

Food-Related Advertising Targeting Children

A Proposal to Reduce Obesity in Mexico

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Abstract

While technological advances are credited with decreasing Mexico's rate of under-nutrition, they have contributed to a rapid increase in childhood obesity nationwide. About one quarter of Mexican youth are overweight or obese, leading to serious medical conditions in adulthood, including Type 2 diabetes, cancer and cardiovascular disease. The aim of this paper is three-fold: (1) identify the dietary habits of Mexican children, (2) assess the role of marketing in Mexico's childhood obesity epidemic and (3) illustrate a proposal for eliminating irresponsible food marketing to young people in Mexico. Studies reveal that Mexican children are eating excessive quantities of energy-dense snack foods and sodas, while fruit and vegetable intake is low. Higher levels of overall food intake have been linked to greater television screen time, suggesting the influence of marketing on the childhood obesity epidemic. Mexican children are more exposed than adults to food advertisements, particularly for energy-dense foods. Children's exposure to food marketing has also been found to affect their food preferences and thus their parents' food purchasing behaviors. This indicates the need for restrictions on food advertising to children in Mexico. Examples from other countries suggest that self-regulatory initiatives within the food industry are insufficient to adequately address the issue. Thus, strict government policies are proposed, outlining nutritional standards on all food items advertised to children in Mexico.

Introduction

Obesity is no longer just a problem of wealthy industrialized nations. It is now on the rise in developing countries, crossing urban and rural areas, affecting adults and children alike. Over the past two decades, obesity has become a major global health issue in part because of its devastating and costly health ramifications but also because of its prevalence. A top priority of the World Health Organization (WHO), obesity is defined by a body mass index (BMI) of 30 or greater. According to the WHO, a precursor to obesity is overweight, a condition characterized by a body mass index (BMI) between 25 and 30. As of 2010, approximately 43 million children under five years of age were overweight or obese worldwide, and more than 80% of these children live in developing countries.¹

This paper explores the growing concern over childhood obesity in Mexico, a country that is currently shifting away from issues that have historically affected the developing world, such as under-nutrition. The nation is now experiencing obesity and other related health issues that once only affected wealthy nations. Adjacent to the United States' southwestern border, Mexico is particularly affected by American dietary influences. While technological advances have vastly improved food availability in Mexico, they have also increased media access and food processing, which play important roles in the obesity epidemic. Mexican children are now growing up in an obesogenic environment characterized by physical inactivity and a high-calorie, nutrient-poor diet. One Mexican study illustrates this, finding that mean purchases of soda have risen by 37% while fruit and vegetable purchases have dropped by 29% since 1984.²

According to the 2006 Mexican National Health and Nutrition Survey, 24.3% of children and adolescents, ages two through 18, were classified as overweight or obese. One study found that the combined prevalence of overweight and obesity reached 26.1% in school age children and 30.1% in adolescents.³ This is a serious problem, as the negative health effects of childhood obe-

sity extend well into adulthood. Non-communicable diseases related to obesity—Type 2 diabetes mellitus, cancer and cardiovascular disease—will remain on the rise in Mexico until behavioral changes are promoted and enacted on a national scale.² Thus, the aim of this paper is to (1) identify the dietary habits of Mexican children, (2) assess the role of marketing in Mexico's childhood obesity epidemic and (3) illustrate a proposal for eliminating irresponsible food marketing to young people in Mexico.

Dietary Habits and Sedentary Behaviors in Mexican Children

Multiple influences have contributed to the worldwide increase in childhood obesity. Environmental factors on local, national and international levels strongly influence food trends, food consumption and food availability. On the individual level, diet and physical activity are associated with overweight and obesity. The following studies highlight the current dietary habits and sedentary behaviors of children and adolescents in Mexico.

Perichart-Perera et al. investigated food intake in a sample of 228 nine to 13 year-old urban school children in Mexico.⁴ The majority of participants failed to meet daily dietary recommendations. Specifically, 77.8% consumed less than the recommended three cups of low-fat dairy per day, 57.9% consumed less than three servings of fruit per day and 54.4% consumed less than two servings of vegetables per day. Instead, the majority of participants' calorie intake came from high-fat dairy products and refined carbohydrates, with about 70% of children reporting daily soft drink consumption. In this study, as much as 25% of the children were overweight, and 29.8% were obese.⁴

Further research agrees that Mexican children are consuming excess amounts of high-energy foods and beverages. In a survey conducted by Ayala et al. (2007), 167 children and teens living on the Mexico-United States border reported an average consumption of nearly three servings of packaged snack foods per day. They also consumed over two servings of candy and nearly

three 12-ounce soda beverages per day on average.⁵

Evidence also suggests there is a gender difference in food consumption. For example, Perez-Lizaur, Kaufer-Horwitz and Plazas reported a statistically significant difference in fruit and vegetable intake between girls and boys. Specifically, in a sample of 327 urban school children living in Mexico City, 15.2% of girls consumed at least three fruits or vegetables per day, compared to only 6.7% of boys. In the same study, 63.6% of boys were overweight or obese, while 51.5% of girls were overweight or obese. Moreover, a gender difference in sedentary behaviors was observed in that 48.5% of boys reported watching television or playing video games for four or more hours per day, compared to only 33.5% of girls.⁶

Jimenez-Aguilar, Flores and Shamah-Levy (2009) found a positive correlation between consumption of sugar-sweetened beverages and body mass index in Mexican adolescents, particularly so in males. For each portion of soda consumed per day, a 0.17 increase in body mass index was observed in boys. Furthermore, sugar-sweetened beverage consumption was also positively correlated with television screen time in this same group. In fact, those who watched less than seven hours of television per week consumed smaller amounts of sugar-sweetened beverages. Although 30% of all ten to 19 year-old adolescents in this study were overweight or obese, results were only statistically significant for males.⁷ In the 2006 Mexican National Health and Nutrition Survey, Morales-Ruan et al. (2009) further reported that high levels of screen time were associated with overweight and obesity among 10 to 19 year old adolescents. In this survey, 24,921 respondents reported on physical activity levels and screen time, including television viewing and computer gaming. After adjusting for gender, urban versus rural setting, indigenous ethnicity, enrollment in school, tobacco use, alcohol use and physical activity, those who reported at least seven hours of screen time per week were 20% more likely to be overweight or obese than those with a screen time of less than seven hours per week. Participants who reported 21 hours or more of screen time per week were 30% more likely to be overweight or obese.⁸

Advertising to Children of Mexico

The heavy consumption of high-energy snack foods and sugar-sweetened beverages described above is likely the result of numerous factors, including family dietary practices, local food availability and media influences. The findings on the association between television screen time and food consumption suggest that food-related advertisements may play an important role in Mexico's struggle with obesity.

Recent evidence suggests that children in Mexico have a higher exposure to food-related advertising than adults. Perez-Salgado, Nutr, Rivera-Marquez and Ortiz-Hernandez reported in an observational study that 25.8% of television commercials during children's programming were food-related, compared to only 15.4% of those during general audience programming. The types of food items more frequently marketed to children were sweetened beverages, candy and sugar-sweetened cereals. Foods advertised during children's television were also found to be significantly higher in calories, sugar and fat content compared to those marketed during general programming. Interestingly, the most utilized food marketing strategy during children's programming was the offering of a gift or prize with the purchase of a particular product. This occurred in 56.1% of all food commercials during children's television, as opposed to in only 22.2% during general audience programs.⁹

Ramirez-Ley et al. agree that Mexican children are more exposed than adults to advertisements for energy-dense foods. In this study, researchers recorded television programming and advertisements on five channels—two local and three national—for a seven-day period during hours in which viewing by children was likely. They found

that of the 8,299 advertisements captured in 235 hours, 22% were food-related. Approximately 50% of all food-related advertisements contained images or contexts oriented to children such as pets, animation, fictional characters or children themselves. Sweetened beverages, candies, and sweetened cereals were frequently the topics of these commercials geared toward children. Furthermore, nearly all advertisements for potato chips and desserts were child-oriented—97.2% and 88.9%, respectively.¹⁰

Further research done at the United States-Mexico border explores the correlation between food advertisements and food consumption in children ranging from eight- to 18- years old. Ayala et al. found that over 75% of children in the study recalled advertisements for soft drinks, hamburgers, cereal and pizza. On the other hand, less than 40% of children reported seeing fruit and vegetable advertisements. Parental food purchasing behaviors were correlated with children's levels of exposure to food advertising. This is problematic as children whose parents were more likely to purchase food items seen on television commercials reported higher levels of snack food and fat consumption. These families also reported a higher likelihood of eating fast food more than once a week. Conversely, youth who reported less exposure to food advertisements on television also reported higher fiber intake. In addition, this article suggested that family interventions could promote a healthier diet and would help mediate food consumption, as children reported eating more fiber and less snack foods if their parents were more supportive of healthy eating by offering and encouraging more nutritious foods.⁵

The Effects of Food Marketing on Children Worldwide

Further research on food-related advertisements geared toward children in other countries illustrates the harmful consequences of these advertisements on food preferences and consumption. For example, Boyland et al. (2011) conducted an experimental study on a sample of 281 children aged six to 13 years in England. Compared to the control group watching toy commercials, participants exposed to food advertising selected significantly higher amounts of carbohydrate and fat products, both branded and non-branded. Those with high rates of television-viewing generally were more likely to choose advertised foods than those who watched television less frequently. Finally, viewing television for more than 21 hours weekly correlated with higher preferences for all food items, particularly branded foods.¹¹

Advertisements not only influence preferences for energy-dense, nutrient-poor foods but may also affect what children are actually eating. Andreyeva, Kelly and Harris (2011) demonstrated that

television exposure to advertisements for sugar-sweetened beverages and fast food was associated with an increase in children's consumption of these products. Through a spot market analysis of advertising to a representative sample of children in the United States, these researchers studied the relationship between fast food and soft drink advertisement exposure to consumption

among elementary school children. For every 100 commercials viewed over a three-year period, there was a 9.4% rise in consumption of sugar-sweetened beverages. The same exposure to fast food advertising was associated with a 1.1% increase in consumption of fast food.¹²

Food choices, however, are not only influenced by commercial advertising on television. In an Australian experimental study, Jones and Kervin (2010) showed that food advertisements found in print media also affected food choices. Among five to 12 year-old participants, those who read child-targeted magazines with "unhealthy" food advertisements tended to select more non-nutritious food items compared to the control group.¹³ The food industry also markets to children and adolescents through product placements appearing in television programming. According to Speers, Harris and Schwartz

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(2011), young audiences are frequent targets of this type of marketing, especially during prime-time television. Coca Cola products, for example, accounted for 70% of brand appearances viewed by children during prime-time programming of popular shows in the United States.¹⁴

The persuasive techniques of marketing are particularly influential on children, and thus can have a great effect on their long-term eating behaviors. In a multi-national study conducted by Goris, Petersen, Stamatakis and Veerman (2009), the effect of television food advertising was quantified and compared to the prevalence of overweight and obesity in children six to 11 years old. They found that the rate of exposure to food advertisements was positively associated with the rate of obesity. The United States had the highest rates of exposure as well as overweight and obesity in children, with an average daily marketing exposure time of 11.5 minutes and a combined overweight plus obesity prevalence of 32.2% among boys and 34.0% among girls. Conversely, the Netherlands had a daily advertising exposure of 1.8 minutes and combined overweight plus obesity rates of 14.5% amongst boys and 15.9% amongst girls.¹⁵

Food-related advertising to children is associated with an increase in consumption of energy-dense, nutrient-poor foods, which suggests that a decrease in food-related advertising may decrease the intake of such products. In fact, evidence shows that restricting the marketing of unhealthy foods reduces their consumption. Dhar and Baylis (2011) examined the effectiveness of a ban on fast food advertising to children in the Canadian province of Quebec. Results showed that while the ban was in effect, consumer spending on fast food was 13% lower per week in Quebec than in similar households in Ontario, a neighboring Canadian region where the ban was not in place. The estimated decrease in Quebec's fast food expenditures was \$88 million per year. Such evidence supports the effectiveness of marketing regulations on the consumption of energy-dense, nutrient-poor foods.¹⁶

A Look at Industry Initiatives Worldwide

Regulations initiated by companies themselves have had little influence on reducing marketing to children. The Canadian Children's Food and Beverage Advertising Initiative (CAI), for example, is a self-regulatory advertising initiative in which companies pledge to limit advertisements directed toward children. Still, research shows that the corporations within the CAI actually broadcast more television promotions than other companies within the food and beverage industry. According to a Canadian study conducted by Kent, Dubois and Wanless (2011), in an 87.5-hour sample of children's preferred television, the 17 companies that comprise the CAI were responsible for 67% of food and beverage commercials. The remaining 33% of commercials in this time frame consisted of 35 companies not participating in the CAI. Interestingly, when analyzing promotions that used characters from popular media geared toward children, only 45% of non-CAI commercials advertised foods or beverages deemed unhealthy. CAI companies, however, were significantly more likely to advertise unhealthy foods, with 92% of advertisements with media characters promoting such foods. They marketed items that were high in fat, sugar, sodium and caloric density.¹⁷

Hebden, King, Grunseit, Kelly and Chapman (2011) showed similar results in Australia. In 2009, the seven quick-service companies that joined the Australian Quick Service Restaurant Industry Initiative for Responsible Advertising and Marketing to Children agreed to advertise only healthier choices or lifestyles in television commercials geared toward children under the age of 14. Overall fast-food advertising, however, continued to increase despite such

voluntary regulations.¹⁸ Participating companies including KFC and McDonald's agreed that their advertising and marketing to children would "[r]epresent healthier choices ... and/or ... represent a healthy lifestyle."¹⁹ Instead, eight months after the initiative began, the average frequency of commercials for unhealthy fast food items remained the same at 1.3 per hour.¹⁸

Alexander, Yach and Mensah (2011) explored the impact that food and beverage companies could have on public health based on market share data. Some major international food and beverage companies have made pledges to "improve the nutrition quality of products and restrict advertising to children" by entering the International Food and Beverage Alliance (IFBA). The major firms within the alliance are Ferrero, General Mills, Grupo Bimbo, Kellogg's, Kraft Foods, Mars, Nestle, PepsiCo, Coca-Cola Company and Unilever. The Coca-Cola Company and PepsiCo, Inc., both participants in the IFBA, together represent 62.8% of the soft drink market in Mexico. Still, the authors of this article concluded that the impact of the IFBA will remain limited unless these multinational corporations are joined by the smaller companies that make up the rest of the market share.²⁰

Alexander, et al. (2011) further illustrated that while soft drink companies within the IFBA represent the ma-

majority of the market share worldwide and in Mexico, the packaged food companies represent a very small portion. Of the packaged food companies with the top ten market shares in Mexico, only five are participants in the IFBA. However, these top ten only represent 32.4% of the Mexican market, leaving a large majority of the market unrepresented. Grupo Bimbo, a Mexican-based company, holds the largest share at 8.8% of the packaged food sales in Mexico and is the largest baked goods company in the world. In 2003, they launched an initiative titled "Committed to Your Health." The initiative had only modest success within the vast shared market. To further facilitate positive health changes, such as a decrease in obesity, participation in health initiatives by all companies in the packaged food industry is necessary.²⁰

A Proposal for Mexican Policy

Due to the limited effects of food industry self-regulations, enforceable governmental restrictions on food-related advertising to young people must be pursued. This would ensure that companies are marketing their products responsibly in light of the obesity epidemic. The goals of this policy should be two-fold: (a) set nutritional standards to help distinguish between healthy and less nutritious foods and beverages, and (b) ban the marketing of unhealthy food and beverage items to children and adolescents.

The current dietary guidelines issued by Mexico's Secretary of Health in 2000 provide a basic overview of a healthy lifestyle with regard to eating, drinking, and physical activity. El Plato del Bien Comer, or "Plate of Good Eating", divides food items into three main groups: (1) fruits and vegetables, (2) cereals and grains and (3) animal proteins. According to these guidelines, consumers are encouraged to eat "high" amounts of fruits and vegetables, "sufficient" amounts of cereals and grains, and "low" amounts of animal proteins.²¹ Designed for the lay Mexican population, El Plato del Bien Comer is made simple for both the literate and illiterate. National guidelines pertaining to the food industry, however, are nonexistent. Furthermore, no nutritional standards for food advertising, let alone for food advertising to children, have been devised to date.

The need for specific nutritional standards on food and beverage products allowed to be advertised to children is of prime importance in Mexico. The lack of mandatory criteria warrants great concern as companies continue to produce and advertise food items

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that are detrimental to childhood health. More specifically, the Mexican Secretary of Health should outline explicit parameters on nutrients found in food products marketed toward children. By first establishing clear standards for the food and beverage industry, the Mexican government can then begin setting limits on food-related advertising toward children.

Since voluntary marketing restrictions have been largely unsuccessful in other countries,^{17,18} Mexico must instead implement national restrictions on food advertising to children, which include advertisements that appear during children's television programming as well as advertisements that consist of child-oriented themes. Because other media influences apart from television have been shown to affect food choices, print media and radio advertisements geared toward children should also be restricted. Companies would be subject to specific nutritional standards in order to market food and beverage items to minors under age 18, the legal age of adulthood in Mexico. A legal policy, enforced by the Secretary of Health, would ensure that children are only receiving healthful food messages through responsible marketing. It would also encourage the food and beverage industry to produce food items that meet nutritional standards.

Moreover, a ban on advertising unhealthy foods to children allows for all companies in the food and beverage industry to be participants in the fight against childhood obesity. As Alexander et al. (2011) explained, the proportion of companies joining voluntary pacts is too small to have a significant impact.²⁰ In contrast to voluntary or partial bans, a policy that simply prohibits all unhealthy food advertising is more feasible for a developing nation like Mexico, as fewer resources would be needed to monitor companies' compliance with policy. Establishing a system of monetary fines for companies that deviate from this policy would further increase its feasibility. Furthermore, strict requirements would be most effective at yielding reductions in advertisements that are significant enough to evoke improvements in eating behaviors that have long-term health effects. Thus, mandatory regulations imposed by the Mexican government are a key step to promoting behavioral change and improving the unhealthy eating associated with childhood obesity.

Recommendations for Future Research

To further support the importance of policy changes in Mexico, more research is needed. The following are recommendations for future research on child-targeted food marketing in Mexico. A major limitation in the current body of evidence is the reliance on cross-sectional data alone to draw conclusions on the association between television advertisement exposure and children's dietary habits in Mexico. As a result, causality is difficult to determine. While the results from the studies mentioned in this article imply direct relationships between

food-related advertisements and altered food preferences and consumption, longitudinal studies would be helpful in measuring true causality.

Additionally, the studies discussed in this paper are predominantly observational, rather than experimental. Again, causation is difficult to determine through this kind of design. Because obesity is a multi-factorial disease, controlling for potential confounding variables is essential. For example, children that exhibit sedentary behaviors may be more likely to watch television, and thus more exposed to food-related advertisements. It is then difficult to estimate the true cause of poor diet and obesity, unless there is a control for activity levels. Large cohort studies and ethically-designed randomized control trials would, therefore, be beneficial additions to the current literature.

Furthermore, the information known today on this subject has largely been collected through self-reports of television exposure and dietary habits. Thus, bias may potentially compromise the internal validity of the available research. Self-reported data is subject to inaccuracy as respondents are asked to recall details and report objectively. Prospective longitudinal designs would allow participants to document or investigators to observe marketing exposure and food intake through the course of the study, and may provide stronger evidence.

Finally, the aforementioned articles depict mere snapshots of children's exposure to food and beverage marketing in Mexico. The sample populations represent television exposure in select geographic regions including Mexico City, Baja California, and the Mexico-United States border. Although results are consistent with the literature that food-related advertising impacts children's food consumption, generalization to other Mexican regions is limited. To reinforce future policies on food-related advertising to children in Mexico, more regionally dispersed studies on the effects of marketing on childhood obesity are needed.

Conclusion

Childhood obesity is rapidly on the rise in Mexico. One of the many reasons for this is that children are living in an obesogenic environment that supports a sedentary lifestyle and promotes unhealthy eating. Mexican children are highly exposed to media influences such as food-related advertisements for energy-dense nutrient-poor foods and beverages. Exposure to marketing through television commercials, product placements and magazine advertisements has been shown to sway children's food preferences and eating habits. Enforceable interventions that limit marketing to children may therefore have a positive influence on children's diets. A government-imposed ban on unhealthy food advertising to children is a necessary component in the fight against childhood obesity.

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