

Children's Food and Beverage Promotion on Television to Parents

Jennifer A. Emond, PhD, MSc^{a,b}, Marietta E. Smith, BS^c, Suman J. Mathur, BS^b, James D. Sargent, MD^{a,d,e}, Diane Gilbert-Diamond, ScD^{a,b}

abstract

BACKGROUND: Nutritionally poor foods are heavily advertised to children on television. Whether those same products are also advertised to parents on television has not been systematically examined.

METHODS: This study is a content analysis of advertisements for children's packaged foods and beverages aired over US network, cable, and syndicated television for 1 year (2012 to 2013). The target audience of each advertisement was defined as children or parents based on advertisement content, where parent-directed advertisements included emotional appeals related to family bonding and love. Advertisement characteristics and patterns of airtime were compared across target audience, and the proportion of total airtime devoted to advertisements targeting parents was computed.

RESULTS: Fifty-one children's food or beverage products were advertised over the study year, 25 (49%) of which were advertised directly to parents. Parent-directed advertisements more often featured nutrition and health messaging and an active lifestyle than child-directed advertisements, whereas child-directed advertisements more frequently highlighted fun and product taste. Over all products, 42.4% of total airtime was devoted to advertisements that targeted parents. The products with the most amount of airtime over the study year were ready-to-eat cereals, sugar-sweetened beverages, and children's yogurt, and the proportion of total advertisement airtime for those products devoted to parents was 24.4%, 72.8%, and 25.8%, respectively.

DISCUSSION: Television advertisements for children's packaged foods and beverages frequently targeted parents with emotional appeals and messaging related to nutrition and health. Findings are of concern if exposure to such advertisements among parents may shape their beliefs about the appropriateness of nutritionally questionable children's foods and beverages.



^aCancer Control Research Program, Norris Cotton Cancer Center, and ^eDepartment of Pediatrics, Geisel School of Medicine at Dartmouth, Lebanon, New Hampshire; ^bDepartments of Epidemiology and ^dCommunity and Family Medicine, Geisel School of Medicine at Dartmouth, Hanover, New Hampshire; ^cDepartment of General Medicine, Geisel School of Medicine at Dartmouth College, Hanover, New Hampshire

Drs Emond and Gilbert-Diamond conceptualized and designed the study; Dr Emond, Ms Smith, and Ms Mathur coded advertisements; Drs Sargent and Gilbert-Diamond critically reviewed data analyses; Dr Emond completed data analyses and drafted the initial manuscript; Ms Smith assisted in drafting the initial manuscript; Dr Sargent reviewed and revised the manuscript; Dr Gilbert-Diamond critically reviewed the manuscript; and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

www.pediatrics.org/cgi/doi/10.1542/peds.2015-2853

DOI: 10.1542/peds.2015-2853

Accepted for publication Sep 22, 2015

Address correspondence to Jennifer A. Emond, Department of Epidemiology, Geisel School of Medicine at Dartmouth, Hinman Box 7920, Hanover, NH 03755. E-mail: jennifer.a.emond@dartmouth.edu

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2015 by the American Academy of Pediatrics

WHAT'S KNOWN ON THIS SUBJECT: Nutritionally poor foods are frequently marketed to children on US television. As manufacturers face increasing pressure to limit such marketing, parents may become an increasingly important audience. However, little is known about parent-directed marketing for children's foods.

WHAT THIS STUDY ADDS: Nutritionally poor children's foods were frequently advertised to parents on US television using emotional and health-related appeals. Whether exposure to such marketing may shape a parent's beliefs about the appropriateness of nutritionally poor children's foods warrants investigation.

Foods and beverages are heavily marketed to children in the United States.^{1,2} Television is the primary medium used when marketing food to children,^{1,2} accounting for 48% of all child-directed marketing expenditures for packaged foods in 2009.¹ On average, children under the age of 12 view >24 hours a week of traditional television³ and view 12.8 food advertisements per day.⁴ Importantly, the foods promoted to children on television are primarily of poor nutritional quality.^{1,4,5} Child-directed advertisements are often crafted to increase children's pestering for advertised items,^{1,6} and strong evidence supports that exposure to food advertisements influences the food preferences and purchase requests of children.^{7,8}

As food manufacturers face increasing pressure to limit child-directed advertising for nutritionally poor foods, parents may become an increasingly important target audience. Few studies have examined the promotion of children's foods and beverages directly to parents. Previous studies have examined the promotion of children's foods and beverages in parenting^{9,10} or general adult¹¹ magazines and have described case studies of children's products promoted to parents.^{12,13} One study of a random sample of 100 Australian television advertisements for children's foods aired in 2009¹⁴ reported that 24% of advertisements were considered emotionally appealing to parents, in that they included themes of family life or a parent's concern for their child's well-being or health. The extent to which manufacturers target parents directly when advertising children's foods and beverages on US television remains unexplored.

This study analyzed the content of advertisements for children's packaged foods and beverages aired over US television over 1 year (March 2012 to February 2013).

Advertisements that targeted children or parents were selected for analysis. We defined parent-directed advertisements as those that included an emotional appeal of family bonding or caring/love. That definition was guided by the findings of the above content analysis of a sample of Australian television advertisements.¹⁴ Advertisement characteristics were compared across target audiences, and airtime for advertisements by target audience were presented by food and beverage type. Given the health concerns related to sugar-sweetened beverage consumption among children,¹⁵⁻¹⁸ we present a case study to describe the marketing approaches used in promoting sugar-sweetened beverages. The results provide novel information about the nature and extent of parent-directed advertising for nutritionally questionable children's foods and beverages on television.

METHODS

Data Source

Data for this study were purchased from a commercial vender (AdScope, Kantar Media, Atlanta, GA) as part of another study to examine television food advertising. The purchased database included a listing of all advertisements for packaged foods and beverages placed on US network, cable, and syndicated television (139 channels) aired between March 2012 and February 2013. The following information was included for each advertisement: a unique identifier (specific to the advertisement), product manufacturer, product name, length of advertisement (seconds), and channel, date, and time of airing. A video library of advertisements was available for content coding. The purchased database did not include advertisements for restaurants, including quick-serve restaurants. This study was exempt from institutional board review.

Selection of Advertisements for Children's Foods and Beverages

The process used to select advertisements for analysis is presented in Fig 1. Children's foods and beverages were defined as those promoted on television during programming targeted to children. Specifically, any food or beverage advertised at least once from 8 AM to 1 PM weekdays on Nickelodeon, NickToons, Disney XD, and Cartoon Network was included. Those channels were selected because they were the top sources of television food and beverage advertisement exposure among children in 2011.⁴ Broadcast stations (eg, ABC, CBS, NBC, and FOX) accounted for <10% of all food and beverage ads viewed by children in 2011⁴ and therefore were not included. Once those children's foods and beverages were identified, all advertisements for those products that aired on any channel and at any time were extracted for content coding. Advertisements for infant formula, toddler/baby food, or artificial sweeteners, those in Spanish, or those with technical difficulties were excluded from analysis.

Each advertisement was coded on a series of quantitative characteristics and qualitative appeals. Characteristics were based on previous studies that analyzed the content of television^{5,14,19,20} and print^{9,10} advertisements for children's foods. An iterative process was used in which 2 authors (JAE and SM) coded the advertisements while reviewing and refining the coding schema. That process resulted in a final codebook of 18 quantitative and 10 qualitative characteristics. Next, all advertisements were coded by 2 authors (JAE and MS), one of whom was not involved in developing the coding schema. Quantitative characteristics were coded as present (yes versus no), and each advertisement was assigned ≤ 4 qualitative appeals.

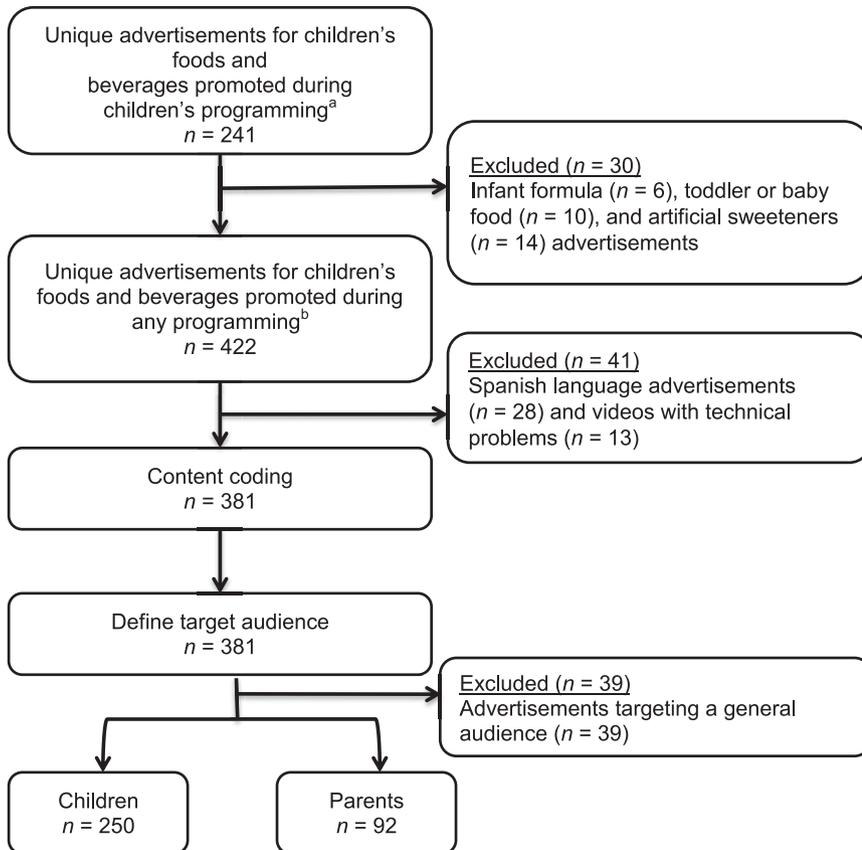


FIGURE 1

Selection of television advertisements promoting children's packaged foods and beverages and definition of target audience. Advertisements selected among all packaged food and beverage advertisements aired in the United States over network and cable television, March 2012 to February 2013. ^aChildren's foods and beverages were identified as those advertised at least once between 8 AM and 1 PM weekdays on Nickelodeon, NickToons, Disney XD, and Cartoon Network. ^bOnce children's food and beverage products were identified, all advertisements for those products over all channels and airtimes were included for content coding.

Supplemental Tables 3 and 4 contain the final set of quantitative and qualitative characteristics and interrater agreements. Because Cohen's κ values are sensitive to underlying prevalence rates and asymmetry and may underestimate reliability when agreement is high,²¹ we report interrater reliability as both Cohen's κ and simple agreement (%). The average Cohen's κ over the 18 quantitative characteristics was 0.81 (range 0.12–1.0; 1 characteristic was an outlier with a κ of 0.12, but it had a high absolute agreement of 90%). Average simple agreement was 94% (range 75%–100%). The average Cohen's κ over the 10 quantitative characteristics was 0.68 (range 0.44–0.96) and average simple

agreement was 88% (range 73%–97%). We observed high levels of agreement between the 2 raters on most characteristics. There were 3 qualitative appeals (fantasy, humor, and fun) with moderate levels of agreement: κ values 0.4 to 0.6 and simple agreement 70% to 80%. Disagreement between the 2 raters on any characteristic or appeal was adjudicated by using the value assigned by the lead author (JAE).

Identification of Target Audience

After the coding was completed, advertisements that targeted a general adult audience, defined as advertisements that did not include a child or a clear parental figure, were excluded ($n = 39$). Examples include

advertisements for chocolate candy that highlighted a romantic relationship between 2 adults and for ready-to-eat cereal that focused on health concerns specific to adults such as high cholesterol. Next, advertisements that included a qualitative appeal of family bonding were defined as parent-directed. The family bonding appeal included any images of parental figures and children bonding by participating and enjoying an activity together such as playing, high-fives, hugging, or kissing. The family bonding appeal also included advertisements with voiceovers likely to be emotionally appealing to parents ("shows how much you care" or "share what you love with who you love"). Interrater agreement on the family bonding appeal was high (Cohen's $\kappa = 0.93$, simple agreement 97%). Finally, advertisements that were not parent-directed were defined as targeting children. We next reviewed advertisements to ensure that the method of defining target audience did not clearly misclassify advertisements. The target audience was considered appropriate for all advertisements except 1: an advertisement for 100% orange juice was initially considered child-directed (ie, it did not include a family bonding appeal), yet the advertisement featured a busy mother preparing for her day. Thus, that advertisement was recoded as parent-directed. The final advertisement pool contained 342 unique advertisements, 250 child-directed and 92 parent-directed. To assess the face validity that our methods accurately distinguished advertisements by target audience, we compared the distribution of advertisement airtime across television channels and time of day by target audience.

Analyses

We used χ^2 tests or Fisher exact tests, as appropriate, to compare quantitative and qualitative

characteristics by target audience. The proportion of total airtime devoted to parent-directed advertisements was computed for each food and beverage category. Finally, given the health concerns related to sugar-sweetened beverage consumption among children, examples of the marketing approaches used to promote those beverages by target audience were examined as a case study. All analyses were completed with R software, version 3.0.2.²²

RESULTS

Over the study period, 342 unique advertisements promoted 51 unique children's foods or beverages; 92 unique ads promoted 25 of those products (49.0%) to parents. Table 1 compares advertisement characteristics by target audience. Child-directed advertisements were statistically more likely to be animated, feature a licensed character (ie, brand mascot), feature the food as a character, include a promotional item, reference an Internet site, or reference social media than parent-directed advertisements. In contrast, parent-directed advertisements were statistically more likely to feature a child and parent, show the item consumed in the advertisement, feature a nutritional or health message (eg, any spoken or written message about nutritional aspects of the item or health benefits of the item), feature a parent reading the item's packaging, or feature an active lifestyle (eg, actors engaging in sports or other physical activity) than child-directed advertisements. When considering qualitative appeals of the advertisements, child-directed advertisements were statistically more likely to feature appeals of fun, taste, humor, fantasy, action/adventure, desirability, and mystery, whereas parent-directed advertisements were statistically more likely to feature themes of nutrition and convenience.

TABLE 1 Characteristics of Television Advertisements Promoting Children's Packaged Foods and Beverages by Target Audience

Characteristic	Unique Advertisements by Target Audience ^a		<i>p</i> ^b
	Children, <i>n</i> = 250	Parents, <i>n</i> = 92	
Actor characteristics			
Primarily animated	142 (56.8)	13 (14.1)	<.001
Licensed character present	106 (42.4)	24 (26.1)	.009
Food as character	70 (28.0)	13 (14.1)	.012
Child present	153 (61.2)	90 (97.8)	<.001
Parent present	4 (1.6)	85 (92.4)	<.001
General adult present	42 (16.8)	17 (18.5)	.748
Actor actions			
Item consumed in ad	135 (54.0)	65 (70.7)	.008
Shared preparation	NA ^c	22 (23.9)	NA ^c
Parent gives item to child	NA ^c	62 (68.9)	NA ^c
Child thanks parent	NA ^c	39 (42.4)	NA ^c
Child requests item	NA ^c	6 (6.5)	NA ^c
Premiums or tie-ins			
Promotional item included	33 (13.4)	0 (0)	<.001
TV or movie tie-in	22 (8.8)	3 (3.3)	.101
Sweepstakes or contest	15 (6.0)	2 (2.2)	.259
Internet/social media			
Online reference	91 (36.4)	21 (22.8)	.025
Health/wellness messaging			
Nutritional or health message	35 (14.0)	39 (42.4)	<.001
Parent reads label	0 (0)	14 (15.2)	<.001
Active lifestyle presented	27 (10.8)	24 (26.1)	<.001
Qualitative appeals^d			
Fun	164 (65.6)	39 (42.4)	<.001
Taste	143 (57.2)	33 (35.9)	<.001
Humor	118 (47.2)	13 (14.1)	<.001
Fantasy	104 (41.6)	4 (4.4)	<.001
Action/adventure	101 (40.4)	1 (1.1)	<.001
Desirability	76 (30.4)	3 (3.3)	<.001
Mystery	17 (6.8)	0 (0)	.009
Convenience	7 (2.8)	12 (13.0)	<.001
Nutrition	6 (2.4)	35 (38.0)	<.001

Advertisements selected among all packaged food and beverage advertisements aired in the United States over network and cable television, March 2012-February 2013.

^a Parent-directed advertisements were defined as having a family bonding appeal. None of the child-directed advertisements included a theme of family bonding.

^b *P* value from χ^2 test; Fisher exact test was used if the number of advertisements in a stratum was ≤ 5 .

^c NA, not applicable; comparison not presented because characteristic related to family bonding appeal, which was used to define parent-directed advertisements.

^d Each advertisement was coded for 4 appeals at most.

We compared the distribution of airtime across channels and time of day, stratified by target audience, to assess the face validity of our target audience definitions. Five channels accounted for 65.8% of the total airtime for child-directed advertisements: Nickelodeon (21.3% of total airtime), NickToons (17.5%), Cartoon Network (12.5%), Disney XD (8.5%), and the HUB (6.0%). In contrast, airtime for parent-directed advertisements was more evenly distributed over all television channels; the top five channels in

airtime for parent-directed advertisements were the HUB (4.6%), Game Show Network (3.7%), WE (3.2%), Hallmark (3.1%), and Style (2.7%). The distribution of airtime by time of day differed by target audience (Supplemental Fig 2). The airtime for child-directed advertisements was quite variable during the day; on weekdays it peaked at 2 PM to 8 PM, and on weekends it peaked at 8 AM to 11 AM and remained high until 8 PM. In comparison, the airtime for parent-directed ads was less variable

during the day on weekdays and weekends.

Table 2 presents the airtime devoted to television advertisements promoting children's foods and beverages. Ready-to-eat cereal was the most frequently promoted children's food or beverage, followed by sugar-sweetened beverages and children's yogurt. Airtime for parent-directed advertisements accounted for 42.4% (1290.4 hours) of total airtime over all products and varied by product type. For example, ~25% of the total airtime for ready-to-eat cereals and children's yogurt was devoted to parent-directed advertisements, whereas 72.8% of the total airtime for sugar-sweetened beverages was devoted to parent-directed advertisements. Notably, 5 products were targeted only to parents (chocolate, chocolate milk, bottled water, condiments, and baked beans) and qualified as children's

foods or beverages because advertisements for those products aired at least once during the airtimes defined as child-directed per study criteria.

Case Study for Sugar-Sweetened Beverages

Over the study year, 365.8 hours of airtime was devoted to sugar-sweetened beverages: 249.2 hours for 3 different brands of children's sugar-sweetened fruit drinks and 116.6 hours for 1 brand of children's chocolate milk. Sixty percent of the total airtime for sugar-sweetened fruit drinks was devoted to parent-directed advertisements, whereas 100% of the airtime for chocolate milk was devoted to parent-directed advertisements. Parent-directed advertisements featured the nutritional attributes of the product (eg, "with 1 combined serving of fruits and vegetables," "40% fewer calories than most regular soda

brands," "made with white low-fat milk with calcium, vitamins A and D") and lower sugar content ("no high-fructose corn syrup," "now with 35% less sugar," "with just enough sugar for a wholesome everyday treat"); advertisements for chocolate milk also included messages related to taste ("the great taste kids love"). Parent-directed advertisements for the fruit drinks additionally featured active lifestyles (eg, swimming and biking together). In all parent-directed advertisements for sugar-sweetened beverages, a mother was featured bonding with her child (or children) through depictions of smiling, touching, and laughing together. In contrast, child-directed advertisements for sugar-sweetened fruit drinks focused on fantasy, coolness, and contests. None of the child-directed advertisements included nutrition or health

TABLE 2 Television Advertisement Airtime for Children's Packaged Foods and Beverages by Product Type and Target Audience

Product	Airtime, Overall h (% Total Airtime) ^a	Airtime by Target Audience ^b			
		Children		Parents	
		h	% Overall	h	% Overall
Overall	3043.6 (100)	1753.3	57.6	1290.4	42.4
Ready-to-eat cereals	1105.9 (36.3)	835.6	75.6	270.2	24.4
Sugar-sweetened beverages					
Overall	365.8 (12.0)	99.5	27.2	266.3	72.8
Sugar-sweetened fruit drinks	249.2 (8.2)	99.5	39.9	149.7	60.1
Chocolate milk	116.6 (3.8)	—	—	116.6	100
Children's yogurt	258.7 (8.5)	191.9	74.2	66.8	25.8
Candy	254.5 (8.4)	224.2	88.1	30.3	11.9
Chocolate	207.9 (6.8)	—	—	207.9	100
Fruit chews or roll-ups	139.7 (4.6)	75.2	53.8	64.5	46.2
Canned soup	121.1 (4.0)	2.8	2.3	118.4	97.7
Graham and baked crackers ^c	108.6 (3.6)	87.9	80.9	20.7	19.1
Bottled water	99.1 (3.3)	—	—	99.1	100
Children's entrees	80.7 (2.7)	58.4	72.4	22.3	27.7
Condiments	70.2 (2.3)	—	—	70.2	100
Lunch kits	61.5 (2.0)	49.9	81.2	11.6	18.9
Deli meats	44.0 (1.4)	44.0	100	—	—
Potato chips	42.5 (1.2)	42.5	100	—	—
Baked beans	36.8 (1.2)	—	—	36.8	100
Breakfast pastry	19.8 (0.7)	19.8	100	—	—
Frozen novelties	19.6 (0.6)	16.4	83.8	3.2	16.3
Puffed corn	2.9 (0.1)	2.9	100	—	—
100% orange juice	4.2 (0.1)	2.1	50.0	2.1	50.8

Advertisements selected among all packaged food and beverage advertisements aired in the United States over network and cable television, March 2012 to February 2013. Parent-directed advertisements were defined as having a family bonding appeal. None of the child-directed advertisements included a theme of family bonding. —, indicates 0.

^a Percent total airtime sums down columns.

^b Percent airtime by product sums across rows.

^c Graham crackers and baked crackers were combined because one manufacturer frequently promoted several varieties of graham and baked crackers in the same advertisements.

messaging or featured active lifestyles.

DISCUSSION

In this study, we analyzed the content of all television advertisements for a set of children's foods and beverages that aired on national television over 1 year (March 2012 to February 2013) and demonstrated that considerable airtime (42.4%) was devoted to parent-directed advertisements. The children's foods and beverages identified in this study are consistent with those heavily promoted to children on television, based on published Nielsen viewership data.^{4,23} These products fall short of nutritional guidelines set by the Interagency Working Group,²³⁻²⁵ a federal working group charged with improving the quality of foods marketed to children on television. Thus, study findings document the considerable frequency with which manufacturers target parents for children's foods and beverages of questionable nutritional quality.

The characteristics of child-directed advertisements (eg, fun, adventure, the use of animated licensed characters, and premium promotions) in this study are consistent with those reported in several previous studies.^{1,5,19,20,26,27} Strong evidence supports that exposure to child-directed food advertising influences a child's food requests,⁷ and child-directed television advertisements are often crafted to increase children's pestering for advertised products.¹ However, parents may perceive children's foods as low in nutrition and high in sugar based on characteristics of child-directed advertisements¹¹ and product packaging,²⁸ such as bright colors, animation, and licensed characters. In comparison with child-directed advertisements, parent-directed advertisements in this study more commonly featured themes of nutrition, health, and an active

lifestyle. Targeting parents with an approach distinct from that used to target children is likely a useful strategy¹²; the use of nutrition and health appeals for children's foods may divert attention away from poor nutritional quality.^{11,12} Given that our study results demonstrated that many children's foods and beverages were promoted both to children and parents using different themes, the effects of both exposures on the purchase of these items should be studied together, rather than in isolation, to assess whether their effects are additive or synergistic.

As food and beverage manufacturers continue to face increasing pressure to limit child-directed marketing for nutritionally poor foods in the United States,^{2,29,30} parent-directed marketing of nutritionally questionable children's foods may become increasingly more common.^{12,23,31} In particular, the findings for sugar-sweetened beverages (fruit drinks and flavored milk) are of concern. Sugar-sweetened beverages were the second most heavily promoted item during the study year, with 60.1% of the airtime for sugar-sweetened fruit drinks and 100% of the airtime for chocolate milk devoted to parent-directed advertisements. Sugar-sweetened beverage consumption contributes to excess weight gain¹⁵ and dental caries^{17,18} among children, and such beverages are not recommended for children.³² In our study, all of the parent-directed advertisements for sugar-sweetened beverages highlighted a nutrition or health message, whereas none of the child-directed advertisements for those products promoted nutrition or health. These findings are of concern, as parents often misinterpret the nutrition or health claims associated with children's foods³³; many parents believe sugar-sweetened fruit drinks and chocolate milk are healthy choices for their children.^{34,35} Thus,

it is critical to understand whether exposure to parent-directed advertisements for sugar-sweetened beverages may shape parental beliefs and attitudes about the appropriateness of such drinks for their children.

Strengths of this study include the assessment of all advertisements promoting a set of children's foods and beverages over all network, cable, and syndicated television channels for 1 year. Previous studies have only analyzed the content of a sample of child-directed advertisements by videorecording children's television shows^{5,14,19,20,36} or a sample of advertisements targeting a general audience.³⁶ This is also the first study to assess advertisements targeting children and parents for the same foods and beverages. Our coding schema was informed by previous studies, and we achieved high rates of interrater reliability. The distribution of advertisement airtime by channel and time of day provides face validity that we correctly distinguished child-directed versus parent-directed advertisements. For example, airtime for child-directed advertisements was greatest during times when children's programming is commonly aired (ie, after school and weekend mornings).

Findings must be interpreted in light of study limitations. We did not sample food and beverage advertisements intended for adolescents (eg, sports drinks, flavored waters),¹³ and our analysis cannot address the marketing of those products to parents. Also, because of our sampling schema, we may have missed some foods or beverages promoted solely to parents that were not aired on children's networks. Results for the qualitative appeals of fun, humor, and fantasy must be interpreted with caution, as rates of interrater agreement were moderate. Importantly, this study focused on packaged foods and

beverages, and we did not include advertisements for restaurants, including fast food restaurants. This analysis focused only on television marketing, yet newer media (eg, Internet, social media) are more frequently being used to market to children as well as parents.^{37,38} Finally, parent-directed advertisements were those considered emotionally appealing to parents based on a family bonding appeal. Additional studies are needed to validate our approach and define other themes that may specifically appeal to parents.

CONCLUSIONS

This study is one of the first comprehensive assessments of the tactics used in parent-directed television advertisements for children's packaged foods and beverages. Results highlighted that parent-directed advertisements commonly featured messages of nutrition and health and portrayals of an active lifestyle. Further research is needed to determine whether such advertisements ultimately undermine the ability of parents to select healthy dietary options for their children.

Study findings additionally highlight a marketing approach (directly marketing children's foods to parents) that may become increasingly more common as federal³⁹ and international⁴⁰ organizations work to limit child-directed marketing of nutritionally questionable foods. As policymakers and researchers evaluate the effectiveness of such policies, the potential effect that parent-directed marketing for those foods may have on a child's dietary intake and health should be considered.

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: All phases of this study were supported by the National Institutes of Health (JAE, MS, DGD, grants 5R21HD076097-02, P20GM104416, and P01ES022832); the Environmental Protection Agency (JAE, MS, DGD, grant RD83544201); and the Women in Science Program at Dartmouth College (SM). None of the funders had a role in the design, analysis, or writing of this article. Funded by the National Institutes of Health (NIH).

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

REFERENCES

- Botha S, Fentonmiller K, Jennings C, et al. A review of food marketing to children and adolescents: follow-up report. Washington DC: Federal Trade Commission; 2012. Available at: www.ftc.gov/reports/review-food-marketing-children-adolescents-follow-report. Accessed September 29, 2015
- Powell LM, Harris JL, Fox T. Food marketing expenditures aimed at youth: putting the numbers in context. *Am J Prev Med*. 2013;45(4):453–461
- The Nielsen Company. An era of growth: the cross-platform report. Available at: penngood.com/wp-content/uploads/2014/03/nielsen-cross-platform-report-march-2014.pdf. Accessed September 29, 2015
- Dembek CR, Harris JL, Schwartz MB. Where children and adolescents view food and beverage ads on TV: exposure by channel and program. Hartford, CT: Rudd Center for Food Policy and Obesity. Available at: www.uconnruddcenter.org/files/Pdfs/Rudd_Report_TV_Ad_Exposure_Channel_Program_2013.pdf. Accessed September 29, 2015
- Harrison K, Marske AL. Nutritional content of foods advertised during the television programs children watch most. *Am J Public Health*. 2005;95(9):1568–1574
- Cairns GAK, Hastings G. (2009) The extent, nature and effects of food promotion to children: a review of the evidence to December 2008. Geneva: World Health Organization. Institute for Social Marketing, University of Stirling, and the Open University, United Kingdom. Available at: www.who.int/dietphysicalactivity/publications/marketing_evidence_2009/en/. Accessed September 29, 2015
- McGinnis JM, Gootman JA, Kraak VI, eds. Food marketing to children and youth: threat or opportunity? Washington, DC: Committee on Food Marketing and the Diets of Children and Youth, Food and Nutrition Board, Board on Children, Youth, and Families, Institute of Medicine. Available at: nationalacademies.org/Reports/2005/Food-Marketing-to-Children-and-Youth-Threat-or-Opportunity.aspx. Accessed September 29, 2015
- Henry AE, Borzekowski DL. The nag factor. *J Child Media*. 2011;5(3):298–317
- Basch CH, Hammond R, Ethan D, Samuel L. Food advertisements in two popular U. S. parenting magazines: results of a five-year analysis. *Glob J Health Sci*. 2014; 6(2):175–182
- Manganello JA, Clegg Smith K, Sudakow K, Summers AC. A content analysis of food advertisements appearing in parenting magazines. *Public Health Nutr*. 2013;16(12):2188–2196
- Jones S, Fabrianesi B. Gross for kids but good for parents: differing messages in advertisements for the same products. *Public Health Nutr*. 2008;11(6):588–595
- British Heart Foundation. How parents are being misled: a campaign report on children's food marketing. 2008. Available at: http://image.guardian.co.uk/sys-files/Guardian/documents/2008/12/15/G449_How_parents_are_being_misled_report.pdf. Accessed October 9, 2015
- Harris JLSM, Brownell KD et al. Sugary Drink Facts. Hartford, CT: Rudd Center for Food Policy and Obesity. Available at: www.sugarydrinkfacts.org. Accessed September 29, 2015
- Hebden L, King L, Kelly B. Art of persuasion: an analysis of techniques used to market foods to children. *J Paediatr Child Health*. 2011;47(11):776–782

15. Malik VS, Pan A, Willett WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. *Am J Clin Nutr*. 2013;98(4):1084–1102
16. Chan TF, Lin WT, Huang HL, et al. Consumption of sugar-sweetened beverages is associated with components of the metabolic syndrome in adolescents. *Nutrients*. 2014;6(5):2088–2103
17. Park S, Lin M, Onufrak S, Li R. Association of sugar-sweetened beverage intake during infancy with dental caries in 6-year-olds. *Clin Nutr Res*. 2015;4(1):9–17
18. Warren JJ, Weber-Gasparoni K, Marshall TA, et al. A longitudinal study of dental caries risk among very young low SES children. *Community Dent Oral Epidemiol*. 2009;37(2):116–122
19. Connor SM. Food-related advertising on preschool television: building brand recognition in young viewers. *Pediatrics*. 2006;118(4):1478–1485
20. Folta SC, Goldberg JP, Economos C, Bell R, Meltzer R. Food advertising targeted at school-age children: a content analysis. *J Nutr Educ Behav*. 2006;38(4):244–248
21. Feinstein AR, Cicchetti DV. High agreement but low kappa: I. The problems of two paradoxes. *J Clin Epidemiol*. 1990;43(6):543–549
22. R Core Team. R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing; 2013
23. Powell LM, Schermbeck RM, Chaloupka FJ. Nutritional content of food and beverage products in television advertisements seen on children's programming. *Child Obes*. 2013;9(6):524–531
24. Schermbeck RM, Powell LM. Nutrition recommendations and the Children's Food and Beverage Advertising Initiative's 2014 approved food and beverage product list. *Prev Chronic Dis*. 2015;12:E53
25. Hingle MD, Castonguay JS, Ambuel DA, Smith RM, Kunkel D. Alignment of children's food advertising with proposed federal guidelines. *Am J Prev Med*. 2015;48(6):707–713
26. Jenkin G, Madhvani N, Signal L, Bowers S. A systematic review of persuasive marketing techniques to promote food to children on television. *Obes Rev*. 2014;15(4):281–293
27. Cairns G, Angus K, Hastings G, Caraher M. Systematic reviews of the evidence on the nature, extent and effects of food marketing to children. A retrospective summary. *Appetite*. 2013;62:209–215
28. Abrams KM, Evans C, Duff BR. Ignorance is bliss. How parents of preschool children make sense of front-of-package visuals and claims on food. *Appetite*. 2015;87:20–29
29. Kraak VI, Story M, Wartella EA, Ginter J. Industry progress to market a healthful diet to American children and adolescents. *Am J Prev Med*. 2011;41(3):322–333, quiz A4
30. Children's Food and Beverage Advertising Initiative. Foods and beverages that meet the CFBAI category-specific uniform nutrition criteria that may be in child-directed advertising. January 2015. Council of Better Business Bureaus. Available at: www.bbb.org/globalassets/shared/media/cfbai/cfbai-product-list-jan-2015.pdf
31. Lee J. Food advertising shifts focus from kids to parents. *Marketing Magazine*, August 7, 2008. Available at: www.marketingmagazine.co.uk/article/829678/food-advertising-shifts-focus-kids-parents. Accessed September 29, 2015
32. Robert Wood Johnson Foundation. Recommendations for healthier beverages. *Healthy Eating Research*, March 12, 2013. Available at: <http://www.rwjf.org/en/library/research/2013/03/recommendations-for-healthier-beverages.html>. Accessed September 29, 2015
33. Harris JL, Thompson JM, Schwartz MB, Brownell KD. Nutrition-related claims on children's cereals: what do they mean to parents and do they influence willingness to buy? *Public Health Nutr*. 2011;14(12):2207–2212
34. Munsell CR, Harris JL, Sarda V, Schwartz MB. Parents' beliefs about the healthfulness of sugary drink options: opportunities to address misperceptions. *Public Health Nutr*. 2015;1–9
35. Hennessy M, Bleakley A, Piotrowski JT, Mallya G, Jordan A. Sugar-sweetened beverage consumption by adult caregivers and their children: the role of drink features and advertising exposure. *Health Educ Behav*. 2015;42(5):677–686
36. Sixsmith R, Furnham A. A content analysis of British food advertisements aimed at children and adults. *Health Promot Int*. 2010;25(1):24–32
37. Capri-Sun. Push the straw. Push play [parent-directed website]. Available at: parents.caprisun.com/juice-drinks. Accessed September 29, 2015
38. TruMoo. Available at: www.trumoo.com. Accessed September 29, 2015
39. Federal Trade Commission. Interagency working group seeks input on proposed voluntary principles for marketing food to children. Available at: www.ftc.gov/news-events/press-releases/2011/04/interagency-working-group-seeks-input-proposed-voluntary. Accessed September 29, 2015
40. World Health Organization. Global strategy on diet, physical activity and health. Marketing of foods and non-alcoholic beverages to children. 2010. Available at: www.who.int/dietphysicalactivity/marketing-food-to-children/en/. Accessed September 29, 2015

Children's Food and Beverage Promotion on Television to Parents

Jennifer A. Emond, Marietta E. Smith, Suman J. Mathur, James D. Sargent and Diane Gilbert-Diamond

Pediatrics 2015;136;1095

DOI: 10.1542/peds.2015-2853 originally published online November 9, 2015;

Updated Information & Services	including high resolution figures, can be found at: http://pediatrics.aappublications.org/content/136/6/1095
References	This article cites 25 articles, 2 of which you can access for free at: http://pediatrics.aappublications.org/content/136/6/1095#BIBL
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Nutrition http://www.aappublications.org/cgi/collection/nutrition_sub Obesity http://www.aappublications.org/cgi/collection/obesity_new_sub
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.aappublications.org/site/misc/Permissions.xhtml
Reprints	Information about ordering reprints can be found online: http://www.aappublications.org/site/misc/reprints.xhtml

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



PEDIATRICS[®]

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Children's Food and Beverage Promotion on Television to Parents

Jennifer A. Emond, Marietta E. Smith, Suman J. Mathur, James D. Sargent and Diane Gilbert-Diamond

Pediatrics 2015;136;1095

DOI: 10.1542/peds.2015-2853 originally published online November 9, 2015;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/136/6/1095>

Data Supplement at:

<http://pediatrics.aappublications.org/content/suppl/2015/11/04/peds.2015-2853.DCSupplemental>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2015 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN[®]

