The Impact of Marketing Power and Brand Marketing on Children

Analysis of the impact of child-targeted vs. adult-targeted marketing, licensed characters vs. spokes characters and brand vs. product-based marketing on children's food preferences and behavioural intentions

The OUTLIVE Lab

FOOD AND NUTRITION POLICY FOR OBESITY PREVENTION

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EXECUTIVE SUMMARY

INTRODUCTION

Exposure to food marketing for unhealthy foods and beverages has been highlighted as an important causal factor contributing to poor diet quality in children and to childhood obesity. As a result, the World Health Organization (WHO) has recommended that countries develop policies to restrict these harmful marketing practices.

The overall impact of food marketing is a function of both children's exposure to food marketing, and the power of such marketing. Exposure refers to the reach and frequency of the marketing, while power refers to its content and design. While there is a growing body of literature describing the power of food marketing, fewer studies have assessed the impact of specific persuasive marketing techniques or aspects of 'power' on children. To date, there have been no studies which have specifically studied the impact of adult-targeted food marketing (i.e., with the absence of marketing techniques specifically targeting children) on children's preferences, nor how adult-targeting marketing's impact compares to that of child-targeted marketing. Additionally, there is little evidence on how different types of marketing techniques, such as the use of spokes characters (i.e., brand-owned characters; e.g., Tony the Tiger or Count Chocula) in comparison to licensed characters (i.e., characters from other media; e.g., Minions, Olaf the snowman) impact children's preferences and behaviours. Moreover, while the influence of exposure to food marketing on children is clear, the effect of brand marketing (i.e., marketing featuring branded content, but absent from any actual food product) is uncertain, and there have been no studies to date which have directly examined the impact of brand marketing on children.

Bill C-252, *The Child Health Protection Act,* which will mandate the restriction of unhealthy food marketing to children at the federal level, is currently making its way through Parliament. The policy framework that will dictate the scope of the proposed marketing restrictions has yet to be finalized. As such, there is a critical opportunity to generate timely evidence to inform and shape the impending policy to ensure that all types of marketing that impact children are being covered within the regulatory framework.

RESEARCH QUESTIONS

The present research study posed three research questions aiming to address the gaps in the current body of literature related to the impacts of different aspects of marketing power and brand marketing on children:

1. What is the impact of adult-targeted food and beverage advertisements compared to child-targeted food beverage advertisements on children's food preferences and behavioral intentions?

2. What is the impact of spokes characters vs. licensed characters used in food and beverage advertisements on children's food preferences and behavioral intentions?

3. What is the impact of food and beverage brand marketing compared to product-based advertising on children's food preferences and behavioral intentions?

METHODOLOGY

A three-part online survey was administered to 1,341 Canadian children (aged 9-12 years) to determine the impact of: 1) child-targeted vs. adult-targeted marketing (RQ1), 2) licensed characters vs. spokes characters (RQ2) and 3) food and beverage product-based vs. brand marketing (RQ3). Participants were randomized to a single condition within each part of the survey, for which they were asked to view three static food advertisements displaying the features of that condition (e.g., child-targeted advertising or licensed characters). Following each ad exposure, participants were asked to answer three Likert-scale questions (5-points, indicated by emojis ranging from sad (1) to happy (5) faces). For each experimental condition within each research question, there were four outcome variables of interest related to the impact of marketing on children:

1. **Food preference**
2. **Purchase intent**
3. **Pester power**
4. **Total impact**

To evaluate the difference in impact between each experimental condition on outcome variables, analysis of variance (ANOVA) models were fitted with Likert scores for food preference, purchase intent, pester power and total impact as outcomes; sex (male/female), age (9-10years/11-12years), ethnicity (majority, minority), perceived income adequacy (low/high), and experimental condition as fixed factors/independent variables. In cases where the ANOVA yielded significant results, Bonferroni post-hoc tests were conducted. Results were considered statistically significant when $p<0.05$.

RESULTS

1. Child-targeted ads had a higher total impact (mean Likert score 3.36) on children, compared to adult-targeted ads (mean score 2.75; $p<0.001$) or no marketing (mean score 2.81; $p<0.001$). A similar trend was observed for food preference, purchase intent and pester power.

2. Ads featuring spokes characters had a higher total impact on children (mean score 3.98) compared to ads featuring licensed characters (mean score 3.80; $p<0.001$) and the control (i.e., no characters) (mean score 3.19; $p<0.001$), and the total impact of licensed characters was greater than that of no characters. A similar trend was observed for food preference, purchase intent and pester power.

3. Familiar product ads had a higher total impact on children (mean score 3.57) compared to familiar brand ads (2.88), unfamiliar brand ads (3.24), or unfamiliar product ads (3.09; $p<0.001$ for all pairwise comparisons). Total impact was also different between familiar brand ads and unfamiliar brand ads or unfamiliar product ads ($p<0.001$ for all pairwise comparisons). The impact of unfamiliar brand ads on children was not different than the impact of unfamiliar product ads ($p=0.53$).

CONCLUSIONS & POLICY RECOMMENDATIONS

This study showed that child-targeted ads and those using characters - especially spokes characters - have a strong overall impact on children's food preferences, purchase intents, and pester power. While gaps remain in our understanding of brand marketing, this study suggests that familiarity matters, and that the presence of a food product generates power and contributes to the marketing's overall impact on children.

Based on the results of this study, we propose the following policy recommendations:

1. **Policies restricting food and beverage marketing must prioritize child-targeted marketing, using broad definitions of what is considered to be "child-targeted".**

2. **Policies must prohibit the display of all characters in food and beverage marketing.**

3. **Policies should include a review period to continue monitoring the use and impact of brand marketing.**

Taken together, the results of this research provide timely evidence to support and inform the development and implementation of federally mandated marketing restrictions in Canada and highlight the importance of carefully considering aspects of marketing power (alongside exposure) and brand marketing within the regulatory approach to best protect children from the harmful effects of food marketing.

GLOSSARY OF IMPORTANT TERMS

MARKETING EXPOSURE	The reach and frequency of food and beverage marketing
MARKETING POWER	The content and design of food and beverage marketing
CHILD-TARGETED MARKETING	Marketing that features marketing techniques that are known to specifically target children (e.g., characters, games, fun designs)
ADULT-TARGETED MARKETING	Marketing that does not feature marketing techniques that are known to target children, or marketing that features techniques that target a demographic other than children
LICENSED CHARACTER	Characters licensed from other media, such as movies, television shows, video games, etc.
SPOKES CHARACTER	Characters developed and owned by food and beverage companies to promote products and increase brand equity
BRAND MARKETING	Marketing that features branding strategies, such as branded symbols or logos, without explicitly featuring a food or beverage product
FOOD PREFERENCE	Children's desire to choose and/or consume a food or beverage product
PURCHASE INTENT	Children's intention to purchase a food or beverage product
PESTER POWER	Children's ability to influence parents/guardians to purchase food and beverage products

INTRODUCTION

THE PROBLEM: FOOD MARKETING TO CHILDREN

The burden of childhood overweight, obesity and non-communicable diseases (NCDs) remains high globally, and in Canada.[1-6] There is a well-established link between diet and nutrition-related chronic diseases such as obesity and in Canada, dietary risk is the top behavioural risk factor for death and disability following tobacco.[7-11] Canadian children's diets are consistently found to fall short of meeting national dietary guidelines; research shows that child diets are high in ultra-processed foods and low in fruits and vegetables, putting them at risk for nutrition-related chronic disease.[12-15]

Food marketing has been highlighted as an important causal factor contributing to poor diet quality in children, and to childhood obesity.[16-20] Canadian children are exposed to a high volume of food marketing across various media platforms and settings, including television, digital and social media, at school, and in recreational centres, among others.[21-26] Recent data from Canada has shown that there were 54 million food and beverage ads on child-preferred websites alone over a one-year period, and that children aged 2-11 years in Toronto were exposed to 2,234 food ads in 2019 on television across 36 stations.[27] This exposure was propelled by an estimated 628 million dollars in food and beverage advertising expenditures that occurred in Canada in 2019, most of which occurred on television (68%) and digital media (12%).[28] Exposure to food marketing is also driven by high screen time rates; the average child in Canada watches 17.3 hours of television per week and >25% of children spend one to two hours a day on weekdays and more than three hours/day on weekends on digital devices.[29,30]

There is a plethora of evidence indicating that the vast majority of marketing children are exposed to promotes food and beverage products that are of poor nutritional quality that are often high in sodium, sugars and saturated fat. [18,31,32] Children are particularly vulnerable to the effects of marketing and a series of systematic reviews have documented that unhealthy food marketing impacts children's food preferences, intakes, and requests.[16,18-20] As a result, the World Health Organization (WHO) has recommended that countries develop policies to restrict these marketing practices.[32,33]

THE POWER OF FOOD MARKETING

The overall impact of food marketing is a function of both children's exposure to food marketing, and the power of such marketing.[33] While "exposure" refers to the reach, and frequency of the marketing, "power" refers to its content and design.[33] While the bulk of the scientific literature has focused on child exposure to food marketing, research has also documented the power of the food and beverage marketing. Although the types of techniques that are used vary between media (e.g., print media vs. digital), there are many techniques that are consistent across all marketing platforms, such as the use of: promotional characters or brand spokes characters, nutrition or health appeals, taste appeals, celebrity endorsements, colorful or eye-catching visual imagery, appeals to fun or humour, emotional appeals, child-appealing themes (e.g., fantasy, adventure), games, toys, giveaways, contests, and more.[18,34-37] Research from Canada studying the power of marketing has elucidated similar trends in the types of strategies manufacturers are employing to appeal to children.[25,26,38-42]

While there is a growing body of literature describing the power of food marketing, fewer studies have assessed the impact of specific persuasive marketing techniques or aspects of 'power' on children. The use of advergames, for example, have been found to impact children's food choice and intakes.[43-46] While some studies have examined the impact of various characters on children's attention, recall, preferences, and choice of products [16,43,47-50], there are many gaps regarding the impact of specific techniques compared to others. For instance, despite characters being a frequently displayed and impactful marketing technique, it is unknown how various types of characters, such as brand spokes characters (e.g., Tony the Tiger or Count Chocula) or licensed characters (i.e., from popular movies or television shows) differentially impact children.

There has also been recent research indicating that children are drawn to marketing techniques that are not typically considered to be targeted at youth, such as appeals to health and nutrition or giveaways and promotions for adult-targeted products (e.g., prepaid gas cards).[51] This is important, as children are also heavily exposed to food and beverage marketing targeting older demographics, within child-focused media or settings (e.g., adult-targeted ad featured on a children's television channel), while frequenting mixed-audience settings (e.g., professional sports games), or while consuming mixed-audience media (e.g., prime time television). To date, however, there have been no studies to our knowledge which have specifically studied the impact of adult-targeted food marketing (i.e., with the absence of marketing techniques specifically targeting children) on children's preferences or made comparisons to child-targeted marketing.

Assessing these nuances in impact between different aspects of marketing power is essential to understand how the specific content and features of food and beverage marketing play a role in children's food preferences and food-related behaviours. Such evidence is critical to informing the development of marketing policy that ensures all types of marketing that impact children are being covered within the scope of the regulatory framework.

BRAND MARKETING

While the influence of exposure to food marketing on children is clear, the effect of marketing by food and beverage companies that is absent from any distinct food products remains ambiguous. Brand marketing is another form of food marketing whereby companies feature branding strategies, such as branded symbols or logos, without explicitly featuring a food product. Research has shown that this type of marketing can elicit responses including brand preferences, awareness, and purchasing behaviours in youth, which can drive long-term health effects and behaviours. For example, a significant increase in the brand recognition and attitudes among children (7 to 12 years old) was found after exposure to television and online food brand advertisements.[52] Other evidence has shown the effectiveness of fast-food branded marketing on children's brand awareness and recognition.[53-55]

Children in Canada are exposed to brand marketing from food and beverage companies across multiple media and settings. For instance, on social media, brand advertisements made up 38% of all food marketing exposures viewed by children 7 to 11 years old, while on television brand marketing is also present though less frequent.[24] While there has been some evidence documenting the extent of brand advertising being conducted by food and beverage companies in Canada, there have been no studies to date to our knowledge which have examined the impact of brand advertising on children, especially in comparison to product-based food advertising. This is an important question as most, if not all, regulatory actions aiming to restrict food marketing to children have not included brand marketing within their scope. This is a potential policy gap and as such, additional research in this area is imperative.[53]

CANADIAN POLICY CONTEXT

In Canada, the policy environment governing marketing to children is unique. Since 1980 in Quebec, the Consumer Protection Act (QCPA) has banned the advertisement of all commercial products that are exclusively designed for children or that particularly appeal to children under the age of 13 (e.g., toys, candy).[56,57] These restrictions apply to multiple media. While research suggests that this law has decreased the frequency of child-appealing marketing techniques on television in Quebec, it has been less effective at protecting Quebecois children from exposure to unhealthy food advertising on television.[26,41,42] This is likely due to the QCPA not being specifically designed to protect children from food and beverage advertising and permitting adolescent and adult-targeted advertising during children's programming. In the rest of Canada, unhealthy food marketing to children is self-regulated by 16 large food and beverage companies that voluntarily participate in

the Children's Food and Beverage Advertising Initiative (CAI). These companies have pledged to only advertise self-defined "better-for-you" products directed to children however, there are no guidelines limiting the use of promotional techniques or branded marketing to target children.[58] Research has shown this initiative has not been effective at reducing child exposure to unhealthy food advertising on television, on product packaging, in digital media, and in schools.[42,59-62]

In response to the gaps in the current initiatives aiming to protect children from food marketing in Canada, many Canadian non-governmental organizations have advocated for more robust policy action in this area. Health Canada responded to these calls in 2016 by committing to passing regulations to restrict child-appealing marketing of unhealthy foods and beverages as part of their *Healthy Eating Strategy*.[63] Shortly afterward, Bill S-228: *The Child Health Protection Act* which aimed to restrict the commercial marketing of food and beverage products to children under the age of 13, was introduced.[64] The bill ultimately died on the parliamentary order paper ahead of the 2019 federal election.[65]

In 2021, members of the food and beverage and advertising industries have jointly developed a new industry-led *Code for the Responsible Advertising of Food and Beverage Products to Children,* to be implemented in summer 2023.[66] Among other weaknesses, the *Code* exempts social media, product packaging, point of sale (retail stores that sell food), labelling, container, product shape, price premiums and giveaways, and ambiguously defines advertising "primarily directed at children". The introduction of federally mandated legislation on food marketing to children remains a government priority and in 2022, the *Child Health Protection Act* was re-introduced in the House of Commons as Bill C-252. Given that Bill C-252 is currently making its way through Parliament, and the policy framework that will dictate the scope of proposed marketing restrictions has yet to be finalized, there is an opportunity to generate timely evidence to inform and shape the impending policy, particularly regarding the aforementioned gaps related to marketing power and brand marketing.

RESEARCH QUESTIONS

Despite a growing body of literature on the topic of food marketing to children, there are gaps in our knowledge surrounding the impact of such marketing on children, specifically related to the power of food marketing and the use of brand marketing by food and beverage companies, areas which are critical to developing marketing policies and regulations that broadly and effectively protect children from the harmful effects of food advertising. The present research study posed three research questions aiming to address these gaps.

RESEARCH QUESTION 1 (RQ1):
What is the impact of adult-targeted food and beverage advertisements compared to child-targeted food beverage advertisements on children's food preferences and behavioral intentions?

RESEARCH QUESTION 2 (RQ2):
What is the impact of spokes characters vs. licensed characters used in food and beverage advertisements on children's food preferences and behavioral intentions?

RESEARCH QUESTION 3 (RQ3):
What is the impact of food and beverage brand marketing compared to product-based advertising on children's food preferences and behavioral intentions?

RESEARCH METHODOLOGY

STUDY OVERVIEW

This study was a cross-sectional study; an online survey was administered to more than 1,000 Canadian children to determine the impact of 1) child-targeted vs. adult-targeted food and beverage ads, 2) ads featuring licensed characters vs. spokes characters, and 3) food and beverage product-based ads vs. brand ads. This study was approved by the University of Ottawa Research Ethics Board (H-11-22-8517).

PARTICIPANTS & RECRUITMENT

Participants were recruited for this study by the market research company, Leger. Leger targeted adult panelists who identify as being parents of children within our desired demographic by email. For this study, recruitment was aimed at children aged 9-12 years old living in Canada, speaking English or French and having the ability to complete an online survey. Parents were asked to complete a series of screening questions to determine eligibility and those who met the inclusion criteria were asked to provide informed consent for their child to participate in the survey; children also provided informed assent. Participants were able to complete the survey either in English or in French.

Based on the study design required to answer the research questions, we aimed to recruit 1,000 children for this study. Based on a recent systematic review and meta-analysis, we anticipated a small effect size (i.e., standard mean difference of 0.3) of food marketing on children's preferences.[16] To detect a significant difference of that magnitude between two groups in a 2-tailed T test with 80% power, the minimum sample size required per study group was 175 participants. With a sample size of 1,000 children, all experimental conditions required a minimum of 250 participants, providing adequate power for any given comparison. This number of participants also aligned with budgetary limitations and recruiting feasibility as assessed by Leger. Recruitment was conducted as to be nationally representative (based on provincial population), and by age/sex groups. Participants were compensated according to Leger's usual incentive structure.

EXPERIMENTAL DESIGN

To test the research questions, a survey was administered online to participants by Leger. The first part of the survey consisted of a short demographic questionnaire that was completed by parents on behalf of their child, which asked questions about the child's age, sex, ethnicity, and perceived income adequacy. Children then completed the remainder of the survey on their own.

The children's portion of the survey consisted of three parts, each corresponding to one of the research questions on the impact of food and beverage ads: 1) child-targeted vs. adult-targeted (RQ1), 2) licensed characters vs. spokes characters (RQ2) and 3) food and beverage product-based vs. brand advertising (RQ3). A summary of the survey parts and experimental conditions is presented in **Table 1.** Participants were randomized to a single condition within each part of the survey, for which they were asked to view three static food advertisements (in random order) displaying the features of that condition (e.g., child-targeted advertising or licensed characters). The order of the survey parts was also randomized.

Table 1. Summary of survey Parts and experimental conditions

EXPERIMENTAL CONDITIONS	PART 1: RQ 1	PART 2: RQ 2	PART 3: RQ 3*
	Child-targeted ad	Licensed characters	Familiar product ad
	Adult-targeted ad	Spokes characters	Familiar brand ad *[No food product]*
	No marketing (control)	No characters (control)	Unfamiliar product ad (control)
			Unfamiliar brand ad (control) *[No food product]*

*For RQ3, two control conditions were necessary to discern between the impact of a) a food or beverage product being present (i.e., product vs. brand ad), and b) the familiarity of the brand, due to the rationale that the familiarity of the brand should correspond to increased brand equity and preference, whereas unknown brands should, in theory, have little impact on children.

Following each ad exposure, participants were asked to answer the following Likert-scale questions (5-points, indicated by emojis ranging from sad (1) to happy (5) faces) related to their preference, purchase intent and pester power, respectively:

1. **How much would you like to eat/drink this product? (RQ1 & RQ2) / How much would you like to eat/drink this brand's products? (RQ3)**

2. **Would you choose to buy this product in a store? (RQ1 & RQ2) / Would you choose to buy this brand's products in a store? (RQ3)**

3. **Would you ask an adult to buy this product for you? (RQ1 & RQ2) / Would you ask an adult to buy this brand's products for you? (RQ3)**

The ad images children were exposed to were designed specifically for this study. All ads were designed to be gender-neutral (e.g., avoiding stereotypical gendered advertising techniques or characters such as princesses or race cars) and appropriate for children within the study age range. Where possible, ads were for products from brands unfamiliar to children in Canada (i.e., brands from the United Kingdom or Australia) to reduce bias due to pre-existing brand or product preferences. In some cases (e.g., RQ2 – spokes character condition and RQ3 – familiar brand ad and familiar product ad conditions), this was not feasible given the nature of the experimental condition. Additionally, where possible, products featured in the ad images were from "health-neutral" food categories (i.e., not 'junk foods', e.g., yogurt, cereal, granola bars) to avoid bias based on children's known preference for junk foods. In the case of RQ3, this was not possible given that in order to be realistic to the nature of food ads that children are actually exposed to, the featured brands were chosen based on the top brands from the most advertised food categories in Canada, which were fast food, breakfast foods, candy, deserts, and snacks.[21]

OUTCOMES & ANALYSIS

Demographic variables were analyzed descriptively. For each experimental condition within each research question, there were four outcome variables of interest related to the impact of marketing on children:

1. Food preference (score from Likert question 1)

2. Purchase intent (Likert question 2)

3. Pester power (Likert question 3)

4. Total impact (average of all Likert scores)

In this survey, a Likert score of 3 was represented by a "neutral face" emoji, so for the purposes of these analyses, an average Likert score greater than 3 (i.e., happy faces) can be interpreted as a positive impact on children, and any score lower than 3 (i.e., sad faces) can be interpreted as a negative impact.

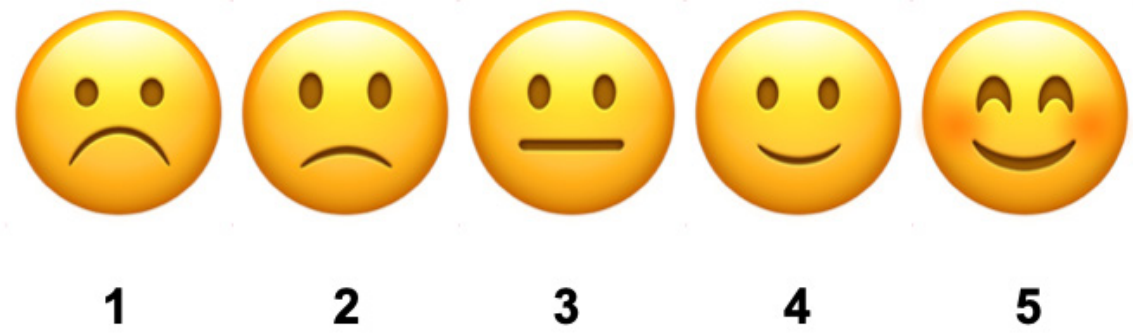

Figure 1. Likert Scale scores and emojis

To evaluate the difference in impact between each experimental condition on preference, purchase intent, pester power, and total impact, for each RQ analysis of variance (ANOVA) models were fitted with Likert scores for food preference, purchase intent, pester power and total impact as outcomes; sex (male/female), age (9-10 years/11-12 years), ethnicity (majority, minority), perceived income adequacy (low/high), and experimental condition as fixed factors/independent variables. There was no interaction between experimental condition, age, and sex, so further subgroup analyses were not conducted. In cases where the ANOVA yielded significant results, Bonferroni post-hoc tests were conducted. Results were considered statistically significant when $p<0.05$. All data was analyzed using Microsoft Excel and SPSS 27.0 (IBM, 2020).

RESULTS

In total, n=1,341 children completed the survey administered by Leger. Sociodemographic characteristics of the participants are presented in **Table 2**. A total of 49.2% of the sample was male and 50.6% was female and the average age of participants was 10.6 years (47.4% 9-10 years and 52.6% 11-12 years). Most participants identified as being in the ethnic majority group (i.e., White, 64.5%) and high perceived income adequacy (60%).

Table 2. Demographic characteristics of the study sample (n=1,341)

	N	%
Total Sample	**1,341**	**100.0**
Sex		
Female	679	50.6
Male	660	49.2
Prefer not to say	2	0.1
Age		
11-12 years	706	52.6
9-10 years	635	47.4
Mean Age (SD)	10.6 (1.1) years	
Ethnicity[1]		
Majority	869	64.8
Minority	457	34.1
Did not answer	15	1.1
Perceived income adequacy[2]		
High	804	60.0
Low	530	39.5
Did not answer	7	0.5
Province/Region of residence		
West (BC, AB)	323	22.6
Prairies (SK, MB)	91	6.4
Ontario	523	36.5
Quebec	318	22.2
East (NL, NS, NB, PE)	85	5.9
North (YT, NT, NU)	1	0.1

[1] Ethnicity was categorized as "majority" (i.e., only "White (European descent)" was selected) and "minority" (i.e., any other ethnicity group(s) were selected, including when in addition to "White (European descent)" being selected).

[2] Perceived income adequacy was categorized as "high" (Reponses of either very easy, easy, and neither easy nor difficult when asked how difficult or easy it is for you to make ends meet?) or "low" (responses of difficult or very difficult).

RQ1: CHILD-TARGETED VS. ADULT-TARGETED ADS

The effects of exposure to adult and child-targeted ads, and exposure to child-targeted ads or the control on total impact, were significantly different (**Figure 2**). A significantly greater average total impact was observed among children exposed to child-targeted ads (mean Likert score 3.36) compared to those exposed to adult-targeted ads (mean score 2.75; $p<0.001$) or no marketing (mean score 2.81; $p<0.001$).

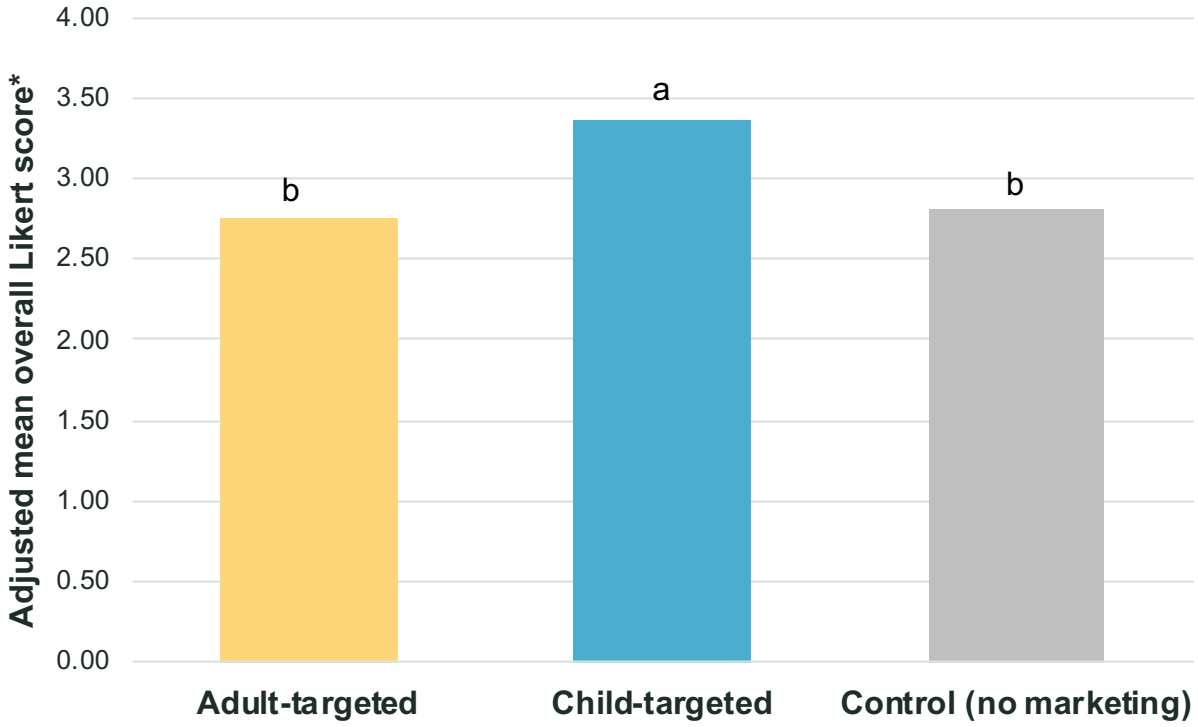

Figure 2. Total impact of child-targeted vs. adult targeted ads on children's food preferences and behavioural intentions

** Bars that do not share subscripts have means that differ by $p < 0.05$ according to Bonferroni multiple comparisons*

As shown in **Table 3**, average preference, purchase intent, and pester responses significantly differed by ad exposure condition, overall and by ethnicity. Average food preference was significantly higher among participants exposed to child-targeted ads (mean score 3.38) compared to both adult-targeted ads (mean score 2.83; $p<0.001$) or control (mean score 2.87; $p<0.001$). Similarly, average purchase intent and pester power responses were also significantly higher among those exposed to child-targeted ads (mean scores 3.33 and 3.38, respectively) compared to adult (2.72 and 2.70; $p<0.001$)) or control conditions (2.79 and 2.78; $p<0.001$). Among ethnic minorities and majorities, preference, purchase, and pester were significantly higher among those exposed to child-targeted ads compared to those exposed to adult-targeted or no marketing (control), with majority ethnic participants reporting stronger impact. There was no significant interaction effect between sex, age, perceived income adequacy, and ad exposure condition on preference, purchase, pester, or total impact responses.

Table 3. Total impact and impact of child-targeted vs. adult-targeted ads on children's food preference, purchase intent and pester power

EXPERIMENTAL CONDITION:	ADULT-TARGETED MARKETING	CHILD-TARGETED MARKETING	CONTROL (NO MARKETING)	
FOOD PREFERENCE				
	Adjusted mean[1]	Adjusted mean[1]	Adjusted mean[1]	p value[2]
Overall	2.83[b]	3.38[a]	2.87[b]	p<0.01
Sex				0.57
Male	2.84	3.35	2.91	
Female	2.83	3.41	2.83	
Age				0.74
9-10 years	2.9	3.44	2.89	
11-12 years	2.77	3.33	2.85	
Ethnicity[3]				0.02
Minority	2.85[b]	3.30[a]	2.97[b]	
Majority	2.82[b]	3.46[a]	2.77[b]	
Perceived Income Adequacy[4]				0.27
Low	2.82	3.4	2.79	
High	2.84	3.36	2.96	

EXPERIMENTAL CONDITION:	ADULT-TARGETED MARKETING	CHILD-TARGETED MARKETING	CONTROL (NO MARKETING)	
PURCHASE INTENT				
	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	2.72[b]	3.33[a]	2.79[b]	p<0.01
Sex				0.67
Male	2.74	3.31	2.83	
Female	2.71	3.35	2.76	
Age				0.66
9-10 years	2.79	3.38	2.8	
11-12 years	2.66	3.28	2.79	
Ethnicity				0.01
Minority	2.76[b]	3.26[a]	2.92[b]	
Majority	2.69[b]	3.40[a]	2.67[b]	
Perceived Income Adequacy				0.09
Low	2.73	3.36	2.68	
High	2.72	3.3	2.9	
PESTER POWER				
	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	2.70[b]	3.38[a]	2.78[b]	p<0.01
Sex				0.51
Male	2.71	3.34	2.82	
Female	2.69	3.42	2.74	
Age				0.29
9-10 years	2.77	3.44	2.75	
11-12 years	2.63	3.32	2.81	
Ethnicity				0.03
Minority	2.73[b]	3.33[a]	2.91[b]	
Majority	2.67[b]	3.42[a]	2.64[b]	
Perceived Income Adequacy				0.21
Low	2.69	3.4	2.68	
High	2.71	3.36	2.88	

EXPERIMENTAL CONDITION:	ADULT-TARGETED MARKETING	CHILD-TARGETED MARKETING	CONTROL (NO MARKETING)	
TOTAL IMPACT				
	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	2.75[b]	3.36[a]	2.81[b]	p<0.01
Sex				0.56
Male	2.76	3.33	2.85	
Female	2.74	3.4	2.78	
Age				0.52
9-10 years	2.82	3.42	2.81	
11-12 years	2.68	3.31	2.82	
Ethnicity				0.02
Minority	2.78[b]	3.30[a]	2.94[b]	
Majority	2.73[b]	3.43[a]	2.69[b]	
Perceived Income Adequacy				0.16
Low	2.75	3.39	2.72	
High	2.76	3.34	2.91	

[1]Adjusted means based on ANOVA models fitted with Likert scores for food preference, purchase intent, pester power and total impact as outcomes; sex (male/female), age (9-10years/11-12years), ethnicity (majority, minority), perceived income adequacy (low/high), and experimental condition as fixed factors/independent variables. Means that do not share subscripts have means that differ by p < 0.05 according to Bonferroni multiple comparisons.; [2] p values <0.05 were considered to be statistically significant. [3]Ethnicity was categorized as "majority" (i.e., only "White (European descent)" was selected) and "minority" (i.e., any other ethnicity group(s) were selected, including when in addition to "White (European descent)" being selected).[4] Perceived income adequacy was categorized as "high" (Reponses of either very easy, easy, and neither easy nor difficult when asked how difficult or easy it is for you to make ends meet?) or "low" (responses of difficult or very difficult).

RQ2: LICENSED CHARACTERS VS. SPOKES CHARACTERS

The average total impact differed significantly per experimental condition (**Figure 3**). Children exposed to ads featuring spokes characters had a significantly higher average total impact (mean score 3.98) compared to those exposed to licensed characters (mean score 3.80; $p<0.001$) and the control (i.e., no characters) (mean score 3.19; $p<0.001$).

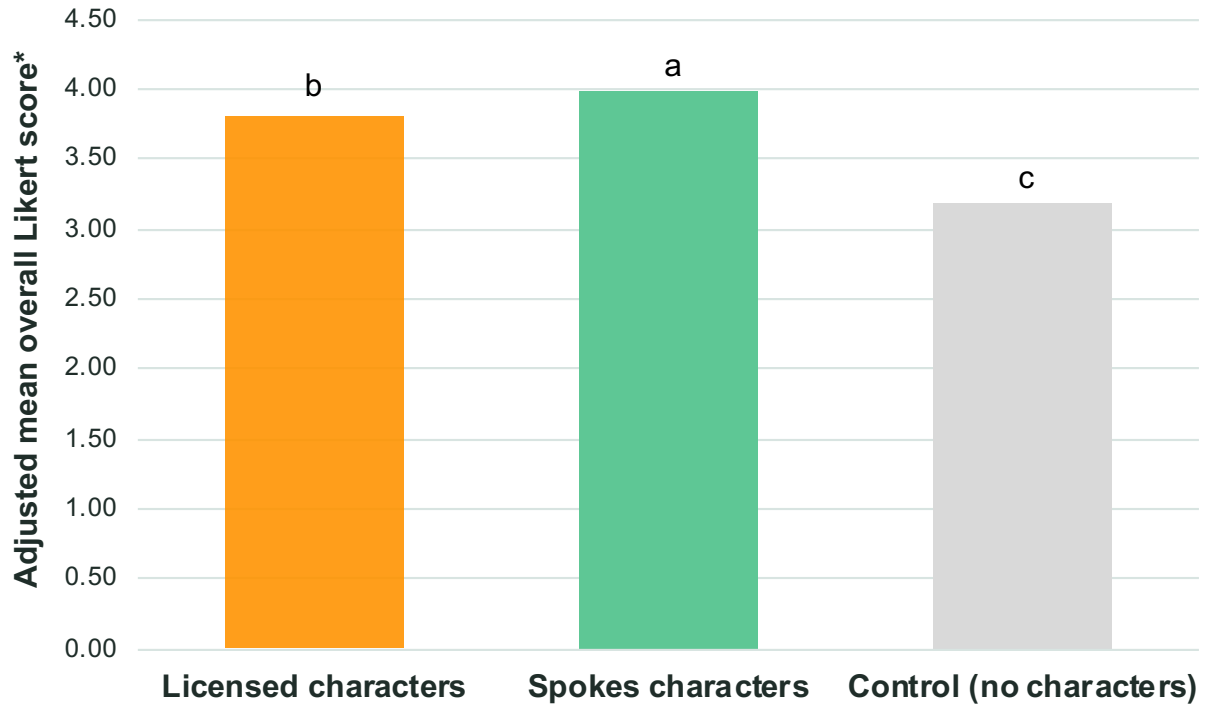

Figure 3. Total impact of licensed characters vs. spokes characters on children's food preferences and behavioural intentions

* *Bars that do not share subscripts have means that differ by $p < 0.05$ according to Bonferroni multiple comparisons*

The effect of exposure to spokes characters on food preference (mean score 4.02) , purchase (3.93), and pester power (4.00) responses were greater compared to those exposed to licensed characters (mean scores 3.84, 3.79, 3.78, respectively; $p<0.001$) or no characters (3.25, 3.16, 3.17, respectively; $p<0.001$) while exposure to licensed characters was significantly different to no characters ($p<0.001$) **(Table 4)**. The response outcomes did not significantly differ by the interaction effect between ad exposure condition, sex, age, ethnicity, or perceived income adequacy.

Table 4. Total impact and impact of licensed characters vs. spokes characters on children's food preference, purchase intent and pester power

EXPERIMENTAL CONDITION:	LICENSED CHARACTERS	SPOKES CHARACTERS	CONTROL (NO CHARACTERS)	
FOOD PREFERENCE				
	Adjusted mean[1]	Adjusted mean[1]	Adjusted mean[1]	p value[2]
Overall	**3.84[b]**	**4.02[a]**	**3.25[c]**	**P<0.001**
Sex				**0.22**
Male	3.84	3.97	3.3	
Female	3.84	4.07	3.19	
Age				**0.12**
9-10 years	3.91	4.17	3.27	
11-12 years	3.77	3.87	3.22	
Ethnicity[3]				0.37
Minority	3.81	3.96	3.27	
Majority	3.87	4.08	3.22	
Perceived Income Adequacy[4]				0.11
Low	3.84	4.03	3.14	
High	3.84	4.02	3.35	
PURCHASE INTENT				
	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	3.79[b]	3.93[a]	3.16[c]	**P<0.001**
Sex				0.44
Male	3.78	3.89	3.2	
Female	3.81	3.98	3.12	
Age				0.3
9-10 years	3.87	4.07	3.19	
11-12 years	3.71	3.8	3.13	
Ethnicity				0.4
Minority	3.78	3.87	3.18	
Majority	3.8	4	3.14	
Perceived Income Adequacy				0.07
Low	3.84	3.97	3.07	
High	3.75	3.9	3.25	

EXPERIMENTAL CONDITION:	LICENSED CHARACTERS	SPOKES CHARACTERS	CONTROL (NO CHARACTERS)	
PESTER POWER				
	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	3.78[b]	4.00[a]	3.17[c]	P<0.001
Sex				0.54
Male	3.75	4.01	3.21	
Female	3.81	3.99	3.13	
Age				0.43
9-10 years	3.84	4.13	3.23	
11-12 years	3.72	3.87	3.12	
Ethnicity				0.18
Minority	3.75	3.94	3.23	
Majority	3.82	4.06	3.12	
Perceived Income Adequacy				0.20
Low	3.84	4.02	3.12	
High	3.72	3.98	3.23	
TOTAL IMPACT				
	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	3.80[b]	3.98[a]	3.19[c]	P<0.001
Sex				0.44
Male	3.79	3.96	3.24	
Female	3.82	4.01	3.15	
Age				0.24
9-10 years	3.87	4.12	3.23	
11-12 years	3.74	3.84	3.16	
Ethnicity				0.28
Minority	3.78	3.92	3.23	
Majority	3.83	4.05	3.16	
Perceived Income Adequacy				0.11
Low	3.84	4.01	3.11	
High	3.77	3.96	3.28	

[1]Adjusted means based on ANOVA models fitted with Likert scores for food preference, purchase intent, pester power and total impact as outcomes; sex (male/female), age (9-10years/11-12years), ethnicity (majority, minority), perceived income adequacy (low/high), and experimental condition as fixed factors/independent variables. Means that do not share subscripts have means that differ by p < 0.05 according to Bonferroni multiple comparisons.; [2] p values <0.05 were considered to be statistically significant. [3]Ethnicity was categorized as "majority" (i.e., only "White (European descent)" was selected) and "minority" (i.e., any other ethnicity group(s) were selected, including when in addition to "White (European descent)" being selected).[4] Perceived income adequacy was categorized as "high" (Reponses of either very easy, easy, and neither easy nor difficult when asked how difficult or easy it is for you to make ends meet?) or "low" (responses of difficult or very difficult).

RQ3: PRODUCT ADS VS. BRAND ADS

Average total impact significantly differed across almost all product and brand ad types (**Figure 4**). A significant difference was observed in total impact between exposure to familiar product ads (mean score 3.57) compared to familiar brand ads (2.88), unfamiliar brand ads (3.24), or unfamiliar product ads (3.09; $p<0.001$ for all pairwise comparisons). Total impact was also significantly different among those exposed to familiar brand ads compared to those exposed to unfamiliar brand ads or unfamiliar product ads ($p<0.001$ for all pairwise comparisons). The effect of exposure to unfamiliar brand ads on total impact was not significantly different to exposure to unfamiliar product ads ($p=0.53$).

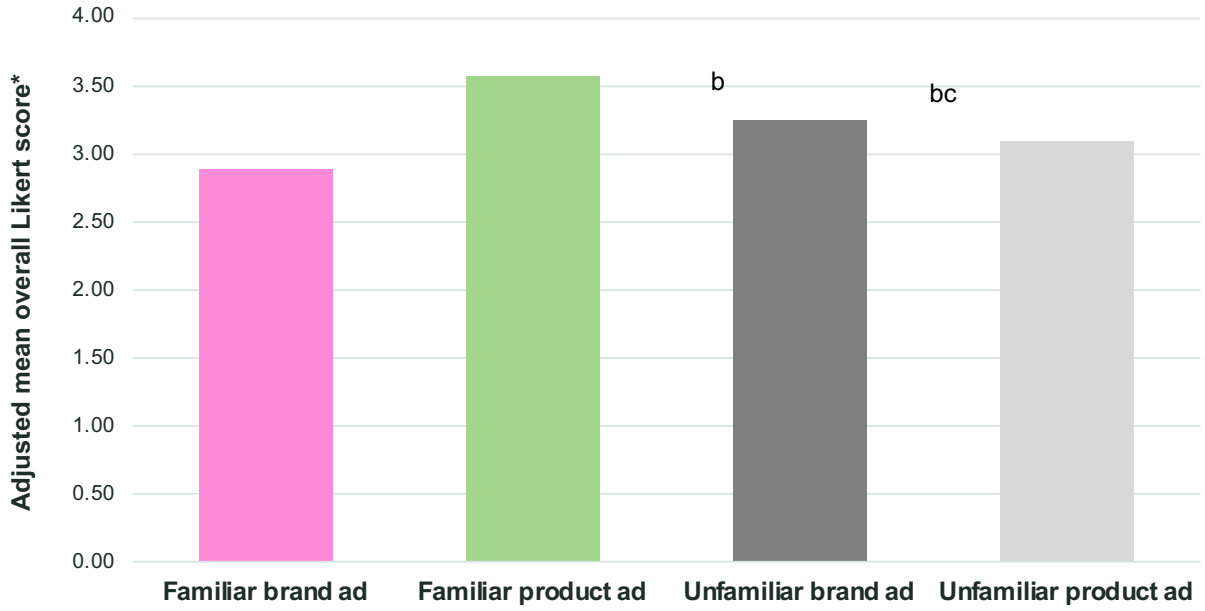

Figure 4. Total impact of brand ads vs. product-based ads on children's food preferences and behavioural intentions

* *Bars that do not share subscripts have means that differ by $p < 0.05$ according to Bonferroni multiple comparisons*

All response outcomes significantly differed by product and brand ad exposure (**Table 5)**. The effect of exposure to familiar food product ads on preference (mean score 3.59) was significantly greater compared to all other product and brand ad exposure types ($p<0.001$) while the effect of exposure to unfamiliar brand or food ads on preference did not significantly differ (mean scores 3.28 and 3.12, respectively; $p=0.31$). Likewise, average purchase and pester responses were significantly greater among those exposed to familiar product ads compared to all other conditions ($p<0.001$ for all pairwise comparisons), however purchase and pester did not significantly differ between exposure to unfamiliar brand ads and unfamiliar product ads ($p=0.99$ and $p=0.67$, respectively).

Table 5. Total impact and impact of brand ads vs. product-based ads on children's food preference, purchase intent and pester power

EXPERIMENTAL CONDITION:	FAMILIAR BRAND AD	FAMILIAR PRODUCT AD	UN-FAMILIAR BRAND AD	UN-FAMILIAR PRODUCT AD	
FOOD PREFERENCE					
	Adjusted mean	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	**2.80d**	**3.59a**	**3.28b**	**3.12bc**	**P<0.001**
Sex					0.25
Male	2.94	3.57	3.27	3.19	
Female	2.66	3.62	3.29	3.06	
Age					0.4
9-10 years	2.91	3.6	3.25	3.19	
11-12 years	2.7	3.59	3.31	3.06	
Ethnicity					0.54
Minority	2.94	3.69	3.38	3.14	
Majority	2.67	3.5	3.18	3.11	
Perceived Income Adequacy					0.22
Low	2.88	3.58	3.2	3.18	
High	2.72	3.61	3.36	3.07	
PURCHASE INTENT					
	Adjusted mean	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	**2.89d**	**3.53a**	**3.21b**	**3.07bc**	**P<0.001**
Sex					0.39
Male	3.03	3.52	3.23	3.14	
Female	2.74	3.54	3.19	3.01	
Age					0.49
9-10 years	2.98	3.53	3.22	3.17	
11-12 years	2.79	3.54	3.2	2.98	
Ethnicity					0.54
Minority	3.01	3.62	3.32	3.09	
Majority	2.76	3.45	3.1	3.06	
Perceived Income Adequacy					0.28
Low	2.98	3.51	3.14	3.1	
High	2.79	3.56	3.28	3.05	

PESTER POWER					
	Adjusted mean	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	**2.95d**	**3.57a**	**3.23b**	**3.08bc**	**P<0.001**
Sex					**0.61**
Male	3.04	3.58	3.21	3.15	
Female	2.86	3.56	3.24	3.01	
Age					**0.71**
9-10 years	3.05	3.59	3.23	3.14	
11-12 years	2.85	3.54	3.23	3.01	
Ethnicity					**0.55**
Minority	3.09	3.65	3.34	3.09	
Majority	2.81	3.48	3.12	3.06	
Perceived Income Adequacy					**0.29**
Low	3.08	3.57	3.17	3.09	
High	2.82	3.57	3.29	3.06	

TOTAL IMPACT					
	Adjusted mean	Adjusted mean	Adjusted mean	Adjusted mean	p value
Overall	**2.88d**	**3.57a**	**3.24b**	**3.09^{bc}**	**p<0.001**
Sex					**0.41**
Male	3	3.56	3.24	3.16	
Female	2.76	3.57	3.24	3.03	
Age					**0.52**
9-10 years	2.98	3.57	3.23	3.17	
11-12 years	2.78	3.56	3.25	3.02	
Ethnicity					**0.51**
Minority	3.01	3.66	3.34	3.11	
Majority	2.75	3.47	3.14	3.08	
Perceived Income Adequacy					**0.25**
Low	2.98	3.55	3.17	3.13	
High	2.78	3.58	3.31	3.06	

[1]Adjusted means based on ANOVA models fitted with Likert scores for food preference, purchase intent, pester power and total impact as outcomes; sex (male/female), age (9-10years/11-12years), ethnicity (majority, minority), perceived income adequacy (low/high), and experimental condition as fixed factors/independent variables. Means that do not share subscripts have means that differ by p < 0.05 according to Bonferroni multiple comparisons.; [2] p values <0.05 were considered to be statistically significant. [3]Ethnicity was categorized as "majority" (i.e., only "White (European descent)" was selected) and "minority" (i.e., any other ethnicity group(s) were selected, including when in addition to "White (European descent)" being selected).[4] Perceived income adequacy was categorized as "high" (Reponses of either very easy, easy, and neither easy nor difficult when asked how difficult or easy it is for you to make ends meet?) or "low" (responses of difficult or very difficult).

DISCUSSION

The objectives of this study were to determine how various aspects of marketing power (i.e., the design, content, and overall impression) impact children's food preferences and behavioural intentions. Three research questions examined the differential impact of child-targeted vs. adult-targeted ads, licensed characters vs. spokes characters, and product vs. brand ads, the results and policy implications of which will be discussed in the following sections.

RQ 1 – CHILD-TARGETED ADS HAD THE STRONGEST IMPACT

Child-targeted ads had a significant impact on children's preferences, purchase intents, pester power and total impact. These results differed significantly from the impact of adult-targeted ads, and ads with no marketing (control condition), both of which had negative impacts on all examined outcomes. This indicates that when children are exposed to food and beverage marketing, the ads that display features of child-targeted marketing are most likely to trigger children's desire to consume, purchase or pester parents about those products, especially in comparison to ads targeting adults or those with little to no marketing power. These findings are supported by previous literature on the impact of child-targeted food and beverage marketing on children's food preferences and food-related behaviours.[16]

The adult-targeted ads had a slightly negative impact on children in our study and this result is discordant with other studies that have spoken to the appeal of marketing techniques that are not explicitly child-targeted or that are aimed at older demographics.[51] However, this research question was aiming to evaluate the overall impression of the ad, rather than the specific marketing techniques that were used, meaning that while, overall, adult-targeted ads were less impactful on children in our study, it is still possible that specific adult-targeted marketing techniques are appealing to children. It is worth noting that to date, there have still been few studies aiming to elucidate the impacts of marketing techniques beyond those implicitly targeting children, and further research should aim to determine which adult-targeted techniques (such as health claims and giveaways or price promotions targeting adults) are most impactful to children, or how the use of these techniques in conjunction with child-targeted marketing techniques influences the overall impact of the marketing on children.

Some literature has noted potential differences in marketing impact based on demographic characteristics (e.g., age, sex, gender, weight status, socioeconomic status).[18,67-69] The present study, however, found no effect of age, sex, or perceived income adequacy on marketing impact of child or adult-targeted ads. This can likely be explained in part by the fact that the static ad images used in this experiment were designed to be gender/sex-neutral and appealing to a broad age range of children to reduce bias. In real world settings, however, children's personal characteristics almost certainly play a role in the impact of the food marketing they see. One recent study has attempted to elucidate how characteristics of Canadian children (e.g., sociodemographic, behavioural, and dietary intake factors) impact the appeal of real-world instances of digital food marketing.[70] The authors report that there was large variability in what children found appealing and that the power of marketing instances varied even within groups of children with similar characteristics, suggesting that children's marketing preference may largely be personal and not linked to sociodemographic group membership.[70] Interestingly, our results indicated that child-targeted ads had a stronger total impact and impact on preference, purchase intent and pester power in the majority (i.e., White) ethnic group. While there has been some recent evidence documenting potential inequities in marketing exposure, whereby children's exposure to food and beverage marketing seems to be higher in lower socioeconomic status (SES) and racialized communities[18,71], there is a paucity of evidence examining the impact, especially in Canada, of food marketing across sociodemographic strata, and further research is needed in this area to consolidate these findings and ensure that any future marketing policies are equitable.

RQ2 – CHARACTERS MAKE MARKETING MORE IMPACTFUL

The second research question addressed by this study delved into one specific child-targeted marketing technique: the display of characters. Results showed that spokes characters had the strongest total impact on children compared to licensed characters and the control condition. While not as strong of an impact, licensed characters still had a positive impact on children, which was significantly greater the impact of marketing that did not display any characters (control condition). In line with previous literature speaking to the powerful impact of characters [16,43,47-50], this study found that ads featuring spokes characters and licensed characters increased children's desire to consume, purchase or pester about products in comparison to ads that did not feature these marketing techniques, with spokes characters being the most powerful of the two examined character types. Research has shown that children's characters are one of the marketing techniques that children are most exposed to on many different media platforms and settings where children live and play.[18,34-37] Manufacturers are evidently choosing to employ this marketing technique frequently, likely because they have found it to be valuable for building brand equity and effective

at increasing purchasing and therefore, profits. The ethics of using characters to promote foods and beverages to children has been questioned, and some have called for greater accountability from companies with regard to their use of spokes and licensed characters in order to protect children's health.[72] However, given that major food and beverage companies have fiduciary responsibilities that conflict with prioritizing public health (e.g., generating profit), governments should take responsibility for ensuring children are not unduly exposed to harmful food and beverage marketing by introducing federal policies.

Findings from RQ1 indicated that child-targeted marketing is highly impactful to children, and these results add nuance to these findings by highlighting a specific marketing technique that is contributing to the overall child-targeted impression of the ad and boosting its impact. Findings like these, examining the impact of individual marketing techniques, are important, as they provide strong rationale to include these aspects of power within marketing restrictions.

RQ3 – FOOD AND FAMILIARITY MAY DICTATE IMPACT

The final research question in this study aimed to elucidate the impact of brand marketing compared to product-based marketing on children. Our results showed that ads featuring familiar food products had a stronger total impact on children than familiar brand ads and unfamiliar brand and product ads. This trend was consistent across all other study outcomes (i.e., food preference, purchase intent and pester power). Furthermore, we found that unfamiliar brand and product ads did not differ from each other in terms of impact but had a stronger impact than familiar brand ads.

These results suggest that the presence of a food product in itself is an inherently powerful aspect of food marketing, aligning with the popular theory that marketing is a combination of the "4Ps": price, promotion, placement - and in this case – product.[73,74] These findings may be amplified for instances of marketing featuring less healthy or junk-type foods, categories for which children are known to have preferences. However, our findings also suggest that familiarity is an important contributor to the impact of food marketing on children given that ads for familiar products were found to be more impactful than those for unfamiliar products. With this in mind, it would have been reasonable to expect that the familiar brand ads would have had a stronger impact on children's food preferences and behavioural intentions than the unfamiliar brand ads, however this was not seen in these data. This unexpected result may have arisen due to other aspects of the ad exposures in this condition lacking appeal due to the personal preferences of children compared to other conditions, or simply random error. Additional studies aiming to evaluate the impact of brand ads that children are actually exposed to on a regular basis are warranted to clarify this

incongruous result. It was unsurprising that the two unfamiliar conditions (product ads and brand ads) had similar impact on children, given that Canadian children should not have been exposed to ads for the foreign brands that were displayed and therefore should not have already developed equity toward these brands.

While the familiar brand ad condition in this study was not found to be particularly impactful on children, brand marketing is still an important tactic used by food and beverage companies to build brand equity and loyalty for their products. The familiar food ad in this experiment was found to have the strongest impact on children's desire to consume, purchase and pester about those products. How children's exposure to brand marketing contributes to building this familiarity, and ultimately influences the impact of product-based marketing, is worth examining.

Overall, these results indicate that there is still much to learn in terms of how children respond to brand advertising conducted by food and beverage companies. Given the volume of brand-advertising that children are exposed to and the unhealthy food categories for which children are most likely to see marketing[24], further research aiming to determine what mental images or food-related associations are triggered by brand ads is warranted. Increasing our understanding of brand marketing will be important to informing the continued development of comprehensive marketing policy.

STRENGTHS & LIMITATIONS

This study presented the first Canadian examination of the impact of 1) child-targeted vs. adult-targeted food and beverage marketing, 2) marketing featuring licensed characters vs. spokes characters, and 3) food and beverage product-based marketing vs. brand marketing on children's food preference, purchase intent, and pester power, strengthened by the use of a large and nationally representative sample of Canadian children. Strong efforts were made to reduce bias due to pre-existing preferences or random error, namely by using multiple ad exposures per experimental condition, as well the intentional design of the survey ad images to be gender-neutral and display unfamiliar products/brands and health-neutral food categories when possible. Randomization was also employed in several ways. Study participants were randomly assigned to an ad exposure condition within each research question, and this helped to achieve a relatively equal distribution of participants within each condition based on sociodemographic variables (i.e., sex and age). Participants also viewed each ad exposure within their assigned condition in randomized order to further protect against bias. The order of which participants were exposed to each part of the survey (i.e., each RQ) was also random. Finally, the strengths of the analytical approach employed in this study, in particular the use of ANOVA analysis, allowed for results to

be compared between experimental conditions, while adjusting for relevant sociodemographic variables. Moreover, post hoc Bonferroni tests enabled the identification of significant pairwise comparisons and providing additional depth to the analysis.

This study was, however, not without limitations, some inherent to survey study design, such as survey fatigue, which may have impacted the quality and accuracy of responses. Next, the study sample primarily consisted of participants identifying as ethnic majority and of higher income which may have reduced the generalizability of the results, however this is a skew is a commonly observed when recruiting participants from online/online survey panels.[75] Additionally, the effect of BMI or weight-status on the response outcomes could not be assessed in this study due to inconsistent or incomplete self-reporting of participants' height and weight observed in this survey. Finally, it is necessary to acknowledge that children have individualized preferences and were only exposed to three images per experimental condition for feasibility reasons and to limit participant fatigue. While the marketing images used in this study were designed with the intention of being as universally appealing as possible, and it is plausible that this may have somewhat neutralized the overall impact of the ads to some children, or that the selected images did not capture the interest of some children at all. In an expanded study or a real-world setting, greater variability or strength in the response outcomes could be expected, especially on an individual level, given that children are exposed to a large volume and variety of marketing on a daily basis that may better align with their personal preferences and therefore increase its impact.

POLICY IMPLICATIONS & RECOMMENDATIONS

Canada currently has a bill being studied in Parliament (Bill C-252) which would mandate the restriction of food marketing to children at the federal level. As such, we are at a critical point during which the development of the policy and regulatory framework can be informed and molded by emerging scientific evidence. Research has highlighted the disproportional influence of food industry stakeholders on the failed Bill S-228 and the development of nutrition policy in Canada more generally[76-78], further highlighting the importance of generating and sharing robust, policy-relevant scientific evidence on this topic.

In terms of developing effective marketing policies, the WHO has indicated that a comprehensive approach that restricts "all forms of marketing to children of foods which are high in saturated fats, trans-fatty acids, free sugars, or salt" is preferable. Based on the results of this study, we propose the following:

POLICY RECOMMENDATION 1

Policies restricting food and beverage marketing must prioritize child-targeted marketing, using broad definitions of what is considered to be "child-targeted."

Based on the previous regulatory proposal that accompanied Bill S-228, and assuming Health Canada takes a similar approach with Bill C-252, it appears that child-directed marketing will be defined based on a combination of the setting, medium, context and messaging of a marketing instance.[79] The proposed draft regulatory definitions are not nearly broad enough to capture all instances of children's exposure to food marketing (e.g., general television programming would not be captured, despite children being frequent viewers) and relies heavily on requiring the content of the marketing to be "child-targeted" in nature to be subject to the nutrient criteria and then potentially restricted. The importance of broadly and comprehensively defining "child-targeted marketing" for regulatory purposes is clear, and ultimately, narrow, and leaky definitions of what constitutes "child-targeted marketing" will result in incomplete protection of children from powerful food marketing. Should Health Canada opt for this regulatory approach, ensuring all aspects of marketing power that impact children are covered by restrictions is imperative.

POLICY RECOMMENDATION 2

Policies must prohibit the display of all characters in food and beverage marketing

Both spokes characters and licensed characters were found to be highly impactful on children's food preferences in this study, and other types of cartoon characters have been identified as impactful marketing strategies in previous work.[16,43,47-50] Characters have thus emerged as an incredibly powerful marketing technique that must be captured within the scope of marketing restrictions if they are to be effective. Chile has set an excellent example in this area, explicitly prohibiting the use of characters, including spokes characters, on products that do not meet their nutrient criteria. Since the implementation of their policy, familiar faces, such as Tony the Tiger or Count Chocula, no longer feature on the packages of sugary cereals, demonstrating the feasibility of this type of restriction.[80-83]

Unfortunately, current Canadian industry-led self-regulatory approaches to reducing food marketing to children (i.e., the CAI and the Code for Responsible Advertising) are ambiguous as to whether characters fall within their definition of what constitutes "child-targeted" marketing.[66,84] As discussed, food companies may be reluctant to remove characters from their marketing strategy given their likely economic benefit. There are, however, ethical issues associated with the use of this powerful marketing technique[72] and the use of characters must therefore be prohibited, no matter the regulatory format.

POLICY RECOMMENDATION 3

Policies should include a review period to continue monitoring the use and impact of brand marketing.

This recommendation is in line with guidance from the WHO, who indicated in their 2010 *Set of recommendations on the marketing of foods and non-alcoholic beverages to children,* that the development of strong monitoring programs to measure compliance with the policy framework is integral.[33] This period can also be used to monitor other unintended consequences of the implemented regulations, such as shifts toward marketing targeted older demographics (i.e., adolescents), using marketing techniques or mediums not covered by restrictions, the development of emergent marketing strategies or the evaluation of understudied marketing strategies – such as brand marketing. Continued and comprehensive monitoring is essential to be able to adapt and evolve policy as marketing practices and/or children's behaviours and preferences change, so they remain effective and protective.

So far, Bill C-252 does include a mandatory review period prioritizing the evaluation of marketing targeting children aged 13-16.[85] This review period should absolutely be included in the final regulations and should also prioritize monitoring related to brand marketing. There are still several questions and potential policy gaps that exist with regard to regulating brand marketing that does not explicitly feature food products, and additional evidence is required to justify the inclusion of brand marketing within future food marketing policies.

CONCLUSIONS

This study showed that child-targeted ads and those using characters - especially spokes characters - have a strong overall impact on children's food preferences, purchase intents, and pester power. While gaps remain in our understanding of brand marketing, this study suggests that familiarity matters, and that the presence of a food product generates power and contributes to the marketing's overall impact on children.

Taken together, the results of this research provide timely evidence to support and inform the development and implementation of federally mandated marketing restrictions in Canada and highlight the importance of carefully considering aspects of marketing power and brand marketing within the regulatory approach to best protect children from the harmful effects of unhealthy food and beverage marketing.

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