

INFLUENCING FOOD CHOICES FOR THE PREVENTION OF CHILDHOOD OBESITY



Science and Technology in
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Why influence children's food choices?

Many children live in an obesogenic environment where the choice to consume energy-dense foods is encouraged through high availability, accessibility, and targeted promotion.

In addition to traditional public health policy approaches (e.g. economic restrictions), advances in behavioural science, specifically behavioural insights, can be utilised to inform policy interventions and influence healthier food choices. Interventions using behavioural insights change elements of the social and physical environment to influence individual's decisions, without actively restricting their options. Traditional public health interventions alone have not been successful in influencing healthier choices, so it is essential that other methods are investigated to inform policy for the prevention of childhood obesity.



STOP project findings: Mini-summary

The STOP project evaluated the impact of behavioural interventions to improve children's diet related outcomes using different research approaches

- **Systematic search of literature:** Interventions using behavioural insights were effective at modifying children's diet-related outcomes in 74% of all included interventions (1).
- **Social marketing interventions:** The Drink Up campaign and The Danish Wholegrain campaign case studies demonstrated that multi-faceted marketing campaigns are most successful in changing behaviour (e.g. utilising a range of media and popular culture, while setting achievable consumer goals) (2) (3).
- **Slovenian schools field study:** Two schools were compared; one school had an intervention where children were encouraged to eat healthier snacks and the other did not receive an intervention. It was found that children in the intervention increased their intake of vegetables (from 7.3 % to 11 %) whilst the other school's intake of vegetables dropped (5.3 % to 3.4 %) (4).

STOP publications are referenced (1-4)

Implications of findings for policy design

- **The most promising behavioural inventions** involve using incentives (e.g., stickers, stationery), changing default options (e.g., apple slices instead of fries), and altering portion sizes.
- **Social marketing interventions** should be designed with comprehensive market research in the planning phase; the inclusion of multiple stakeholders and partners (including high-profile individuals); messaging which communicates gain from choices (gain-framed messaging); ensure good target market segmentation; multiple media platforms relevant to target audience; human images for emotional resonance; and have a visual reinforcement at the point of purchase.
- **Many teachers** have limited knowledge in how to improve children's diet. It would therefore be beneficial to include a module on healthy eating for children in teaching training courses.



Danish wholegrain partnership logo

Behavioural science is an effective tool to be utilised as part of public health interventions.



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Interventions using Behavioural Insights ⁽¹⁾

The STOP project conducted a systematic review to examine the effectiveness and health-equity implications of interventions using behavioural insights to improve children's diet-related outcomes. Health equity is a commitment to reduce, and ultimately eliminate, disparities in health.

Following a comprehensive search strategy, 138 unique interventions were identified from 109 articles. Interventions using behavioural insights were effective at modifying children's diet-related outcomes in 74% of all included interventions. The most promising approaches involved using incentives (e.g. stickers, stationary), changing defaults (e.g. changing an unhealthy side option like fries to a healthier one like apple slices), and altering portion size. Information provision alone was the least effective approach. Health-equity implications were rarely analysed or discussed. There was limited evidence of the sustainability of interventions in relation to both their overall effectiveness and cost-effectiveness.

Overall, there is evidence that behavioural insight interventions can influence children's diet-related outcomes. However, definitive conclusions are limited given the reliance on before-and-after studies, interventions with no follow-up, and over-representation of interventions in education settings.

Case Studies: Social marketing interventions

Drink Up campaign ^{(2) (3)}

The Drink Up campaign was a social marketing campaign, launched by Michelle Obama in collaboration with the Obama White House and the Partnership for a Healthier America. It was undertaken to encourage healthier behaviours and decrease the prevalence of childhood obesity by encouraging the US population to consume more water. Overall, the strategy aspired to 'create demand for health' in the same way that marketing aspires to create a desire for products in everyday commerce.

Good understanding of marketplace purchase patterns (regarding beverages) and the motivations driving consumer purchase in advance of campaign design were important for success. This was achieved using innovative advertising techniques and a pre-campaign pilot stage. Advertising techniques included psychographic segmentation for analysis of marketplace purchase patterns (grouping according to psychological preferences) and neurological testing related to choosing effective creative taglines and concepts. The pre-campaign testing phase looked at panellist's reactions to factors such as logos and taglines and flagged the importance of gain-framed messages and setting achievable goals. Gain-framed messages are commonly used in commercial marketing. They position the benefits of a behaviour and provide information regarding specific, actionable measures that a consumer can take to achieve that gain.

The enlistment of influential multiple stakeholders was also key to the success of the campaign. Corporations, non-governmental organisations (NGOs), foundations, celebrities, and sports figures (e.g. basketball star Stephen Curry), all worked to amplify the message of the campaign for the public good. The stakeholder message was strengthened with the utilisation of a range of avenues to reach audiences. This included television, online advertising, place-based advertising, and social media. In addition, there were other, less traditional avenues such as a nationally traveling street art campaign, a pop-up concert during the summer after the campaign launched, and multiple YouTube videos with hip-hop and other popular artists.

The campaign had a large reach, including Ms Obama's earned media appearances of 61 million and 18 million online impressions. In terms of campaign outcomes, the consumption of tap water is difficult to measure, so the campaign used sales of bottled water as a proxy for changed water consumption. There was a measured 3% increase among the test group representing the segments of the population tested, and a 4% increase in the segment with the lowest socioeconomic status.

Overall, this campaign had unique circumstances facilitating its success, which cannot be assured for other public health campaigns. However, key lessons can be applied to other future public health campaigns.



Stephen Curry promoting drinking water

Case Studies: Social marketing interventions ⁽²⁾

The Danish Wholegrain Partnership

The Danish Wholegrain Partnership (DWGP) was created with the aim of employing target-oriented and effective methods to encourage people in Denmark to eat more whole grains, and thereby improve public health. The partnership consists of government agencies, health NGOs, and companies and organisations representing the food industry. The first phase of the DWGP involved the launch of a logo in 2009 to be used on packaging and in marketing campaigns by food companies. To use the logo, food companies needed to comply with the Keyhole criteria - a nutrient criterion creating incentive for product reformulation.

Once the industry partners were able to report that a sufficient variety and quantity of wholegrain products had arrived on the market, the partnership was ready to launch the social marketing phase of the campaign. This included 'on-the-street' promotions, television and radio broadcasts, and social media activities. Most materials developed targeted the general population, although some specific populations were also targeted (e.g. a 'Whole Grain Hero' cartoon mascot was created to appeal to children). Social media played a crucial role and included online cooking, health communities and a dedicated website with customised content. The DWGP also created toolboxes so that food manufacturers and retailers could contribute to the dissemination of the campaign by sharing materials through their online channels and in their stores.

Campaign effectiveness was assessed through:

- Awareness and intention: 71% of Danes recognised the DGWP logo and 53% looked for the logo when buying products
- Sales of products with the logo increased by 7% and sales of whole grain flour increased by 24%
- Whole grain intakes increased from 32g to 63g/day post-campaign

Overall, The Danish Whole Grain campaign highlighted some central techniques to ensure the success of future health-oriented social marketing campaigns.

Slovenian school field study ⁽⁴⁾

Schools can be a key setting to implement measures to address childhood obesity. Most European children spend a significant amount of time at school and consume many of their daily calories there. However, currently children generally only have access to unhealthy snacks in school cafeterias, and meals provided to them contain few fruits and vegetables.

The STOP project undertook a quasi-experimental field study in two Slovenian Schools to identify optimal ways to encourage and make it easier for children to eat healthier snacks and more vegetables. One school was set up as a control (did not receive the intervention) and the other school the test (received the intervention). Altogether, there were 99 pupils at the intervention school, and 50 pupils at the control school involved in the programme. Children were between six and ten years old.

The first stage involved focus groups with the children and interviews with the teachers. Children also completed a diary of their snacks throughout the week. The intervention stage involved approaches which targeted children, their parents, cafeteria staff, and teachers. Children in the test school took part in a workshop and were given take-home recipe cards. Parents in the intervention were targeted through an online presentation (20 out of 60 invited attended). They also received an email once a week with a healthy recipe and tips for encouraging children's healthy snacking. These parents also received an electronic handout at the end of the four weeks. It was planned to approach teachers in the intervention with a meeting, but they showed little or no interest in participating. The head of nutrition at the intervention school agreed that the kitchen would present salads without vinaigrette.

Fruits and sweets were the beloved type of food for snacks in both schools. However, after the intervention, there seemed to be a bigger difference between how the schoolchildren snacked.

There was an increase in intake of vegetables (from 7.3% to 11%) for the intervention school, whilst the control school's intake of vegetables dropped (5.3% to 3.4%). However, children's taste or diet patterns did not change drastically due to the intervention.

Overall, children were cooperative and willing to learn about healthier food and diet, but their environment does not seem to encourage a different relationship towards food. Parents were often unknowledgeable on how to deal with food pickiness, and teachers were often overburdened with their workloads and had a significant lack of readiness to cooperate with the intervention.





Future research priorities

The findings from the STOP project have provided new evidence and insights on influencing healthier food choices for the prevention of childhood obesity.

Further research opportunities identified include:

- Providing greater evidence of the sustainability of behavioural insight interventions;
- Providing increased evidence of the health-equity implications of behavioural insight interventions, particularly for analyses of SES and ethnicity;
- Determining whether a reduction in portion size and associated caloric intake reduced BMI;
- The effects of behavioural insight interventions on other age groups, particularly older children.

STOP Publications (see www.stopchildobesity.eu for an up-to-date list)

- (1) Chambers T, Segal A and Sassi F. Interventions using behavioural insights to influence children's diet-related outcomes: A systematic review. *Obes Rev.* 2021; 22: 1–13 <https://doi.org/10.1111/obr.13152>
- (2) Watson EK. D5.2: Case Study Report Creating Demand for Healthier Behaviour: An Innovative Approach to Social Marketing for Public Health Campaigns. 2019. <http://www.stopchildobesity.eu/wp-content/uploads/2021/10/D5.2.pdf>.
- (3) You Are What You Drink: A Case Study of The Drink Up Campaign. *Journal of Business and Economic Policy.* 2022 (Forthcoming).
- (4) Social marketing school-based intervention to tackle obesity (In review).

Whole Grain Partners



Stakeholders in the Danish Wholegrain Partnership from industry, government, and health NGOs ⁽²⁾

ASHANTI

Drink Up Ashanti



Interactive Drink Up video featuring Ashanti ^{(2) (3)}