A Content Analysis of Health and Physical Activity Messages Marketed to African American Children During After-School Television Programming

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Objective: To examine the number of food advertisements African American children are exposed to during children’s television programming aired on predominantly African American and general television stations.

Design: A content analysis was conducted to identify and analyze the health-related content (HRC) and physical activity–related content (PARC) of food advertisements shown during children’s television programming.

Setting: Three sets of television advertisements from 3 stations (Black Entertainment Television, The WB [Warner Bros], and Disney Channel) served as the sample during a 1-week period in July 2005 (July 11-15), from 3 PM to 9 PM.

Results: In total, 1098 advertisements were recorded, with 256 food and beverage commercials used for this study. Results indicate that 36.3% of all commercials were based on fast food restaurants, 31.3% were for drinks, 16.8% were for candy, 13.7% were for cereals, and 2.0% were for snacks (percentages do not total 100 because of rounding). Compared with The WB and Disney Channel, Black Entertainment Television had significantly (P=0.001) more food and beverage advertisements. Few HRC or PARC advertisements were shown. Of 256 food and beverage commercials, only 8.2% contained HRC and 9.4% had PARC. Also, the HRC and PARC scenes contained messages that were implied vs explicitly talking about the health or physical benefits of the product.

Conclusions: African American children are overexposed to numerous types of food and beverage advertisements. These advertisements do not provide an adequate level of positive HRC and PARC messages. Consequently, the messages that are portrayed may undermine efforts to teach African American children about the importance of healthy living and physical activity.


Obesity is becoming a major public health concern, affecting 1 of 5 children in the United States. Studies have shown an alarming increase in obesity among children in the United States during the past decade. Between 10% and 20% of children and teenagers in the United States are obese. The prevalence of obesity in US children varies by racial and ethnic group as well. Estimates indicate that 13% of African American children are overweight or obese. Consequently, more African Americans are experiencing health problems due to obesity, such as high cholesterol, stroke, asthma, sleep apnea, and diabetes mellitus. Limited access to high-quality foods, poor dietary choices, sedentary lifestyles, cultural norms, and low socioeconomic status contribute to the high prevalence of obesity among African American children. Despite these influences, researchers have begun to investigate the role of the media and its influences on obesity.

Television viewing in America starts at an early age. Children as young as 2 to 6 years are viewing approximately 2 hours of television each day. According to a recent study, children in the United States between the ages of 6 and 11 years watch an average of more than 23 hours of television a week, while children between the ages of 12 and 17 years watch an average of more than 21 hours per week. Furthermore, it is estimated that the average child views more than 40 000 advertisements each year. Television viewership also differs by racial and ethnic groups. Previous studies indicate that African American children watch significantly more television than white children. Studies have documented that African American prime-time television shows contain 60% more food commercials (fast food, candy and sweets, and unhealthy foods) compared with general prime-time market shows. To our knowledge, the effect of television viewing and obesity risk among African Americans is an area that has received little attention, despite the fact that much television viewing is taking place in African American households.

There are 4 main propositions to explain the relationship between television...
viewing and obesity: (1) television displaces participation in exercise and other active leisure behaviors, (2) increased food consumption occurs during viewing, (3) advertisement exposure leads to increased consumption of advertised foods, and (4) there are subsequent attempts by children to influence parental food purchases after repeated advertisement exposure. Each of these propositions illustrates the vulnerability of children to the food messages that are portrayed during television advertisements. Although many believe there is a link between television watching, decreased physical activity, and obesity, what children watch and the messages they are receiving from the advertisements may be more important. This is significant given that most food advertised during children’s programming is fast foods, soft drinks, sweets, and sugar-sweetened cereal, all of which has been linked to children’s misconceptions about the health benefits of the advertised foods and increased consumption of high-caloric high-fat foods.

In recent years, the food and beverage industry has viewed children and adolescents as major consumers. As a result, children and adolescents are targeted aggressively by food advertisers, and are exposed to a growing and unprecedented amount of advertising through television. There have been few studies focused on the after-school hours, from 3 PM to 9 PM. Thus, the present study represents an attempt to examine the health- and physical activity–related messages presented during after-school children’s television programs on a predominately African American network and those airing on general programming networks.

METHODS

SAMPLE

Nielsen Media Research indicates that 72% of African American children (aged 2-11 years) and 65% of teenagers (aged 12-17 years) watch network and advertisement-supported cable stations. The selected television stations for this study include Black Entertainment Television (BET), The WB (Warner Bros), and Disney Channel. Each channel represents a different television segment. The WB is the fifth largest television network in the nation, BET is an advertisement-supported cable station, and Disney Channel is a cable station supported by private and nonprofit advertisements. The WB is the first television network devoted to programming for African American viewers between the ages of 18 and 34 years, and reaches more than 80 million households (78% African American). Historically, The WB has featured African American shows that have drawn an African American audience. Although few prime-time shows exist with predominately African American casts, their Kids’ WB children’s programming is rated number 1 among all US children. Finally, Nielsen Media Research points out that although Disney Channel is not an advertiser-supported channel (some programming is underwritten via select sponsorship advertisement), several shows (e.g., That’s So Raven) are among the top rated for African American children. Each of these was selected based on these findings and for being among the top-ranked stations for African American viewers younger than 18 years.

The stations were broadcast in the Midwest region of the United States for a 1-week period, July 11-13, 2005. The commercials broadcast on each network were recorded between 3 PM and 9 PM. All of the commercials that aired during the recorded period were included. A total of 35 hours of after-school television programs were analyzed.

CODING PROCEDURE

The coding scheme was based on earlier studies and included new categories. The final instrument was pilot tested by having 3 upper-level recreation students independently analyze 3 hours of televised after-school programs. The results of the pilot test were used to revise the instrument. The final instrument used for this study contained 2 sections. Section 1 focused on basic television station information (program type, commercial length, presence of models, and type of product advertised). Section 2 described the health-related content (HRC) or physical activity–related content (PARC) of the advertisement. For this study, HRC was defined as any scene that provided visual and verbal information related to mental or physical health, medical treatments (e.g., medications), and food/nutrition. In contrast, PARC was defined as any scene that provided verbal or visual information related to leisure-related physical activities. Although previous studies have looked at these 2 categories collectively, research warrants having an accurate examination of HRC and PARC separately because both are viewed as predictors of obesity.

This section also looked at (1) the level of accuracy (accurate, accurate but misleading, or inaccurate) for the HRC and PARC and (2) their implicit or explicit assertions. The level of accuracy was measured by examining the amount of information the HRC and PARC provided that was free from errors and did not mislead the viewer. An advertisement that illustrates its cereal product as “no preservatives” and “no additives” (and the statements are true based on US nutritional guidelines) is a good example of an accurate advertisement. An accurate but misleading message was defined as one that provides information without errors but withholding or deletes additional information that can counter the primary target message (e.g., a commercial that flaunts a cereal product’s low-sugar content but does not reveal the high level of carbohydrates, calories, and fat that equal the regular cereal version). Inaccurate messages were those that provided information on a product that was erroneous or left out, that could possibly assist viewers in their decision making. For example, this can occur when a product is advertised as having the ingredients to increase children’s running capacity to that of a jaguar or to mimic a cartoon inanimate superstrength (e.g., Popeye’s can of spinach).

Implicit messages were those that implied a link between the advertised product and the HRC or PARC message but relied on the viewer to make the connection. Explicit HRC is when the commercial message regarding health outcomes is directly linked to the advertised product. For example, a commercial that implied eating a particular food was linked to health by describing the food product ingredients (e.g., whole wheat) or unique quality (e.g., low in sugar) was deemed implicit. Likewise, a commercial that overtly stated that the featured product could lower cholesterol was coded as explicit.

DATA COLLECTION

Two researchers (A.T. and an undergraduate student) were trained to conduct the content analysis. This training included a review of the instrument and definitions before beginning analysis. In addition, the examiners jointly viewed and coded 3 hours of after-school programming to become familiar with the procedures. For the actual study, each researcher independently viewed and coded all of the commercials in a private computer/media laboratory. To ensure that the data were recorded accurately, the examiners were encouraged to stop,
restarted, and rewound the videotape, and to use slow motion as needed. At the end of their coding, the researchers compared and discussed any differences to reach an agreed on decision.

RESULTS

The 36 hours of after-school programming analyzed included a total of 1098 commercials. Food and beverage advertisements accounted for 256 (23.3%) of the total advertisements broadcast during the study period. A total of 174 minutes, or 2 hours 54 minutes, of the 36 hours sampled was commercial time. The number of commercials per half hour ranges from 15 to 20 (average, 18). The commercial length ranges from 25 to 55 seconds. On average, more than 7 in 10 of the food commercials presented were repeated several times throughout the day. Of the advertisements, 63.3% aired on BET, 32.4% aired on The WB, and only 4.3% aired on Disney Channel.

TYPE OF PRODUCTS ADVERTISED

The food and beverage products advertised were grouped into the following categories: fast food restaurants, drinks, candy, cereal, and snacks. According to our findings (Figure), fast food represented most advertisements, followed by drinks, candy, cereal, and snacks. We investigated whether there were differences in the type of products being advertised by the varying stations (Table 1). The top 3 fast food advertisements were for McDonald’s (30.1%), SONIC (16.0%), and Domino’s Pizza (15.1%). Fast food advertisements were aired more often on BET compared with the other 2 stations. There was a significant difference in the drink products that were advertised, with all of the Kool-Aid advertisements (25.0%) being aired on BET (P = .001). The next leading drink product was Coke and Gatorade (16.3% each). There were no significant differences in the type of snacks advertised on the varying stations. Cinnamon Toast Crunch represented 34.3% of the total cereal products that were recorded. This was followed by Cheerios, which represented 20.0% of the cereal advertisements aired. The third largest advertised cereal product was Frosted Flakes (17.1%). Candy products were advertised mainly on The WB compared with BET or Disney Channel. The major advertised candy product was Air

Figure. Type of food advertised during after-school programming. Percentages do not total 100 because of rounding.

<table>
<thead>
<tr>
<th>Product Type</th>
<th>BET</th>
<th>The WB</th>
<th>Disney Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast food</td>
<td>65.6</td>
<td>34.4</td>
<td>0</td>
</tr>
<tr>
<td>Drinks†</td>
<td>82.5</td>
<td>11.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Snacks‡</td>
<td>60.0</td>
<td>0</td>
<td>40.0</td>
</tr>
<tr>
<td>Cereal†</td>
<td>42.9</td>
<td>45.7</td>
<td>11.4</td>
</tr>
<tr>
<td>Candy‡</td>
<td>39.5</td>
<td>60.5</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1. χ² Analysis Between Type of Food Advertised and Television Stations

Abbreviations: BET, Black Entertainment Television; WB, Warner Bros.
*Data are given as percentage of food advertised on each station. Percentages may not total 100 because of rounding.
†The difference between stations is significant (P = .001).
‡The difference between stations is significant (P = .001).

Heads (41.9%). This was followed by M&M’s (27.9%) and various gum products (14.0%).

HEALTH-RELATED CONTENT

Of 256 food and beverage commercials viewed, only 8.2% contained HRC information (Table 3). The HRC advertisements all promoted health or nutritional factors (eg, showed that the product contains no or low sugar, the product has low fat, or “the product is good”). Most of the health-related commercials aired were implicit (90.5%), with few being explicit (9.5%). Few commercials explicitly illustrated positive health-related information to sell their products to young viewers. Many focused on taste, color, and smell to market the food products.

Next, we determined the accuracy of the claims regarding the HRC information aired in each advertisement. Of the commercials, 47.6% provided accurate information. In comparison, 28.6% were accurate but misleading and 23.8% were inaccurate and misleading. There was a significant difference in the amount of HRC information provided in the advertisements between the 3 stations, with more HRC advertisements on BET.

PHYSICAL ACTIVITY–RELATED CONTENT

Much like the HRC advertisements, the PARC advertisement sample was small. Only 9.4% of the food and beverage commercials contained PARC (Table 3). When it comes to PARC, Disney Channel aired the most advertisements, followed by The WB and BET. Again, rarely did advertisers attempt to make a direct link between their product and physical activity messages. Few models that were portrayed in the commercials were shown explicitly us-
ing products while participating in physical activity (34.6%). There were no significant (P=.19) differences between the stations in the total number of commercials that were implicit or explicit in their message form. Approximately 38.5% of the commercials were accurate, 38.5% were accurate but misleading, and 23.1% were inaccurate and misleading (percentages do not total 100 because of rounding).

In summary, our results indicate that African American children are being exposed to numerous types of food and beverage advertisements being aired during after-school programming. In the past, much research focused on the links between children being exposed to an unprecedented volume of televised food and beverage advertisements and the unprecedented rates of childhood obesity. Many of these researchers have indicated that most children who are at a high risk of becoming overweight are African American children who come from low-income families. It is argued that these children watch significantly more hours of television. The more children watch television, the greater the chance of them being exposed to advertisements for foods that are high in fat and sugar. In addition, these children are exposed to HRC and PARC that does not reflect nutritional and physical activity guidelines. Although this study does not look at the relationship between television watching and obesity, it does provide a bird’s-eye view into the type of advertisements shown during the after-school hours and the information they convey. Unfortunately, many of the products being advertised can be considered unhealthy and not conforming to the health recommendations set by the US government.

This study illustrates this is especially true for children watching the predominant African American television network, BET. BET had the most advertisements that are deemed unhealthy compared with those that the general television stations aired during after-school programming. This study supports previous findings5,17,18 that suggest African American television shows have a disproportionate number of unhealthy food images and may influence the eating behavior and knowledge of vulnerable African American children.

This study is one of the first to examine the effects of media on children during the after-school programming hours. Past studies have more often focused on Saturday morning and weekday prime-time television programming. Yet, the out-of-school time hours have become a leading focus of researchers investigating positive youth development. Data suggest that there are approximately 8 million children between the ages of 5 and 14 years who spend the after-school hours without adult supervision.19 Research19 has shown that, during these hours, children without adult supervision are at significantly greater risk of nonattendance from school, stress, receiving poor grades, risk-taking behavior, and substance abuse. Those who spend more hours on their own and begin self-care at younger ages are at increased risk of poor development outcomes. We hope that these findings will be used to further research that will examine the inequitable advertising that African American children are exposed to and its effect on their health. Given the increase in the number of African American children who are overweight and obese, their cultural predisposition to watch television programs that feature African American characters,5,17,18 and the lack of obesity prevention programs designed to address disproportionate target marketing, research on the effect of media on African American children in the United States must become a priority.

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Table 3. χ² Test of Television Stations Containing Physical Activity–Related Content

<table>
<thead>
<tr>
<th>Television Station</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>BET (n = 162)†</td>
<td>7 (4.3)</td>
<td>155 (95.7)</td>
</tr>
<tr>
<td>The WB (n = 85)†</td>
<td>12 (14.5)</td>
<td>71 (85.5)</td>
</tr>
<tr>
<td>Disney Channel (n = 11)†</td>
<td>5 (45.5)</td>
<td>6 (54.5)</td>
</tr>
<tr>
<td>Total (N = 256)</td>
<td>24 (9.4)</td>
<td>232 (90.6)</td>
</tr>
</tbody>
</table>

Abbreviations: See Table 1.
*Data are given as number (percentage) of each station.
†The difference between stations is significant (P = .001).

REFERENCES