Marketing foods to children through product packaging: prolific, unhealthy and misleading

Kaye Mehta1,2,*, Clare Phillips1, Paul Ward1, John Coveney1, Elizabeth Handsley3 and Patricia Carter4
1Department of Public Health, Flinders University, Bedford Park, South Australia, Australia; 2Department of Nutrition and Dietetics, School of Medicine, Flinders University, Bedford Park, South Australia 5042, Australia; 3School of Law, Flinders University, Bedford Park, South Australia, Australia; 4Health Promotion Branch, South Australia Department of Health, Adelaide, South Australia, Australia

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Abstract

Objective: To investigate marketing techniques used on the packaging of child-oriented products sold through supermarkets. 

Design: Food and beverage products which met criteria for ‘marketed to children’ were recorded as child-oriented. The products were analysed for food categories, nutritional value, and type and extent of marketing techniques used.

Setting: A major supermarket chain in Adelaide, South Australia.

Subjects: Child-oriented food and beverage products.

Results: One hundred and fifty-seven discrete products were marketed to children via product packaging; most (75.2%) represented non-core foods, being high in fat or sugar. Many marketing techniques (more than sixteen unique marketing techniques) were used to promote child-oriented food products. Claims about health and nutrition were found on 55.5% of non-core foods. A median of 6.43 marketing techniques per product was found.

Conclusions: The high volume and power of marketing non-core foods to children via product packaging in supermarkets should be of concern to policy makers wanting to improve children’s diet for their health and to tackle childhood obesity. Claims about health or nutrition on non-core foods deserve urgent attention owing to their potential to mislead and confuse child and adult consumers.

There is little dispute among public health professionals that the marketing of unhealthy foods and beverages to children plays a role in the rising prevalence of childhood obesity across the globe(1–3). Television advertising is the dominant means of marketing food and beverage products to children(4); however, a trend has been observed towards increasing investment in marketing on new media such as the Internet, video games and children’s magazines(5). Children’s lives, and in particular their leisure activities, have been systematically transformed into marketing opportunities for corporations to exploit(6).

Supermarkets are lucrative sites for food and beverage companies to market their products. In 2002, more money was spent on supermarket sales promotions in the USA ($US 234 billion) than was spent on television advertising ($US 212 billion)(7). While supermarket sales promotions include marketing techniques other than product packaging such as shelf-talkers, dump-bins, end-of-aisle displays, bundling, product sampling and positioning of products on shelves and checkouts, nevertheless product packaging most readily meets the criterion of ‘child-oriented marketing’ due to the use of lettering, iconography and themes of interest to children, and cross-promotions, tie-ins, competitions and premium offers that appeal to children(7).

Product packaging is significant as a marketing method because it is the primary means of communicating information to the consumer at point of sale about product attributes and branding(8). Up to 85% of supermarket purchases are made on impulse, and packaging is known to play a crucial role in purchasing decisions(8). Children are considered to be the demographic most influenced by product packaging and investment in child-oriented product packaging has been put at $US 3 billion annually(9).

A number of international studies on product packaging aimed at children have found more child-oriented marketing techniques on unhealthy products than on healthy products(9,11–13). However, these studies were limited in their examination of product categories (e.g. breakfast cereal alone)(9,11) or marketing techniques (e.g. cartoon iconography and cross-promotions alone)(12,13). Only one

*Corresponding author: Email kaye.mehta@flinders.edu.au

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study by Elliott in Canada investigated child-oriented marketing in all product categories, finding 90% of the products to be unhealthy, 84% to use cartoon characters and 63% to have misleading health or nutrition claims(14).

Marketers particularly use ‘visual cues’ that children respond to, for example cartoon characters, colour, graphics and premiums. In this way they take advantage of children’s visual and associative memory to sell products(11). A study by McNeal and Ji requiring children to ‘draw a cereal box’ resulted in 97% of children drawing pictures with detailed brand imagery, thereby revealing the extent of detailed brand symbolism stored in children’s memories(15).

Supermarket promotions are known to increase overall food sales significantly(10). Parents reportedly spend more than when they shop alone(12). Cartoon characters are in supermarkets when they are shopping with children such as premium offers, competitions, cartoon characters the use of particular child-oriented marketing techniques such as premium offers, competitions, cartoon characters and celebrities(18).

The only known Australian study on supermarket sales promotions targeting children was done by Chapman et al. in 2006(18). They examined product categories that were heavily promoted to children, such as sweet biscuits, snack foods, confectionery and crisps, and recorded the use of particular child-oriented marketing techniques such as premium offers, competitions, cartoon characters and celebrities(18).

The present study aimed to broaden the scope of Chapman et al’s study(18) by investigating the nature and extent of marketing via packaging, on child-oriented food and beverage products, sold through a major supermarket chain in Adelaide, South Australia, in October 2009.

Methods

Selection of supermarket

In Australia, the supermarket sector is essentially a duopoly represented by Coles and Woolworths who together control 80% of the supermarket trade*. Woolworths was selected as the representative supermarket for the present study because: (i) it carries similar products to Coles; (ii) it has over 700 supermarkets nationwide; and (iii) it services 13 million customers each week†. The Woolworths store chosen for the study (Westfield Marion) is one of the larger stores in metropolitan Adelaide. While Woolworth stores vary in size between metropolitan and rural settings, we were assured that food and beverage product lines are very similar‡.

Sampling

For the purpose of assessing the likely orientation of products to children, we adopted the definition of children used in a number of child-focused policies, for example the recent regulations governing advertising to children put forward by the Office of Communications, UK; this is taken to be 0–16 years of age(19).

Every aisle and section of the Woolworths supermarket at Westfield Marion was assessed for child-oriented products using the following five criteria, which were adapted from previous studies(10,14,18). To be included in the present study, products had to meet at least two of the following:

1. Words referring to children, fun, play, physical activity or school.
2. Images of cartoon characters, popular personalities/ celebrities or children, or pictures that appeal to children.
3. Emphasis on unusual shapes, unconventional flavours or bright colours.
4. Cross-promotions and tie-ins with children’s television programmes, merchandise, films or websites.
5. Premium offers (competitions, games, puzzles, toys or other giveaways targeting children).

Units of data

A unit of data was a branded product which met the criteria for ‘child-oriented’. The following decisions were made about inclusion and exclusion:

1. Multiple-sized packages of the same product were recorded as a single item.
2. Baby food and seasonal products (e.g. Christmas food) were excluded.
3. Products with the same nutritional content but with variations in the packaging (e.g. Allen’s Party Mix had fourteen variations of essentially similar products) were recorded as a single item.
4. Products with slight variations to content (e.g. Coco Pops also has a Coco Pops Chex variation) were recorded as a single item.

Units of data are referred to as ‘discrete products’.

Data collection

The data collection tool was adapted from Hawkes(10) and Chapman et al.(18). The following data were collected from product packages.

1. Marketing techniques that were observable on product packages – on all sides of the package. These included: product identification, package semiotics (graphics, text, colour, iconography, popular personalities), cross-promotions (tie-ins with television/films, directed to websites), packaging form (lunch box-size packaging and unusual shapes), premium promotions (competitions, toys, games) and price promotions (discounts, bonus offers).

‡ Personal communication with Woolworths Marketing Manager, 30 September 2009.
2. Nutrition information from the Nutrition Information Panel; this covered fat and sugar content per 100g.
3. All claims or statements about health or nutrition.

Assessing nutritional value of products

Food products were divided into core and non-core categories, following the classification system used by Kelly et al. (20). Non-core foods are those high in fat and sugar and recommended for ‘sometimes’ consumption by the Australian Guide to Healthy Eating, whereas core foods are recommended for daily consumption because of the provision of essential nutrients (21). Adaptations to Kelly et al.’s classification system (20) included the following.

1. Removal of eight categories: alcohol; baby food/ formula; tea and coffee; vitamins and minerals; and other miscellaneous categories.
2. Dairy: all milk, yoghurt and cheese products were classified as core foods, in line with the National Schools Canteen Project, classification system (22). Other dairy products such as custards and dairy desserts were classified as core foods only if they met the criteria of <20 g fat/100 g and <15 g sugar/100 g (23), Custards and dairy desserts that contained >20 g fat/100 g and >15 g sugar/100 g were designated ‘dairy non-core’. The dairy category was given special attention by the National Schools Canteen Project because of the beneficial effects of calcium and protein, that were considered to compensate for detrimental effects of sugar and fat (22).

This resulted in twenty food categories, eight core and twelve non-core.

Data collection period

Data were collected over the period 13–15 October 2009.

Pilot study

Data collection was piloted by two research assistants at Woolworths (Marion), independently coding the same aisle in the supermarket. They achieved a Cohen inter-coder reliability test score of $\kappa = 0.2$, which represented slight agreement (24). The results were analysed and discussed and the criteria were clarified to enable more accurate interpretation. The data collection was repeated on a different aisle in the same supermarket, and this time achieved $\kappa = 0.647$, signifying substantial agreement (24).

All discrepancies were discussed and resolved.

Data analysis

Data were entered into the SPSS statistical software package version 17 and subjected to descriptive and inferential analysis. Descriptive statistics were used to reveal: the extent of child-oriented food products; the proportion of core and non-core products; the type and extent of marketing techniques; and the application of aggregated marketing techniques to each product. Marketing techniques were aggregated into the following five categories.

1. Semiotics: child-oriented graphics, child-oriented cartoons and celebrities, and claims about health and nutrition.
2. Cross-promotions: links to television, movies and websites.
4. Premiums: giveaways (toys and games) and competitions.
5. Price promotions: discounts and bonus offers.

The top marketing category (semiotics) was further sub-categorized as follows.

1. Child-oriented graphics: bright colours; images of children or animals; childish script; references to play, education, flavours, colour or shapes; captions exaggerating attributes, e.g. ‘bliss bombs’, ‘dangerously cheesy’.
2. Child-oriented cartoons and celebrities: images of licensed cartoon characters, e.g. Simpsons; images of unlicensed cartoon characters, e.g. generic cartoons; images of sporting or entertainment celebrities.
3. Claims about health and nutrition.

All data were categorical and therefore were subjected to inferential analysis using $\chi^2$ tests to compare: the use of aggregated marketing techniques on core and non-core foods groups; and the use of semiotics on core and non-core food groups.

Results

Descriptive analysis of food marketing via product packaging

The study found 157 discrete child-oriented products. Core foods comprised thirty-nine (24.8%) products, while non-core foods comprised 118 (75.2%) products. The most prominent child-oriented products were confectionery and chocolate ($n = 43$, 27.4%), snacks ($n = 28$, 17.8%) and dairy core ($n = 18$, 11.5%; see Fig. 1). Together these three groups accounted for more than half of all food products marketed to children.

There were sixteen unique marketing techniques used on $\geq 10\%$ of child-oriented products (see Table 1).

An examination of the number of individual marketing techniques per product revealed a median of 6.43 (SD 2.21) techniques per product, with a maximum of 12 techniques per product (used on two products: Coco Pops and Simpsons Sour Bombs) and a minimum of 1 technique per product (used on one product: Smiley Fritz; see Fig. 2).

The number of marketing techniques per product was descriptively explored for any difference between promotion of core and non-core foods. The core food
group showed a median of 6·66 marketing techniques, whereas the non-core food group revealed a median of 6·90 techniques; which was not statistically significant.

**Inferential analysis of marketing of foods to children**

Semiotics (comprising child-oriented graphics, child-oriented cartoons and celebrities, and claims about health and nutrition) was used as a marketing technique on 99% of products. Cross-promotion (comprising television, movies and websites) was used on 77% of products, and packaging design (comprising lunch box-size packaging, novelty packaging) was used on 55% of products. Premium promotions were the least used marketing techniques, observed in 25% of products. The χ² analysis revealed no statistical significance between the use of these aggregated marketing categories on core and non-core food groups (see Table 2).

Further analysis of ‘semiotics’ revealed that child-oriented graphics were used on 156 products (99·4%), followed by child-oriented cartoons and celebrities on 133 products (84·7%) and claims about health and nutrition on 100 products (63·7%). No statistical difference was found between the use of child-oriented graphics and child-oriented cartoons and celebrities on core and non-core food groups. Statistical difference was found, however, for the use of claims about health or nutrition on core and non-core food groups. As expected, claims about health or nutrition were used significantly more often to promote healthy foods (P < 0·000). However, claims about health or nutrition were also found on sixty-six non-core foods (55·5%; see Table 3).

**Discussion**

The present study of supermarket product packaging found 157 discrete food and beverage products marketed to children, of which 75% were non-core foods. There was high use of marketing techniques that appeal to children, such as graphics (99%) and cartoons and celebrities (85%). Claims about health and nutrition were found on 64% of products and cross-promotions were found on 77% of products; there was no significant difference between the application of marketing techniques to core foods and non-core foods, except for claims about health and nutrition. More than six marketing techniques were found to be used per product (no significant difference between core and non-core foods). The finding of similar types and numbers of marketing techniques used to promote core and non-core foods suggests that companies do not bias marketing towards non-core foods only; this may be exploited in the future for the social marketing of core foods to children.\(^{(25)}\)
These findings concur with previous studies\(^{(9,10,12–14,16,17)}\), which found higher proportions of non-core foods marketed to children compared with core-foods, notwithstanding differences in research methods between studies. Children are known to be highly attracted to cartoon characters, celebrities and animals\(^{(26)}\), and to prefer foods with cartoon packaging, over foods with plain packaging iconography\(^{(27)}\). Parents have indicated strong concerns about the use of cartoon and celebrity characters in marketing foods and beverages to children, and they have called for restrictions on these practices\(^{(28,29)}\). While the use of premiums has also been cited as a particular concern by parents\(^{(26,30)}\), the present study found a relatively low occurrence of premiums on child-oriented products (25%). Cross-promotions (found on 77% of products) are a good example of integrated marketing, whereby the same product line is marketed on a number of media, thereby reinforcing product recognition and desire\(^{(31)}\). Parents in a qualitative study by Mehta \textit{et al}\(^{(32)}\) reported on purchase requests made by their children during supermarket trips which linked directly to current television advertisements and product placement in television programmes and movies; this exemplifies integrated marketing.

Supermarkets are a major site of purchase requests by children, and packaging is known to influence children’s...
purchasing decisions, as well as parents' acquiescence to children's requests\(^{(26)}\). Child-oriented marketing has been identified by parents as one of the factors influencing their children's food preferences and purchase requests\(^{(30,35,34)}\). The process of refusing or acquiescing to children's purchase requests is a complex one, involving the assessment of a range of parenting goals\(^{(35)}\). Conflict in the parent–child negotiation process around purchase requests is a common phenomenon\(^{(36)}\), and co-shopping has been described by parents as stressful due to the purchase demands, particularly of young children\(^{(35)}\).

One disturbing finding from the present study was the use of 'claims about health and nutrition' on more than half (55.5%) of non-core foods; in other words, unhealthy foods were portrayed, in some way, as healthy. This finding is serious because of the significance of product packaging in point-of-purchase food decisions\(^{(38)}\). In the qualitative study by Mehta et al.\(^{(32)}\), parents expressed concerns about nutrition and health claims exploiting their children's credulity, while children, on the other hand, described using the very same claims to persuade their parents to purchase products. Adult shoppers are increasingly interested in referring to nutrition information on labels to guide their purchase decisions\(^{(37)}\), and misleading information signals intent on the part of companies to deceive and confuse consumers.

In its recommendations to Member States to take action on the problematic nature of food and beverage marketing to children, the WHO identified exposure (reach, frequency and impact of marketing messages) and power (content, design and execution of marketing messages) as two separate dimensions requiring attention\(^{(3)}\). The 157 products marketed to children constitute exposure to predominantly non-core foods and beverages. On the question of power, the finding of more than six marketing techniques per product and the high use of child-oriented graphics, child-oriented cartoons and celebrities that appeal to children, claims about health and nutrition, and cross-promotions are examples of the power of marketing. While marketing techniques appear to have been applied equally to core and non-core foods, nevertheless children are exposed to more marketing of non-core foods by a factor of 3:1. Children's high exposure to marketing of non-core foods via product packaging, and the concomitant power of the marketing techniques used, should be of concern to policy makers in Australia, who want to reduce childhood obesity and improve children's diets generally.

Australian food and beverage corporations have pledged to be more socially responsible, by reducing their marketing to children\(^{(38–40)}\). However, the self-regulatory codes do not apply to labels and packaging\(^{(40)}\), which supports doubts held by public health advocates about the adequacy of self-regulation to protect children from the impact of unhealthy food marketing\(^{(31)}\). The findings of the present study suggest that marketing via product packaging needs to be included in self-regulatory codes, or legislative regulations.

**Study limitations**

The study limitations are similar to those mentioned by Harris et al.\(^{(32)}\) in that only the number of promotions on product packaging was counted, not the total number of child-oriented products on the supermarket shelves\(^{(12)}\). Counting the number of products, in other words shelf-space, would add to our knowledge about children's exposure to marketing. The other limitation cited by Harris et al.'s study was the absence of a broader range of supermarkets\(^{(12)}\). While from an international perspective the use of only one supermarket may be considered a limitation, given the duopoly situation of Australian supermarkets, and the fact that both supermarkets stock similar products, we do not consider this to be a limitation of our study. As one of the largest supermarket chains in Australia, Woolworths could be expected to carry the largest range of child-oriented products. Doubtless, there would have been some products marketed to children that did not meet our criteria for 'child-oriented' (e.g., small packs of sultanas); nevertheless, the present study set out to use objective criteria to capture those products specifically targeting children. In hindsight, the study would have been strengthened by collecting data on all products marketed to children, including those that did not meet the criteria of 'child-oriented', in order to determine the proportion of child and non-child-oriented products. While our study establishes the highest level of knowledge about the nature and extent of marketing to Australian children via product packaging, it does also point to the need for more research into the areas of pester power, cross-promotions, food labelling and misleading health claims on product packaging, as well as the actual effects of this type of marketing on children's consumption behaviour.

**Conclusions**

The marketing of unhealthy foods and beverages is widely recognized as contributing to an obesogenic environment for children. Marketing food and beverages to children in supermarkets adds to that which already exists on the well-studied broadcast media, resulting in children being exposed to ever increasing encouragements to consume non-core foods. The integrated nature of simultaneous marketing on multiple media increases the power of persuasive messages that encourage children to consume particular products. There is considerable marketing of non-core foods via product packaging in supermarkets which is highly salient to children and which influences their food preferences and purchase behaviour – in other words, requests to parents. Parents have to resist their
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children’s purchase requests for unhealthy foods, adding stress to parenting and the parent–child relationship. Parents are particularly concerned about the use of cartoon characters, celebrity endorsements, premiums, competitions and nutrition claims on children’s product packages. The present study provides reinforcement that regulations governing marketing to children should include packaging, by legislative or self-regulatory approaches.

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