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Can counter-advertising reduce pre-adolescent children's susceptibility to front-of-package promotions on unhealthy foods?: Experimental research

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ABSTRACT

This study aimed to test whether counter-advertisements (i.e. messages contesting industry marketing) make pre-adolescent children less susceptible to the influence of food promotions. Since children have lower media literacy levels due to their immature cognitive abilities, specific research questions explored were: (1) whether the effectiveness of counter-ads is contingent on children having understood them; and (2) whether counter-ads may be detrimental when they are misinterpreted. A between-subjects experimental design using a web-based methodology was employed. 1351 grade 5–6 students (mean age 11 years) from schools located in metropolitan Melbourne, Australia participated. Participants were randomly shown an animated web banner *advertisement* (counter-ad challenging front-of-package promotion or control ad) and a pair of food packages from the same product category comprising an unhealthy product featuring a *front-of-package promotion* (nutrient content claim or sports celebrity endorsement) and a healthier control pack without a front-of-package promotion. Responses to the assigned advertisement, choice of product (healthy versus unhealthy) and ratings of the unhealthy product and front-of-package promotion on various nutritional and image-related attributes were recorded for each child. Sixty-six percent of children who viewed a counter-ad understood its main message. These children rated the front-of-package promotion as *less* believable and rated the unhealthy product bearing the front-of-package promotion as *less* healthy compared to the control group. However, children who misunderstood the counter-ad rated the unhealthy product bearing a front-of-package promotion as *more* healthy and rated the front-of-package promotion more favourably than those who correctly understood the counter-ad. Counter-advertising may have unintended consequences when misunderstood. If public health organizations or government pursue counter-advertising as a strategy to reduce the negative influence of unhealthy food marketing among children, caution is needed in designing counter-ads to guard against possible contradictory effects.

1. Introduction

There has been considerable research concerning effects of food advertising on children's food preferences, purchases and consumption (Cairns et al., 2009), leading to the conclusion that food marketing is a probable causal factor in childhood obesity (World Health Organization, 2007). Despite this, there has been little investigation of potential strategies for reducing the effects of unhealthy food advertising on children (e.g. regulating media content, limiting children's media use, social marketing (including counter-advertising), nutrition education and media literacy education). Calls for greater government regulation of unhealthy food advertising to children are generally met with strong opposition by the food industry, which favours self-regulatory actions (Sharma et al., 2010). However, available evidence indicates that such voluntary codes do not sufficiently reduce advertising of foods which undermine healthy diets, or reduce children's exposure to this advertising (Galbraith-Emami and Lobstein, 2013; Moodie et al., 2013). Industry self-regulatory actions and strong anti-regulatory lobbying mean many governments have been reluctant to impose meaningful restrictions on unhealthy food marketing. Consequently, alternative strategies for countering persuasive effects of

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unhealthy food advertising need to be explored. This study explores older children's responses to food promotion counter-advertising.

Developmental theory provides useful insights into how children of different ages may react to food advertising and also counter-advertising. Moses and Baldwin (2005) argue that by seven or eight years of age children should have well-formed conceptions of the intentions underlying television advertising; however, they are unable to deploy these concepts in their everyday lives. They argue this is because children's ability to process, cope with, and defend against advertising is affected by the development of executive functioning skills, which are still developing throughout adolescence and into early adulthood. Thus, while older children may understand the persuasive intent of television advertisements, they are still susceptible to being influenced by them.

Advertising intent could be less salient to children when food advertising is embedded in more subtle ways (e.g. product websites with interactive games, front-of-package promotions). Qualitative research indicates that children aged 5–12 years have difficulty evaluating the healthiness of packaged foods, and are influenced by package colours, images, spokes-characters, brands and front-of-package claims (Elliott and Brierley, 2012). Elliott and Brierley (2012) noted that children's nutrition education has mainly focused on teaching them what core foods are healthy, without arming them with skills to make healthier food choices in an environment where energy-dense, nutrient poor (hereafter called "unhealthy"), packaged foods are prevalent and widely promoted to children.

Advertisers create increasingly subtle advertising tactics to remain effective as people become more advertising savvy through experience. Compared to adults, children may lack relevant expertise about advertising tactics and be especially susceptible to persuasion (Moses and Baldwin, 2005; Wright et al., 2005). Two common types of front-of-package promotions used to market unhealthy foods are: *nutrient content claims*, which typically highlight positive nutritional attributes of products without mentioning unhealthy nutritional characteristics of the product (e.g. "source of fibre" on a high-sugar cereal); and, *sports celebrity endorsements*, which frequently align unhealthy products with images of health, vitality and fame (e.g. McDonald's sponsorship of 2008 Beijing Olympics) (see ad: http://www.youtube.com/watch?v=lAitI0O7e20). Throughout the world, there is widespread use of sports stars and competitions to market food to youth (Cairns et al., 2009). While concerns have been raised about increasing use of such promotions, few studies have objectively monitored these trends. Increased use of cross-promotional partnerships between food manufacturers and sport was documented in US supermarkets between 2006 and 2008 (Harris et al., 2010). Increased use of nutrition claims in food advertisements was documented in Holland between 1990 and 2008 (Zwier, 2009).

A previous experiment with 1302 Australian children aged 10–12 years found that front-of-package nutrient content claims made children more likely to choose unhealthy foods featuring these promotions and front-of-package sports celebrity endorsements made boys (but not girls) more likely to choose unhealthy food products over healthier products without such promotions (Dixon et al., 2013). Nutrition claims enhanced children's perceptions of an unhealthy food product's nutrition content. Soldavini et al. (2012) found that children around 9 years of age perceived products with a nutrient content claim as healthier and identified the "healthier" cookies and crackers as tasting better. Older children (aged 8–12 years) are more likely than younger children (aged 5–7) to refer to front-of-package claims to justify why a product is healthy (Elliott and Brierley, 2012). Recent studies have found evidence for an impact on actual food intake, with nutrient claims promoting increased portion size by adults (McCann et al., 2013), and sports celebrity endorsements promoting increased consumption of chips by children aged 8–11 years (Boyland et al., 2013).

Counter-advertisements could detract from the persuasive effects of these types of promotions on children. However, owing to some areas of immaturity in children's cognitive development, it is unclear how effective counter-advertising might be in making children more resistant to commercial food promotions. Petty and Priester's (1994) Elaboration Likelihood Model (ELM) offers some insights for considering potential responses to counter-advertising (Agostinelli and Grube, 2002). As with food product advertising, the persuasive potential of food promotion counter-advertisements may be influenced by characteristics of the communication's source, message and receiver. Counter-advertisements could persuade children to change their attitudes and behaviour towards unhealthy food advertising via the "central route" (where audience processing of communications is more active and effortful but predicted to result in enduring belief changes) or via the "peripheral route" (where audience processing of communications is more passive and can be based on simple persuasive cues without issue-relevant thinking). Food marketers commonly utilize peripheral cues (e.g. sports celebrity endorsements), which previous research has shown can lead consumers to erroneously evaluate unhealthy food products (Dixon et al., 2013). For counter-advertisements to address both potential routes to persuasion, they should employ both peripheral factors (to engage audience members who are not motivated to attend to these messages) and central factors (strong logical information that can be integrated into audience member's belief structures) (Agostinelli and Grube, 2002; Slater, 1999).

Potential issue-relevant arguments to pursue through counter-advertising include drawing attention to negative health effects of certain products, questioning the motives of businesses that produce or promote certain products, or revealing/exposing misleading promotions (Dorfman and Wallack, 1993). Nutrient content claims and sports celebrity endorsements of unhealthy foods could be countered by advertisements portraying the ingredients in these foods and the consequences of regularly consuming them as unhealthy and socially unappealing. Peripheral cues that could be included in such counter-advertisements include expert support (e.g. displaying logos for reputable health organizations) and use of youth-oriented fonts, colour schemes and graphics to capture children's attention. Counter-advertising has been used effectively to promote reduced tobacco and alcohol consumption (Agostinelli and Grube, 2002; Farrelly et al., 2005; Saffer, 2002). However, research on the potential efficacy of food promotion counter-advertising is lacking. Experimental evidence indicates food counter-advertising may be effective with parents (Dixon et al., submitted for publication), yet this has not been tested with children.

Employing counter-advertising to reduce food advertising effects is based on the reasoning that promoting this specific form of advertising literacy should empower children to identify, analyse and critically evaluate commercial messages, rendering them less susceptible to persuasion by potentially misleading peripheral cues used in food advertising in future. Harris, Brownell and Bargh's (2009) "food marketing defense model" posits that for individuals to withstand the persuasive appeal of advertisements, they need to be aware they are being targeted, understand how exposure may affect them, and be able and motivated to resist. Children's media literacy levels increase with age and older children are more likely to be persuaded by advertising strategies based on high-quality arguments, whereas younger children are more likely to be persuaded by peripheral advertising cues (Livingstone and Helsper, 2006). Children's responses to counter-advertisements may be contingent on their ability to interpret the counter-ad's main message and then

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