

## Public Health

# A systematic review of persuasive marketing techniques to promote food to children on television

G. Jenkin<sup>1</sup>, N. Madhvani<sup>2</sup>, L. Signal<sup>1</sup> and S. Bowers<sup>1</sup>

<sup>1</sup>Health Promotion and Policy Research Unit, Department of Public Health, University of Otago, Wellington, New Zealand; <sup>2</sup>Oxford University, London, UK

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Address for correspondence: Dr G Jenkin, 23a Mein St., Newtown, Wellington South 6242, New Zealand.  
E-mail: gabrielle.jenkin@otago.ac.nz

## Summary

The ubiquitous marketing of energy-dense, nutrient-poor food and beverages is a key modifiable influence on childhood dietary patterns and obesity. Much of the research on television food advertising is focused on identifying and quantifying unhealthy food marketing with comparatively few studies examining persuasive marketing techniques to promote unhealthy food to children. This review identifies the most frequently documented persuasive marketing techniques to promote food to children via television. A systematic search of eight online databases using key search terms identified 267 unique articles. Thirty-eight articles met the inclusion criteria. A narrative synthesis of the reviewed studies revealed the most commonly reported persuasive techniques used on television to promote food to children. These were the use of premium offers, promotional characters, nutrition and health-related claims, the theme of taste, and the emotional appeal of fun. Identifying and documenting these commonly reported persuasive marketing techniques to promote food to children on television is critical for the monitoring and evaluation of advertising codes and industry pledges and the development of further regulation in this area. This has a strong potential to curbing the international obesity epidemic besieging children throughout the world.

**Keywords:** Children, food marketing, persuasive techniques, television.

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## Introduction

An unhealthy diet is one of the four key preventable risk factors for non-communicable disease (NCD), the leading cause of death globally (1). Unhealthy diets are a major contributor to the twin NCD epidemics of type 2 diabetes and obesity (2). Of particular concern is the emergence of these nutrition-related conditions among children and young people. Obese children are more likely to become obese as adults (3), which has implications for chronic disease later in life (4).

The ubiquitous marketing of energy-dense, nutrient-poor food and beverages is a key modifiable influence on childhood dietary patterns and obesity. Evidence from systematic reviews has concluded that food marketing influences the preferences, purchasing behaviour and diets of children

(5–8). In light of the current obesity epidemic, this ubiquitous marketing of unhealthy food has come under increasing public health scrutiny by international health organizations, which have called on governments to monitor and address the problem (9–11). Many countries now have systems for regulating aspects of food advertising to children; most of these are industry self-regulatory initiatives that avoid government regulation (12,13).

Television (TV) remains the key avenue through which food marketing reaches children (5). To date, much of the international literature documenting TV food advertising to children was about quantifying food advertising to children, with a focus on the nutritional profiles of the advertised foods. Evidence from such studies indicates that the majority of such marketing is for unhealthy foods (5). Comparatively fewer studies have examined persuasive

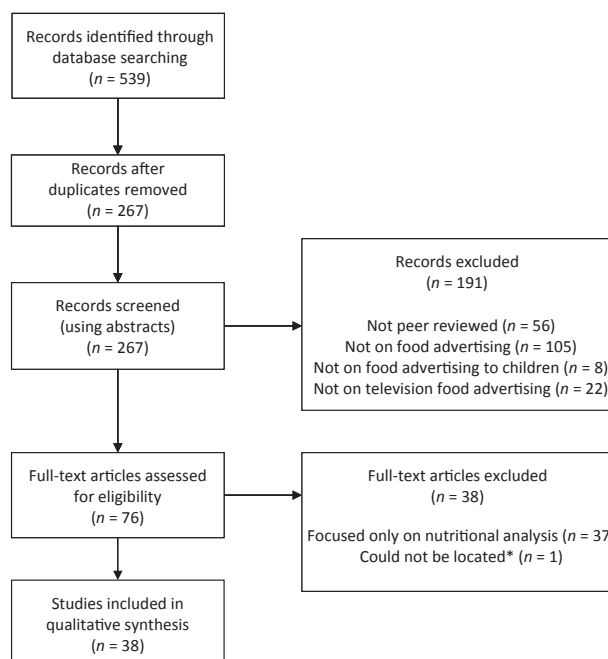
marketing techniques employed by food companies, retailers and advertising agencies to promote unhealthy food and beverages to children. This means that both research and many of the advertising codes and regulations in many countries centre on limiting the *quantity* of unhealthy food advertising without similar rules around the *persuasive content* of such marketing. Some exceptions to this include the UK (14), Australia (15) and Ireland (12), where there are some regulatory content rules limiting promotional or premium offers, the use of promotional characters and celebrities and nutritional health claims in food advertising targeted at children. These exceptions highlight the plausibility of regulating the persuasive content of food advertising to children.

Recent reviews have highlighted promotional strategies used to promote food to children, including the use of promotional characters and celebrities; premiums such as free toys, collectables and competitions; TV shows and movie tie-ins; jingles and slogans; gender and age-specific targeting; and more recently, directions to websites (5,8). Creative marketing techniques such as these, like branding, give food marketing its persuasive power (16). There is good evidence that the use of techniques such as premium offers (free gifts, toys, discounts and competitions) promotes brand loyalty in children, and other persuasive techniques including the use of promotional characters, nutrition and health-related claims, and appeals to taste and fun increase children's recall and enjoyment of advertising, purchase-request behaviour, food preferences and consumption behaviour (5,6).

In recognition of this, the World Health Organization framework for implementing food marketing recommendations released in 2012 stated that: 'the overall policy objective should be to reduce both the exposure of children to, and the power of, marketing of foods' (17). It is therefore timely for a systematic review of primary research that has documented persuasive marketing techniques to promote food to children via TV.

## Methods

Eight academic databases (Medline, Embase, Scopus, PubMed, CINAHL, Proquest, Web of Knowledge and EBSCO) were searched using the PRISMA (18) review process, the results of which are shown in Fig. 1. Inclusion criteria were English-language primary research articles documenting persuasive marketing techniques to promote food to children via TV, published before 30 May 2013. The exclusion criteria were developed iteratively and applied by two researchers, with 100% agreement of final articles included. The specific exclusion criteria, as depicted in Fig. 1, were (i) articles not peer reviewed; (ii) articles not on food advertising; (iii) articles not on food advertising to children (although studies on TV advertising seen by adults and chil-



**Figure 1** Search strategy based on PRISMA. Source: Moher *et al.* (2009).

dren were included); (iv) articles not on TV food advertising; (v) articles that only examined nutrient profiles of advertised foods; and (vi) one article that could not be located.

The databases were searched with terms and variations of the following: marketing; 'persuasive advertising' OR 'persuasive communication' OR 'persuasive marketing' AND food\* OR beverage\* OR drink\* AND child\*; AND 'content analysis' OR thematic analysis OR cod\*. Studies that examined alcohol, smoking and drugs were excluded by specifying: NOT alcohol OR smoking OR drug\* (18).

## Quality assessment

Many available quality assessment tools, as they are designed for randomized controlled trials or meta-analyses, were not suitable for rating the quality of the studies in this review, which were descriptive, observational, cross-sectional and typically with no participants. We therefore adapted a tool previously developed for a quality assessment of descriptive studies (19). This involved selecting those quality assessment items relevant to the studies included in this review, essentially resulting in a condensed version of the original tool. The five specific quality items assessed were (i) the presence of a clear statement of the study aims; (ii) a clear description of the sample (of food advertising to, or seen by, children); (iii) the use of two or more researchers to code the data and a test for inter-coder reliability; (iv) a description of how the themes (of persuasive marketing techniques) were identified (inductive or

deductive); and (v) the acknowledgement of relevant limitations. Consistent with the Cochrane collaboration recommendations (20) a three-point ordinal scale was used to grade the quality items (1 = *item definitely met*, 2 = *partially met*, 3 = *not met*). Thus, a high-quality paper could score 5 and a low-quality paper could score 15.

## Synthesis of literature

We conducted a narrative synthesis of the reviewed literature, focusing on the most common persuasive marketing techniques used to promote food to children on TV. This synthesis is presented below and organized according to research country of origin because of country differences in regulatory frameworks around food promotion to children.

## Results

### Main study characteristics

The main study characteristics, quality assessment scores and the relevant findings of the 38 reviewed articles are presented in Table 1.

As shown in Table 1, the articles scored well overall for quality, with scores ranging between 5 and 10, and a median score of 6.9. Thus, overall, the aims, sample and method used to examine persuasive techniques were clearly described; coding and inter-coder reliability and study limitations were assessed and reported. As shown in Table 1, the 38 peer-reviewed articles were published between 1997 and 2013. Less than half ( $n = 17$ ) of the articles were based on U.S. research only, six studies were from Australia, three were from the UK and two were from Canada (see Table 1). There was also one study from each of eight other countries (21–28), and two studies comparing two or more countries (29,30).

The majority of the research was focused on food advertising, although some also included advertising for other products (21,22,29,31–33) albeit with separate analysis for food advertising. Many studies compared ‘child-targeted’ with ‘adult or family/general audience-targeted’ advertisements, although the criteria for determining the target audience of advertisements (child, adult, general, family) varied greatly making meaningful comparisons difficult. For example, in the study by Warren *et al.* (34), child-targeted advertisements included any advertisement that met any of the following criteria: being placed in a children’s programme; any advertisement where children appear visually or are used as voice-overs; any advertisement that contains verbal or visual references or appeals to children (e.g. references to school or animation); or any advertisement that promoted food products specifically designed for children.

Similarly, definitions of when children are likely to be watching TV also varied greatly. Many studies used

quantitative data (usually purchased or based on Nielsen TV audience data) to identify ‘children’s viewing times’. However, some studies relied on a more simplistic ‘common sense’ approach to determine children’s viewing times, examining before and after school and/or weekend TV viewing times or exploring advertisements screened in-between child-rated programmes. Bell *et al.* (35), for instance, recorded advertising from 15.00 to 21.00 h on weekdays and from 19.00 to 22.00 h on Saturdays, assuming these to be times when children are watching TV. Other approaches included an exclusive focus on child-oriented channels (e.g. Disney) or a combination of a focus on child-oriented channels and children’s programming times (using the rating of the programme) on mainstream free-to-air broadcast channels. Again, the heterogeneity of times when children were considered to be watching TV makes meaningful comparisons difficult.

In all except two studies (21,36), the method for identifying persuasive techniques was deductive (informed by an existing coding schedule). The range of persuasive marketing techniques documented in the studies varied from a few to more than 40 in some studies using comprehensive coding tools informed by previous research in this area. The types of persuasive marketing techniques documented varied enormously and depended on the specific aims. For instance, some studies interested in the targeted nature of food marketing focused on documenting the human characteristics of the advertisement actors, such as gender, race and age (29,37,38), while others interested in the range of marketing techniques examined the use of premium offers, celebrity endorsements, emotional or rational appeals, and production techniques (e.g. the use of animation and cartoon characters and jingles). Some studies examining compliance with industry self-regulation focused on a limited range of persuasive techniques and factors relevant to local codes (such as repetition of advertisements) and industry pledges (21,28,22,39,40). The number of hours of TV recorded in the studies ranged from 14 (26) to 5,856 (33,40). The combined studies covered more than 24,000 h of TV programming.

### Most reported persuasive marketing techniques

As the various studies used different definitions of persuasive marketing techniques and themes, to compare findings across studies, we drew on the definitions and themes outlined by Hebden *et al.* (16). Based on this, the most frequently reported persuasive marketing techniques used to promote food to children (found in the 38 studies) were: premium offers ( $n = 21$  studies); the use of promotional characters ( $n = 21$  studies); nutritional and health claims ( $n = 20$  studies); the theme of ‘taste’ ( $n = 17$  studies); and the emotional appeal of ‘fun’ ( $n = 17$  studies). These are discussed below.

**Table 1** Study characteristics and key persuasive techniques found to promote food to children via television

Author (Date) Country	TV hours recorded	Quality score	Main persuasive techniques found in promoting food to children	Premiums	Promotional characters	Nutrition/ health claims	Taste	Fun	Unique/ new	Animation	Price
Wicks <i>et al.</i> (2009) (41) United States	1,008	7	Five of the six most frequently used appeals in all sampled food ads were product appeals: taste/flavour (33%); mood alteration (14%); new (8%); nutrition (6%); premium offer (6%); or value (6%). Significantly, more emotional appeals and production techniques were found in ads appearing in child-rated programs. Production techniques such as live action visual effects (66%) were the technique used in most food advertising. Most of the food ads did not use animation, sound effects or jingles.	1	0	1	1	1	1	1	1
Warren <i>et al.</i> (2007) (54) United States	1,008	6	Taste/flavour appeals were used most often (in over 50%), followed by mood alteration appeals. Premium offers and value appeals were also evident. The most common production technique was visual effects. Others included animation, sound effects and jingles. New appeals that appeared in the first year of data were replaced in the second year with nutritional appeals and action/adventure.	1	0	1	1	1	1	0	1
Warren <i>et al.</i> (2008) (34) United States	627	9	The most common persuasive appeals for child and general audience ads were: taste/flavour (35%); mood alteration (14%); nutritional content (10%); new (8); and value for money (6%). Appeals more significantly associated with child ads were emotional appeals: mood alteration; action/adventure; speed/strength; magic/fantasy; trickery/deceit; adult approval; peer acceptance; and premium offers. Four appeals appeared more in general audience ads, two were emotional (healthy/well-being, appearance) and two were product appeals (taste/flavour, new).	1	0	1	1	1	1	1	1
Beil <i>et al.</i> (2009) (35) United States	216	5	Product novelty (28%) was the main technique (and many of the novelty claims were in last food advertisements). Also common in 17% of ads were premium ('special') offers. Fun was a theme in 7% of ads. 'Good value' propositions were found in only 6% of ads, with nearly all instances being present in last food restaurant commercials. Appeals to taste were found in just 4% of ads, and not associated with food category. Nutritional claims (presence of a nutrient) were also found (in 4% of ads).	1	0	1	1	1	1	0	1
Kunkel <i>et al.</i> (2013) (49) United States	150	8	Promotional strategies assessed were promotional characters, premiums and contests, and website links. The use of licensed characters was similar across the two environments (16% of ads in Spanish vs. 16% of ads in English), as was the use of premiums (16% of ads in Spanish vs. 18% in English). Significant differences were found for contests (14% of ads in Spanish vs. 8% in English) and the presence of website promotions in food ads (66% of ads in Spanish vs. 57% in English). Although guidelines state that licensed characters may be used to market healthy food, 78% of Spanish-language food ads that featured licensed characters promoted unhealthy products, compared with 49% for English-language ads.	1	1	0	0	0	0	0	0
Zwarun <i>et al.</i> (2008) (43) United States	79	8	Assessed breaches of Children's Advertising Review Unit (CARU) guidelines. Licensed characters appeared in 17% of food ads; less common were celebrities (3%). Fifty-seven per cent of food ads showed cartoon or computer-generated characters, and 23% showed premiums such as contests or free toys (most of which emphasized the premium rather than the product). Very few ads had a message that use of the product was associated with peer group approval or social acceptance and only a few implied that use of the product would result in improved strength or growth, or special powers.	1	1	0	0	0	0	0	0

Table 1 Continued

Author (Date) Country	TV hours recorded	Quality score	Main persuasive techniques found in promoting food to children	Premiums	Promotional characters	Nutrition/ health claims	Taste	Fun	Unique/ new	Animation	Price
Thompson <i>et al.</i> (2007) (51) United States	60	5	Of food ads, 12% featured Latino celebrities, and 19% made reference to Latino culture. In 13% of ads, an animated character was used. Most commercial messages (84%) were consumer related, such as 'tastes great' and 'makes kids smile'. The remaining 16% of commercials contained health-related content in their message, such as 'complete and balanced nutrition'. Physical activity was featured in 10% of advertisements.	0	1	1	1	0	0	1	0
Page <i>et al.</i> (2009) (59) United States	59	6	Examined food ads for behaviours associated with substance use behaviour, physical violence and other problematic behaviours for children. Sixteen per cent portrayed conflict, fighting or taking extreme measures; 13% showed depictions of dependency or addiction; 12% portrayed adults in negative or complimentary ways; 10% depicted thievery; and 10% contained portrayals of physical violence. Eight per cent of the ads displayed exaggerated pleasure sensation; 6% showed trickery; 6% depicted child characters treating adults with disrespect; and 3% depicted the undermining of adult authority.	0	0	0	0	0	0	0	0
Page <i>et al.</i> (2007) (55) United States	59	8	The most prominent emotional appeals were fun/happiness (85%) and play (59%) followed by fantasy/magination (50%), social enhancement/peer acceptance, and coolness/hipness. The most common rational appeal was taste (52%), fruit appeal (35%); novelty/new (22%), healthy/nutritious (8%). Value for money was not found in any food ads. Premium offers and promotional characters were not documented.	0	0	1	1	1	1	0	0
Page <i>et al.</i> (2007) (50) United States	59	5	Examined 20 promotional strategies and 20 attention elements. The main strategies used were jingles/slogans (64%); children shown with food (54%); product identification characters (44%) which was much more common than the use of fictional super-characters (6%); toy tie-ins 16%; collectables (12%); movie tie-ins (16%); directed to website (16%); and contests (6%). The main attentional elements used were real children (66%), animation (63%) and animated main characters (57%). Other prominent techniques included fast-cutting scenes, exciting/fast-paced music, using humour and intense colour effects.	1	1	0	0	1	0	1	0
Connor (2006) (36) United States	48	6	The main appeals in food ads targeting pre-school-age children were fun (82), action (57%), taste (25%) and premiums (14%). All child-oriented food ads on Disney and Public Broadcasting Service, and around half of those on Nickelodeon, used licensed characters (e.g. Ronald McDonald) and animation. Nutrition claims were also evident in 4% of ads.	1	1	1	1	1	0	1	0
Rose <i>et al.</i> (2012) (52) United States	44	6	In total, 82% of ads employed some kind of fantasy appeal, including fantasies around ingredients (36%), animal-related stories (33%), adventures (30%) and animated characters (57%). Computer graphics were used extensively in food ads (89%). Only 26% of the food ads made a nutritional claim.	0	0	1	0	0	0	1	0
Harrison (2006) (37) United States	40	6	Found differences in food advertising by physical characteristics of actors in ads: ethnicity, gender, age (child/adult) and body size.	0	0	0	0	0	0	0	0
Harrison <i>et al.</i> (2005) (38) United States	40	6	Common character attributes were male, white race and average weight. Other marketing techniques were not explored. Health-related messages were evident in some food ads.	0	0	1	0	0	0	0	0
Oulley <i>et al.</i> (2006) (60) United States	36	7	Examining only health and physical activity-related (any scene that provided verbal or visual information related to leisure-related physical activities) components found physical activity was present in 9% of ads and health-related content in 8% of ads. Much of the health information was misleading/inaccurate.	0	0	1	0	0	0	0	0

Table 1 Continued

Author (Date) Country	TV hours recorded	Quality score	Main persuasive techniques found in promoting food to children	Premiums	Promotional characters	Nutrition/ health claims	Taste	Fun	Unique/ new	Animation	Price
Folia <i>et al.</i> (2006) (42) United States	31	5	Food was most often associated with fun and good times (75%), pleasant taste (54%), being hip or cool (43%) and feelings of happiness (43%). Premiums (free toys) being given away (35%), athletic ability (35%), novelty (innovation or newness) (32%), friendship or social success (30%), magical or superhuman abilities (27%), and deceiving or tricking adults (22%) were also associated with the promotion of food to children. Nutrition or healthfulness was only evident in 5% of food ads. Promotional characters and price were not measured.	1	0	1	1	1	1	0	0
Byrd-Bredbenner & Grasso (2000) (56) United States	18	5	Taste ('flavour') (79%), economy (36%) and quality (26%) were the key persuasive themes evident in food ads. General health and nutrition claims were featured in 22–24% of food ads (and these claims were analysed in detail). Novelty was evident in 13% of ads, and 'other' (12% of ads) included premiums such as 'free gifts'. Promotional characters and emotional appeals were not explored.	1	0	1	1	0	1	0	1
Roberts <i>et al.</i> (2012) (40) Australia	5,856	8	Assessed breaches of the Australian co-regulatory system. There were 619 breaches of the mandatory and 332 breaches of the voluntary regulations. The study identified 613 breaches relating to premiums, competitions and promotional characters. There were also breaches of advertising repetition.	1	1	0	0	0	0	0	0
Pettigrew <i>et al.</i> (2012) (33) Australia	5,856	7	Sixteen per cent of the 93,284 food ads contained negative themes, specific negative emotions (loneliness, boredom), antisocial behaviours (aggression, mocking, nagging) or the use of food for emotional purposes (food craving, mood alteration, and other emotional uses such as obtaining approval or affection from others). Ads with negative themes were more likely to be for non-core foods and to be aired during children's popular viewing times than at other times.	0	0	0	0	0	0	0	0
Hebden <i>et al.</i> (2010) (16) Australia	324	7	Sixty-two per cent of food ads used persuasive techniques (premium offers, promotional characters and nutritional claims). Fifty-nine per cent of the promotional techniques were used to advertise non-core (unhealthy) foods. Premium offers were the most frequently used persuasive technique (39% of all food ads).	1	1	0	0	0	0	0	0
Hebden <i>et al.</i> (2011) (44) Australia	192	6	Emotional appeals were featured in 78% of food ads. Most common emotional appeals were fantasy and imagination (26–28% of food ads) and parental themes (23–29%). Achievement/accomplishment, control of self/environment and fun/happiness were also evident as emotional appeals. Convenience and taste were common food product appeals appearing in more than 50% of non-core food ads. Promotional characters were featured in 23% of ads, of which 39% were cartoon or licensed characters (e.g. Bugs Bunny); 48% were sportspersons or celebrities; and 13% were health professionals or scientists. Nutrition claims were featured in 37% of core/miscellaneous food advertisements and 9% of non-core food ads. Economy/price and novelty, although documented, were not common themes.	0	1	1	1	1	1	1	1
Roberts & Pettigrew (2007) (45) Australia	29	10	The main promotional appeal was fantasy featuring in 57% of ads. Fun was also a common promotional appeal. A premium was featured in about a third of ads (and included collectables). Animations were featured in 30% of advertisements. Celebrities were featured in 17% of advertisements and included those from the areas of sports, television and film. Four major themes evident included (a) portrayal of grazing; (b) denigration of core foods; (c) enhancement of popularity, performance and mood; and (d) exaggerated health claims.	1	1	1	0	1	0	0	0
Hill & Radimer (1997) (48) Australia	27	6	The main promotional technique was premiums (giveaways 20%), and these were most common to fast food ads. A third of ads contained explicit messages relating to taste as well as messages about vitamins/minerals (common in breakfast cereal ads). Other key promotional themes were fun, 'hip and cool'.	1	0	1	1	1	0	1	0

Table 1 Continued

Author (Date) Country	TV hours recorded	Quality score	Main persuasive techniques found in promoting food to children	Premiums	Promotional characters	Nutrition/ health claims	Taste	Fun	Unique/ new	Animation	Price
Boylard <i>et al.</i> (2012) (47) UK	5,234	8	The main persuasive theme in food ads targeting children was fun (51%), followed by taste (16%), premium (14%), health/nutrition (7%); energy (5%); unique (3%); enjoyment/satisfaction (2%); peer status (1%); price (0.6%); and general superiority (0.1%). A promotional character (brand equity and licensed characters) or a celebrity endorser was featured on 56% of food ads.	1	1	1	1	1	1	0	1
Lewis <i>et al.</i> (1998) (32) UK	91	6	Food ads were more likely to use animation, a story format, and humour, and to contain the emotional appeal of fun/happiness/mood alteration. Ads for non-food products contained significantly more claims of value for money.	0	1	0	0	1	0	1	0
Sixsmith & Furnham (2009) (46) UK	45	6	Promotional techniques more common in child-targeted food ads included health benefits (37% of child-targeted ads vs. 17% of adult ads), scientific information (20% of child-targeted ads vs. 6% of adult ads), fantasy content, use of cartoons and the 'leisure' setting. However, more adult ads contained information concerning price, value or promotions/competitions (27%) than did the 'Children' advertisements (9%) and (28.8%) contained celebrities (29% of adult ads vs. 9% of 'children' ads).	1	1	1	0	0	0	1	1
Kent <i>et al.</i> (2011) (39) Canada	100	6	Ads produced by companies associated with the industry Children's Food and Beverage Advertising Initiative (CAI) were significantly more likely to include promotional characters. Of the promotions with media characters, 90% of CAI promotions were for 'less healthy' foods compared to 13% of the non-CAI promotions.	0	1	0	0	0	0	0	0
Kent <i>et al.</i> (2011) (31) Canada	90	5	There was a significant difference between the different broadcasting provinces/language on the themes: fun and use of a promotional character. Fun was featured as a theme in 38% of all (not just food) Ontario English ads, 15% of Quebec French ads and 41% of Quebec English ads. Promotional characters were featured in 24% of Ontario English ads, 12% of Quebec French ads and 21% of Quebec English ads. Contests were featured between 7 and 35% of food and beverage ads and sponsorship announcements between 22 and 29%.	0	1	0	0	1	0	0	0
Furnham <i>et al.</i> (1997) (29) United States and UK	?	8	Focusing on gender and ethnicity of ad content, central figures in ads to children were more likely to be male (52% in United States, 28% in UK) than female (40% in United States, 21% in UK) in both countries, but in many cases gender was unidentifiable (non-human characters). Voice-overs were also more likely to be male (55% in United States, 60% in UK) than female (45% in United States, 40% in UK). Music was present in a clear majority of ads (88% in United States, 81% in UK). Most of the ads aimed at both boys and girls (67% in United States, 75% in UK). There were differences between the American and British samples in terms of the prevalence of boys and girls. The most numerous ethnic group was whites, followed by blacks, and then finally Hispanics and Asians. Among 'non-human' characters, cartoon animals were easily the most numerous in children advertising. Other key marketing techniques were not explored.	0	1	0	0	0	0	1	0
Kelly <i>et al.</i> (2010) (30) 13 countries	192	5	Examined premiums and promotional characters only. Over all countries, 12% of ads included premiums (range of 2% in Greek and 34% in American ad). In most countries, these ads were for unhealthy foods. Over all countries, 23% of ads included promotional characters (ranging from 9% in Italy to 49% in the United States). Promotional characters were more evident in non-core (unhealthy) food ads (79% vs. 15% for core foods).	1	1	0	0	0	0	0	0
Keller <i>et al.</i> (2011) (25) Switzerland	1,365	8	Advertising strategies included children eating the food (42%), cartoons (39%), a jingle (35%) and fantasy (29%). Popular appeals included fun (46%) and sport/action (21%); adventure (15%) and taste (8%). Premiums were featured in 54% of ads.	1	1	0	1	1	0	1	0

Table 1 Continued

Author (Date) Country	TV hours recorded	Quality score	Main persuasive techniques found in promoting food to children	Premiums	Promotional characters	Nutrition/ health claims	Taste	Fun	Unique/ new	Animation	Price
Efertz & Wlicke (2012) (22) Germany	684	7	Compared with toy commercials, non-core food commercials more frequently used persuasive marketing techniques or promotional characters and premiums. After the EU Pledge, there was a decrease in the use of premiums for non-core food ads but an increase in the use of promotional characters.	1	1	0	0	0	0	0	0
Guran <i>et al.</i> (2010) (24) Turkey	256	9	Key theme was fun, taste and happiness. Thirty per cent of unhealthy ads were promoted using audio-visual techniques. Other marketing techniques appear to have been measured but are not documented in the results.	0	0	0	1	1	0	1	0
Romero-Fernandez (2009) (28) Spain	80	6	Of ads from companies signatory to the Spanish code of marketing to children, 49% were not compliant. Low levels of compliance were found for a number of standards including Standard 13, avoid promotional characters, and Standard 18, presentation of essential conditions for a promotional offer. Findings for companies that did not agree to the code were generally similar, although there were some differences including lower adherence to Standard 13.	1	1	0	0	0	0	0	0
Gaicheva <i>et al.</i> (2008) (23) Bulgaria	42	10	The main product information provided to children was based on the food taste (69%), physical qualities (48%), novelty (29%), composition and content (25), and presence of premiums and prizes – cards, stickers and electronic games (24%). Information about the product's price was rare (3.2%). The most common and popular appeals/associations were with lovely/magnificent taste (76%), smile/fun/happiness (50%), singing and dancing (32%), celebrities/stars (24%), love emotions (19%), pleasure while consuming the food (12%) and adventure/action/sport (11%). Animation was also evident in many ads. Of all food/beverage ads, 27% contained health-related information.	1	1	1	1	1	1	1	1
Barroso <i>et al.</i> (2011) (21) Texas-Mexico	18	8	Narration, animation/special effects, product displayed throughout ads and mascot character.	0	1	0	0	0	0	1	0
Maryam <i>et al.</i> (2006) (26) Iran	14	10	The main messages found were high quality (46%) and taste (59%). Other common messages associated with food were energetic, refreshing, novelty/unique peer acceptance and approval. Rhythmic rhymes were deployed in 67% of the ads. Consumers depicted in 43% of the food ads were overweight ('fat'). Nutrition and health claims appeared in 37% of food ads (half were untrue).	0	0	1	1	0	1	0	0
Moon (2010) (27) Korea	?	7	The most common persuasive appeals were competitive/unique (31%), health/well-being (27%), taste/flavour/smell/texture (27%) and nutritional content (15%), mood alterations (14%), and new (14%). Less used were value for money (3%), appearance (3%), convenience (3%), trickery/deceit (1%), adult approval/disapproval (1%) and quantity/size/amount (0.2%). Health claims were present in 34% of food ads.	0	0	1	1	0	1	0	1
Total 38	24,077			21	21	20	17	17	12	15	10

1 = Persuasive technique found in the promotion of food to children; 0 = Persuasive technique not found in the promotion of food to children. Quality score: Five items were included in the quality assessment: (1) the presence of a clear statement of the study aims; (2) a clear description of the sample (of food advertising to, or seen by, children); (3) the use of two or more researchers to code the data and a test for inter-coder reliability; (4) a description of how the themes (of persuasive marketing techniques) were identified (inductive or deductive); and (5) the acknowledgement of relevant limitations. A three-point ordinal scale was used to grade the quality items (1 = *item definitely met*, 2 = *partially met*, 3 = *not met*). A high-quality paper could score 5 and a low-quality paper could score 15.



## Premium offers

Premium offers to consumers which are associated with the purchase of a product included: offers of a free gift(s) such as toys or cards; competitions; rebates; and vouchers (16). This was a common persuasive marketing technique documented in 21 studies (see Table 1).

U.S. studies assessing premium offers found them prevalent anywhere between 6% in the largest sample of TV programming (1,008 h) (41) and 35% (42) of food advertisements in a much smaller sample (31 h). In the latter case, the offer of *free toys* with a product was present in 35% of food advertisements to children (42). Further, despite new self-regulatory guidelines in the United States, that the premium message should appear as secondary to a focus on the product, 82% of advertisements using premiums were found to focus on the premium (43).

In four of the six Australian studies reviewed, premium offers were also common. In one Australian study, based on a sample of 324 h of TV, premium offers were the most common persuasive technique found in 39% of food advertisements (44). Other Australian studies found premiums evident in 20%<sup>45</sup> to 33% of food advertisements (45). Use of premium offers in UK studies ranged from 9% of child-oriented advertisements (in a modest study) (46) to 14% in a much larger study (47). The multi-country study found that the use of premiums in food advertising was 12% overall, ranging from 2% in Greece to 34% in the United States (30). The use of premiums to promote food in TV advertisements as documented in other countries ranged from 54% in a large study from Switzerland (25) to 24% from Bulgaria (23). The use of premiums in many of these studies was more evident in child-targeted food advertisements and this persuasive technique was often reported in association with the promotion of unhealthy foods (47) and fast foods (60% of fast food advertisements in one Australian study) (48).

## Promotional characters

The use of promotional characters, evident in 21 studies (see Table 1), was an equally common marketing technique to promote food to children. Promotional characters by definition included brand identification characters (such as Tony the Tiger and Ronald McDonald); licensed characters (such as Sponge Bob Square Pants and Spiderman); unlicensed characters (unknown cartoons); and celebrities or popular personalities, including sports persons, health professionals or scientists (16).

The multi-country study reported the use of promotional characters in 23% of food advertisements to children, ranging from 9% in Italy to 49% in the United States (30). Within the U.S.-based studies, one examining the use of licensed characters on three pre-school-age children's

broadcasting networks found that 55% of food advertisements on Nickelodeon and 100% of food advertisements on both Disney and the Public Broadcasting Service used licensed characters (36). Further analyses revealed that fast food advertisements were significantly more likely to use licensed characters than other food advertisements (36). Another U.S. study comparing food advertising on Spanish- and English-language channels reported that 16% of advertisements on both channels used licensed characters to promote food, and although guidelines allow for the use of licensed characters to promote healthy food, the majority of Spanish-language (78%) and half of English-language food advertisements featuring licensed characters were promoting unhealthy food (49). Other U.S.-based studies reported the presence of promotional characters in varying degrees. For instance, Page *et al.* reported that 44% of food advertisements used product identification characters and 6% featured fictional super-characters (50).

Australian evidence on the use of promotional characters was similar, with this technique common in four studies (16,40,44,45). UK research from 2012 also reflected the popular use of promotional characters, with the largest study of more than 5,000 h of TV programming reporting the presence of brand equity and licensed characters or a celebrity endorser in 56% of food advertisements (47). Canadian research, too, reveals that promotional characters have been used frequently between 12 and 24% of food advertisements in one study (31), and in another Canadian study promotional characters were associated with the promotion of unhealthy foods and were used frequently by food and beverage companies, which were signatories to industry initiatives to control food marketing to children (39). The findings from studies in other countries support this evidence with a German-based study reporting an *increase* in the use of promotional characters since the EU Pledge to limit their use (22). The use of cartoon characters was also reported in a number of studies (25,50–52,32,46). As with premium offers, promotional characters were found to be used more frequently to promote unhealthy than healthy foods (30,39).

## Health and nutrition claims

Although health and nutrition claims could be viewed as a persuasive marketing technique aimed at an adult audience, we include them here because they are commonly found in advertising to children (and there is emerging evidence that children are receptive to and influenced by this information) (53). In total, 20 studies found evidence of some form of health and nutrition claim to promote food to children on TV (see Table 1). The definitions of what constituted health and nutrition claims varied widely between studies. More comprehensive accounts of nutrition and health claims differentiate between various levels of claims. For

example, Hebden's taxonomy (16) had four levels to reflect differences between general and specific health and nutrition statements and claims. Some studies made a basic distinction between a general health/well-being claim (or a claim that a food product was 'healthy') and a nutrient claim (a claim that a food contained a specific nutrient). Use of phrases or words to suggest that a food product promoted strength or growth was also commonly found in food advertisements. The inconsistency of definitions used in the various studies makes any meaningful comparison difficult. Because of this, the findings reported below relate to both specific and general health claims combined.

Among the U.S. studies, the presence of nutrition or health-related claims in food advertisements, which were documented in 12 studies, was reported to be between 4%<sup>36</sup> and 26% (in the latter case, the most common claim consisted of 'mentioning' nutrients) (52). Four of the six Australian studies documented the presence of nutrition and health claims. In one of these studies, nutrition claims were documented for 37% of core/miscellaneous food advertisements and 9% of non-core (unhealthy) food advertisements. Another Australian study found that nutrition claims about specific nutrients are more common in breakfast cereal commercials (48). A trend towards exaggerated health claims was documented in another Australian study (45).

While health and nutrition claims were not documented in the two Canadian studies, or the two cross-country studies, all three of the UK studies documented some level of health and nutrition claims associated with food advertising to children (32,46,47). In one of these studies, health claims (or 'health benefits') were reported to be more common in child-targeted (37%) than adult-targeted (17%) food advertisements (46). Of the studies in other countries, health claims were evident in 37% of food advertisements in Iran (26), 34% in Korea (27) and 27% in Bulgaria (23).

## Taste

Appeals to taste (or flavour) were another recurring persuasive technique used to promote food to children, reported in 17 studies (see Table 1). A number of U.S. studies, including the largest three, found evidence for appeals to taste evident in 33–79% of food advertisements (34,41,42,54–56). Taste was also a popular marketing technique present in food advertisements directed at pre-school-age children in the United States (36).

Two of the six Australian-based studies, one from the UK and one from Canada, also reported taste as a common theme (16,31,47,48). Of the studies from the other countries, taste was noted as present in 8% of advertisements in Switzerland (25), 69% in Bulgaria (23), 59% in Iran (26) and 27% in Korea (27).

## Fun

Fun has been a popular theme in food marketing for years. It refers to both non-verbal displays of fun and happiness (e.g. smiling or playing) or use of the words 'fun', 'happiness' or 'pleasure' (16). Another common term used in studies to capture the concepts of fun and happiness was *mood alteration*. Fun and the associated concepts were documented as a key persuasive marketing technique in 17 of the 38 studies (see Table 1).

Fun was a key theme in eight of the U.S. studies, appearing in 7% of food advertisements in one study (35) and 14% of food advertisements in two of the larger U.S. studies (34,41). One U.S. study found fun/happiness to be the most prominent emotional appeal which documented for 85% of food advertisements (55). Another study that focused on TV appealing to pre-school-age children found fun to be present in 82% of food advertisements (36), while a study that focused on school-age children found fun to be the most common theme present in 75% of food advertisements (42). Fun was also documented in two of the Australian studies (16,48), one in association with 'hip and cool' (48), and in two of the three UK studies (32,47), one of which found fun to be the main persuasive theme apparent in 51% of food advertisements (47). As for Canada, the study comparing Ontario with Quebec broadcasting provinces found fun less common in Quebec advertisements (31). Fun was also a common marketing technique in Turkey (24); Switzerland, where it was present in 46% of food advertisements (25); and Bulgaria, where it was apparent in half of all food advertisements (23). Contrary to the evidence supporting the dominance of fun as a persuasive marketing technique, one study documented the presence of negative emotional appeals (promoting food as a means to alleviate loneliness or boredom) and antisocial behaviours in association with food advertising to children, especially unhealthy food (33).

## Other persuasive marketing techniques

Aside from the most common persuasive marketing techniques outlined above, several other persuasive techniques were used to market food to children on TV. These were the use of animation as a production technique of particular appeal to children documented in 15 studies (see Table 1); the themes of uniqueness or novelty noted in 12 studies and often found in association with fast food promotions (35); price (or 'economy' or 'value for money') noted in 10 studies (often found in association with fast food promotions) (35); and the emotional appeals of action, adventure and fantasy noted in many studies, often in association with fun (see Table 1).

## Discussion

Our review of 38 studies documenting persuasive marketing techniques used to promote food to children on TV revealed that the most common strategies were the use of premium offers, promotional characters, nutrition and health-related claims, the theme of taste and the emotional appeal of fun. These persuasive techniques were used more frequently to promote unhealthy food.

## Strengths

Our review differs from other recent systematic reviews (5–8) of food marketing to children because of the focus on persuasive marketing techniques on TV, allowing for more detailed analysis. We also undertook a quality assessment of the papers in the review which, to our knowledge, has not been done previously for literature on food marketing to children. This showed that the majority of the papers were of good quality. Further, this review reports on the main characteristics of the studies including the size of the TV programming sample, the research country of origin and the methods used. This review also applied, across studies, a single definition of each persuasive technique used to promote food to children (16).

## Limitations

Definitional and methodological differences between the various studies reviewed are an important limitation of the evidence base in this area. This includes the heterogeneity in how child-targeted food advertising has been defined, definitions of children's viewing times and how they are measured. Another key limitation is the absence of consistent reporting in many studies of the number of food advertisements screened (total number and unique food advertisements).

In terms of generalizability of the common marketing techniques found in this review, we do not suggest that these will be the same as those found in other media. Different media, magazines, packaging, billboards and the Internet are likely to prioritize different persuasive marketing techniques. We know, for instance, that the Internet and smartphones make use of advertising techniques that facilitate interactive marketing, which is not available via TV. Further, it was not possible in this review to identify overlapping use of persuasive techniques which likely increases the power of advertisements.

## Future research

Future research in this area would be enhanced by the development of some standard definitions and the consistent reporting of key data. Specifically, what constitutes

a child-targeted advertisement needs defining (it has been variously defined in the literature based on the content of the advertisement, the actual food promoted, or its placement during children's programming or in children's viewing hours). Research in this area could also be methodologically enhanced by the use of standard definitions for persuasive marketing techniques and children's viewing times, which should be determined empirically using audience profile data. The development of such standard definitions supports the World Health Organization's call for governments to set clear definitions in this area (57). Further, future research should document and report the number of food advertisements screened during the recorded hours. This would facilitate the systematic calculation of the number, or proportion, of advertisements targeted to, and seen by, children and the number and proportion using specific promotional techniques.

## Policy implications

The ubiquitous marketing of energy-dense, nutrient-poor food and beverages is a key modifiable influence on childhood dietary patterns and obesity. As noted previously, TV remains the dominant medium for children's exposure to unhealthy food advertising. In many countries, regulations around unhealthy food advertising are focused on limiting the quantity of advertising of unhealthy food to children. Nonetheless, several countries have developed some rules around the persuasive content of advertising to reduce its effect on children. In particular, the use of promotional characters, promotional offers and nutritional health claims to promote food to children on TV is, for instance, already restricted by governments in some countries (12,14,15). Yet, the two other common promotional appeals of taste and fun are not currently subject to regulatory limitations in any country. This is an area that could be revisited when evaluating and revising codes and regulations and there are some precedents for this in the area of alcohol advertising. In France, for instance, the law around alcohol (the Loi Évin) specifies that when advertising is permitted the content has to be controlled (specifically: 'messages and images should refer only to the qualities of the products such as degree, origin, composition, means of production, patterns of consumption') (58).

Nonetheless, in the current situation, the majority of regulations around unhealthy food advertising and the research in this area remain dominated by the focus on the quantity of unhealthy food advertisements seen by children. In the absence of a complete ban on unhealthy food advertising to children, there is a need to strengthen and extend existing rules and codes to cover common persuasive techniques.

## Conclusion

We have documented the most common persuasive marketing techniques used to promote food to children on TV. Although there are codes and regulations in some jurisdictions around some of these marketing techniques, these are not consistent or comprehensive and a number of common persuasive techniques are not covered at all. We suggest that, in the absence of complete bans, there needs to be a comprehensive and consistent approach across countries by governments to regulate not only the quantity of unhealthy food advertising to children on TV, but also the common persuasive techniques used to promote such food to children. To be effective, any new and existing codes need to be independently monitored with meaningful penalties imposed for breaches. Such actions would be an important step in addressing calls by international health organizations for action in this arena (9–11). This initiative would likely make a meaningful contribution to curbing the international obesity epidemic besieging children throughout the world.

## Conflict of interest statement

The authors report no conflict of interest.

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