or possible in public health. Further, decision-makers can lack an understanding of the different types of evidence that might inform decision-making in these more complex areas hence may dismiss evidence considered less 'strong' according to traditional evidence hierarchies. Systematic reviews of randomised, controlled 'trials' are still hailed as the gold standard despite them rarely providing answers to broad public health policy questions.

The lack of consensus on an evidence grading system within the public health domain further stymies the synthesis and translation of evidence. Existing schemas and typologies differ in the criteria used to appraise individual studies and to grade overall bodies of evidence. They differ also in the text descriptors used for communicating the 'strength' of evidence.

In this presentation I describe the challenges encountered in synthesising, appraising and communicating the complex, diverse evidence base with respect to the retail, pricing and promotion domains of the food environment, to inform government decision-making. An extensive dialogue between the reviewer and government was required to find solutions to these challenges. The tabulated summaries of evidence will be presented and discussed to illustrate the identified solutions in this instance.

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The effect on beverage sales of removal of unhealthy beverages from display in a self-service café

Oliver Huse[2,3,1,*], Miranda Blake[2,3,1], Ruby Brooks[3,4], Kirstan Corben[5], Anna Peeters[3,1]

[1] *School of Health and Social Development, Deakin University, Geelong, Victoria, Australia*
[2] *School of Public Health and Preventative medicine, Monash University, Clayton, Victoria, Australia*
[3] *Clinical Diabetes and Epidemiology, Baker IDI Heart and Diabetes Institute, Prahran, Victoria, Australia*
[4] *Department of Nutrition and Dietetics, Monash University, Clayton, Victoria, Australia*
[5] *Population Health, Alfred Health, Melbourne, Victoria, Australia*

Objectives: Compelling evidence suggests that consumption of unhealthy drinks is associated with weight gain and an increased risk of a number of adverse health outcomes [1,2]. This study assessed the impact of the removal of unhealthy beverages from display by the retailer at a self-service café within a major health service.

Methodology: Beverages were categorised based on a state government nutrient profiling system, which classifies beverages as 'green' (best choices), 'amber' (choose carefully) and 'red' (limit). The total sales (as number of items sold per week) of beverages in the café were measured for five weeks prior to strategy implementation and for another six weeks after removal of all red beverages from self-service display (which were still available for purchase on request). *T*-tests were used to compare mean total beverage sales and sales of red, amber and green beverages, pre- and post-strategy implementation.

Results: After strategy implementation, the proportion of red beverages sold decreased significantly from 34% to 10% of total beverage sales ($P < 0.001$). As amber and green beverage sales increased after strategy implementation, mean total weekly beverage sales did not significantly change ($P = 0.78$). Consumers appeared to more readily switch from purchasing red beverages to purchasing amber beverages, rather than green beverages (the healthiest option).

Conclusions: The removal of unhealthy beverages from display can result in consumers making healthier purchases, while not significantly affecting retailer sales.

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Import duty of palm oil: A case study of policy making in Fiji

Jeremaia J.C. Coriakula[1,*], Marj M.M. Moodie[2], Wendy W.S. Snowdon[3], Gade G.W. Waqa[1], Catherine C.L. Latu[1], Colin C.B. Bell[3]

[1] *Pacific Research Center for the Prevention of Obesity and Non-Communicable Disease (C-POND), Fiji National University, Suva, Central Division, Fiji*
[2] *Deakin Health Economics, Deakin University, Melbourne, Victoria, Australia*
[3] *WHO Collaborating Centre for Obesity Prevention, Centre for Population Health Research, Deakin University, Geelong, Victoria, Australia*

Background: Non-communicable diseases (NCD) impose a significant burden on Fiji. Food-related policies designed to curb NCDs have been implemented in Fiji, including a 32% increase in palm oil import duty (2012). Studying the development and implementation of such policies should provide valuable insights on policy making process and its effectiveness.

Aim: To analyse the development and implementation of the palm oil import duty policy in Fiji. More specifically, to document the policy process, identify barriers and facilitators during implementation and to examine the impact of the new import duty.

Methods: Based on a case study approach, data were collected through key informant interviews with private stakeholders, government officials and supermarket managers. Transcripts were analysed thematically. National import data and prices were analysed for the 2010—2014 period.

Results: Facilitators to policy implementation included awareness, preparation of a comprehensive policy briefing paper, and inter-sectorial support and leadership. Barriers included counter lobbying from retailers and the political environment. Import volume abruptly declined after the policy was implemented in 2012. The decrease in availability of palm oil as a result of the price rise was encouraging. However this was counteracted to some extent by industry moves to mislabel the product as vegetable oil.

Discussion: Potential unintended side-effects of policy changes need to be considered and addressed during policy formulation. Whilst the decline in imports probably decreased consumption, further research is needed to determine if this translated to a population wide reduction in NCD risk.

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Invited talk: Impact of sugar — Brain, gut and beyond

Margaret Morris

University of NSW, Sydney, NSW, Australia

There is much public debate around the detrimental impact of sugar, particularly in the form of sweetened beverages, to overall health. We investigated the impact of chronic sucrose post-weaning on hippocampal genes related to plasticity, neurogenesis, stress responses and mitochondrial biogenesis. Female rats were provided with chow and 30% sucrose (in addition to water) to drink from weaning, and hippocampus was collected at 13 weeks. Control rats drank water. Sucrose intake was associated with marked reductions in expression of genes related to neurogenesis (Reln, Neurod1, Gsk3a) and mitochondrial biogenesis (Pgc-1α, Nrf-1). Expression of markers related to the stress response (GR, Homer 1) was also downregulated. Thus chronic sucrose consumption impacted an array of genes that govern development, and emotional and other brain functions.

We have shown in rats that both high fat, and high sugar, diets can impair hippocampal dependent behaviours, even after short-term exposure. Similar deficits are seen in young men exposed to poor diet for less than one week. Potential mechanisms underlying the cognitive deficits include neuroinflammation, changes in brain neurotrophic factors,