Australian Government
Australian Research Council

EI 2018 ENGAGEMENT AND IMPACT

Engagement and Impact 2018

Deakin University

DKN11-PHS (HLS) - Impact

Overview

Title

(Title of the impact study)

Taking a strategic approach to solving the complex problem of preventing obesity

Unit of Assessment

11 - Medical and Health Sciences

Additional FoR codes

(Identify up to two additional two-digit FoRs that relate to the overall content of the impact study.)

Socio-Economic Objective (SEO) Codes

(Choose from the list of two-digit SEO codes that are relevant to the impact study.)

92 - Health

Australian and New Zealand Standard Industrial Classification (ANZSIC) Codes

(Choose from the list of two-digit ANZSIC codes that are relevant to the impact study.)

45 - Food and Beverage Services
82 - Adult, Community and Other Education
85 - Medical and Other Health Care Services
91 - Sports and Recreation Activities

Keywords

(List up to 10 keywords related to the impact described in Part A.)

Community intervention

Eating behaviour

Obesity prevention

Physical activity levels

Systems thinking

Sensitivities

Commercially sensitive

No

Culturally sensitive

No

Sensitivities description

(Please describe any sensitivities in relation to the impact study that need to be considered, including any particular instructions for ARC staff or assessors, or for the impact study to be made publicly available after EI 2018.)

Aboriginal and Torres Strait Islander research flag

(Is this impact study associated with Aboriginal and Torres Strait Islander content?
NOTE - institutions may identify impact studies where the impact, associated research and/or approach to impact relates to Aboriginal and Torres Strait Islander peoples, nations, communities, language, place, culture and knowledges and/or is undertaken with Aboriginal and Torres Strait Islander peoples, nations, and/or communities.)

No

Science and Research Priorities

(Does this impact study fall within one or more of the Science and Research Priorities?)

Yes

Science and Research Priority	**Practical Research Challenge**
Health	Better models of health care and services that improve outcomes, reduce disparities for disadvantaged and vulnerable groups, increase efficiency and provide greater value for a given expenditure.

Impact

Summary of the impact

(Briefly describe the specific impact in simple, clear English. This will enable the general community to understand the impact of the research.)

According to the Australian Health Survey, the prevalence of overweight and obesity in 2014-15 was 27% among children and adolescents - among the highest rates in the world. The research team at Deakin's Global Obesity Centre (GLOBE) focussed its work on strategies for reducing the prevalence of overweight and obesity.

GLOBE's work, which includes new ways to help communities understand the drivers of obesity (and other complex social problems) and use that knowledge for intervention, has led to reductions in childhood obesity prevalence in the ACT and Victoria. It has also shaped policy guidance provided by the World Health Organization, including tools to help national governments develop policies for creating healthier food environments.

Beneficiaries

(List up to 10 beneficiaries related to the impact study)

ACT Health

Department of Health and Human Services Victoria

Great Southern Coast Region of Victoria

Lancet Commission on Obesity

World Health Organisation (WHO)

Countries in which the impact occurred

(Search the list of countries and add as many as relate to the location of the impact)

Australia
New Zealand
Fiji

Details of the impact

(Provide a narrative that clearly outlines the research impact. The narrative should explain the relationship between the associated research and the impact. It should also identify the contribution the research has made beyond academia, including:
- who or what has benefitted from the results of the research (this should identify relevant research end-users, or beneficiaries from industry, the community, government, wider public etc.)
- the nature or type of impact and how the research made a social, economic, cultural, and/or environmental impact
- the extent of the impact (with specific references to appropriate evidence, such as cost-benefit-analysis, quantity of

those affected, reported benefits etc.)
- the dates and time period in which the impact occurred.

NOTE - the narrative must describe only impact that has occurred within the reference period, and must not make aspirational claims.)

Led by Professor Steven Allender, the research team at Deakin's Global Obesity Centre (GLOBE) conducted a number of large-scale intervention studies between 2011 and 2016 aiming to improve approaches to obesity prevention in children and adolescents. Previous approaches manipulating a single factor contributing to obesity prevalence at a time, such as walking to school and food education and media campaigns, had repeatedly failed. By using systems-thinking to develop more complex approaches to this wicked problem, GLOBE research benefited individuals and communities by reducing childhood obesity prevalence in the ACT and Victoria, and also shaped policy guidance provided by the World Health Organization.

GLOBE began developing multi-faceted approaches to preventing obesity early in the research reference period and conducted the intervention trials `Be Active Eat Well' (2003-2006) and `Romp & Chomp' (2004-2008) in Geelong. Evaluation studies reported that the trials led to lower weight gain and waist growth amongst children in the target community. Importantly, these effects persisted for up to 3 years after the intervention and proved the effectiveness of complex thinking in childhood obesity prevention (VicHealth, 2009; de Silva-Sanigorski et al., 2010; Swinburn et al., 2012).

Building on these successes, GLOBE started using systems-based thinking for community-based obesity prevention programs in 2011 and has since developed its comprehensive methodology. Systems-based thinking recognises that complex problems are the result of a multitude of factors that feed back into and influence each another in complicated ways.

In 2012, GLOBE worked with researchers across Deakin, including programmers at the Institute for Intelligent Systems Research and Innovation, to build tools that make systems thinking easy for people in the community. This included developing software that can be used to map the recognised drivers of complex social problems and identify ideal points for intervention. The software - Systems Thinking in Community Knowledge Exchange (STICKE) - which was informed by outcomes of the workshops with the Geelong (Victoria) community mentioned above, was designed to capture a shared understanding of the drivers of childhood obesity and identify ideal interventions.

An early version of the STICKE tool was used in the Australian Capital Territory 'It's Your Move' (ACT-IYM) project, which was jointly conducted by GLOBE and the ACT health department between 2012 and 2014. Six ACT schools were selected to participate in the project. The project implemented multiple changes to facilitate healthier lifestyles, such as amending school food policy, role modelling by teachers and new technologies to help children track food and activity behaviours, among other measures. A further nine ACT high schools took up the `It's Your Move' program in the first half of 2016 (ACT Government media release, 5 August 2016). A territory-wide roll-out of the program was an election promise from ACT Labor; which was successfully elected in October 2016.

Results of the project showed clear, measurable health and social impacts on children in the schools receiving interventions, with reductions in the percentage of overweight and obesity. Further, signs and symptoms of depression were reduced in groups where mental well-being was a focus of the interventions (Malakellis et al., 2017).

During 2011-2012, GLOBE worked with the ACT's Department of Health using STICKE to map all possible causes leading to obesity in the community, including food, physical activity and sedentary behaviour, and to identify actions to prevent obesity. The ACT Government used the results from this work in their 2013 Healthy Weight Strategy, which was implemented in all ACT Schools. The Strategy included active travel to school, improving the healthiness of food and drinks for sale at school canteens, building physical activity into the school day and encouraging students to get involved in healthier behaviours.

STICKE was used for two community projects in Victoria: SeaChange Portland (which began in 2015) and Genr8Change Southern Grampians (which began in 2016). The projects included obesity intervention methods ranging from banning sugar-sweetened beverages at health services across South West Victoria in 2016, to improving water provision as an alternative beverage in Portland and Hamilton from 2015 onwards.

In 2016, to two GLOBE researchers were invited by the World Health Organisation (WHO) to its Western Pacific Region workshop in 2016, where they trained the region's health leaders to use STICKE in national nutrition planning. In one illustrative example of the impact of this training, government officials, health practitioners and community leaders in Fiji used the learnt techniques to work with senior policymakers from the Ministry of Health and Medical Services and the Ministry of Agriculture and developed and implemented an action plan for preventing chronic disease and improving food systems. The process also led to the Fijian Ministry of Health producing strategic health communication messages for the general population to balance industry's influence on consumer food choices in 2016.

GLOBE researchers led the development of multiple WHO reports (Sacks et al., 2012) related to obesity prevention, co-authored with international policy makers from the WHO. These reports were used by the WHO in workshops held in 2012 and 2013 across 5 WHO regions, to help develop national obesity prevention strategies.

Measuring economic benefit was beyond the scope of these health-focussed studies or activities. Nonetheless,

reductions in obesity have significant economic impacts. Studies estimated that obese children cost an additional $367 per child per year (2016 values) compared to healthy weight children, which translates to an annual cost of approximately $17 million to the Australian health care system (Brown et al., 2017).

Associated research

(Briefly describe the research that led to the impact presented for the UoA. The research must meet the definition of research in Section 1.9 of the EI 2018 Submission Guidelines. The description should include details of:
- what was researched
- when the research occurred
- who conducted the research and what is the association with the institution)

Deakin's GLOBE team, comprising 5 Professors, 5 senior lecturers and more than 50 research fellows and research associates, have instigated the application of systems science and systems-based thinking as an alternative approach for childhood obesity prevention. In a systems-based approach to obesity prevention, the multitude of factors contributing to obesity and their relationships to one another and interdependencies are identified, in what is termed a systems network, in order to uncover intervention points that can be leveraged.

The research aimed to quantify a causal systems network describing childhood obesity, which was then used to design a number of intervention trials where multiple factors contributing to obesity were influenced in a community-based setting. The community setting for the intervention trials was necessary so that multiple factors could be manipulated simultaneously.

Using the software STICKE, GLOBE worked with communities and health policy makers to map all possible drivers of childhood obesity and identify ideal interventions. The results were used in multiple intervention trials, including the `Be Active Eat Well' and `Romp & Chomp' studies, conducted in Geelong (Victoria) between 2003-2006 and 2004-2008, respectively; and the `ACT-It's Your Move' Program.

FoR of associated research

(Up to three two-digit FoRs that best describe the associated research)

11 - Medical and Health Sciences

References (up to 10 references, 350 characters per reference)

(This section should include a list of up to 10 of the most relevant research outputs associated with the impact)

Allender S, Owen B, Kuhlberg J, Lowe J, Nagorcka-Smith P, Whelan J, et al. A Community Based Systems Diagram of Obesity Causes. PLoS ONE. 2015;10(7):e0129683.

Millar L, Kremer P, Silva-Sanigorski A, McCabe MP, Mavoa H, Moodie M. Reduction in overweight and obesity from a 3-year community-based intervention in Australia: the `It's Your Move!' project. Obes Rev. 2011;12.

Millar L, Robertson N, Allender S, Nichols M, Bennett C, Swinburn B. Increasing community capacity and decreasing prevalence of overweight and obesity in a community based intervention among Australian adolescents. Preventive Medicine. 2013;56(6):379-84.

Sanigorski AM, Bell A, Kremer PJ, Cuttler R, Swinburn BA. Reducing unhealthy weight gain in children through community capacity-building: results of a quasi-experimental intervention program, Be Active Eat Well. International Journal of Obesity. 2008;32(7):1060.

Swinburn B, Malakellis M, Moodie M, Waters E, Gibbs L, Millar L, et al. Large reductions in child overweight and obesity in intervention and comparison communities 3 years after a community project. Pediatric Obesity. 2014;9(6):455-62.

de Groot FP, Robertson NM, Swinburn BA, de Silva-Sanigorski AM. Increasing community capacity to prevent childhood obesity: challenges, lessons learned and results from the Romp & Chomp intervention. BMC Public Health. 2010;10(1):522.

de Silva-Sanigorski A, Elea D, Bell C, Kremer P, Carpenter L, Nichols M, et al. Obesity prevention in the family day care setting: impact of the Romp & Chomp intervention on opportunities for children's physical activity and healthy eating. Child: Care, Health and Development. 2011;37(3):385-93.

de Silva-Sanigorski AM, Bell AC, Kremer P, Nichols M, Crellin M, Smith M, et al. Reducing obesity in early childhood: results from Romp & Chomp, an Australian community-wide intervention program. The American Journal of Clinical Nutrition. 2010;91(4):831-40.

de Silva-Sanigorski AM, Bell AC, Kremer P, Park J, Demajo L, Smith M, et al. Process and impact evaluation of the Romp & Chomp obesity prevention intervention in early childhood settings: lessons learned from implementation in preschools and long day care settings. Childhood obesity (Print). 2012;8(3):205-15.

Additional impact indicator information

Additional impact indicator information

(Provide information about any indicators not captured above that are relevant to the impact study, for example return on investment, jobs created, improvements in quality of life years (QALYs). Additional indicators should be quantitative in nature and include:
- name of indicator (100 characters)
- data for indicator (200 characters)
- brief description of indicator and how it is calculated (300 characters).)