post-intervention survey analysis will be presented at the meeting.

Conclusion: Our study suggests that customers and staff believe sport and recreation centres should provide supportive nutrition environments. This study provides insight into changes in customer and staff attitudes in response to a healthy retail intervention, and may provide evidence to support similar initiatives.

Strengthening accountability for healthy food provision in leisure centres

Authors: Ms Margaret Rozman, Ms Brittney Johnson, Ms Kate Wilkinson, Ms Caitlin Syrett

Affiliations: 1Nutrition Australia - Vic, Carlton, Australia

Abstract:
Background: The Healthy Eating Advisory Service (HEAS) supports sport and recreation centres to supply and promote healthier foods and drinks to improve community health outcomes.

Leisure management organisations (LMO) operate centres on behalf of local governments, and are often required to implement the Victorian Government’s Healthy Choices guidelines (HCG) through commercial contracts or facility funding agreements.

Methods: Delivered by Nutrition Australia – Vic and funded by the Victorian Government, HEAS works with large LMOs — YMCA Victoria, Belgravia Leisure and Aligned Leisure — to strengthen their governance and accountability for nutrition, linking obligations with action.

HEAS collaborates with each organisation to embed nutrition policies and practices at all levels of their business. HEAS aims to leverage existing governance systems, whilst supporting them to introduce measures that ensure accountability.

HEAS provides tailored support to secure management commitment, create organisational policies and procedures, train staff, overcome challenges, and engage customers and stakeholders.

Results:
- YMCA Victoria developed and delivered a healthy food and beverage policy and quality auditing process, and provided training and menu planning assistance.
- Belgravia Leisure established business processes to meet the HCG, and piloted a confectionery and sugary drink-free outlet.
- Aligned Leisure developed a nutrition policy and implemented the HCG in 21 centres.

Conclusions: HEAS has supported three large LMOs to embed healthy eating policies and processes, and influence the food supply in up to 35% leisure centres state-wide, improving governance and accountability for nutrition at multiple levels. These learnings support inter-sectoral approaches for preventive health.
Validity of a practice-based approach to implementing a healthy food provision policy

Authors: Ms Tarli O’Connell¹, Ms Fiona Halar², Dr Margaret Thomas², Dr Michelle Crino¹, Ms Megan Cobcroft¹, Ms Elizabeth Munn¹

Affiliations: ¹NSW Ministry of Health, Sydney, Australia, ²Prevention Research Collaboration, Sydney School of Public Health, The University of Sydney, Sydney, Australia

Abstract:

Background: In 2017 New South Wales (NSW) Health launched a policy to improve healthy food and drink options for staff and visitors in health facilities. The policy’s Benchmark provides food outlets with guidelines for improving healthy food and drinks across four focus areas: product availability, product quality, portion size, and marketing.

Methods: To monitor policy implementation, annual audits of all 953 food outlets operating in health facilities are conducted using an electronic monitoring system (PHIMS-Nutrition). Outlets are assessed against 13 indicator practices, selected to represent the 53 Benchmark practices. A comparative analysis was undertaken in 2018 to determine agreement between PHIMS-Nutrition and a ‘gold standard’ audit. Concurrent criterion validity analyses was also undertaken to determine how accurately the 13 indicator practices measure the policy’s Benchmark. The study was conducted across 144 outlets within 6 facilities.

Results: The 2019 audit found 9/13 indicator practices were implemented by 80% or more outlets. The comparison between PHIMS-Nutrition and the ‘gold standard’ audit found a high level of agreement. Agreement varied by practice (κ = 0.41-1.00). Concurrent criterion validity analyses found the 13 indicator practices were a good indicator of implementation of the policy’s full Benchmark across three focus areas (κ >0.95), but not for product quality (κ = 0.37).

Conclusions: Indicator practices provide a valid and pragmatic approach to monitoring policy implementation at scale. These results will inform the policy’s continuous improvement. This policy provides a unique model for creating supportive environments for nutrition that can be applied in various countries and contexts.
Commitments and actions of food companies to offer healthier products in Canada

Authors: Ms. Laura Vergeer1, Dr. Lana Vanderlee1,2, Dr. Mary L’Abbé3

Affiliations: 1Department of Nutritional Sciences, University of Toronto, Toronto, Canada, 2School of Public Health and Health Systems, University of Waterloo, Waterloo, Canada

Abstract: Background/aims: Food companies strongly shape the food supply; however, little is known about voluntary commitments and subsequent actions of companies to improve the healthfulness of their products. This study aimed to compare changes in the nutritional quality of products offered by food companies in Canada with and without commitments in this area.

Methods: Building on the BIA-Obesity Canada project, 22 packaged food and beverage companies with the largest Canadian market shares were selected. In 2017, a systematic policy scan was conducted of companies’ websites and reports to identify commitments to reduce calories, sodium, saturated fat, trans fat and/or sugars in their products. Changes in median amounts of these components per 100 g (or 100 mL) in each company’s Canadian product portfolio between 2013 (n=6,735 products) and 2017 (n=8,178 products) were examined using the University of Toronto Food Label Information Program database.

Results: Sixteen of the 22 companies made reformulation commitments for calories (n=10), sodium (n=13), saturated fat (n=7), trans fat (n=10) and/or sugars (n=10). Overall, 8 companies had reductions in median calories, 14 for sodium, 6 for saturated fat, 1 for trans fat, and 13 for sugars. Of the companies with commitments: 50% (n=5) reduced median calories, 69% (n=9) reduced sodium, 57% (n=4) reduced saturated fat, 0% (n=0) reduced trans fat and 50% (n=5) reduced sugars in their products.

Conclusions: These findings highlight the inconsistent impact of voluntary commitments in prompting companies to improve the healthfulness of their products, a critical aspect of achieving responsible consumption and production (SDG 12).

Prevalence of supermarket own brand foods promoted as Australian-made

Authors: Claire E. Pulker1, Dr Gina S.A. Trapp2,3, Professor Jane A. Scott1, Dr Christina M. Pollard4

Affiliations: 1School of Public Health, Curtin University, Bentley, Australia, 2Telethon Kids Institute, The University of Western Australia, Perth, Australia, 3School of Population and Global Health, The University of Western Australia, Perth, Australia

Abstract: Background: Supermarkets hold a powerful position within the food system. Supermarket own brand foods (SOBF), a source of structural power, allow them to change suppliers and country-of-origin without alerting consumers. Public concern about country-of-origin is high amongst Australians, who regard it as an indication of sustainability. Locally sourcing foods can assure social, environmental and ethical standards have been applied, however country-of-origin for SOBF is currently unknown. This study examines the prevalence of SOBF promoted as Australian-made.

Methods: Photographic audits of 3940 SOBF in three large supermarkets (Coles, Woolworths, IGA) were conducted in Perth, Western Australia in 2017. Photographs showing front-of-packaging and shelf-edge labels were taken for each SOBF. Information on packaging and labels which promoted SOBF as Australian-made was recorded.

Results: Across all supermarkets 2428 SOBF (62%) were promoted as Australian-made, with 81% displaying the voluntary logo. Almost all prepacked fresh SOBF (98%, n=429/438) and chilled convenience SOBF (93%, n=252/271) were promoted as Australian-made. Bakery products contributed the largest number of SOBF promoted as Australian-made (75%, n=464/620). Few processed fish (2%, n=2/124), processed vegetables, legumes and fruit (16%, n=33/208), or dried fruit (19%, n=9/48) SOBF were promoted as Australian-made.

Conclusions: This audit shows that Australian-made branding is widely used on SOBF. The current focus is on sourcing fresh SOBF from Australian growers and producers, which require short supply chains to maintain acceptable food quality. Priority should now be given to sourcing processed SOBF from vulnerable food producing communities at risk of losing livelihoods, and ensuring social, environmental and ethical standards have been applied.

Limiting marketing of discretionary products enables healthier food choices in remote retail

Authors: Associate Professor Julie Brimblecombe1, Ms Khia De Silva1, Dr Megan Ferguson4, Mr Anthony Gunther2, Associate Professor Catherine Mah1, Mr Eddie Miles2, Dr Tom Wycherley4, Professor Anna Peeters5, Assistant Professor Lea Winaker6

Affiliations: 1Monash University, Melbourne, Australia, 2Menzies School of Health Research, Darwin, Australia, 3Arnhem Land Progress Aboriginal Corporation, Darwin, Australia, 4The University of Queensland, Brisbane, Australia, 5Dalhousie University, Halifax, Canada, 6University of South Australia, Adelaide, Australia, 7Deakin University, Geelong, Australia, 8University of Waterloo, Ontario, Canada

Abstract: Background: Marketing in retail strongly influences consumer choice. It determines food and drinks consumers can access, the
price, degree of convenience, and hedonic appeal. Australia’s largest Indigenous corporation (ALPA) partnered with researchers to investigate the impact on health and business-related outcomes of a 10-point ‘Healthy Stores 2020’ strategy designed to limit merchandising of discretionary food and drinks in remote community stores.

Methods: Twenty stores in very remote Australia were randomised to receive the 12-week strategy or continue usual business practice. The four top sources of free sugars in food and drinks sold (together contributing 89% of free sugars) were specifically targeted; sugar-sweetened beverages, table sugar, confectionery and sweet biscuits. The primary outcome was difference in free sugars (g/MJ) from the 12-week baseline in intervention versus control stores assessed using weekly store point-of-sale data. Longitudinal data analysis included random effects for the stores and fixed effects for the week and strategy.

Results: ‘Healthy Stores 2020’ strategy resulted in sales reductions of -2.8% (95%CI -4.8,-0.7) in free sugars (g/MJ), -8.0% in targeted drinks (-12.6% for targeted soft drinks), and -6.1% in confectionery. Stronger effect sizes were associated with improved implementation. No significant effect was shown for table sugar and sweet biscuits. No adverse impacts were shown for business outcomes.

Conclusions: ‘Healthy Stores 2020’ demonstrates that reduction in free sugars is possible through cost intervention and retailer motivation. ALPA has continued ‘Healthy Stores 2020’ further demonstrating its acceptability. This study contributes evidence on how marketing can be disincentivised to improve healthy eating.

Outcomes of a 12-month supermarket randomized controlled trial to promote healthy eating

Authors: Associate Professor Adrian Cameron1, Ms Josephine Marshall1, Ms Amy Brown2, Dr Miranda Blake1, Associate Professor Gary Sacks1, Professor Cliona Ni Mhurchu3, Professor Marj Moodie4, Professor Fabrice Etile5, Professor Boyd Swinburn6, Ms Jaithri Ananthapavan4, Ms Winsfred Ngan1, Professor Liliana Orellana6

Affiliations: 1Deakin University Global Obesity Centre, Burwood, Australia, 2City of Greater Bendigo, Bendigo, Australia, 3University of Auckland, Auckland, New Zealand, 4Deakin University Health Economics, Burwood, Australia, 5Paris School of Economics, Paris, France, 6Deakin University Biostatistics, Burwood, Australia

Abstract:
Background: Marketing techniques that modify the choice architecture in supermarkets can encourage healthy eating at a population level. This RCT tested the effect of a multi-component intervention on sales of foods from the five food groups and less healthy (discretionary) food.

Methods: Eat Well @IGA was a 12 month, government-funded, investigator-initiated RCT conducted between May 2017 and May 2018 (12 month baseline period) in 5 intervention and 6 control supermarkets in regional Victoria, Australia. Interventions included shelf tags highlighting the healthiest packaged foods (based on the Australian Health Star Rating scheme), trolley/basket/floor signs, shelf wobblers, local area promotion (flyers), social media, a public launch and in-store posters. Outcomes included change in sales of five food groups food, fruit and vegetables, shelf-tagged products and key risk nutrients purchased (energy, saturated fat, sugar, sodium).

Results: In preliminary analyses of data from 4/5 intervention stores, sales of fruit and vegetables increased by 0.54%, and sales of shelf tagged products increased by 0.55% in intervention vs. control stores between the baseline and follow-up periods (both p<0.01). These represent absolute increases of 78,000kg of fruit and vegetables, and 48,000 shelf tagged products sold in the intervention stores during the intervention. The impact on sales of five food groups food and individual nutrients will be presented (data cleaning and analysis currently underway).

Conclusions & Significance: Eat Well@IGA represents a unique partnership between industry, academia, local government and NGOs. Given the reach of supermarkets, choice architecture interventions are a promising, cost-effective approach to encouraging healthier eating.

The healthiness of food marketing in Australian supermarkets and socioeconomic position

Authors: Ms Lily Grigsby-Duffy1, Mrs Sally Schultz1, Ms Ella Robinson1, Associate Professor Adrian Cameron1, Ms Josephine Marshall1, Dr Kathryn Backholer1, Associate Professor Liliana Orellana1, Associate Professor Gary Sacks1

Affiliations: 1Deakin University, Burwood, Melbourne, Australia

Abstract:
Background: In Australia, 62% of food is purchased from supermarkets providing a key setting for improving population diet. The supermarket environment and marketing techniques in supermarkets can strongly influence purchases, but there have been no systematic assessment of the nature of Australian supermarket environments through a public health lens.

Aim: To assess the healthiness of food and beverages marketed in supermarkets, and how this differs by supermarket chain and area-level socioeconomic position in Australia.

Methods: In a cross-sectional study, 104 supermarkets were randomly selected from major cities in Victoria, stratified by area-level socioeconomic position. Stores from the largest supermarket chains in Australia (Woolworths, Coles, Aldi) and independent stores (IGA and FoodWorks) were selected. Data are being collected over three months in 2019. Stores will be audited using an adapted version of a validated tool developed by INFORMAS, which assesses marketing techniques using indicators including food availability (ratio of cumulative linear shelf length for unhealthy/healthy products), prominence

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(proportion of checkouts, end of aisles, and island bins with unhealthy/healthy products), and promotion (proportion and magnitude of price promotions on unhealthy/healthy products at prominent areas).

**Results:** Availability, prominence, and promotion of healthy versus unhealthy foods/beverages will be compared between supermarket chains and by area-level socioeconomic position (data available from October 2019).

**Conclusions:** Our findings will comprehensively demonstrate the degree to which marketing techniques in Australian supermarkets are targeted toward less healthy products. This will provide evidence to inform interventions and/or policy changes that support the development of healthy, equitable supermarket food environments.

**Mapping factors associated with shifts towards healthier food retail: a systems approach**

**Authors:** Dr Tara Boelsen-Robinson1, Dr Miranda Blake1, Mr Andrew Brown1, Mr Oliver Huse1, Associate Professor Claire Palermo1, Mrs Neetu George1, Professor Anna Peeters1

**Affiliations:** 1Deakin University, Geelong, Australia, 2Monash University, Clayton, Australia

**Abstract:**

**Background/aims:** Food retailers in community settings are gatekeepers to the crucial food systems changes needed to improve population nutrition. While barriers and enablers to changing food retail environments have been identified, evaluations commonly assume linear and simplistic cause-and-effect mechanisms. Systems thinking offers unique insights by capturing unintended consequences and alternative pathways to success. This study aimed to create a causal map of factors associated with the successful implementation of healthy food retail initiatives in order to identify points of intervention for public health practitioners.

**Methods:** Semi-structured interviews (n=26) were conducted across four community food retail outlets where health-promoting initiatives had been implemented. Interviews were coded by identifying causal relationships and their direction between factors. Vensim software was used to merge interview results and reduce the map to the most salient factors and relationships. Prominent illustrative implementation stories and points of intervention were identified.

**Results:** Five prominent implementation stories incorporating 13 variables highlighted; 1) strongest retailer resistance to change occurs initially but demonstrating positive initiative outcomes increases willingness to engage in further changes; 2) successive changes are increasingly complex, reducing retailers’ capacity to implement them; 3) organisational resourcing can be influenced through multiple leverage points; 4) customer acceptability of healthy changes and retailers’ willingness to engage in healthy changes influence each other; 5) challenges in accessing healthy supply options limit retailer engagement in implementing changes.

**Conclusion:** These findings provide a preliminary conceptual map to understand how to influence retail environments to provide healthy choices and encourage better nutrition for all ages.

**Effects of a Shelf-Placement Intervention on Sales of Healthier Supermarket Food Products**

**Authors:** Dr Cliona Ni Mhurchu1, Dr Leanne Young1, Ms Magda Rosin1, Dr Yannan Jiang1, Ms Jacqui Grey1, Dr Stefanie Vandevijvere1, Dr Wilma Waterlander1

**Affiliations:** 1University Of Auckland, Auckland, New Zealand, 2Scientific Institute of Public Health (Sciensano), Brussels, Belgium, 3University of Amsterdam, Amsterdam, The Netherlands

Supermarkets are important settings for dietary interventions and there is growing evidence that in-store interventions, such as signage and price discounts on healthier foods, can be effective. However, often research interventions are not rolled out in the real world because they are not cost-effective for the retailer. A New Zealand retailer-academic collaboration aimed to co-design commercially sustainable strategies to increase sales of healthier foods relative to less healthy foods in a major supermarket chain. Two co-design workshops were held, led by an experienced facilitator and involving supermarket corporate strategy team members and public health nutrition academics. Potential interventions were mapped against choice architecture evidence frameworks and retailer strategic priorities before one intervention, more prominent shelf placement of healthier products, was selected for evaluation. A 12-week trial was undertaken in six supermarket stores (3 intervention and 3 control stores) April-July 2019. Products in a single selected category were ranked by healthiness (nutrient levels and nutrient profile), and their shelf placement was altered in intervention stores so that healthier products were placed at eye level and less healthy products were placed on lower shelves. No changes were made to shelf layout in matched control stores. The primary outcome of interest is change in sales of healthier products relative to total category sales. Other outcomes of interest include the nutritional composition of breakfast cereal sales, shopper feedback, and retailer perspectives. The intervention phase will finish in July 2019 and full results will be presented at the WCPHN conference.

**Can point-of-sale nutrition information and health-warnings promote healthier drink choices among adults?**

**Authors:** Assoc. Prof. Helen Dixon1,2,3, Ms. Maree Scully1, Dr. Belinda Morley1, Prof. Melanie Wakefield1,2

**Affiliations:** 1Centre for Behavioural Research in Cancer, Cancer Council Victoria, Melbourne, Australia, 2Melbourne School of Psychological Sciences, The University of Melbourne, Parkville, Australia, 3School of Psychology, Faculty of Health Sciences, Curtin University, Bentley, Australia

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Abstract:
Background/Aims: Point-of-sale (POS) interventions could encourage reduced consumption of sugary drinks and reinforce public health campaign messages. This study tested whether: (i) POS information about nutrition and health effects of sugary drinks promotes healthier drink choices and (ii) impacts of POS information on drink choices vary based on whether participants have been exposed to a new sugary drink public health campaign.

Methods: Online experiment where N=3,034 Australian adults (~50% Victorian) aged 18 to 59 years were randomly assigned to one of five POS signage conditions (no signage [control]; sugar content; Health Star Rating; text health warning; graphic health warning) and shown their randomly assigned POS sign alone, then alongside a drinks product display and asked to select which drink they would choose to buy. Lastly, participants’ perceptions of various drink products were assessed.

Results: The proportion of participants selecting a sugary drink was significantly lower among those who viewed one of the POS signs (25%-37%) compared to those who had seen no sign (43%), especially for those who viewed the sugar content sign. These effects held for participants not previously exposed to the campaign; however, for participants who had previously seen the campaign, POS signs did not promote significant reductions in sugary drink choices over and above what exposure to the campaign provided.

Conclusion: POS signage has the potential to shift consumers away from choosing sugary drinks and could complement mass media campaigns by reaching people who may not otherwise be exposed to public health messages about sugary drinks.

Independent food outlets escape energy-labeling but contribute more to deleterious nutrient intakes

Authors: Ms Lyndal Wellard-Cole1, Ms Alyse Davies1, Ms Wendy Watson2, Dr Juliana Chen1, Ms Clare Hughes2, Associate Professor Anna Rangan1, Prof Margaret Allman-Farinelli1

Affiliations: 1Charles Perkins Centre, University of Sydney, Australia, 2Cancer Council NSW, Woolloomooloo, Australia

Abstract: Background and aim: Many states have introduced compulsory menu labeling of energy content of foods if the outlet has 20 or more stores within a state. However, the limited reach of the program may restrict its usefulness in improving population diets. The aim of this study was to assess the proportion of energy and nutrients of public health concern contributed by independent outlets versus menu-labeling.

Method: We recruited 18 to 30 year-olds across NSW, Australia to participate in a cross-sectional study of dietary intakes. Using our purpose-designed and validated smartphone app participants recorded all food and beverages consumed over three consecutive days including location from which the foods were obtained. The proportion of energy, saturated fat, sugars and sodium from foods and beverages prepared at home and outside of home were calculated and further subdivided into food and beverages from independent and menu-labeling chains. Nutrient proportions for independent versus chain outlets were compared using t-tests.

Results: One thousand and one young adults participated. Food and beverages prepared outside the home accounted for 25% of eating occasions. Independent restaurants contributed significantly more to nutrient intakes than menu-labeling chains accounting for 23.6% (SE 0.7) versus 18.7% (SE 0.6) of energy, 24% (SE 0.7) versus 19.0% (0.6) of saturated fat 20.4% (0.7) versus 19.3% (0.7) of sugars, and 25.3% (0.7) versus 21.9% (0.7) of sodium (P<0.001 in all cases).

Conclusion: The reach of energy-labeling may need to be extended to better inform the public about their food choices.

Characteristics and nutritional analysis of meals from a subscription-based meal kit service

Authors: Dr Carly Moores1, Dr Lucy Bell1, Mr Michael Buckingham1, Dr Kacie Dickinson1

Affiliations: 1Nutrition and Dietetics, College of Nursing and Health Sciences, Flinders University, Adelaide, Australia

Abstract: Meal kits are a growing contemporary source of food as individuals and families seek convenient solutions to prepare meals at home, however their nutritional profile has not been previously reported. This study aimed to assess the characteristics and nutritional composition of meals offered by a subscription meal kit service. Available nutrition information and characteristics were extracted as reported from HelloFresh meal kits available to order in Australia from 1 July 2017 to 30 June 2018. In total, 346 (250 unique) recipes were available during the study period. The median hands on and total preparation time was 25 and 35 minutes, respectively. Meal kits provided a median of 9 ingredients, of which 3 (33%) were vegetables. Per serve (median size 578g), meals contained a median of 2840kJ (678kcal) of energy, 58g carbohydrate (14g sugar), 44g protein, 29g total fat (8g saturated fat), and 851mg sodium. Suggested serves of several meal kit recipes (8%) exceeded the suggested dietary target for sodium (2000 mg/day). Further analysis is required to compare macronutrient composition of recipes with the macronutrient distribution for home cooking and convenience alternatives at evening meal times. Micronutrients other than sodium and fibre content of these meal kit recipes was not reported and should be explored. With their growing popularity, meal kit services have the capacity to influence consumer diets and population health. It is important for health professionals to understand the nutritional risks, benefits, and hence suitability of this contemporary meal time option before recommending them to members of the public.
6G – Government policy leadership for equity, food security and nutrition
Rapid Fire Presentations

Review of nutrition policy actions in developed economies 2002-2013
Authors: Lisa-Maree Herron1, Amanda Lee
Affiliations: 1Division of Health Equity and Promotion, UQ School of Public Health, Brisbane, Australia

Abstract:
Aim: Nutrition policy actions are required urgently to tackle malnutrition. This systematic review assessed actions in nutrition policies in developed economies.

Methods: Peer-reviewed and grey literature was searched for nutrition policies of OECD members, 2002 to 2013. Policy actions were mapped against the NOURISHING Framework, classified, tallied and analysed.

Results: 23 documents for 17 countries and two regions were identified. The vast majority of policy actions centred on behaviour change communication, with all policies promoting consumption of healthy foods, but <25% focussed on unhealthy foods. Half the policies included actions in the food system domain; all at local level. In the food environment domain, most included food labelling (84%) and product reformulation (63%). Many included provision of healthy foods in public institutions, mainly schools (89%), and restricting food advertising/promotion (53%), predominantly through voluntary codes. Less than half included policy actions in retail; all promoted healthy foods. Few reported economic policy actions: 16% included subsidies and only 11% taxed unhealthy foods/drinks. No documents covered >75% of potential policy domains, and only two included >75% of the potential areas to limit unhealthy foods. Not all policy actions were covered by the NOURISHING framework. The most comprehensive nutrition policies excluded those with vested interests from policy development processes.

Conclusions: There was limited policy action and little focus on reducing intake of unhealthy food/drinks. Therefore it is unsurprising that rates of diet-related disease were increasing in most developed economies up to 2013. Results provide a baseline to review scope and policy implementation over time.

The representation of equity in nutrition-related policy documents from high-income nations
Authors: Ms Christina Zorbas1, A/Prof Claire Palermo2, Dr Phil Baker3, Ms Alexandra Chung4, Ms Erica Reeve1, Professor Anna Peeters1, Dr Jennifer Browne1, Dr Kathryn Backholer1
Affiliations: 1Global Obesity Centre, Institute for Health Transformation, School of Health and Social Development, Faculty of Health, Deakin University, Geelong, Australia, 2Department of Nutrition, Dietetics and Food, Monash University, Melbourne, Australia, 3Institute of Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Faculty of Health, Deakin University, Melbourne, Australia, 4School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

Abstract:
Background: Equity is integral to improving nutritional health for all, and therefore should be embedded in government food and nutrition policies. It is presently unclear how government food and nutrition-related strategies problematize and seek to address social and socioeconomic inequalities in population diets. We aimed to address these research gaps.

Methods: A document analysis of purposively sampled government nutrition and obesity-prevention strategies from high-income Organisation for Economic Cooperation and Development nations, was conducted. Documents were retrieved from the World Health Organization’s nutrition action database and government websites. Thematic analysis of policy document content was inductively undertaken. Bacchi’s ‘What’s the problem represented to be?’ analysis framework was adapted to interpretively analyse how equity is framed in nutrition problems and policy solutions.

Results: Forty-three policy documents were retrieved (n=20 countries; 1992-2018). Social and socioeconomic inequalities in nutrition-related health were largely represented as social justice and human rights issues involving high-risk or vulnerable subgroups (e.g. low-income and Indigenous communities) rather than populations across a gradient. Despite consistent recognition of the problem, the underlying structural drivers of nutritional inequalities were scarcely addressed. Information, education and settings-based approaches predominated policy solutions, whereas structural actions (e.g. fiscal interventions) were rare.

Conclusions: Whilst overarching nutrition strategies in many countries acknowledge the importance of equity, few demonstrate how equity can be sufficiently embedded in solutions. Without political commitment towards equitable nutrition action, it is unlikely that there will be advancement in reducing inequalities in nutrition and obesity (and thus achieving Sustainable Development Goals 3 and 10).
The effects of food policy actions on First Peoples’ nutrition and health

Authors: Dr Jennifer Browne1, Dr Mark Lock1,2, Mr Troy Walker1, Ms Mikaela Egan3, Dr Kathryn Backholer2

Affiliations: 1Deakin University, Geelong, Australia, 2Commitix Pty. Ltd., Newcastle, Australia, 3Victorian Aboriginal Community Controlled Health Organisation, Melbourne, Australia

Abstract: Background: First Peoples worldwide experience unacceptable health disparities with undernutrition and food insecurity often coexisting with obesity and chronic diseases. In order to eliminate malnutrition in all its forms, multi-level, population-wide, policies are required. However, the impact of such policies on First Peoples is unknown. We synthesised evidence on the effectiveness of food policy actions on First Peoples’ diets and nutrition-related health outcomes.

Methods: Eight databases were searched for grey literature. Studies were included if they quantitatively examined the impact of a food policy (local, state or national) on Indigenous health behaviours, nutritional status or health outcomes in any country. Most research was undertaken in Indigenous settings (e.g. schools, stores). Mandatory food fortification appears to reduce inequalities. We did not identify any studies examining the impact of other population-wide food policies on First Peoples’ health.

Conclusions: The likely impact of population food policies on First Peoples’ nutrition and health is currently unclear. This information will be essential to understand how to achieve the SDGs on improving nutrition and reducing inequalities.

A critical analysis of equity in Australian childhood obesity policy

Authors: Mrs Alexandra Chung1, Prof Anna Peeters2, Dr Jennifer Browne1, Ms Christina Zorbas3, Dr Kathryn Backholer2

Affiliations: 1Monash University, Melbourne, Australia, 2Deakin University, Geelong, Australia

Abstract: Background: In Australia, childhood obesity follows a socioeconomic gradient. A multicomponent policy-driven response is required to reduce obesity and inequities, however political commitment is concerning. Problem framing dictates the policy response, yet little is known about how childhood obesity is framed in Australian health policy, including the extent to which equity is considered.

Methods: Australian federal and state health policy and strategy documents with an entire focus or dedicated section on childhood obesity, published between 2000 and 2019, were included (n=16). Thematic analysis, informed by Bacchi’s What’s the Problem Approach (1) and Whitehead and Dahlgren’s Concepts and Principles for Tackling Social Inequities in Health (2), identified dominant frames in childhood obesity representations in Australian health policy.

Results: The dominant frame portrayed childhood obesity as a problem of individual behaviour, with solutions focused on improving children’s diets and increasing physical activity. A minority represented childhood obesity as a societal issue driven by environmental factors. Despite a number of documents mentioning equity, childhood obesity was seldom framed as an equity issue. Specific recommendations to reduce obesity inequities were limited.

Conclusions: Deliberate actions to reduce inequities in childhood obesity are required to progress towards the Sustainable Development Goal of equitably promoting nutrition-related health, however this unlikely without a reframing of childhood obesity in Australian health policy.

A regional initiative to facilitate evidence-informed food policymaking in the Pacific Islands

Authors: Ms Erica Reeves1, Dr Jacqui Webster2, Prof Colin Bell3, Dr Anne Marie Thow4

Affiliations: 1Global Obesity Centre, Deakin University, Geelong, Australia, 2Public Health Advocacy and Policy Impact, The George Institute for Global Health, UNSW, Sydney, Australia, 3Menzies Centre for Health Policy, University of Sydney, Sydney, Australia

Abstract: Background: Pacific Island Countries suffer from some of the highest rates of NCDs, accounting for over 70% of all deaths in the Region. The rapid transition from traditional diets towards a modern pattern of eating has contributed to a persistent double-burden of malnutrition. The aim of this work was to support five countries towards achieving their national food and nutrition policy priorities through evidence-informed policy development.

Method: The research team took an action-oriented approach so we could engage in the needs of policy stakeholders and produce outputs tailored to country level. We used policy analysis, quantitative analysis of locally consumption data, and economic modelling of a range of policy scenarios to support priority setting processes for the leading health agency in each country. Analyses identified a range of targeted food policy responses and contextualised implementation processes.
**Results:** Analyses were shaped into policy packages to meet the needs of policymakers and leaders in each country, and these were used to underpin multisectoral food policy dialogue. In Fiji for example, analysis included modelling of a comprehensive suite of food policies, and resulted in a high-level food policy dialogue and adoption of new food security strategy. In the Solomon Islands, the policy output was used by Ministers to advocate the adoption of an SSB tax in Cabinet.

**Conclusions:** The work demonstrated the utility of an action-oriented research response to real-time policy problems. The collaboration is ongoing, demonstrating the value of partnership between research institutions and policymakers.

**Are fruit and vegetable policies coherent in Argentina?**

**Authors:** PhD Luciana Castronuovo1, MPH Lorena Allemandi2, MPH Victoria Tiscornia1, LLD Belén Ríos1, Bs Leila Guarnieri1, MsC Gabriel Giacobone1, JD Berenice Cerra1

**Affiliations:** 1Fic Argentina, Ciudad De Buenos Aires, Argentina

**Abstract:**

**Background/aims:** Policy coherence is part of the global agenda in order to achieve public health policies and develop sustainable food systems. Although, some tools for measuring policy coherence has been developed, no prior methodological approaches have been identified in public health policies. The aim of this study is to contribute to coherence between agri-food policies and policies to increase the consumption of fruits and vegetables for the prevention of NCDs in Argentina.

**Methods:** The analysis included primary and secondary data: policy mapping, perceptions and opinions of stakeholders, consumers opinions and perceptions and the fruit and vegetable value chain analysis. The main constituents of the food systems were considered: 1. The food supply chain, 2. The food environment, and 3. Consumer behaviour. Then we focused on the analysis of policy coherence between agrifood policies and health policies to promote fruit and vegetable consumption. A scoring system was developed.

**Results:** All the policies are potentially enabling but do not have any significant positive interactions for the consumption of fruits and vegetables. In a context where policies are not fully implemented, do not have clear objectives and there are not enough coordination mechanisms, policy coherence may be more difficult to achieve. In the Argentinian context, this is a very relevant aspect.

**Conclusions:** The Sustainable Development Goals adopted by the members of the United Nations in 2015 call for policy coherence across different development objectives, including nutrition. Developing tools to measure policy coherence is an essential step to assess the progress in this goal.

**Keep Queenslanders healthy – working across government to support healthy weight**

**Authors:** Ms Deanne Wooden1, Ms Elizabeth Good1, Mr Roger Meany1, Mr Mathew Dick1, Dr Simone Nalatu4, Ms Heather Perina1

**Affiliations:** 1Queensland Department of Health, Herston, Australia

**Abstract:**

**Background:** The Queensland Government Our Future State Advancing Queensland’s Priorities is a statement of the Government’s objectives for the community. The intent is to tackle the most important priorities and hardest challenges. Keep Queenslanders healthy is one of these and the statement includes an ambitious target of increasing the proportion of adults and children with a healthy body weight by 10% by 2026.

**Method:** Roadmaps to achieve these objectives were developed using an assessment of existing initiatives with potential for escalation and impact. Selection criteria included: initiatives within sphere of government control, supported by evidence, and opportunities to use big levers - such as government spend and the public-sector workforce. Identified actions include: healthy food and drink in Government settings; healthy food in remote Indigenous communities; and replacing sugary drink and junk food advertising on government-owned advertising spaces.

**Results:** A focus on Government leadership and collaboration has delivered better outcomes, faster. The Queensland Government has announced its decision to ensure that only healthier food and drink is permitted to be advertised on all government-owned advertising spaces. Scoping work is underway to increase healthy food and drink choices in Government facilities, along with work with cross-sector partners to address food insecurity in remote Aboriginal and Torres Strait Islander communities.

**Conclusion:** The Roadmap acknowledges that many of the causes of unhealthy weight lie outside the health system and cross-agency collaboration is imperative in meeting healthy weight targets. The agreed whole-of-government actions will make a tangible difference to creating supportive environments for nutrition.

**A tale of two departments– strengthening sport and recreation’s healthy eating agenda**

**Authors:** Ms Sharon Laurence1, Mr Philip Saikaly2, Ms Veronica Graham1, Ms Jessica Kempler3, Ms Kate Wilkinson1

**Affiliations:** 1Department of Health and Human Services, Melbourne, Australia, 2Sport and Recreation Victoria, Melbourne, Australia
Abstract:

Background: The Victorian Department of Health and Human Services (DHHS) introduced the Healthy choices: policy guidelines for sport and recreation centres in 2014 to improve the provision and promotion of healthy foods and drinks within sport and recreation facilities.

Historically, the sport and recreation sector has had a limited focus on healthy eating. Leisure facilities largely supply unhealthy foods and drinks, undermining messages about the importance of healthy eating in supporting healthy active lifestyles.

Methods: The identification of healthy eating in the Victorian State Public Health and Wellbeing Plan 2015-2019 provided the policy driver for DHHS to engage with Sport and Recreation Victoria (SRV). This was strengthened by seconding a nutrition position within SRV’s organisational structure. Implementation support provided though the Healthy Eating Advisory Service has been critical to the uptake of Healthy Choices at the local government level.

Results:

Key achievements have included:

• Healthy Choices requirements put into assessment criteria for SRV’s community infrastructure funding.
• Healthy food initiatives integrated as part of a long term agreement between the State and the Australian Football League.
• More than 160 sport, recreation and aquatic facilities implementing Healthy Choices across their retail food outlets, vending machines and catering services.

Conclusions: DHHS has received commitment from SRV to include Healthy Choices in programs and initiatives ongoing, furthering a shared vision and policy coherence between agencies. This example demonstrates that a non-health government department can show leadership and governance in promoting healthy eating environments and make a significant contribution to obesity prevention.

Early prevention of childhood obesity across Australian jurisdictions

Authors: Ms Emma Esdaile¹, Professor Louise Baur¹, Associate Professor Li Ming Wen¹,², Professor Chris Rissel¹,³, Associate Professor James Gillespie¹

Affiliations: ¹University Of Sydney, Camperdown, Australia, ²Sydney Local Health District, Camperdown, Australia, ³Office of Preventive Health, Liverpool, Australia

Abstract:

Background: The WHO Ending Childhood Obesity Report identifies the complexity of the problem and actions for governments to take in order to support families, settings and communities. It recognises the importance of developing environments in which parents can make healthy choices for the growth and development of their children. To date in Australia, we do not have a clear picture of the policies to prevent childhood obesity in the early years across Australian jurisdictions.

Methods: Policies relating to the early prevention of obesity were mapped across Australia’s jurisdictions, followed by interviews with health department bureaucrats engaged in this policy space. In total there were ten participants and interviews ranged from 43-95 minutes. Thematic analysis was undertaken using NVivo software.

Results: Health bureaucrats within Australian jurisdictions consider childhood obesity a priority which they are responding to using a diverse range of policy tools. For example, some states have used regulatory changes to impact on the food and physical activity environments, while others use procurement contracts, or funding positions outside of health to progress their aims. All state/territory governments offer programs to support parents or the childcare sector, with differences in implementation. Many of the policy tools available to address upstream determinants of obesity exist beyond health and require leadership from government to implement.

Conclusions: The levers to address childhood obesity occur at every level of government and include both programmatic and structural changes. Identifying who is responsible for each component requires a long-term partnership between Australia’s jurisdictions.
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