

What's in the cereal aisle? An analysis of child-targeted cereals in Canada

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Abstract

Purpose – To examine the nutritional quality and nature of packaged cereals targeted to children.

Design/methodology/approach – All child-targeted cereals were collected from four major retailers in Calgary, Alberta, Canada, and examined for their marketing techniques, nutritional profile and in light of industry and government-led criteria for advertising regulations.

Findings – 103 children's cereals were examined. Overall, cartoons were the most prevalent persuasive technique (83%), alongside various other child-friendly techniques linking cereal to fun, treats and/or sweets. Almost 90% of cereals had front-of-package nutrition/health claims, yet they averaged 30% of calories from sugar. No cereals would be permitted to be advertised to children based on government criteria; however, 68.9% would be permitted based on the industry code.

Practical implications – The study points to the need to take food packaging more seriously as a vehicle for marketing to children.

Social implications – From a policy perspective, the striking difference between what is deemed “appropriate” for advertising to children signals a greater need to scrutinize the nutrition criteria used and to consider broader implications for consumers' classification of healthy food for children.

Originality/value – This comprehensive examination of child-targeted cereals in Canada is the first to detail their persuasive packaging techniques, sugar content and nutritional profile according to both government and industry-defined criteria. Given calls from international public health bodies to protect children from food marketing's persuasive power, this study provides a timely snapshot into the nature and nutrition of these products. By assessing whether the cereals explicitly packaged to attract children would be permitted to be advertised to them (using recent government and industry-developed criteria), the study reveals the striking difference between what is deemed appropriate to advertise, depending on the criteria used. The study signals the need to scrutinize the nutrition criteria used, to consider broader implications for consumers' classification of healthy food for children, and to take food packaging more seriously as a vehicle for marketing to children.

Keywords Food packaging, Cereals, Advertising, Food policy

Paper type Research article

Introduction

In February 2024, General Mills launched LOADED cereals a line-up of its popular cereals Cinnamon Toast Crunch, Trix and Coca-Puffs made “bigger and bolder” by being “loaded with delicious vanilla crème” (General Mills, 2024). According to the company press release, LOADED offers a “bold and unapologetic breakfast cereal” that brings “even more fun and flavor to the breakfast table to help our fans max out on life starting the moment they wake up” (General Mills, 2024).

LOADED cereals' promise of breakfast “fun” does not stand alone. Similar “fun” cereal products include Original Squishmallows (inspired the squeezable plush toys), Minecraft Creeper Crunch cereal (based on the children's video game) with green “creeper bit” marshmallows, Bluey blue-tinted corn cereal (based on by Disney's cartoon series) and Strawberry Milkshake Frosted Flakes, which turns the milk “a fun, vibrant pink!”

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(WK Kellogg Co, 2025). Along with these “regular” sized cereals are a variety of tiny ones, such as Reese Puffs and Trix minis, described as “mini-fied” product versions that offer a “fun new way” for consumers “to enjoy the BIG flavors they love” (General Mills, 2022). Such products are part of the USD \$41.12 billion global cereals market—a market projected to reach USD \$50.66 billion by 2030 (GVR, 2024).

Despite its “fun” framing, packaged breakfast cereals are not without controversy. Children’s cereals, in particular, have long been criticized by public health professionals for targeting vulnerable audiences with persuasive messages for products of poor nutritional value (Levenstein, 1993, pp. 191–193). The first systematic reviews on the nature and extent of food marketing to children, such as the 2003 UK Food Standards Agency review (Hastings *et al.*, 2003) and the 2006 US Institute of Medicine report (IOM) (McGinnis *et al.*, 2006) pinpoint ready-to-eat cereals as among the most common food products promoted to children; the 2006 IOM report further placed cereal in the top five food categories for “new products targeted to children and adolescents” (McGinnis *et al.*, 2006, p. 160). Since that time, the impact of food marketing (more broadly) on children’s health has received sustained attention, with global health agencies such as the World Health Organization (WHO) (WHO, 2012) and UNICEF affirming the need to protect children from the “severe threats” posed by “harmful commercial marketing” (Clark *et al.*, 2020). Indeed, the WHO’s most recent guideline on the topic calls for countries to enact mandatory regulations to protect children from the advertising of foods high in saturated fat, sugars and/or salt because regular consumption of such foods is a risk factor in childhood obesity, type-II diabetes and other noncommunicable diseases (WHO, 2023). Informing this guideline was a separate narrative review of recent evidence on child-targeted food marketing, which ranked breakfast cereal “high in the list of most frequently marketed foods” (WHO, 2022, p. 7). Simply put, child-targeted breakfast cereals are big-business, enticing children with a range of fun appeals while simultaneously being flagged as a problematic part of food marketing. In Canada, however, little research specifically examines the nutritional quality and persuasive appeals found on child-targeted cereals. Studies on child-targeted food packaging in Canadian retail environments typically examine cereal as part of a broader analysis of food categories (Elliott, 2008a, 2019; Gilbert-Moreau *et al.*, 2021; Mulligan *et al.*, 2023; Hu *et al.*, 2025), providing a general overview of food types rather than detailed insight. To date, only two published studies focus solely on child-targeted packaged cereals in Canada. Both studies are dated (with data collection in 2017) (Chepulis *et al.*, 2020; Potvin Kent *et al.*, 2017) and provide an incomplete picture. One study examined only the nutritional profile of cereals (and not their marketing techniques) (Potvin Kent *et al.*, 2017); the second was conducted from a different country and identified cereals in Canada via online shopping websites (instead of physically visiting stores) (Chepulis *et al.*, 2020). Given this, an updated snapshot of children’s cereals is necessary.

Certain contextual factors in Canada make an examination of children’s packaged cereal equally worthwhile. A decade ago, as part of its *Healthy Eating* strategy, the Government of Canada committed to restrict unhealthy food marketing to children under age 13 (Health Canada, 2016). No mandatory national measures were enacted between 2016 and 2025, although the issue received sustained federal attention (Government of Canada, 2015, 2017, 2019, 2021) and policy interest (Bill C-252, 2022). During this timeframe, Health Canada defined the nutrient criteria to be used for advertising restrictions, and proposed to initially restrict unhealthy food marketing on digital and broadcast media and to monitor packaging and retail environments (among other things) to inform future regulatory changes (Health Canada, 2023a). In response, the food and advertising industry created its own code for advertising foods to children. This *Code for the Responsible Advertising of Food and Beverage Products to Children* has been in effect since 2023 and applies to all media, with a few exceptions (Ad Standards, 2023).

Under new leadership, the Government of Canada has shifted policy focus; in 2026, advancing policy on marketing to children is no longer a regulatory priority. Despite this policy shift, a study on child-targeted packaging remains timely since its findings can speak to the prudence of moving marketing to children to the sidelines.

It is important to note that both the (previously) proposed government regulations and the industry Code pertained to the advertising of food and beverages to children (on television, digital media, etc.), and *not* to product packaging. However, both also provide up-to-date criteria—one from a public health perspective, the other from industry—for assessing whether a food product is “suitable” for being advertised to children. There is little question that: (1) packages are powerful advertisements in their own right; and (2) cereals like Squishmallows, Lucky Charms and Minecraft Creeper Crunch (etc.) are targeted at children. As such, it is useful to see whether the cereals explicitly packaged to attract children in retail environments would be permitted to be advertised to them using government and industry-established criteria. To this end, our study examines the nature and nutritional quality of child-targeted cereals in Canada. Its objectives are to provide a profile of these cereals and their marketing techniques, assess their nutritional value using up-to-date government- and industry-developed criteria, and consider the significance of this marketing. While the research is based in Canada, its findings have much broader implications relevant to international food policy debates—implications pertinent to responsible marketing, regulatory scope and the critical import of nutrition criteria (which can radically impact the classification of what counts as “healthy” food for children).

Methods

Content analysis was used to create a profile of the nutritional quality and persuasive techniques of cereals marketed specifically to children in the Canadian retail environment. Cereals were collected from four major retailers in Calgary, Alberta, in November–December 2024. Stores representing each of the two largest supermarkets in the Canadian food retail market were visited, as well as a department/grocery store (i.e. Wal-Mart) and a discount store targeting price-conscious consumers.

Data collection followed an established protocol for identifying child-targeted food products (Elliott and Truman, 2021, 2019; Health Canada, 2022) and followed recommendations from a scoping review on monitoring packaged foods in retail environments (Elliott and Truman, 2021). Cereals were identified as child-targeted if the front of the package featured one of the following indicators:

- (1) child-friendly graphics (e.g. cartoon characters, cartoon brand mascots, licensed media characters)
- (2) the word “fun” or “child” or “kid”, including in product or brand names (e.g. EnviroKidz cereal)
- (3) unusual or child-oriented shapes, unusual colour or features, or playful product names or tastes (e.g. unicorn-shaped marshmallow bits in cereal, rainbow colour)
- (4) special offers/promotions for children (e.g. free merchandise/movie offer/download, etc.)
- (5) celebrity/sports tie-ins
- (6) movement, such as cereal flying through the air or blasting out of a bowl of milk [1].

All store areas were surveyed for relevant cereals (i.e. the organics section, aisle caps, etc.), following a systematic progression throughout the aisles. Duplicate products and those with identical packaging in multiple sizes were excluded from the analysis. However, since the study is interested in documenting the range of promotional appeals found on children’s cereals, identical cereals with different persuasive packaging were included. For instance, Cinnamon Toast Crunch was available with different packaging options: one box displayed its cartoon brand mascots the Crazy Squares (or Cinnamojis) “surfing” across rainbow-hued milk, while another showed the Cinnamojis and an offer for a “FREE insulated water bottle with charms” (with more Cinnamojis within the offer) prominently filling the top 25% of the package. The cereal is identical, yet the package imagery differs: both products were included

for analysis. Including these products aligns with the recommendations on best practices for monitoring the power of child-targeted food packaging, in which “differences in packaging for the same product should be documented . . . to ensure that what is captured accurately represents what is available to consumers” (Elliott and Truman, 2021).

Each cereal was carefully reviewed to ensure that it was child-targeted when considered in the context of the whole package. This resulted in several exclusions. For example, one limited edition cereal (Cheerios) contained a heart-shaped cereal featured on the front of the box with the bold text “My child” and “MAKES MY HEART HAPPY” in smaller font underneath. Beneath, printed inside a red heart, was the claim “oat fibre helps lower cholesterol.” Although the box had the word “child” and featured cereal in a heart shape, the context of the package made it clear the cereal was targeting adults (having to do with heart health and parent relationships with their child). It, along with similar cereals from that series, was excluded from the analysis.

Photographs of each child-targeted cereal, including its nutrition facts table and ingredients list, were uploaded into a mobile app specially designed for the project. A trained coder inputted the product’s brand, name, flavour, child-targeted marketing techniques, and all front-of-package health and nutrition claims into the app. This included government-regulated health and nutrition claims/symbols (e.g. gluten-free, organic, source of . . . claims) as well as other appeals to health or nutrition that are not government-regulated (Health Canada, 2022, p. 8). The app also records the ingredients and nutrition facts using OCR image recognition.

Coding procedures followed recommended protocols for such marketing (Health Canada, 2022, pp. 11–12; Elliott and Truman, 2021), whereby two expert researchers coded a random sample of 5% of the cereals, with an inter-rater reliability exceeding 90%. All questions with respect to coding of persuasive techniques were resolved through review and consensus with the research team. Given the relatively small sample size, coded products (including all nutrition facts) were manually reviewed a second time to ensure accuracy of the information.

Descriptive statistics (frequencies and proportions) were used to summarize the persuasive techniques and claims, using each package as the unit of analysis. The nutritional profile of the cereals was then assessed using Health Canada’s proposed criteria for determining whether a product is permitted to be advertised to children and the industry-created nutrient criteria (outlined in its *Code for Responsible Food and Beverage Advertising to Children*). Generally speaking, Health Canada’s proposed criteria would prohibit cereals from being advertised to children if they exceed any of the following thresholds per 1 cup serving: 5 g sugar, 140 mg sodium and 2 g saturated fat and $\leq 15\%$ energy from saturated fatty acids (Health Canada, 2023b) (Note there is some nuance to these criteria [2]). In contrast, the industry Code states that, to be advertised to children, the same cup of cereal must not exceed 12 g sugars, 230 mg sodium and 1.5 g saturated fat. This serving must also contain at least 8 g of whole grain or at least 2 g of fibre or offer 15% DV or more for any essential nutrient (except sodium) (Ad Standards, 2023). Results from these two criteria were compared using two-sample Z tests of proportions with a pre-specified significance level of 0.05. The average amount of excess nutrients relative to recommended thresholds based on Health Canada and industry specifications was computed. Finally, the percentage of calories coming from sugar for each cereal was calculated.

Results

Exactly 103 cereals, each distinctly packaged to appeal to children, were assessed for their brand, persuasive techniques and nutritional profile. Although 12 brands were represented, three major brands comprised over 70% of the sample, with General Mills and Kellogg’s promoting the most cereals to children (33% and 30.1% of products, respectively), followed by Post (7.8%).

A range of persuasive techniques was found on these packages (Table 1), with cartoon appeals collectively ranking as the top technique, overall. Eighty-three percent of the cereals

Table 1. Child-targeted persuasive techniques found on cereal packaging ($n = 103$)

Persuasive techniques*	Frequency ($N = 103$)	Proportion (%)
Brand characters/mascots	62	60.2
Movement	54	52.4
Lettering (font)	36	35.0
Unusual colour	29	28.2
Generic cartoons/cartoon imagery	23	22.3
Unusual shape	19	18.4
Special offer	16	15.5
Unusual flavour	13	12.6
Word “kid” or “child”	7	6.8
Licensed media character	6	5.8
Celebrity/athlete	5	4.9
Word “fun”	1	1.0

Note(s): *Multiple persuasive techniques may be on a package
Source(s): Authors’ own work

featured cartoons, including brand mascots ($n = 62$; 60.2%), generic cartoons ($n = 23$; 22.3%) and licensed media characters ($n = 6$; 5.8%).

Brand mascots included long-standing (yet often refreshed) iconic cartoons, such as Tony the Tiger (Frosted Flakes), Toucan Sam (Froot Loops), Lucky the Leprechaun (Lucky Charms), Trix Rabbit (Trix), Snap Crackle and Pop (Rice Krispies), Count Chocula (Count Chocula) and BuzzBee (Honey Nut Cheerios), as well as the Mini mascot (Mini-Wheats) and the Cinnamojis (Cinnamon Toast Crunch), among others. Generic cartoon animals, plants, people and objects appeared on roughly one of every five cereal boxes (22.3%), while cartoons licensed from children’s entertainment media (such as Minecraft) decorated 6% of the boxes. After cartoons, movement was the second most frequently used persuasive technique, featured on over half (52.4%) of cereal packaging. “Movement” typically appeared as cereal flying across the package or exploding out of a bowl, sometimes accompanied by images of splashing milk.

These packages also foregrounded unique cereal shapes (18.4%), flavours (12.6%) and/or colours (28.2%). For instance, some cereals were shaped as stars, hearts, fruits, or clovers or as mini-sized chocolate chip cookies, cinnamon buns, French toast or waffles. Others promoted novel features (e.g. “loaded with vanilla creme filling”, “monster marshmallows”, “creeper bit marshmallows”) or novel flavour profiles, such as cereals that taste like treats, including donuts, cookies, caramel apples, brownies, strawberry milkshakes, cinnamon buns, hot cocoa and chocolate bars. Approximately 16% of the cereals also featured a special offer on the front of the package, such as a free movie pass, free water bottle (with charms), free t-shirt, free cereal bowl or free books (among other things) with proof of purchase.

These child-directed persuasive appeals were almost always accompanied by (adult-directed) health and nutrition-related claims. Roughly nine out of every 10 cereal packages (88.4%) contained them, reassuring shoppers that the fun packaging also encases healthful contents (Table 2). Top claims, by frequency, pertained to the “naturalness” of the product. Of the top seven claims by frequency, six highlighted natural elements such as containing whole grain (45.6%) or fibre (16.5%), being naturally flavoured (27.2%), or “made with real . . .” (honey, peanut butter, cinnamon, etc.). Claims to be “natural” also existed by highlighting what the product did not contain, such as no artificial flavours or colours (22.3%) or no genetically modified ingredients.

On average, these cereals had two health/nutrition-related claims per box, although some products featured as many as six claims—and this was not counting the marketing-related appeals to health (such as the nebulous “Made with Goodness” claim). Even though almost 90% of cereals featured health and/or nutrition-related claims, the cereals had, on average, 30.4% of calories derived from sugar. One product contained a surprising 58.2% of calories

Table 2. Health/nutrition claims found on child-targeted cereals (*n* = 103)

Nutritional claim*	Frequency (<i>n</i> = 103)	Proportion (%)
Whole grain	47	45.6
Naturally flavoured	28	27.2
Source of X essential nutrients	25	24.3
No artificial flavours or artificial colours	23	22.3
Source of fibre	17	16.5
Made with real . . . claim	12	11.7
Non-GMO verified	11	10.7
Gluten free	11	10.7
Organic	8	7.8
Source of iron	1	1
Peanut free	1	1
Low sugar	1	1

Note(s): *Multiple claims could be found on a package

Source(s): Authors' own work

from sugar/serving. Notably, this cereal also had two prominent nutrition-related claims: "Source of 7 Essential Nutrients" and "Made with Whole Grain Oats."

Table 3 summarizes the child-targeted cereals using the criteria for advertising to children set out by both government and industry, while Table 4 details the percentage by which the thresholds are exceeded for each nutrient of concern. Based on Health Canada's criteria, none of the child-targeted cereals examined would be permitted to be advertised to children, whereas 68.9% would be permitted based on the industry code (*p* < 0.001) (see Table 3). For both government and industry criteria, sugar was the main nutrient exceeding the thresholds, but at dramatically different levels: 96.1% of the cereals surpassed Health Canada's sugar thresholds. However, only 24.3% of those same cereals surpassed the sugar thresholds set by industry. This discrepancy could also be found with sodium, where over 8 of every 10 cereals exceeded Health Canada sodium criteria compared to 1 of every 10 cereals using industry's code. As Table 4 reveals, the sugar content in the cereals was roughly two times greater than Health Canada's recommended threshold. Sugar content also exceeded the industry code's thresholds by roughly a third, even though this threshold is much higher (12 g). Saturated fats were rarely flagged as problematic (by either criteria); however, the cereals' sodium content exceeded Health Canada's recommended threshold (140 mg) by 50% – yet only by 11% using industry thresholds (240 mg).

Discussion

This is the first study to provide a comprehensive examination of child-targeted cereals in Canada, detailing the brands, persuasive techniques, sugar content and nutritional profile

Table 3. Frequency and proportion (%) of cereals exceeding nutrient thresholds based on Health Canada and industry code (*n* = 103)

	Government <i>n</i> (%)	Industry* <i>n</i> (%)	<i>p</i> value
Sugars	99 (96.1)	25 (24.3)	<0.001
Saturated fats	0 (0)	1 (1.0)	0.99
Sodium	85 (82.5)	10 (9.7)	<0.001
Sugars, saturated fats, or sodium	103 (100)	31 (30.1)	<0.001

Note(s): *Assumes that reported serving sizes are equal to 1 cup of cereal

Source(s): Authors' own work

Table 4. Average amount of excess nutrients relative to government and industry thresholds*

	Government	Industry
Sugars	199%	32%
Saturated fats	0%	3%
Sodium	50%	11%

Note(s): *These values represent the amount of each nutrient relative to the recommended threshold (e.g. Health Canada's recommended threshold for sugar is 5 g per serving size; a cereal with 7.5 g of sugar would exceed this threshold by 50%)

Source(s): Authors' own work

according to both government and industry-defined criteria. Revealing the vast array of cereals and fun appeals (typically linking breakfast to fun, treats and/or sweets) strategically designed to capture children's attention, the study also sheds light on the nutritional claims and quality of these products. Almost every box analyzed had prominent nutrition and/or health-related claims, communicating "health" to shoppers; however, the cereals had an average of 30% calories from sugar. Strikingly, not one of these kid-friendly cereals would be permitted to be advertised to children according to Health Canada's criteria developed for marketing to kids.

The power, persistence and implications of child-targeted food packaging

Several important implications stem from this study. At its most basic, the research contributes to the extensive literature documenting the nature and extent of food marketing to children (WHO, 2022) and reinforces the ongoing value of considering traditional marketing mediums (such as packaging) in a world of digital media. The significance of packaging in this context is reinforced by a recent study tracking children's exposure to "unhealthy commodity marketing" (including foods such as confectionery and sugary drinks) using wearable cameras (Worters *et al.*, 2025). The study identified product packaging as the top source of unhealthy marketing exposure for children, averaging 50.7 daily exposures.

Beyond this, our study adds to the existing research on children's cereals, revealing that the types of persuasive appeals used on packaging have remained remarkably consistent over time (Elliott, 2008b; Page *et al.*, 2008). On-package brand mascots and special offers represent particularly long-standing techniques for seizing child (and parental) attention. For instance, Kellogg's well-known anthropomorphic tiger mascot, Tony the Tiger, first appeared on boxes of Frosted Flakes 73 years ago (WK Kellogg Co, 2024), while the first cereal "premium" stretches back well over a century. Kellogg's *The Funny Jungland Moving Pictures* book was offered as an in-store promotion with a corn flakes purchase in 1907, and later became the first mail-in premium, costing 10 cents (Dolan, 2023). This said, the scholarly research on child-targeted food packaging often does not break down the *specific* types of persuasive techniques on cereal boxes, making comparison across studies difficult. For the studies that provide such detail, some identify cartoons (including branded, licensed or generic) as the most prevalent persuasive technique (Allemandi *et al.*, 2020; Jones *et al.*, 2023; Richonnet *et al.*, 2021); this aligns with our findings that 85% of cereals used cartoon appeals. Conversely, other studies identify a range of different child-friendly techniques as most prevalent, such as "games or activities" (Vaala and Ritter, 2020), "enlarged images of the cereal" (Page *et al.*, 2008) or "illustrations" (of ingredients, fruits/vegetables, animals, objects or imaginary creatures) (Khan *et al.*, 2023).

That cartoon appeals are prevalent on cereal packaging is unsurprising, given the evidence that cartoon appeals attract children's attention and influence their food preferences and purchase desires (Elliott and Truman, 2020; Hallez *et al.*, 2020; Kraak and Story, 2015; Packer *et al.*, 2022; WHO, 2022). Recent experimental research has shown that cartoons on food packaging also influence children's stated intent to pester their parents for that product (Potvin

Kent *et al.*, 2023). Yet our study also reveals something new in detailing the extent of “movement” – flying cereal, cereal exploding out of a bowl – as a fun persuasive technique. One in every two boxes used this promotional strategy to engage young consumers. Moreover, while research focused explicitly on children’s cereals have observed that unusual product shapes and colours are “frequently seen” (Giménez *et al.*, 2017), our study details the extent of this technique, reporting “unusual colour” at twice the frequency as an earlier American-based study (28.2% vs 14.0%, respectively), and unusual shape in higher proportions as well (18.4% vs 15.0%) (Vaala and Ritter, 2020). Notably, our study also highlights the way that breakfast fare – an important meal for growing children (Terry *et al.*, 2020; Rampersaud *et al.*, 2005) – is explicitly linked to unhealthy treats. This was achieved through highlighting novel flavours, features and shapes, such as linking cereal to milkshakes, cookies, chocolate bars (etc.) or featuring its crème filling or marshmallows in various forms (e.g. magic, monster, creeper shaped, etc.).

Despite the “fun” framing, 90% of the cereals analyzed featured health/nutrition-related claims, a number substantially higher than the 56.4% found on children’s cereals a decade ago (Song *et al.*, 2014). Similar dramatic increases in nutrition-related claims over time have been observed on child-targeted food packaging more generally (Elliott, 2019); however, our study provides a glimpse into the specific types of consumer health concerns circulating at a particular point in time (such as being “natural” or containing whole grain). The ubiquity of such claims specifically on cereal packaging has been observed elsewhere (Arrazio-Cordoba *et al.*, 2023; Elliott, 2008a, 2019; Khan *et al.*, 2023; Mulligan *et al.*, 2023), generally with a nod to the ways that these claims imply that high-sugar cereals are healthy choices for kids. To provide an example from this study, *Nesquik Loaded* chocolate breakfast cereal boldly claimed on the front-of-package that “WHOLE GRAIN IS THE FIRST INGREDIENT”. However, sugar was the second ingredient, and 27% of *Loaded*’s calories/serving came from sugar.

Interestingly, previous research on food packaging in Australia found that 15 manufacturers were responsible for the majority of child-targeted persuasive techniques in their dataset. The researchers therefore suggested that, in the “absence of regulation”, there might be some purchase in asking these manufacturers to voluntarily stop targeting children using these techniques (Jones *et al.*, 2023, p. 3299). This suggestion also has merit when it comes to Canada’s cereal aisle, given that three brands produced 71% of the products.

Policy implications and implications for consumers

From a policy perspective, this research contributes to broader international policy debates regarding marketing to kids, responding to the call to track its persuasive power and children’s exposure across various media and settings (WHO, 2010, 2012, 2023). It reveals that packaged cereals in Canada are a vehicle for aggressive marketing to children, using an array of compelling, persuasive techniques. The research also underscores the critical role of nutrient profiling models when it comes to determining what counts as healthy food for children. Clearly, the food industry has a stake in setting the terms for marketing foods to children. However, numerous studies have reported that industry-defined criteria for such marketing fall short of the mark (Avery *et al.*, 2022; Galbraith-Emami and Lobstein, 2013; Kelly *et al.*, 2015; Landwehr and Hartmann, 2020), while the WHO’s most recent guideline on *Policies to protect children from the harmful impact of food marketing to children* (2023) affirms that mandatory government policies – not voluntary, industry-led policies – are required to protect children from food marketing’s negative impact. Findings from this study speak to the challenges presented by nutrient criteria and the striking differences that emerge when using a government-developed criteria versus an industry-developed one. Using Health Canada’s criteria developed for Marketing to Kids (M2K), none of the cereals would be allowed to be advertised to children. Using industry criteria, almost 70% of the same cereals could be advertised. And while sugar has long been flagged as an issue in children’s cereals (Elliott, 2008a, 2019; Harris *et al.*, 2012; Khan *et al.*, 2023; Song *et al.*, 2014; Tong *et al.*, 2018), this

study further underscores that what “counts” as high sugar pivots very much on the thresholds set: 96.1% of the cereals exceeded the government thresholds while only 24.3% exceeded thresholds set by industry.

This difference in what would be permitted to be advertised to children matters, as it has significant implications for both consumers and for children’s health. Implicit in the government and industry criteria for “responsible advertising” to children is that the foods advertised to them will do no harm. Presumably, the food products permitted to be advertised to children under the banner of responsible advertising will have saturated fat, added sugars and/or sodium at levels appropriate for that audience; foods with excessive quantities of these nutrients will not be allowed. Yet in examining children’s cereals, what counts as “permitted” and appropriate depends entirely on the criteria applied. According to industry criteria, our study reveals that marshmallow-laden cereals (such as Lucky Charms, Minecraft Creeper Crunch, Carmela Creeper and Franken Berry, among others) are all suitable for advertising to children. So, too, are cereals based on cookies, chocolate and treats, like Chips Ahoy!, Nesquik Loaded and Strawberry Milkshake Frosted Flakes. Promoting these kinds of cereals under the guise of “responsible advertising” creates a broader *classification* problem for parents and children alike because it suggests that “fun” cereals with marshmallows or “loaded” with crème filling are appropriate breakfast fare. There is little reason for consumers to distinguish between one kind of marshmallow-filled cereal and another, for instance. If one type of children’s cereal promoted with these fun appeals is appropriate, according to industry standards, then children (and parents) may reasonably generalize across the spectrum of similar cereals. Stated differently, industry’s *Code for Responsible Food and Beverage Advertising to Children* implicitly confers a type of “health halo” on products that meet the stated criteria, which may not be warranted. On the flip side, a caution must equally be raised with respect to the government-developed thresholds, given that even cereals with comparatively low levels of sugar are put in the same category as those that might best be understood as breakfast candy. Chocolate Caramel Crunch cereal, with 40% calories/serving coming from sugar, would not be permitted to be advertised to children per government criteria, but neither would Rice Krispies, a cereal with 3 g sugar/serving and approximately 11% of calories coming from sugar. Placing cereals with such wide-ranging nutrient levels under the same banner of “inappropriate for advertising to children” might cause a disconnect (and therefore less buy-in) with consumers who may consider certain products “healthy” for children.

To be clear: this is not to suggest that “*healthier-for-you*” products are necessarily healthy for children. As several studies have shown, child-targeted food products with “health halos” (such as gluten-free or organic) are often high in sugar, especially fat and/or sodium (Elliott, 2012, 2025), and there is a significant difference between “better-for-you” and “good-for-you”.

Finally, the study underscores the importance of scope when it comes to determining policy. While countries such as Chile include product packaging within their regulatory scope when it comes to food marketing to children (Taillie *et al.*, 2019, 2021), restrictions on child-targeted food packaging are rare (Taillie *et al.*, 2019). Canada, as previously noted, does not have national regulations on food marketing in place, and despite multiple commitments spanning nearly a decade, advancing these regulations is no longer a policy priority. What proves striking in the findings, however, is that using Health Canada’s nutrient criteria proposed for marketing to children, none of the cereals explicitly packaged to appeal to children could be advertised to children.

Strengths and limitations

This study provides an updated, comprehensive snapshot of the cereals targeting children in the Canadian retail environment and key insight into how the nutrient profiling model used can significantly impact what counts as “appropriate” when it comes to marketing to children.

Physically visiting the stores (compared to searching websites or web-scraping data) is a particular strength, as it ensures that all relevant products are captured, alongside and the most up-to-date persuasive appeals. Doing so ensures that the results transparently document exactly what consumers (parents, caregivers and children) see when they visit these stores. This said, the results provide a snapshot in time: persuasive techniques, ingredients and nutritional value are not static entities.

Conclusion

Children in Canada are extensively targeted by a range of fun, powerful and persuasive appeals on cereal packaging. While cereals also seek to communicate “health” to parents using health/nutrition-related claims, high sugar levels are often present. In the context of broader international policy debates regarding food marketing to children, it is noteworthy that (using government-led nutrient criteria) not one of the cereals explicitly packaged to appeal to children would be permitted to be advertised to children. From a policy perspective, this suggests that product packaging – especially cereal packaging – should receive more serious consideration as a form of commercial promotion of food to children.

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Note

1. See Elliott (2020), Health Canada (2022).
2. According to Health Canada’s Proposed Nutrient Thresholds for Restricting Advertising to Children (Health Canada, 2023b), a product would not be permitted to be advertised to children if it exceeds any of the following:
 - Saturated fat*: A total of 2 g of saturated fatty acids (SFA) per the RA (reference amount) or stated serving size (whichever is greater) and ≤ 15 energy from SFA;
 - Sodium*: 140 mg per RA or stated serving size (whichever is greater) or 140 mg per 50 g if the RA is 30 g or less;
 - Sugars*: 5 g per RA or stated serving size (whichever is greater) or 5 g per 50 g if the RA is 30 g or less.

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