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# Predicting Support For Restricting Food Marketing To Youth

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**ABSTRACT** To address the obesity crisis, public health experts recommend major reductions in the marketing of unhealthy food to youth. However, policies to restrict food marketing are not currently viewed as politically feasible. This paper examines attitudes and knowledge about food marketing and support for restricting unhealthy food marketing among one group of constituents: parents. A survey of 807 parents found that those most likely to support food marketing restrictions were also more likely to have negative views of current food practices. These findings suggest that increased public education about the harm caused by food marketing may increase public support for policy interventions.

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**M**arketing foods that are of minimal nutritional value to children and adolescents is an important contributor to skyrocketing obesity rates<sup>1-4</sup> and the associated costs to society.<sup>5-7</sup> Based on comprehensive reviews of the literature, both the Institute of Medicine (IOM)<sup>1</sup> and the World Health Organization (WHO)<sup>8</sup> concluded that steps should be taken to reduce children's exposure to marketing of calorie-dense, nutrient-poor food and beverages, including candy, soft drinks, high-sugar cereals, and fast food. More recent research demonstrates direct causal effects of exposure to food advertising on young people's diet and health.<sup>9-12</sup> For example, a recent experiment by Jennifer Harris and colleagues demonstrated that watching a television program with food advertising increases consumption of snack food during and immediately after viewing as compared to watching the same program with other types of advertising. The food industry has responded with pledges to reduce unhealthy marketing to children.<sup>13</sup> Nonetheless, public health advocates state that regulation will be the only effective way to protect children.<sup>14-16</sup> Still, in spite of increasing evidence that food marketing has a negative impact on chil-

dren,<sup>1,3,4,17,18</sup> public support for policies to limit food marketing to youth is mixed.<sup>19,20</sup> One survey of policy and nutrition experts found that although policies restricting advertising to children were seen as having a potentially strong public health impact, they also were seen as having low political feasibility (that is, they were unlikely to garner sufficient public support for implementation). The most feasible policies were those that health experts rated as low-impact, such as information about school food options and increased nutrition education.<sup>20</sup>

Increasing public support for restrictions on food marketing to children may be necessary to address childhood obesity effectively. However, several barriers may stand in the way of success. One is too little recognition of the harmful impact of food marketing on children's diet and health.<sup>21</sup> Another is that the public greatly underestimates the amount of unhealthy food marketing that children encounter every day.<sup>22</sup> Yet another is the belief that more personal and parental responsibility is all that is needed to reduce obesity.<sup>21,23</sup> The food industry consistently reinforces the personal responsibility message as a way to advocate against broader interventions to change the overall environment affecting sales, marketing, and availability of food.<sup>24,25</sup>

## Research Questions

We were interested in factors that led to greater support for restricted food marketing to youth. Specifically, we examined the relationships between the following factors and support for restricted food marketing: (1) awareness of the extent of unhealthy food marketing to children, (2) recognition of its negative impact,<sup>26</sup> and (3) perceptions that society contributes to children's poor eating habits. We also predicted that awareness of unhealthy food marketing alone would not be related directly to increased support for restricting food marketing. Rather, it would lead to support only by way of its relationship to perceived negative impact and individual and societal contributions. In addition, we predicted that perceptions that individuals contribute to children's poor eating habits would be negatively associated with support for food marketing restrictions.

## Study Data And Methods

We conducted an Internet survey of 807 parents of children ages 2–17 recruited through a survey panel administered by Survey Sampling International.<sup>27</sup> Panelists are recruited via thousands of Web sites to maximize the representativeness of the panel to the online population. Respondents reported at least \$15,000 in annual household income and identified themselves as responsible for food and beverage choices in their households. The sample was augmented to include 202 Hispanic and African American respondents, to allow for analyses of racial and ethnic differences.<sup>28</sup>

### MEASURES

► **AWARENESS OF UNHEALTHY FOOD MARKETING:** Parents reported how often their children see or hear marketing for a variety of foods high in calories, sugar, fat, or sodium. This measure assesses parents' beliefs about their children's exposure, not necessarily actual exposure.

► **NEGATIVE IMPACT OF FOOD MARKETING:** Respondents indicated their agreement with statements about the negative impact of food marketing on their food purchases and children's eating habits.

► **CONTRIBUTORS TO CHILDREN'S POOR EATING HABITS:** Parents rated the degree to which society (that is, government, local communities, and schools) and individuals (that is, respondents and their families) contribute to poor eating habits in children.

► **MARKETING RESTRICTIONS:** This measure assessed respondents' level of support for regulations to limit food marketing to youth (see Exhibit 1 for specific policy questions).

► **HEALTH CONSCIOUSNESS:** Parents rated statements about engaging in healthy activities and goals, unhealthy eating, barriers to healthy meal preparation, and happiness with their weight. We analyzed health consciousness as two components: (1) healthiness, or engaging in healthy activities and goals and being happy with one's weight; and (2) unhealthiness, or eating poorly and perceiving barriers to healthy eating.

► **BACKGROUND VARIABLES:** We assessed respondents' age, race/ethnicity (African American or Hispanic), sex, household income, and education and the presence in the household of at least one overweight child. The presence of an overweight child was assessed using parents' reports of their children's height, weight, age, and sex. We then calculated each child's body mass index (BMI) and compared it to BMI data published by the Centers for Disease Control and Prevention (CDC), which are adjusted for children's age and sex.<sup>28</sup> According to CDC criteria, children with BMI in the eighty-fifth percentile and above were classified as overweight.

► **ANALYSES** We tested the hypothesized paths from awareness of unhealthy food marketing to support for food marketing restrictions, with perceived negative impact and perceived negative contributions of society and individuals to

### EXHIBIT 1

#### Support For Food Marketing Restrictions For Children: Descriptive Statistics (Measured On A Scale Of 1 To 10)

	Mean	Standard deviation
Marketing restrictions	6.31	2.52
No cartoon characters on packages for unhealthy food	6.63	2.97
No games or other child-oriented features on Web sites for unhealthy food	6.55	2.95
No unhealthy food advertising to teens under age 17	6.37	2.97
No food advertising of any kind to children under age 12	5.69	3.04

**SOURCE** National Internet survey of 807 parents. **NOTES** Alpha equals 0.87. The instructions stated, "Below is a list of actions that are either currently being taken or could be taken to promote healthy eating habits to your children. Please indicate how much you would support each of the actions below." Responses ranged from: 1 ("do not support at all") to 10 ("would strongly support").

children's eating habits as intermediary variables (Exhibit 2).<sup>29,30</sup> In short, we assumed that, by itself, awareness of unhealthy food marketing is not enough to result in support for restrictions, and we wanted to explore the pathway or hierarchy of factors that contribute to such support. To rule out other factors that might influence our results, we also controlled for health consciousness and background variables. Structural equation modeling was used to conduct the analyses. This type of modeling provides a means to test for potential directional relationships between cross-sectional variables and is commonly used in communications science.<sup>31</sup>

## Study Findings

**RESULTS SUPPORT ASSUMPTIONS** Statistically, our model predicting support for food marketing restrictions holds up; that is, the results support our assumptions about the relationships between the variables.<sup>29</sup> As described below, Exhibit 2 presents the size and direction (positive or negative) of the relationships between variables for hypothesized paths in the model, controlling for background variables (see Exhibit 3), which are included in the analysis to isolate as much as possible the independent effects of the main variables of interest on the outcome (support for

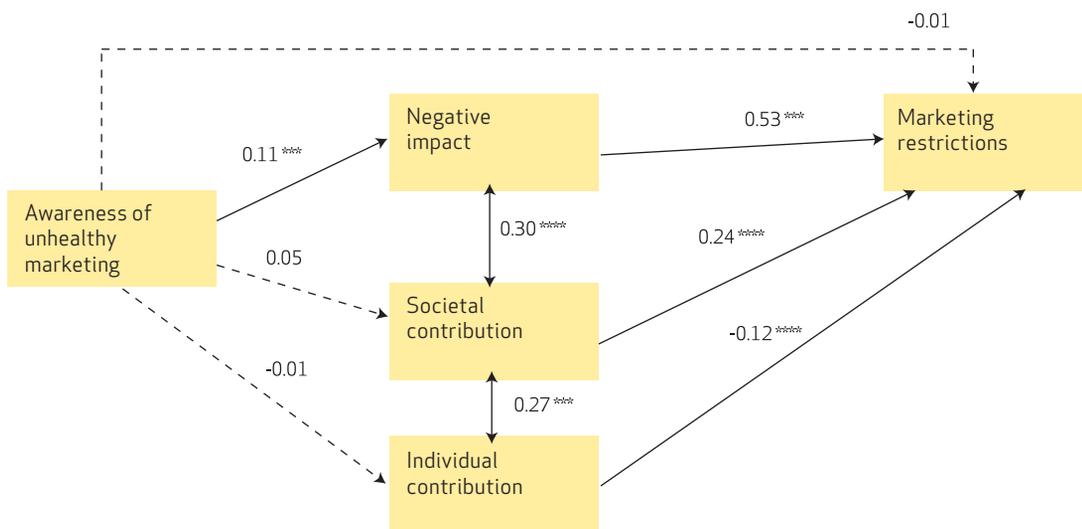
restrictions).<sup>30</sup>

In Exhibit 2, the solid lines indicate cases where the statistical evidence supports the hypothesized relationship, while dotted lines indicated that evidence is lacking for the relationship. The numbers between variables indicate the strength of the relationship, while the signs (positive or negative) indicate the “direction” of the relationship (that is, whether the two variables are positively or negatively correlated).

As predicted, the perceived negative impact of food marketing was the strongest, most direct predictor of support for food marketing restrictions—whereas awareness of unhealthy food marketing alone was not sufficient to predict support (as indicated by the dotted line). Perceptions of society and individual contributions to poor eating habits were correlated; those who perceived that individuals contribute to children's poor eating habits also tended to see society as contributing to poor eating habits as well. However, as hypothesized, the two factors predicted opposite patterns of support for marketing restrictions. Belief that society contributes to poor eating habits leads to increased support for marketing restrictions, whereas belief in individuals' contribution to poor eating habits leads to decreased support for food marketing restrictions. Contrary to our predictions,

### EXHIBIT 2

#### Pathways From Awareness Of Unhealthy Food Marketing To Support For Marketing Restrictions For Children



**SOURCE** National Internet survey of 807 parents. **NOTES** The numbers between variables (represented in each rectangle) are standardized beta coefficients, which can range from -1 to +1 and reflect the size and direction of the relationship between the two variables connected by the arrows. A coefficient of +1 indicates a 1:1 positive relationship between the two variables, and a -1 indicates a 1:1 negative relationship between the two. Solid lines designate significant paths; dashed lines designate nonsignificant paths; asterisks indicate significance levels. Background variables are included in the model are but not shown here (see Exhibit 3). \*\*\* $p < 0.01$  \*\*\*\* $p < 0.001$

## EXHIBIT 3

## Relationships Between Background And Outcome Variables Regarding Food Marketing To Children

Background variables	Outcome variables				
	Awareness of unhealthy marketing	Negative impact	Societal contribution	Individual contribution	Marketing restrictions
Healthiness	0.08**	0.27****	0.28****	0.02	0.08**
Unhealthiness	0.04	0.12***	0.20****	0.27****	0.04
Age	0.04	0.13***	0.20****	0.02	0.05
African American	0.08**	0.02	0.03	-0.04	0.05
Hispanic/Latino	0.12***	0.05	0.10**	-0.01	0.03
Sex (0 = F, 1 = M)	-0.03	-0.12***	-0.12***	-0.04	0.03
Income	0.00	-0.04	-0.08*	0.02	-0.05
Education	-0.02	-0.04	-0.08**	-0.06	0.00
Overweight child	0.00	-0.02	0.11***	0.06*	0.04

**SOURCE** National Internet survey of 807 parents. **NOTES** Coefficients are standardized beta coefficients, which can range from -1 (negative) to +1 (positive) and reflect the size and direction of the relationship between the background and outcome variables. Two-tailed significance values are for the unstandardized beta coefficients. \* $p < 0.10$  \*\* $p < 0.05$  \*\*\* $p < 0.01$  \*\*\*\* $p < 0.001$

awareness of unhealthy food marketing was not related to belief in society's or individuals' contribution to poor eating habits.

**EFFECTS OF BACKGROUND VARIABLES** Some control variables were also related to the main variables in our model. Healthiness was correlated with support for marketing restrictions, negative impact of marketing, societal contribution, and awareness of unhealthy food marketing. Not surprisingly, parents who espoused a healthy lifestyle tended to be more supportive of food marketing restrictions and were more aware of unhealthy food marketing, its impact, and the negative contribution of society to children's poor eating habits, compared with parents who did not espouse such a lifestyle.

Unhealthy eating habits were related to belief in society's contribution to poor eating habits and negative impact of food marketing, as well as belief in individual contribution. It appears that parents who recognized their own shortcomings in maintaining a healthy lifestyle—while aware of the harm of marketing and society's contribution—were nevertheless more likely to hold individuals responsible for children's poor eating habits than were parents who did not. This is contrary to the intuition that support for environmental changes such as marketing restrictions is the result of unhealthy parents' trying to absolve themselves of blame.

Most demographic variables had low or no relationship to support for specific policies, perceived negative impact of food marketing, or beliefs in the contribution of society and individuals to children's poor eating habits.

## Discussion

**NEED TO INCREASE PUBLIC AWARENESS** Our findings suggest that public health advocates and policy makers who wish to increase support for restrictions on food marketing to youth should attempt to increase public understanding of the harmful effects of food marketing. Strategies that focus on greater public awareness of the extent of food marketing that targets children and adolescents may not be sufficiently effective. Our findings also highlight the importance of emphasizing society's responsibility for creating an environment that fosters poor eating habits in children. In contrast, food industry efforts to emphasize individual responsibility may be effective at reducing public support for food marketing restrictions.

Because the data we used were cross-sectional, however, we cannot conclude definitively that increased understanding of the effects of food marketing and other environmental factors will increase public support for food marketing restrictions. Nor can we rule out alternative pathways. For example, it is possible that individuals first became concerned about the impact of marketing and only then began to be aware of it. Similarly, support for food marketing restrictions could have led to beliefs in environmental versus individual contributions and understanding of the negative impact of food marketing. Additional experimental and longitudinal studies are required to prove causation. One advantage of the modeling technique used, however, is that it assesses potential directional paths between variables. As a result, we can conclude that the data are consistent with a directional relationship from awareness of food marketing, through recognition of food marketing impact,

and on to support for food marketing restrictions, as well as a directional relationship from contributions of society and individuals to poor eating habits to support for food marketing restrictions.

Although we were able to control for important potential confounding variables, including parental health consciousness, child weight, and demographic variables (sex, age, income), other unmeasured variables might explain the relationships. Finally, sample bias may limit how much our conclusions would apply to some individuals. These could include people in very-low-income households, since respondents to our survey were required to have incomes greater than \$15,000 per year, as well as others who do not have access to the Internet or the time and resources to participate in online surveys.

These findings do suggest a potentially productive avenue for future research on strategies to increase public support for restricting food marketing. Development of public service campaigns and direct interventions to increase recognition of the negative impact of food marketing and the contribution of society to children's poor eating habits could be tested experimentally or longitudinally for impact on support.

**IMPLICATIONS** The Federal Communications Commission and Federal Trade Commission have begun to reexamine their roles in monitoring and rule making regarding food marketing to children.<sup>17,32</sup> Therefore, restrictions on food marketing to children may become technically feasible. However, increased public support for such restrictions will be required to ensure political feasibility. Even if government regulation

is not possible, public support can nonetheless directly affect industry response and stricter self-regulatory efforts, similar to restrictions enacted by the alcohol and tobacco industries.

The results of this analysis suggest that public health researchers who wish to assist in these efforts should conduct research to increase the body of evidence for direct negative effects of food marketing on young people. As highlighted in the IOM report, existing research clearly demonstrates the scope of food marketing on television.<sup>1</sup> In addition, the report concludes that food marketing increases children's preferences for the primarily unhealthy food advertised on television, as well as their food choices and requests to parents for advertised products. However, more evidence is needed on the direct effects of food marketing, especially for adolescents and for nontelevision media.

In addition, policy makers and public health advocates should use social justice messages (such as "community responsibility;" "we're all in this together") to frame their communications about environmental factors that negatively affect the health of young people.<sup>33</sup> Messages that emphasize the role of government, local communities, and schools in contributing to children's poor diets may increase support for restrictions on food marketing. These communications would counteract industry messages that frame the discussion around market justice or "every man for himself." Efforts to shift the focus away from blaming individuals and toward more systemic environment-shaping solutions can, ironically, support healthy choices and personal responsibility.<sup>21</sup> ■

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## NOTES

- 1 Institute of Medicine. Food marketing to children and youth: threat or opportunity? Washington (DC): National Academies Press; 2006.
- 2 Brownell KD, Horgen KB. Food fight: the inside story of the food industry, America's obesity crisis, and what we can do about it. New York (NY): McGraw-Hill; 2004.
- 3 Harris JL, Pomeranz JL, Lobstein T, Brownell KD. A crisis in the marketplace: how food marketing contributes to childhood obesity and what can be done. *Annu Rev Public Health*. 2009;30:211-25.
- 4 Hastings G, Stead M, McDermott L, Forsyth A. Review of research on the effects of food promotion to children. Glasgow (UK): Center for Social Marketing, University of Strathclyde; 2003.
- 5 Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. *JAMA*. 1999;282(16):1523-9.
- 6 Olshansky SJ, Passaro DJ, Hershow RC, Layden J, Carnes BA, Brody J, et al. A potential decline in life expectancy in the United States in the 21st century. *N Engl J Med*. 2005;352(11):1138-45.
- 7 Finkelstein EA, Ruhm CJ, Kosa KM. Economic causes and consequences of obesity. *Annu Rev Public Health*. 2005;26:239-57.
- 8 World Health Organization. Marketing of food and non-alcoholic beverages to children (conference). Oslo, Norway; 2-5 May 2006.
- 9 Halford JCG, Boyland MJ, Hughes G, Oliveira LP, Dovey TM. Beyond-brand effect of television (TV) food advertisement/commercials on caloric intake and food choice of 5-7-year-old children. *Appetite*. 2007;49:263-7.
- 10 Harris JL, Bargh JA, Brownell KD. Priming effects of television food advertising on eating behavior. *Health Psychol*. 2009;28(4):404-13.
- 11 Epstein LH, Roemmich JN, Robinson JL, Paluch RA, Winiewicz DD, Fuerch JH, et al. A randomized trial of the effects of reducing television viewing and computer use on body mass index in young children.

- Arch Pediatr Adolesc Med. 2008; 162:239–45.
- 12 Chou SY, Rashad I, Grossman M. Fast-food restaurant advertising on television and its influence on childhood obesity. *J Law Econ*. 2008;51(4):599–618.
  - 13 Kolish ED, Peeler CL. Changing the landscape of food and beverage advertising: the Children's Food and Beverage Advertising Initiative in action. A progress report on the first six months of implementation: July–December 2007. Arlington (VA): Council of Better Business Bureaus; 2008 Jul.
  - 14 Brownell KD, Warner KE. The perils of ignoring history: Big Tobacco played dirty and millions died. How similar is Big Food? *Milbank Q*. 2009;87(1):259–94.
  - 15 Hawkes C. Regulating and litigating in the public interest: regulating food marketing to young people worldwide: trends and policy drivers. *Am J Public Health*. 2007;97(11):1962–73.
  - 16 Sharma LL, Teret SP, Brownell KD. The food industry and self-regulation: standards to promote success and to avoid public health failures. *Am J Public Health*. 2010;100(2):240–6.
  - 17 Federal Trade Commission. Marketing food to children and adolescents. a review of industry expenditures, activities, and self-regulation. A report to Congress [Internet]. Washington (DC): FTC; 2008 [cited 2010 Jan 25]. Available from: <http://www.ftc.gov/os/2008/07/P064504foodmktgreport.pdf>
  - 18 Powell LM, Szczepka G, Chaloupka FJ, Braunschweig CL. Nutritional content of television food advertisements seen by children and adolescents. *Pediatrics*. 2007;120:576–83.
  - 19 Davies C. Health pulse of America survey. Stony Brook (NY): Center for Survey Research, Stony Brook University; 2005.
  - 20 Brescoll VL, Kersh R, Brownell KD. Assessing the feasibility and impact of federal childhood obesity policies. *Ann Am Acad Pol Soc Sci*. 2008; 615:178–94.
  - 21 Brownell KD, Kersh R, Ludwig DS, Post RC, Puhl RM, Schwartz MB, et al. Personal responsibility and obesity: a constructive approach to a controversial issue. *Health Aff (Millwood)*. 2010;29(3):379–387.
  - 22 Speers S, Goren A, Harris JL, Schwartz M, Brownell KD. Public perceptions of food marketing to youth: results of the Rudd Center public opinion poll [Internet]. New Haven (CT): Rudd Center for Food Policy and Obesity, Yale University; 2009 [cited 2009 Nov 16]. Available from: <http://www.yaleruddcenter.org/resources/upload/docs/what/reports/RuddReportPublicPerceptionsFoodMarketingYouth2009.pdf>
  - 23 Schor JB. Born to buy: the commercialized child and the new consumer culture. New York (NY): Scribner; 2004.
  - 24 Americans Against Food Taxes [home page on the Internet]. c2009 [cited 2009 Aug 19]. Available from: <http://nofoodtaxes.com/>
  - 25 Center for Consumer Freedom [home page on the Internet]. c1997–2009 [cited 2009 Aug 19]. Available from: <http://www.consumerfreedom.com/>
  - 26 Wilson TD, Brekke N. Mental contamination and mental correction: unwanted influences on judgments and evaluations. *Psychol Bull*. 1994;116:117–42.
  - 27 Survey Sampling International [home page on the Internet]. c2009 [cited 2009 Nov 16]. Available from: <http://www.surveysampling.com/>
  - 28 Centers for Disease Control and Prevention. About BMI for children and teens [Internet]. Atlanta (GA): CDC; 2009 Jan 27 [cited 2009 Dec 23]. Available from: [http://www.cdc.gov/healthyweight/assessing/bmi/childrens\\_bmi/about\\_childrens\\_bmi.html](http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html)
  - 29 For further details, see the online Technical Appendix, which can be accessed by clicking on the Technical Appendix link in the box to the right of the article online.
  - 30 See Tables A1–A5 in the online Technical Appendix, as in Note 29, for latent factor indicator details and descriptives.
  - 31 Holbert RL, Stephenson MT. Structural equation modeling in the communication sciences, 1995–2000. *Health Comm Res*. 2002;28(4):531–51.
  - 32 Federal Communications Commission: Media and childhood obesity [Internet]. Washington (DC): FCC; 2009 Sep 3 [cited 2009 Nov 16]. Available from: <http://www.fcc.gov/obesity/>
  - 33 Dorfman L, Wallack L, Woodruff K. More than a message: framing public health advocacy to change corporate practices. *Health Educ Behav*. 2005; 32(3):320–36.