Counter-Advertising May Reduce Parent’s Susceptibility to Front-of-Package Promotions on Unhealthy Foods

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ABSTRACT

Objective: Assess the effect of counter-advertisements on parents’ appraisals of unhealthy foods featuring front-of-package promotions (FOPPs).

Design: A 2 × 2 × 5 between-subjects Web-based experiment. Parents were randomly shown an advertisement (counter-advertisement challenging FOPP/control advertisement) and then a pair of food products from the same category: an unhealthy product featuring an FOPP (nutrient content claim/sports celebrity endorsement) and a healthier control product with no FOPP.

Setting: Australia.

Participants: A total of 1,269 Australian-based parents of children aged 5–12 years recruited from an online panel.

Main Outcome Measures: Parents nominated which product they would prefer to buy and which they thought was healthier, then rated the unhealthy product and FOPP on various characteristics.

Analysis: Differences between advertisement conditions were assessed using logistic regression (product choice tasks) and analysis of variance tests (ratings of unhealthy product and FOPP).

Results: Compared with parents who saw a control advertisement, parents who saw a counter-advertisement perceived unhealthy products featuring FOPPs as less healthy, expressed weaker intentions for buying such products, and were more likely to read the nutrition facts panel before nominating choices (all P < .001).

Conclusions and Implications: Counter-advertising may help reduce the misleading influence of unhealthy food marketing and improve the accuracy of parents’ evaluations of how nutritious promoted food products are.

Key Words: advertising, nutrition, front-of-package promotions, parents, front-of-package labeling, marketing (J Nutr Educ Behav. 2014;46:467-474.)

INTRODUCTION

Amidst increased community concern regarding marketing of unhealthy products to children and support for tighter restrictions,1,2 food companies are focusing on messages that encourage parents to purchase such foods for their children.3 Research from the UK highlighted many examples of the food industry using nutrient, health, and quality claims, celebrity endorsements, and emotion to create a favorable attitude toward a brand in both broadcast (eg, television) and non-broadcast (eg, product packaging, company Web sites) media promotions that misled parents as to the true nutritional value of their products.3

Two common marketing strategies that have been found to influence parents in a previous experimental study are nutrient content claims and sports celebrity endorsements.5 Nutrient content claims emphasize selected positive nutritional attributes of products without acknowledging unhealthy nutritional characteristics (eg, “99% fat-free” candy). Sports celebrity endorsements often align high-energy products with images of health and vitality. Many foods featuring such promotions are not healthful.6-8 A previous study found that front-of-package nutrient content claims and sports celebrity endorsements (in which statements about a product’s nutritional content and convenience were attributed to the celebrity) tipped parents’ food product preferences toward unhealthy products, especially when they had not read the nutrition facts panel, and led parents to erroneously perceive these products to be more

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nutritious than healthier products without such promotions. These sports celebrity endorsements were also shown to enhance parents' perceptions of consumers of the product, the healthiness and quality of the product, and intentions to purchase the product. Other studies with adults and children have found that such front-of-package promotions (FOPPs) enhance perceptions of how healthy and nutritious products are. Because parents are typically the gatekeepers for children's food choices at home, parents are the main decision-makers when it comes to the purchase of food products. Preventive initiatives aimed at reducing the persuasive impact of unhealthy child-oriented food marketing should target parents as well as children.

Counter-advertising could provide a promising avenue for reducing the deleterious effects of unhealthy food advertising to parents while promoting healthier food choices. Counter-advertisements challenge messages of industry marketing using tactics such as questioning advertisers' motives, highlighting the negative health implications of unhealthy food products, and exposing misleading promotions. Media research on other health issues indicates that counter-advertising can be an effective strategy for reducing unhealthy behaviors. For example, the “truth” campaign, a youth anti-tobacco counter-marketing initiative run by the American Legacy Foundation, accounted for a significant portion of the decline in US youth smoking prevalence rates observed between 1999 and 2002 after controlling for potential threats to validity such as cigarette prices, investment in state tobacco control programs, and secular trends in smoking prevalence. A review of mass media campaigns promoting quitting among adults provided some support for the use of anti-industry messages.

Alcohol counter-advertising has been effective in reducing alcohol consumption of teenagers and young adults. Although most research assessing public responses to health-related counter-advertising has focused on young people, some studies from tobacco control also show positive effects on adults.

Despite evidence supporting the efficacy of counter-advertising strategies for tobacco control and alcohol harm reduction, efforts to employ counter-advertising in the area of obesity prevention have been scarce. Nevertheless, some innovative examples exist. In France, advertisements for processed, sweetened, or salted food and drinks are required to carry cautions urging people to stop snacking and to exercise and eat more fruits and vegetables. New York City Health Department's Pouring on the Pounds counter-advertising campaign graphically highlights the sugar content in soda and the potential of sugar-sweetened beverages to contribute to weight gain. This campaign was also adapted for transit advertising in San Francisco, CA. A small mixed-methods evaluation found that around one third of survey and focus group respondents were aware of San Francisco's Pouring on the Pounds campaign; however, because no baseline data was collected, the impact of the campaign on changing behavior could not be assessed.

The objective of the current study was to provide empirical evidence to assess the potential efficacy of counter-advertisements that may affect obesity prevention. Specifically, this study aimed to test whether exposing parents to counter-advertisements that challenge nutrient content claims and sports celebrity endorsements led them to more critically and accurately appraise unhealthy child-oriented food products bearing these FOPPs. It was hypothesized that parents exposed to counter-advertisements would be less likely to prefer unhealthy products bearing these FOPPs and would rate such products and consumers of them less favorably than would parents not exposed to counter-advertisements.

**METHODS**

**Design and Procedure**

The study employed a 2 (FOPP) × 2 (advertisement) × 5 (product category) between-subjects experimental design. Using a Web-based method, parents were randomized to: (1) an FOPP type (nutrient content claim or sports celebrity endorsement), (2) an advertisement (counter-advertisement challenging their assigned FOPP or control advertisement), and (3) a pair of packaged food products from the same product category composed of an unhealthy (energy-dense and nutrient-poor) product featuring their assigned FOPP and a healthier product without an FOPP. Participants first viewed their assigned advertisement before subsequent questions assessing their reactions to it could be completed. The advertisement played through automatically on a loop in the center of the screen, with participants unable to click through to the questions until they had viewed the advertisement at least twice. Next, participants viewed their assigned pair of packaged food products and then completed a choice task and ratings of the unhealthy product. The Cancer Council Victoria’s Institutional Review Committee granted ethical approval to conduct the study. Implied consent was obtained by panel members clicking on the Web link and completing the survey.

The sample was composed of members of an existing national online panel who resided in Australia and were identified as being the main grocery buyer for their household and the parent or caregiver of a child aged 5–12 years. The online panel, managed by the market research company commissioned to conduct the fieldwork, was composed of members originally sourced from various methods including computer-assisted telephone interviews, face-to-face, and online market research databases. Panel members were sent an e-mail with a Web link to the survey, inviting them to participate in a study about packaged food. As an incentive to participate, members received points toward shopping vouchers from the market research company upon completing the survey. Three screening questions were asked at the beginning of the survey to confirm that participants met the eligibility criteria, were not employed (or had close family or friends) in the food manufacturing or marketing industries, and were not dietitians or nutritionists. Based on power calculations using results from previous experiments testing adults’ responses to FOPP promotions (Cohen $D = 0.24$ for effect of nutrient content claim on mean purchase intentions for food product) and anti-tobacco counter-advertisements $(V = 0.15$ and $0.08$, respectively, for the effect of anti-smoking advertisements during movies on the proportion of respondents likely or unlikely to be smoking in 12 months), a sample size of 1,040
parents was estimated to be sufficient to detect effects. To keep cell sizes relatively equal, a minimum quota of n = 52 was set for the 20 conditions.

Experimental Stimuli

Advertisements. A counter-advertisement in the form of an animated Web banner was developed to challenge each type of FOPP: nutrient content claim and sports celebrity endorsement, respectively. For the control condition, an advertisement for laundry detergent, with an analogous execution style, was developed. Qualitative methods were used to inform the content of the counter-advertisements. Three focus groups with parents from varying socio-economic status (SES) backgrounds were conducted to explore misperceptions elicited by FOPPs on unhealthy child-oriented food products and to identify potential messages for counter-advertising. A second round of focus groups was undertaken to explore parents’ responses to 6 potential counter-advertisement concepts developed by a creative agency and to select the most effective concept to be fully developed and used in the experimental study.

From these discussions, a number of overarching principles relating to each of the concepts became apparent, including the need for the message to be communicated in a simple and straightforward way and a preference for images of everyday foods (eg, cereal) to be used instead of treats foods (eg, sweets). One concept was identified as having the greatest opportunity to achieve the intended aims of the advertising if adapted to take into account these principles. The selected concept included 3 frames: (1) an image of a mock cereal package with an FOPP focusing on a positive aspect of the product, with the tagline “The part they tell you”; (2) an image of the same cereal package with an FOPP focusing on a negative aspect of the product, with the tagline “The part they don’t”; and (3) a call to action urging parents, “Don’t trust the front of the pack, the truth is on the back,” with the logos of 3 prominent health organizations (who consented to this use) underneath. The visuals within the concept were tailored to create 2 separate counter-advertisements, one addressing nutrient content claims and the other addressing sports celebrity endorsements (Figure). Encouraging parents to read the nutritional information on the back or side of the package was considered an important communication objective because of evidence from an earlier experimental study showing that the persuasive effects of nutrient content claims and sports celebrity endorsements were somewhat negated when parents referred to the nutritional information.5

Food products. Participants were randomly allocated to view 1 of 10 unhealthy food packages that varied by FOPP type and product category (Table 1). The nutrient content claim FOPP highlighted a positive nutritional attribute of the product. The sports celebrity endorsement FOPP featured an image of a popular Australian sportsperson (also a parent), with an accompanying quotation that included a nutrient content claim and reference to other positive product attributes such as taste and convenience. The format and content of the FOPPs were designed to replicate the typical style of nutrient content claims and sports celebrity endorsements seen on food packaging in Australia. All products were based on overseas brands to minimize response bias based on preconceived notions about known brands, and were successfully used in the authors’ earlier experiment.5

For each FOPP type, unhealthy products were prepared for 5 food categories: sweetened breakfast cereals, cheese dip snacks, ice cream bars, frozen chicken nuggets, and flavored milk. These product categories were chosen to reflect a mixture of sweet, savory, and frozen snack foods and meals typically consumed by children. A healthier product with no

Figure. Screenshots of nutrient content claim and sports celebrity endorsement counter-advertisements: (A) Nutrient content claim counter-advertisement; (B) sports celebrity endorsement counter-advertisement; (C) control advertisement.
Table 1. Food Product Categories and Corresponding Front-of-Package Promotion Types

<table>
<thead>
<tr>
<th>Food Product Category</th>
<th>Nutrient Content Claim</th>
<th>Sports Celebrity Endorsement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweetened breakfast cereal</td>
<td>Source of fiber</td>
<td>“A tasty source of fiber to start your kids’ day.”</td>
</tr>
<tr>
<td>Cheese dip snacks</td>
<td>Source of calcium</td>
<td>“A great-tasting source of calcium for kids on the go.”</td>
</tr>
<tr>
<td>Ice cream bars</td>
<td>Reduced fat</td>
<td>“Reduced-fat Creamsicles are a family winner.”</td>
</tr>
<tr>
<td>Frozen chicken nuggets</td>
<td>Trans-fat free</td>
<td>“Quick, simple, and trans-fat free. The kids love ‘em.”</td>
</tr>
<tr>
<td>Flavored milk drinks</td>
<td>Good source of vitamin D</td>
<td>“A good source of vitamin D and a taste kids adore.”</td>
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</tbody>
</table>

Note: Participants were assigned to view 1 front-of-package promotion type within 1 food product category.

FOPP, with a similar packaging style, was prepared for each of the 5 food categories to serve as a comparison product. A manipulation check in the authors’ earlier experimental study confirmed that the healthier comparison products were rated comparably by parents in terms of brand and packaging characteristics to the unhealthy products when they contained no FOPP. A nutrition facts panel was generated for each product by referring to similar market products. Each unhealthy product contained more energy and higher levels of fat, sugar, and/or sodium per 100 g or 100 mL than its healthier counterpart and had a nutrient profile prohibiting them from carrying a health claim (ie, a reference to a relationship between a food and health rather than a statement of content) under the Australian regulatory standard for nutrient content and health claims. A further manipulation check in the authors’ earlier experimental study indicated that healthier comparison products were rated as healthier than the unhealthy products (featuring no FOPP) by parents.

Measures

Product choice. Participants were presented with an unhealthy food product featuring their assigned FOPP and a healthier food product from the same product category without an FOPP side-by-side on the screen, and were asked to choose which product they (1) would prefer to buy and (2) thought was healthier. Participants were able to view the other side of each package by clicking on the image but were not explicitly told that this would display the product’s nutrition information. A measure of whether participants clicked to read the nutrition information on the FOPP product was recorded. The order of presentation of the 2 products on screen (eg, left vs right) was randomized across participants.

Reactions to front-of-package promotions. Participants rated their assigned FOPP for believability, trustworthiness, and credibility using 7-point semantic differential scales. They also indicated their level of agreement (1 = “strongly disagree” to 7 = “strongly agree”) with these statements about their FOPP: “interests me,” “is misleading,” “would motivate me to buy the product,” “is helpful to me,” “means nothing to me,” and “is original.”

Demographic and other variables. All participants indicated their sex, age group, education level, and postal code. Participants were classified by residential postal code into 3 SES groups (low [first and second quintiles], medium [third and fourth quintiles], and high [fifth quintile]) according to the Socio-Economic Index for Areas Index of Relative Socio-Economic Advantage/Disadvantage. Perceived weight status was assessed by asking participants how they would describe their weight at the moment (1 = “very underweight” to 5 = “very overweight”).

Statistical Analysis

Chi-square tests were performed to check whether random assignment yielded equivalent demographic groups. Interactions between advertisement (counter-advertisement/control advertisement) and FOPP (nutrient content claim/sports celebrity endorsement) were tested using logistic regression (choice tasks) and 2-way between-groups ANOVA tests (ratings), but because none were significant, results for the 2 FOPP types were aggregated. Logistic regression analysis was conducted to test for differences between advertisement conditions in participants selecting the FOPP product in the 2 choice tasks. In addition, differences by advertisement condition in the proportion of participants reading the FOPP product’s nutrition information before making their selections were assessed using chi-square tests. Independent-samples t tests were performed to test for mean differences in ratings of the food products and FOPPs by advertisement condition on each of the 24 continuous response measures. These analyses are presented with a Bonferroni correction (P = .05 divided by 28) to avoid type I errors (IBM SPSS Statistics 20.0, IBM Corporation, Armonk, NY, 2011).
RESULTS
Sample Characteristics and Group Assignment

A total of 14,343 e-mail invitations were sent to panel members, 3,194 of whom started the survey (22%). After accounting for people who did not meet the inclusion criteria (n = 430), incomplete surveys (n = 177), condition quotas being reached (n = 1,259), and cases with anomalous missing data (n = 59), a final sample of 1,269 eligible parents was achieved. Of the respondents, 74% were female, 66% were aged 35–44 years and 27% were >44 years; 52% had not completed tertiary education (ie, university, technical and further education, or college); 18% were of low SES, 52% medium, and 30% high; and 5% perceived themselves as underweight, 45% as about right, and 50% as overweight. Participants’ demographic profile was comparable across conditions for all characteristics except education level (P = .04). However, there was no significant difference in participants’ education level between the 2 advertisement conditions (counter-advertisement / control advertisement) (P = .68).

Product Choice

Exposure to a counter-advertisement did not lead to a significant reduction in the likelihood of parents showing a preference for buying the FOPP product over the healthier product (34% vs 39% for control condition; odds ratio ¼ 0.79, 95% confidence interval ¼ 0.63–0.99, P = .04). However, exposure to a counter-advertisement significantly reduced the likelihood of parents thinking the FOPP product was the healthier of the 2 products (30% vs 44%; odds ratio ¼ 0.60, confidence interval ¼ 0.48–0.76, P < .001). Parents who viewed a counter-advertisement were more likely to have read the FOPP product’s nutrition information before selecting both the product they would prefer to buy (60% vs 44%, c²(1) = 32.65, P < .001) and the one they thought was healthier (70% vs 56%, c²(1) = 27.45, P < .001).

Perceptions of Unhealthy Product With Front-of-Package Promotion

Table 2 summarizes results of ANOVA tests comparing ratings of the FOPP

<table>
<thead>
<tr>
<th></th>
<th>Control Advertisement Mean (SD)</th>
<th>Counter-Advertisement Mean (SD)</th>
<th>Main Effect</th>
<th>P</th>
<th>Effect Size Cohen D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived target nutrient content of product</td>
<td>4.48 (1.63)</td>
<td>4.36 (1.69)</td>
<td>1.26</td>
<td>&lt; .001*</td>
<td>0.07</td>
</tr>
<tr>
<td>Perceived healthiness of producta</td>
<td>3.27 (1.40)</td>
<td>2.95 (1.33)</td>
<td>4.27</td>
<td>.004</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Brand/pack characteristics

<table>
<thead>
<tr>
<th></th>
<th>Control Advertisement Mean (SD)</th>
<th>Counter-Advertisement Mean (SD)</th>
<th>t</th>
<th>P</th>
<th>Effect Size Cohen D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of good quality</td>
<td>4.07 (1.37)</td>
<td>4.07 (1.38)</td>
<td>0.03</td>
<td>.98</td>
<td>0.00</td>
</tr>
<tr>
<td>Tasty</td>
<td>4.36 (1.40)</td>
<td>4.49 (1.36)</td>
<td>–1.62</td>
<td>.11</td>
<td>–0.09</td>
</tr>
<tr>
<td>Inferior to other brands</td>
<td>3.28 (1.32)</td>
<td>3.44 (1.33)</td>
<td>2.12</td>
<td>.03</td>
<td>0.12</td>
</tr>
<tr>
<td>Good value for money</td>
<td>3.76 (1.32)</td>
<td>3.83 (1.24)</td>
<td>–0.92</td>
<td>.36</td>
<td>–0.05</td>
</tr>
</tbody>
</table>

Perceptions of consumers of product

<table>
<thead>
<tr>
<th></th>
<th>Control Advertisement Mean (SD)</th>
<th>Counter-Advertisement Mean (SD)</th>
<th>Main Effect</th>
<th>P</th>
<th>Effect Size Cohen D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor–richa</td>
<td>3.90 (1.13)</td>
<td>3.83 (1.05)</td>
<td>1.20</td>
<td>.23</td>
<td>0.07</td>
</tr>
<tr>
<td>Unhealthy–healthy</td>
<td>3.76 (1.37)</td>
<td>3.55 (1.20)</td>
<td>2.89</td>
<td>.004</td>
<td>0.16</td>
</tr>
<tr>
<td>Young–old</td>
<td>3.11 (1.36)</td>
<td>3.11 (1.27)</td>
<td>0.05</td>
<td>.96</td>
<td>0.00</td>
</tr>
<tr>
<td>Daggyb–cool</td>
<td>4.02 (1.15)</td>
<td>4.07 (1.10)</td>
<td>–0.79</td>
<td>.43</td>
<td>–0.04</td>
</tr>
<tr>
<td>Careless–responsible</td>
<td>3.93 (1.30)</td>
<td>3.71 (1.22)</td>
<td>3.12</td>
<td>.002</td>
<td>0.18</td>
</tr>
<tr>
<td>Unfit–fit</td>
<td>3.73 (1.27)</td>
<td>3.55 (1.14)</td>
<td>2.73</td>
<td>.006</td>
<td>0.15</td>
</tr>
<tr>
<td>Stupid–intelligent</td>
<td>3.99 (1.19)</td>
<td>3.75 (1.21)</td>
<td>3.55</td>
<td>&lt; .001</td>
<td>0.20</td>
</tr>
<tr>
<td>Cautious–risk taker</td>
<td>4.16 (1.07)</td>
<td>4.30 (1.11)</td>
<td>2.18</td>
<td>.03</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Purchase intentions

<table>
<thead>
<tr>
<th></th>
<th>Control Advertisement Mean (SD)</th>
<th>Counter-Advertisement Mean (SD)</th>
<th>Main Effect</th>
<th>P</th>
<th>Effect Size Cohen D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbelievable–believable</td>
<td>4.11 (1.47)</td>
<td>3.85 (1.57)</td>
<td>3.05</td>
<td>.002</td>
<td>0.17</td>
</tr>
<tr>
<td>Untrustworthy–trustworthy</td>
<td>4.10 (1.44)</td>
<td>3.73 (1.56)</td>
<td>4.33</td>
<td>&lt; .001*</td>
<td>0.24</td>
</tr>
<tr>
<td>Not credible–credible</td>
<td>4.02 (1.51)</td>
<td>3.73 (1.64)</td>
<td>3.29</td>
<td>.001*</td>
<td>0.18</td>
</tr>
<tr>
<td>Interests me</td>
<td>3.35 (1.69)</td>
<td>3.18 (1.63)</td>
<td>1.79</td>
<td>.07</td>
<td>0.10</td>
</tr>
<tr>
<td>Is misleading</td>
<td>3.71 (1.62)</td>
<td>4.31 (1.72)</td>
<td>6.36</td>
<td>&lt; .001*</td>
<td>0.36</td>
</tr>
<tr>
<td>Would motivate me to buy the producta</td>
<td>3.07 (1.70)</td>
<td>3.03 (1.63)</td>
<td>0.46</td>
<td>.64</td>
<td>0.03</td>
</tr>
<tr>
<td>Is helpful to me</td>
<td>3.25 (1.65)</td>
<td>3.04 (1.57)</td>
<td>2.29</td>
<td>.02</td>
<td>0.13</td>
</tr>
<tr>
<td>Means nothing to me</td>
<td>3.79 (1.96)</td>
<td>3.98 (1.93)</td>
<td>1.75</td>
<td>.08</td>
<td>0.10</td>
</tr>
<tr>
<td>Is original</td>
<td>2.94 (1.59)</td>
<td>2.84 (1.51)</td>
<td>1.15</td>
<td>.25</td>
<td>0.06</td>
</tr>
</tbody>
</table>

*Statistically significant difference with Bonferroni correction (P < .002); aVariable was skewed; b‘‘Daggy’’ is an informal Australian term meaning uncool or not fashionable.

Note: All response scales ranged from 1 through 7. Cohen D: ≤ 0.20 = small effect size; ≤ 0.40 = medium effect size. A negative effect size indicates that it was not in the predicted direction.
unhealthy product by advertisement condition. Parents who viewed a counter-advertisement rated the FOPP product as less healthy and expressed weaker intentions for purchasing the FOPP product compared with parents who viewed the control advertisement ($P < .001$). They were also more likely to perceive typical consumers who buy the FOPP product as less intelligent ($P < .001$).

Reactions to Front-of-Package Promotions

Parents exposed to a counter-advertisement expressed a number of less favorable reactions to the FOPPs compared with parents who saw the control advertisement (Table 2). Specifically, they rated the promotions as less trustworthy ($P < .001$), less credible ($P = .001$), and more misleading ($P < .001$) than parents not exposed to a counter-advertisement.

DISCUSSION

This study provides preliminary evidence that counter-advertising may be an effective strategy for helping to reduce the persuasive effects of potentially misleading promotions for unhealthy foods. Whereas previous experimental research with parents found that inclusion of front-of-package sports celebrity endorsements and nutrient content claims tips consumer preferences toward unhealthy products bearing these promotions, these current findings suggest that exposing parents to counter-advertisements challenging these promotions can detract from their appeal.

The Elaboration Likelihood Model offers insights into how counter-advertising may operate. Counter-advertisements could persuade audiences to change their attitudes and behavior toward unhealthy food advertising via the central route (in which audience processing of communications is more active and effortful but predicted to result in enduring belief changes) or the peripheral route (in which audience processing of communications is more passive and can be based on simple persuasive cues without issue-relevant thinking). Food advertising often employs peripheral cues (eg, sports celebrity endorsements), which can lead adults and children to erroneously evaluate unhealthy food products. 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 members’ belief structures). It is arguable that the counter-advertisements tested in the present study addressed both routes of persuasion. The counter-advertisements contained issue-relevant arguments (by exposing misleading promotions) and made use of peripheral cues (expert endorsement by reputable health organizations and use of bold graphics to capture attention).

The study has some limitations. Participants were from an online panel with a low response rate (a typical weakness of this survey approach) and may not have been representative of the general parent population. However, their profile was comparable across conditions, which suggests that demographic characteristics would not have confounded the experiment. Exposure to counter-advertisements was forced, potentially making people more attentive than if they had been disseminated in a naturalistic media environment. Demand effects could have made participants more likely to respond to the counter-advertisements as intended, because the counter-advertisements specified a recommended course of behavior. Future research could extend this preliminary test of the usefulness of counter-advertising. Demand effects could be reduced by obscuring the salience to participants of assessment of food choices in response to counter-advertising exposure by testing counter-advertising effects on actual food product choices, with a greater lag between counter-advertising exposure and behavioral assessment. Because this was an online study, product choice was simulated. Counter-advertisements were developed only to address 2 specific types of FOPP (ie, nutrient content claims and sports celebrity endorsements), which limited the generalizability of the current study findings to other types of food marketing strategies that target parents, such as emotional manipulation and images of family life and happiness. The sports celebrity endorsement promotions used in the current study were not pure in that they incorporated a nutrient content claim and reference to other positive product attributes (eg, taste, convenience). This composite style was intentionally chosen because it is more representative of how sports celebrity endorsements appear in food marketing and was the format used in previous research that found that parents are influenced by sports celebrity endorsements. All of the statistically significant mean differences found between advertisement conditions represented small to medium effect sizes (between 0.18 and 0.36). Because exposure to a counter-advertisement was across a single time point, the detection of larger effects would not have been expected. Small to medium effect sizes have often been found in experimental media research on other health topics.

IMPLICATIONS FOR RESEARCH AND PRACTICE

The counter-advertisements did not affect perceptions of products’ taste or quality, which suggests that their route of influence lay in deterring from perceived health attributes of products, the truthfulness of FOPPs, and to a lesser extent, perceptions of product consumers. The use of counter-advertisements challenging other types of food promotions (eg, premium offers), food advertising in other media (eg, television), or different types of counter-advertising messages (eg, questioning motives or integrity of food companies) could be effective, too, although further research would be needed to assess the nature of their influence.

Although the counter-advertisements assisted parents in identifying the healthier of the product pair and weakened their perception of the healthiness of the FOPP product and their intentions to purchase it when rated separately, it did not change their preferred product to buy. This was true even though parents who viewed the counter-advertisement were more likely than those who saw the control advertisement to read the FOPP product’s nutrition information.
before selecting their preferred product to buy. Such a finding suggests that other factors figure alongside or even ahead of health concerns when choosing between foods within a particular product category. For example, it may be that unhealthy foods are perceived to be less expensive or to taste better than “healthier” alternatives, even when the brands are unknown to consumers, as was the case in the current experiment. The inclusion of additional choice tasks in future studies that prompt participants to base their product pair selection on anticipated sensory attributes and cost could help elucidate this finding.

Overall, the results suggest that mass dissemination of food promotion counter-advertising could help reduce the misleading influence of unhealthy food marketing and improve the accuracy of parents’ evaluations of how nutritious promoted food products are. Use of counter-advertising may be more politically acceptable than regulations to restrict certain food marketing techniques, although bans would probably be more effective and affordable for public health. This study provided a preliminary test of the usefulness of counter-advertisements in providing parents with a form of defense against potentially misleading food promotions. However, further research assessing whether more intense exposure to counter-advertisements can bring about significant improvements to consumers’ food choices would be necessary before adopting this as a widespread strategy.

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