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Evidence Brief: Perceptions and reactions to obesity- or weight-related health messaging campaigns

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Issue and Research Question

Obesity is highly prevalent among Ontario youth and adults. According to the 2011-12 Canadian Community Health Survey (CCHS), 27.3% of Ontario adult males and 24.1% of females were obese and 44.7% and 34.1% were overweight, respectively.[1] Among Canadian children (five to 18 years old), 15.2% of boys and 8.6% of girls were obese while 19.7% and 19.4% were classified as overweight, respectively (CCHS 2009-11).[2] Furthermore, obesity is associated with a number of chronic conditions and adverse health outcomes,[3] and children who are overweight and obese are more likely to remain so as adults.[4]

One approach to reduce the prevalence of and prevent conditions such as obesity at a population level is to create and disseminate mass media health messages.[5-7] These messages or ads may appear independently or as a part of larger anti-obesity campaigns.[5,8] Many anti-obesity messages have focused on changing behaviours such as physical activity and nutrition,[5] while others have focused directly on the issue of obesity or overweight.[9] It has been suggested that the current framing and delivery of obesity messages and campaigns may be ineffective and cause more harm than good.[10] However, despite the prevalence of these messages and campaigns in Canada and the U.S.,[5] there is limited published evidence on how anti-obesity social advertising strategies impact their audience.[10] It is important to explore how obesity messages are perceived by their audience, to gain a better understanding of how to create effective messages for obesity prevention and treatment.

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This evidence brief asks the question **"*What are the impacts of obesity or weight-related health messaging campaigns on campaign audiences?*"** This evidence brief focuses on perceptions of, and reactions to, obesity campaign messages.

Methods

A literature search was conducted in November 2014 by Public Health Ontario (PHO) Library Services for articles published from inception of electronic databases to present. The search involved five databases including MEDLINE, Embase, CINAHL, PsycINFO and Scopus. The full search strategy can be obtained from Public Health Ontario (PHO). All abstracts and titles retrieved by this search were assessed for inclusion by a single reviewer.

Articles were eligible for inclusion if they were a primary study that evaluated perceptions, and/or reactions towards an obesity or weight-related health messaging campaign. Articles that did not evaluate perceptions or reactions towards an obesity or weight-related health messaging campaign, or which were not a peer-reviewed primary study were excluded. Articles evaluating interventions or campaigns that focused primarily on physical activity and nutrition promotion (rather than obesity or over-weight status) were excluded. Similarly, campaigns focused on physical activity or nutrition behaviours without reference to obesity or overweight were also excluded as well as campaigns or interventions which focused on being underweight. Lastly, articles evaluating obesity or weight-related interventions that had a messaging campaign component but did not evaluate the campaign in isolation (i.e., multicomponent interventions evaluated as a whole) were excluded.

Full text articles were retrieved and reviewed by two reviewers using the above inclusion and exclusion criteria. Discrepancies were discussed until consensus was reached. Relevant information was extracted from each article by a single reviewer. Quality appraisal was completed for all included studies using the McMaster Critical Review Form: Qualitative Studies Version 2.0[16] for qualitative studies, and the Effective Public Health Practice Project (EPHPP) tool[17] for quantitative studies.

Main Findings

The literature search identified 1552 articles, of which 37 primary studies were selected for full-text review. No review-level evidence met inclusion criteria. Seven unique primary studies met inclusion criteria and are included in this brief.

The seven included studies, examined perceptions and/or reactions to obesity campaigns among adults (n=3),[9,11,12] adolescents (n=1),[13] obese individuals (n=1),[14] and parents and their children (n=2).[10,15] [10,149,11-13,15] When assessed for methodological quality, all studies were rated as moderate to strong [9,10,11-13,14] with the exception of GreenMills et al., (2013),[15] which was rated as weak using the EPHPP tool. This study adopted a community-based participatory research (CBPR) approach, which involves relevant stakeholders in aspects of the study. When applying the EPHPP tool, the study demonstrated weaknesses surrounding study design, selection bias, blinding, confounders, and data collection methods. The weak rating appears to be a reflection of the limited compatibility of the tool with the CBPR approach versus the overall quality of the study itself. As such, all seven studies were included in this evidence brief.

Perceptions and Reactions towards Obesity Campaigns among Adults

Three studies examined perceptions or reactions to obesity-related public health campaigns among adults.[9,11,12]

Puhl et al., (2013a) examined perceptions of U.S. obesity-related public health campaigns among a nationally representative sample of

American adults (n = 1085, aged 18 and older) using an online survey.[9] Using a between-participant randomized control trial (RCT), participants were randomly assigned to view either 10 stigmatizing obesity ads (i.e., ads that were pretested and publicly criticized for being stigmatizing towards obese people) or 10 more neutral-content obesity ads.[9] Participants were asked about their perceptions of the ads, including extent to which the campaigns: 1) were stigmatizing towards obese people, 2) motivated individuals to improve lifestyle behaviours such as physical activity, healthy eating, 3) were promoting of self-efficacy (i.e., one's beliefs about their capabilities to engage in a behaviour) for health behavior change, or 4) that the images accompanying the main messages were appropriate.

Participants confirmed that the ads previously classified as stigmatizing for the trial were in fact rated as significantly more stigmatizing than the neutral ads.[9] There was no significant difference between the stigmatizing and neutral ads in the degree to which they motivated individuals to improve lifestyle behaviours. However, the stigmatizing ads were perceived to result in less self-efficacy and have less appropriate visual content compared to neutral ads.[9]

In a similar study, Puhl et al. (2013b) examined the extent to which obesity-related campaigns were perceived as motivating or stigmatizing among a second nationally representative sample of American adults.[11] Participants (n=1014, 18 years of age and older), were randomly presented with 10 of 29 obesity-related health messages. Messages categorized by content (e.g., sugar-sweetened beverages, portion sizes, fruit/vegetable consumption physical activity, personal empowerment, parent-targeted, multiple topics, stigmatizing, or other) were rated using a 5-point Likert scale for relevance, helpfulness, likeability and intent to comply with the message.[11]

Participants responded most favourably to messages involving themes of increased fruit and vegetable consumption, general messages involving multiple health behaviors and messages that attempted to instill confidence and personal empowerment. Stigmatizing messages received the lowest ratings on positive characteristics.[11]

Intention to comply with stigmatizing ads was significantly lower compared with intention to comply with all other (non-stigmatizing) ads. ($p<0.001$).[11]

As expected, and consistent with the findings by Puhl et al., (2013a), a greater percentage of participants (39-62%) rated the stigmatizing messages as stigmatizing, compared with lower percentages of participants who perceived messages from other theme categories to be stigmatizing (28-45%).[11] Messages involving themes of increased fruit and vegetable consumption, general messages involving multiple health behaviors and messages that attempted to instill confidence and personal empowerment of one's health were rated to be the most motivating.[11] There were no differences between overweight versus normal weight participants in their ratings of messages as motivating or stigmatizing.[11]

Interestingly, the most positively rated and most motivating messages did not mention the term 'obesity', and instead focused on promoting health behaviours.[11] The messages rated to be most stigmatizing were those that focused on children.

Barry et al., (2014) examined how obesity campaign messages effected Americans' attitudes regarding obesity prevention and weight-based stigma towards obese children.[12] Using an online panel survey, a nationally representative sample of US adults (n =1,677, 18 years of age and older) were presented with one of three video messages from Georgia's Strong4Life campaign. Participants were randomly assigned to view a single video

message that highlighted either: 1) health consequences of obesity (e.g., hypertension), 2) psycho-social consequences of obesity (e.g., bullying), 3) the responsibility of parents for solving the problem of obesity, or 4) a control group who did not view any obesity messages.[12] Participants' evaluations of: 1) the importance and seriousness of childhood obesity, 2) its consequences (e.g., hypertension or weight-related bullying), and 3) how much responsibility different groups (e.g., parents, children, the food/beverage industry, schools, and government) should have for addressing the problem of childhood obesity were assessed.[12] Additionally, they assessed participants' support for obesity prevention strategies as well as their weight-based stigma.

Compared with the control group, message exposure did not affect participants' perceptions about the importance or seriousness of childhood obesity and/or its consequences.[12] However, this may have been due to high baseline rates (i.e., 86-89% already perceived obesity and its consequences to be a serious problem at baseline). Message exposure led to higher attribution of responsibility for the obesity problem to the industry, schools and government compared with the control group; however, participants still attributed more of the problem to obese children and their parents.[12] Support for obesity prevention policies did not significantly differ between those who had been exposed to the messages and those who had not.[12]

Lastly, exposure to the obesity messages was associated with a reduction in stigmatizing attitudes towards obese children.[12] Those exposed to the obesity messages rated obese children as more motivated (versus lazy) and smart (versus stupid) compared to the control group.[12] When stratified by weight and gender, overweight participants who viewed the messages reported lower weight-based stigma (i.e., rating obese children as motivated and smart) compared with overweight individuals in the control group; however, no difference was found among healthy weight (non-obese) individuals in the control versus exposure groups. Similarly, female participants in the exposure group reported lower weight-based stigma compared with females in the control group, but no such difference was found among males.[12]

Overall, campaign video messages did not affect public perceptions about the importance or the seriousness of the problem of childhood obesity and its consequences, although it did increase perceptions of responsibility for the obesity problem to contributors beyond children and parents themselves.[12]

Perceptions and Reactions to Obesity Campaigns among Adolescents

One Canadian study examined adolescent perceptions and reactions towards obesity campaigns.[13] Dooley et al., (2010) compared the effects of adolescent-targeted body-image obesity prevention messages with positive experience, health benefit and unrelated (control) health messages on participants' behavioural intentions and unintended effects.[13] Using a pre-post survey design, Canadian adolescents (n=95) were randomly assigned to one of four conditions: 1) body-image, 2) health benefit, 3) positive experience, and 4) control. The Public Service Announcements (PSAs) in the body image condition portrayed the notion of ideal body types or implied that an ideal body shape exists; health benefit PSAs mentioned the health benefits of physical activity and/or health eating; positive experience PSAs had no mention of the benefits of physical activity or healthy eating but the portrayed the fun aspects of these behaviours; and control PSAs focused on non-obesity related health behaviours such as hand washing, sun-safety, seat belt use or volunteering. Dependent measures included unintended effects (i.e., state self-esteem, anxiety, mood, weight attitudes), PSA likeability, readability and

behavioural intentions (i.e., physical activity and healthy eating intentions).

Contrary to the study hypothesis, but similar to the US findings by Barry et al., (2014), body image PSAs were not significantly more likely to elicit negative weight attitudes.[13] In fact, the body image PSAs weight attitudes scores were *less* negative compared with all other conditions. Changes in state self-esteem did not significantly differ across conditions.[13] However, there was a marginally significant effect (p=.06) of condition on anxiety change; the body image PSAs produced significantly ($p<0.05$) greater anxiety among participants who viewed them, compared with those who viewed the control ads.[13] For the ad evaluation, control ads received lower attitude and believability ratings than all other conditions, and the health benefit PSAs were perceived to be more readable than the body image or positive experience PSAs. Contrary to the authors' hypothesis, the positive experience PSAs did not receive more positive evaluations than health benefit PSAs. Lastly, the health benefit PSAs resulted in greater healthy eating intentions than the control PSAs.[13]

Overall, results suggest that while body-image obesity PSA's may increase anxiety among adolescents, they do not stimulate more negative weight attitudes or decrease self-esteem.[13] However, the authors hypothesized these findings may be influenced by social desirability bias wherein adolescents may be uncomfortable expressing negative attitudes about weight.

Perceptions and reactions to Obesity Campaigns among Obese Individuals

One Australian study by Lewis et al., (2010) evaluated perceptions and interpretations of obesity health messages among obese adults.[14] Participants (n=142; aged 19-75) completed semi-structured telephone interviews with four discussion questions exploring: 1) the range of messages and key messages in campaigns, 2) the personal relevance of messages, 3) the impact of messages on feelings about their weight, and 4) whether public health obesity messages need to be changed.[14] Interviews were transcribed and coded to identify key themes, categories, and concepts.

Participants expressed that the public health messages were not aligned with their experience of obesity.[14] Although participants largely agreed with health risk messages, they disagreed with the way the messages were framed and communicated. They emphasized that the messages were too simplistic in that they ignored social and cultural contexts, emphasized personal responsibility, and focused exclusively on physical health risks instead of mental or emotional risks.[14]

Similar to previous findings by Puhl et al.,[9,11] participants commented that public health messages often stereotyped obese people with stigmatizing messages and images of them engaging in negative behaviours (e.g., eating junk food).[14] Participants expressed that this left them feeling blamed, isolated, and disconnected from messages. Some participants rejected the messages as they did not align with their experience of obesity as they considered themselves healthy and morally responsible.[14]

In response to how public health messages about obesity could be changed, participants emphasized they would like to see campaigns focused on outcomes other than body weight and body mass index.[14] They suggested reframing messages from those which they perceived to judge people for unhealthy behaviours into more positively-framed messages portraying the benefits of engaging in healthy behaviours (especially exercise). Importantly, participants wanted these messages to be paired with practical solutions and supports for how lifestyle changes could be accomplished by all individuals regardless of size.[14] Lastly, participants recommended a better balance of communicating the risks associated with obesity without stigmatizing

obese people and recognizing that there are many different and complex causes to obesity.[14]

Perceptions and Reactions to Obesity Campaigns among Parents and their Children

Two studies examined perceptions and reactions among parents and their children.[10,15] In a qualitative study, Thomas et al. (2014) evaluated parent and child perceptions and interactions with two differently framed anti-obesity social marketing campaigns in Australia: *Measure Up* and *Swap It* (2008-2013).[10] The campaign's aims were to raise awareness of the need to change lifestyle behaviours to prevent/treat obesity and to provide supporting information on what to do and how to accomplish suggested lifestyle changes. *Measure Up* involved negatively-framed advertisements showing the risks associated with overweight and obesity, versus *Swap It* which focused on positive framing and practical solutions for making small lifestyle changes to reduce body weight.[10] For both campaigns, parents aged 25 to 50 were the primary target audience, with children considered an incidental audience who would also be exposed to the campaigns.[10]

Parents (n=159; aged 27 to 63 years) and children (n=184; aged 9 to 18 years) participated in semi-structured interviews to: 1) explore perceptions of visual campaign aspects and intended target audiences, 2) explore perceptions of campaign messages, and 3) discuss behaviour change.[10]

The first set of findings related to children's perceptions of the campaigns (which were intended to target parents). Some children expressed that *Measure Up* ads made them feel the need to 'parent' their parents (e.g., to caution their parents to be careful about their weight). Similar to the study by Dooley et al., (2010),[13] the *Measure Up* advertisements induced anxiety in some children about their weight, future weight, and weight of their parents.[10] In terms of *Swap It*, children expressed that they thought these messages would be less likely to make obese people feel 'bad' about themselves and noted they liked the positive messaging and focus on small changes.

Findings also suggested children may find the ads more personally relevant, and would be more willing to act on them, if ads used health behaviours as the outcome rather than weight. Some children suggested messages may be irrelevant to those who were not overweight or obese.

The findings of parents' perceptions of the *Measure Up* campaign were similar to those of Lewis et al., (2010).[14] Although most parents viewed the ads as being realistic and trustworthy, parents who were obese had strong negative reactions to the messages and described them as being stigmatizing without providing practical solutions.[10] In terms of *Swap It,* both parents and children liked the clear, 'realistic' examples of how to change behaviours, and the positive framing of messages.[10] However, some parents criticized the simplicity of the solutions as being unrealistically easy and that messages undermined barriers and the broader context in which they lived.

Several important differences emerged regarding how the two campaigns might impact behaviour change in child and adult audiences. Although some parents noted that *Measure Up* messages were a good "wake up call", few commented that they would take action as a result of these messages, due to the lack of practical tools and solutions for behaviour change.[10] Some obese parents said they actively avoided the messages for these reasons and that the messages were so negatively framed they were "depressing" and "disempowering".[10] In line with this, children felt that *Measure Up* was trying to motivate behaviour change in parents by making them feel morally responsible and that if they loved their children they would change their lifestyles.[10]

In contrast, most parents felt that the *Swap It* ads were likely to be effective in influencing behaviour change because they: 1) recommended small sustainable changes, 2) aimed to shift beliefs about lifestyle behaviours and 3) avoided "shock tactics" which they believed only motivate short-term solutions.[10] Similarly, children thought these messages could be acted upon by families. Parents and children all felt that *Swap It* advertisements could be even more effective at motivating behaviour change by acknowledging realistic barriers and shifting outcome focus to behaviour change rather than weight status.[10]

In another US parental study, GreenMills et al., (2013), evaluated the outcomes of a childhood obesity campaign targeting parents.[15] The campaign was developed through a participatory approach including members from a community advisory board (CAB) (i.e., parents enrolled in a Head Start program; a program providing comprehensive education, health nutrition and parent involvement services for low income parents) and researchers.[15] During development of the campaign, CAB members indicated that terminology was an important issue and that they disliked the term 'obese' and preferred the term 'big boned', while others disagreed.

The campaign messages addressed parents' misconceptions related to child weight and obesity risk (i.e., "Myth- He's just big for his age.", "Fact – 'Big Kids' may be overweight and at risk for health and self-esteem problems.", "Get the facts about your child's weight.").[15] Parents of children two to five years of age (n=108) who were enrolled in a participating Head Start center completed pre- and post-survey questionnaires assessing parental attitudes towards childhood obesity (as measured by agreement with the myths) and their reactions to the ads.[15]

Less than 5% of parents believed the messages were untrue, insulting or not relevant to those participating in the Head Start Centre.[15] They also found that the ads reduced agreement with the obesity myths (i.e., reduced parental misconceptions) following campaign exposure.[15]

Discussion and Conclusions

Available primary study evidence highlights key findings and themes across different populations. The following discussion considers findings as a whole and draws general conclusions about perceptions and reactions to obesity-related campaigns across populations.

Message Frame and Focus

Three studies indicated that participants preferred positively framed messages that communicated the benefits of healthy behaviours,[10,13,14] over negatively framed messages judging people for unhealthy behaviours (perceived as stigmatizing).[14] Participants responded most favourably to messages promoting multiple health behaviours[9,11] as well as realistic examples or practical solutions for how healthy behaviours could be achieved.[10,14] They suggested focusing on healthy behaviours as the outcome rather than body weight and body mass index.[10,14]

Responsibility

Several studies noted that many obesity campaigns focused on the personal responsibility of the obese individual or parent of the obese child.[10,12,14] When used exclusively, these types of messages ignore the broader context of obesity[10] and its diverse causes.[14] This appeared to negatively impact perceived stigma, personal connection with messages and personal relevance of messages.[10,14] Conversely, one study found that exposure to obesity messages led to higher attribution of responsibility for the obesity problem to industry, schools and government; however, this was still lower than the responsibility

attributed to obese children and their parents.[12] This suggests that obesity messages emphasizing the broader context of obesity could mediate negative perceptions related to attributing obesity solely to obese individuals and/or parents of obese children.

Stigma

Stigmatizing ads such as those portraying obese people engaging in negative behaviours (e.g., eating junk food) were also perceived negatively.[11] Stigmatizing obesity ads were no more likely to instill motivation for improving lifestyle behaviors, and induced less self-efficacy to engage in these health behaviors compared with more neutral content ads.[9] Participants expressed that these types of ads left them feeling blamed, isolated, and disconnected from messages.[14] Stigmatizing ads were also less likely to produce intentions to comply with the messages communicated in the ads.[11] Instead, participants suggested a better balance of communicating obesity-related risks without stigmatizing obese people.[14] However, one study did find that obesity messages led to reduced stigmatizing attitudes towards obese children.[12] Notably, this study examined only three messages which were part of a much larger campaign, and it is unclear whether findings were generalizable to other obesity ads.

Anxiety

In one study, body image obesity ads were found to increase anxiety among adolescents.[13] Similarly, *Measure Up* ads focused on the risks of weight gain induced anxiety in some children (ages 9 to 18) about their future weight and their parents' weight.[10]

Summary

Overall, findings suggest that positively framed messages communicating the benefits of healthy behaviours along with practical solutions for engaging in these behaviours are preferred.[9-11,13,14] Stigmatizing ads were less likely to result in greater intention and/or self-efficacy to engage in healthy behaviours.[9] Instead these ads left participants feeling blamed, isolated, and disconnected from messages.[14] Importantly, obese people indicated they actively avoided or rejected these messages,[10,14] suggesting that these messages were less effective in an important target audience for whom they were intended.

Limitations

It is important to note that while studies examined perceptions of, and reactions to, obesity ads or campaigns among participants, none of these studies assessed the impact of these ads or campaigns on obesity rates and/or obesity-related health behaviours (e.g., healthy eating and physical activity).

Additionally, each study examined perceptions and reactions of only a few select campaigns and/or ads, and therefore findings from these studies may not be generalizable to all obesity campaigns.

Future research is needed to examine the impact of obesity ads on behaviour change, and subsequently, obesity prevalence.

Implications for Practice

Findings from these studies may assist health promoters in developing obesity campaigns that are well received by their intended audience. The findings provide support for positively versus negatively framed messages, and for promoting health behaviours rather than focusing on weight-related outcomes. Messages should provide practical and realistic solutions for changing health behaviours, and should include addressing barriers and acknowledge the broader social context. Health promoters should avoid using images and/or messages that could be perceived to negatively

stereotype overweight and/or obese individuals.

This may require careful selection of language (i.e., using the term 'obesity') and visual content for obesity and weight-related health campaigns. Pilot testing these materials with their intended audience could help ensure that messages are received as intended and are not perceived as stigmatizing.

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