

Content Analysis of Food Advertising in the Context of Targeted Age

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## **DEDICATION**

To my parents, Sururi and Mukadder.

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## **ABSTRACT**

There has been a concern among researchers about the preponderance of televised food advertising targeting children as a contributor to childhood obesity. Yet, in order to fully understand the possible effects of food advertising, it is imperative to give attention to the content analysis of food advertising. This study examined the product categories of advertisements targeting children and compared the results of this study to the previous studies in order to understand the extent of food advertisements targeting children has changed since the last content analysis was done. In addition, this study examined the nutritional quality of the food products in the advertisements by classifying them according to nutrition guide prepared by U.S. Department of Health & Human Services (USDHHS). Finally, this study investigated how food product types and their nutritional quality differed depending on the age of the target audience by grouping the advertisements targeting preschoolers, school aged children, and adolescent. As consistent with previous content analyses, analysis of 1,762 food advertisements from three cable network primarily target children (Cartoon Network, Nickelodeon, and Disney Channel) indicated that sweets/snacks were the most dominant food category (30.1%), followed by cereals (22.4%), salted snacks (15.3%), then beverages (10.3%) in food advertisements targeting children. All sweets/snacks, cereals, and the majority of beverages were sugared. In addition, the majority of the food advertisements promoted WHOA foods (66.3%) which the USDHHS recommended for children to stay away and only eat on special occasions. Finally, the majority of food advertisements that were high in cereals, sweets/snacks, salted snacks, beverages, fast food restaurants, and combination foods were

concentrated on the category of school-aged children. These findings provide several theoretical and practical implications. In addition, recommendations for future studies are discussed.

*Keywords:* advertising, health, food, television, marketing, children, school-aged, age.

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## **CHAPTER 1: INTRODUCTION**

In today's world, although individuals have access to several kinds of media outlets, television is still one of the most favorite communication sources for children and adults (Abbatangelo-Grey et al., 2008; Rideout, 2017; Rideout & Robb, 2019). According to a recent study conducted by Common Sense Media in 2017, children aged 8 or under in the U.S. spent 72% of their daily screen time by watching television followed by gaming (18%) and reading (2%) etc. In addition, children under 2 years old spent approximately 29 minutes, 2 to 4 years old spent approximately 1 hour 9 minutes, and 5 to 8 years old spent approximately 1 hour 4 minutes in front of a television in a day. According to the same study, 29% of children aged 8 or under had a television in their bedrooms. This finding indicated that these children watched television alone in their bedrooms without any parental or adult supervision. Another finding of this study was that only 15% of parents limited and controlled the amount that their children watched television. In addition, according to the study, most parents did not think watching television had negative effects on their children (Rideout, 2017).

Similarly, according to another study conducted by Common Sense Media in 2019, children aged 8 to 12 years old spent their 62% of daily screen time by watching television followed by listening to music (37%) and playing mobile games (27%) etc. In addition, children aged 8 to 12 years spent approximately 2 hours 26 minutes in front of a television in a day. 47% of these children had a television in their own bedrooms. This study also examined watching behaviors of adolescents aged to 13 – 18 years old and found that adolescents spent most of their times, approximately 2 hours 38 minutes, in front of a

television in a day, followed by listening to music (1 hour 54 minutes) etc. In addition, 57% of these adolescents had a television in their own bedrooms (Rideout & Robb, 2019).

This abundance of viewing television also implies that children are exposed to different kinds of advertisements. Another important finding is that when children start watching a program, they mostly stay on the same channel even though the particular program finishes and the next one starts (Abelman & Atkin, 2000).

Given that children watch television a lot and that it is determined that they tend to remain on the same channel, then it is likely that they are being exposed to many television advertisements. Hence, it is important to understand whether children are able to understand television advertisements in the same way adults do. Several studies showed that children under seven years old do not really understand the real intents of food advertisements (i.e. selling their products), they assume that these advertisements are reliable and accurate. On the other hand, even though older children may understand the real intents of advertisements, they may not understand the messages completely (Kunkel et al., 2004). In addition, Oates et al. (2002) found that most children at 10 years old could not understand the persuasive techniques and the selling intents of advertisements. Children usually need some cues and prompts from a supervisor (Young, 2003). Therefore, the American Psychological Association indicated that advertisers need to be more careful when targeting younger children (Kunkel et al., 2004).

Television advertisements, including advertisements to children, are definitely a large market. Recent statistics showed that the U.S. was leading the market in advertising in the

world by spending 243 billion dollars in 2019 (Guttmann, 2019). In addition, children are considered a significant market by advertisers (Linn, 2004). It was found out that children in the U.S. view more than 40,000 television advertisements per year (Kunkel, 2001; Kunkel et al., 2004). Aidman (1996) explains the reasons that children are the most profitable market for advertisers and indicates that first, children are consumers and buyers themselves, second, they influence their parents' purchases, and third, they are the future adult customers. According to Schor & Ford (2007), children aged 4 to 12 years old in the U.S. spent \$30 billion of their own money and affected approximately \$650 billion worth of their families' shopping choices in 2002. Companies spend about \$10 billion a year on television advertisements targeting children (Schor & Ford, 2007). Food related advertisements are one of the most common advertisements in the U.S. and the total expenditure for sweets and snack advertising was about \$1 billion in 1997 (Story & French, 2004).

This profusion of expenditure of food advertisements for unhealthy products raised some concerns about the effect of these advertisements on children's development. Several previous studies in literature documented that in the U.S., children were mostly exposed to low nutrition foods and foods high in salt, sugar, and fat whereas vegetables and fruits were almost never displayed in the food advertisements (Brown, 1977; Castonguay et al., 2013; Condry et al., 1988; Gamble & Cotugna, 1999; Gantz et al., 2007; Kunkel & Gantz, 1992; Powell et al., 2007a; Stitt & Kunkel, 2008; Taras & Gage, 1995). Food advertisements are considered to be one of the most important factors that cause children to consume low nutrition foods and foods that are high in salt, sugar, and fat (Ebbeling et al., 2002; Halford et al., 2008). Consuming foods high in salt, sugar, and fat is also negatively associated with

children's development and their well-beings. Numerous studies documented that there is a relationship between watching television (including food advertisements) and potential health problems including childhood obesity (Andreyeva et al., 2011; Crespo et al., 2001; Dibb, 1996; Dietz & Gortmaker, 1985; Halford et al., 2008; Harris et al., 2009; Reisch et al., 2013; Robinson, 2001; Taras & Gage, 1995). Obesity can also lead to other serious health diseases, such as Type 2 diabetes and heart diseases, as well as psychological diseases including depression and reduced self-esteem (Adams et al., 2012; Reisch et al., 2013; Werrij et al., 2006; World Health Organization, 2015). A recent study reported that 36% of children aged 2 to 5 years old in the U.S. are overweight (Skinner et al., 2018). Another study stated that the obesity rate is increased by 2% among 12 to 17-year-old adolescents with one-hour increase in television viewing (Dietz & Gortmaker, 1985). These results reinforce the importance of the contents of food advertisements toward children because children are vulnerable to food products that are presented in the food advertisements (Hastings et al., 2003).

The relationship between the content of food advertising and negative effects on children's well-beings prompted the government and its agencies to act for mitigating these outcomes. For example, in 2006, the Federal Trade Commission (FTC) and the Department of Health and Human Services (HHS) accommodated a workshop about food advertising targeting children advocating that children food advertising should focus on healthier foods to decrease childhood obesity and there should be more public education campaigns in the media that presents simple messages about healthy foods ("Perspectives on Marketing, Self-Regulation, & Childhood Obesity," 2006).

In addition, in 2006, the Council of Better Business Bureaus (CBBB) initiated the Children's Food and Beverage Advertising Initiative (CFBAI). CFBAI started a campaign indicating that food or beverage advertisers should not directly target children under 12 years in their advertisements. In 2006, some food companies (i.e. Cadbury Adams, the Coca-Cola Company, the Hershey Company, and Mars Inc, etc.) accepted the new policies (Peeler, 2009). In 2013, CFBAI also regulated a campaign and put limits on calories, saturated fat, and sugar in foods ("CFBAI's Uniform Nutrition Criteria," n.d.). However, not all food companies participated in this campaign; therefore, it may still be possible to view foods high in sugar, salt, and fat in the food advertisements targeting children.

This study aims to examine the product categories of food advertisements geared towards children and to compare the results of this study to the previous studies to understand to what extent food advertisements targeting children has changed since the last content analysis was done. In addition, the last content analysis related to food advertisements was conducted in 2015. Therefore, this study is significant and offers an update about television food advertising targeting children. In addition, this study examines the nutritional quality of the food products in the advertisements by classifying them according to nutrition guide prepared by U.S. Department of Health & Human Services (USDHHS). Finally, this study aims to investigate how food product types and their nutritional quality might differ depending on the age of the target audience by grouping the advertisements targeting preschoolers, school aged children, and adolescent. It is significant to examine different children age groups because just a few studies investigated such a category, so far. Thus, this study aims to fill this gap in the literature. Finally, this study is the

first to examine solely food product types and their nutritional quality on children's cable networks.

This study is mainly guided by the following research questions: To what extent has food advertisements changed since the last content analysis was done? How do product types featured in food advertisements change when they target children at different ages?

## CHAPTER 2: LITERATURE REVIEW

All previous studies presented in this literature review were conducted in the U.S. unless it is indicated otherwise.

### **Type of Foods in Children Advertising**

Brown (1977) examined 27 hours of national television broadcasts including ABC, CBS, and NBC. A total of 154 advertisements were monitored on Saturday mornings between 8 a.m. and 11 a.m. on September, 1976. Brown (1977) found that 107 out of 154 advertisements (69%) were for foods. 41% of food advertisements included breakfast cereals; 37% of food advertisements were for cookies, candies, and snacks; and 7% were for beverages and beverage mixes. There were no advertisements representing fruits and vegetables.

Condry et al. (1988) examined a total of 86.5 hours of children television broadcast on Saturday mornings (7 a.m. to noon) and weekday afternoons from March through December in 1983, 1985, and 1987. Condry et al. (1988) monitored the three major commercial broadcast networks which were ABC, NBC, and CBS. The authors divided the advertisements into 6 product categories: cereals (including ready to eat breakfast, granola bars); candy/snacks (including ready to eat sugared foods and beverages, chips, etc.); restaurants; other food/beverage (no sugared); toys/games; and miscellaneous (hygiene, medicine). Condry et al. (1988) found that 31.8% of advertisements were for cereals in 1983, 20.5% in 1985, and 22.8% in 1987. Candy/snacks were 19.6% of all advertisements in 1983, 14.5% in 1985, and 17.2% in 1987. The percentage of other food/beverage appeared in the advertisements were 1.5%, 4.6%, and 3.4% in 1983, 1985, and 1987, respectively. Finally,



the percentage of restaurants in advertisements were 15% in 1983, 18.5% in 1985, 12.5% in 1987. Condry et al. (1988) did not separate fast food and non-fast food restaurants in their analysis.

Cotugna (1988) recorded a total of 12 hours of children programming from 7 a.m. to 11 a.m. on Saturday on January 24, 1987 on national television networks (ABC, CBS, and NBC). There were a total of 225 advertisements and majority of the advertisements were for foods (71%). The results showed that 34% of food advertisements were for sweets and snacks. In addition, 31% of food advertisements were for cereals and majority of these cereal advertisements were highly sugared. Fast food advertisements were also common in children programs.

Kunkel & Gantz (1992) examined 604 hours of children programming from 7 a.m. to noon on weekends and 6.30 a.m. to 9 a.m. and 2.30 p.m. to 5 p.m. on weekdays on broadcast networks (ABC, CBS, and NBC), independent broadcast stations (two stations from Los Angeles, CA; and one station from the following cities; Boston MA, Detroit MI, Indianapolis IN, Portland OR, New Orleans LA, and Austin, TX), and cable channels (Nickelodeon and USA). 16,024 advertisements broadcast between February and March of 1990 were analyzed. Kunkel & Gantz (1992) grouped the advertisements into toys; cereal/breakfast foods (cereals, waffles, syrups); sugared snacks/drinks; fast foods (including take out restaurants); healthy foods/drinks (bread, fruit, milk) and other. Among all the advertisements in all channels, sugared snacks/drinks (18.4%) and cereals/breakfast foods (22.4%) were the most represented products after toys (33.8%). Fast food was presented in 5.7% of all

advertisements. On the other hand, healthy foods were seen only in 2.8% of the advertisements targeting children.

Kotz and Story (1994) examined a total 52,5 hours of children programming on Saturday mornings from 7 a.m. to 10.30 a.m. in October 1991, January 1992, and February 1992. The authors recorded five networks including ABC, CBS, NBC, FOX, and Nickelodeon. Finally, the authors collected a total 997 advertisements for analysis. Kotz and Story (1994) found that more than half of the advertisements (56.5%) were for food, following toys (33%), and other items (10.2%) such as local businesses, events, movies, etc. 43.6% of food advertisements represented low nutritional foods including fats, oils, and sweets. 37.5% of food advertisements were for bread, pasta, rice and cereals. High-sugar cereals (33%) were the most appealed products on Saturday mornings in advertisements targeting children. There were no advertisements for fruits and vegetables. Finally, 11% of advertisements included fast food restaurants such as McDonald's, Burger King, and Pizza Hut.

Taras & Gage (1995) examined 95 hours of television programming targeting children. On weekdays from 3 p.m. to 6 p.m., the authors videotaped FOX Channel, the Nickelodeon Channel, the Family Channel, and KUSI (a local independent station in San Diego, CA). Children's programming broadcast on only one Saturday from 7 a.m. to noon was also recorded from ABC, NBC and CBS. Eventually a total of 1,896 advertisements were analyzed. The authors conducted the study during January and February of 1993. The study found that food advertisements including food products, beverages, and restaurants were 47.8% of all advertisements. In food advertisements, cereals (34.1%) and candy/snacks

(29%) were the most popular ones. In addition, 86.4% of these cereals had high sugar content. Almost 83% of the beverage advertisements were for sweetened beverages. Even though Taras & Gage (1995) did not separate fast food and non-fast food restaurants in their sample, results showed that 15.6% of food advertisement were for restaurants. Overall, 91% of foods were high in fat, sugar and/or salt in the advertisements.

Gamble & Cotugna (1999) recorded 16 hours of Saturday morning (7 a.m. to noon) children programming from ABC, CBS, FOX, and Nickelodeon in mid-January 1996. The authors had a total of 353 advertisements recorded. Gamble & Cotugna (1999) found that 62.8% of advertisements were related to food; 24.3% of advertisements were for other items (local business, news, and events); and 11.8% were for toys. In all food advertisements (62.8%), 37.8% of the advertisements were for cereals; 21.6% were for candy/snacks; 3.6% were for beverages; 1.8% were for frozen waffles and pastries; and 6.7% were canned pasta. There were not any advertisement promoting fruits and vegetables. Generally, 56.3% of food advertisements were related to bread, cereal, rice and pasta and 27.4% was about fast food restaurants.

Harrison & Marske (2005) examined a total of 40 hours television programs which were most often viewed by children aged 6 to 11 years old on network Saturday, network prime time, syndication, and cable between 7.00 a.m. to 10 a.m. in 2003. There were a total of 1,424 advertisements and 29.9% of these advertisements were for foods. The authors found that candy, sweets, and soft drinks (43.8%, the authors combined these three food product types) were the most common products in the food advertisements targeting children.

Fast foods (34.2%) were the second common advertisements targeting children aged 6 to 11 years old. In addition, 14.9% of food advertisements were for cereals and breads.

Powell et al. (2007a) examined national advertisements from 170 top-rated children programs from 60 network series, 60 cable series, 30 syndicated series, 10 network specials and 10 cable specials between September 2003 and May 2004. The authors collected 224,083 advertisements during this time period. Results indicated that while 27.2 % of the advertisements were related to food products including non-fast food restaurants and fast food restaurants, 47.7% of all advertisements were related other products. In all food product advertisements, cereal (27.6%) was the most common one followed by sweets (17.7%), snacks (12.2%), and fast food restaurants (12%). Related to the presented beverages in advertising targeting children, the authors found that fruit drinks were the most popular ones, whereas soft drinks and sports drinks were the less common ones. In addition, there were not any fruits and vegetables advertisements targeted children.

Gantz et al. (2007) examined top 13 networks among children aged between 2-8, 9-11 and 12-17 years old. Six of the networks were commercial broadcast networks including ABC, CBS, Fox, NBC, WB and UPN. The other six were commercial cable networks including ABC Family, BET, Cartoon Network, Disney Channel, MTV, and Nickelodeon. The last network was PBS which was a non-commercial broadcast network. The authors recorded the first sample from the last week of May to first week of September 2005, then another 12 hours were recorded after September. For their study, the authors collected a total of 1,638 hours of programming and a total of 40,152 advertisements. The study found that there was a total of 2,613 food advertisements on all networks. Similar to other previous

studies, the authors found that candy/snacks (34%) and cereal (29%) were the most dominant products aimed for children. All food products including cereals were high in sugar and there were not any advertisements presenting vegetables, meat, grains, or fish.

Stitt & Kunkel (2008) examined five national broadcast networks: ABC, CBS, Fox, NBC, and WB; three cable networks: ABC Family, Cartoon Network, and Nickelodeon for food advertisements. Stitt & Kunkel (2008) recorded 7 a.m. to 10 p.m. on Saturdays from February to June, 2005. There were 1,209 advertisements and 557 of them was for food products. The authors categorized food products in the advertisements as (i) fats and sweets including sugared snacks, salted snacks, sugared beverages; (ii) breads and cereals, including sugared cereals, pastries/waffles, pasta; (iii) fast foods/restaurants; (iv) dairy; (v) fruits/vegetables/100% fruit juice; (vi) protein; and (vii) other. The study found that 38.7% of all advertisements were related to fats and sweets; including sugared snacks (20.8%), salted snacks (8.4%), sugared beverages (9.5%). Then, 34.4% of all advertisements were related to breads and cereals, including 26% sugared cereals, 5.9% pastries/waffles, 2.5% pasta; 20.8% of all advertisements were related to fast foods/restaurants; 2.5% were for diaries; and 0.7% were for fruits/vegetables/100% fruit juices.

Castonguay et al. (2013) recorded NBC, ABC, CBS, FOX, CW, Nickelodeon, and Cartoon Network between 7 a.m. to 10 p.m. The authors analyzed only one episode of children's programs from each network during weekdays or Saturdays for three months. Food advertisements were categorized into sugared snacks; salted snacks; sugared beverages; sugared cereals; pastries/waffles; pasta; fast foods; restaurant foods, dairy, fruits/vegetables, 100% fruit juice; protein; and other. The study found that there was a total of 577 food

advertisements in all networks. Restaurants/fast foods (40%) and sugared cereals (24%) were the most dominant products targeting children.

Harris et al. (2013) used Nielson Media Research data collected from cable and syndicated TV in 2009. The food categories were: breakfast cereals; snacks; candy; dairy products; baked goods; carbonated beverages; fruit juice and non-carbonated beverages; prepared foods and meals; frozen/chilled desserts; fast food restaurants; and other restaurants. The study found that children aged 2 to 5 years viewed 3,801 food advertisements, children aged 6 to 11 years viewed 4435 food advertisements in 2009. The study also found that children aged 2 to 11 years viewed mostly fast food restaurants (1,018) and breakfast cereals (702) in all television programs in 2009.

Hingle et al. (2015) recorded five national broadcast networks (ABC, CBS, Fox, NBC, and CW) and two cable networks (Cartoon Network and Nickelodeon) from February 1 to April 15 in 2013. Then, the authors selected one episode of every children programming of each network to analyze their data. Overall, there were 354 food advertisements. The food categories were: breakfast cereals; snacks; candy; dairy products; baked goods; carbonated beverages; fruit juice and non-carbonated beverages; prepared foods and meals; frozen/chilled desserts; and restaurant food. Hingle et al. (2015) found that breakfast cereals (36.2%) and fast foods/restaurant foods (26.8) were the most dominant products targeting children.

Overall, previous content analysis of food advertisements showed that while some of the studies found that sweets and snacks were the most dominant products in the

advertisements targeting children (Cotugna, 1988; Gantz et al., 2007; Harrison & Marske, 2005; Powell et al., 2007a), some of them found that cereals were the most dominant (Brown, 1977; Castonguay et al., 2013; Condry et al., 1988; Gamble & Cotugna, 1999; Harris et al., 2013; Hingle et al., 2015; Kunkel & Gantz, 1992; Stitt & Kunkel, 2008; Taras & Gage, 1995). In addition, all previous studies agreed that there weren't any or there were just a few food advertisements for fruits and vegetables.

### **Food Advertisements and Target Age**

Powell et al. (2011) examined food advertisements rated for children aged from 2 to 5 and from 6 to 11 by using the data from Nielsen Media Research in 2003, 2005, 2007, and 2009. The authors found that children aged 2 to 5 years watched average 10.9, and children aged 6 to 11 watched average 12.7 food advertisements per day in 2009. This average was higher in 2003 which was 13.3 and 13.7 per day, respectively. The authors also found that for both age groups, 86% of cereals in the advertisements was high sugared cereals in 2009, which was 92% in 2003. Similarly, 62.7% of beverages for 2 to 5 years old children and 64.1% of beverages for 6 to 11 years old children in the advertisements were high sugared and their percentage reduced compared to 2003 which were 85.7% and 85.6, respectively. Powel et al. (2013) used the same data from Nielsen Media Research for 2009 and concluded that food and beverage advertisements watched by children do not comply with the Interagency Working Group (IWG) nutrition recommendations.

## **The Effects of Television Food Advertising on Children**

Content analyses cannot examine effects; however, the content does have implications for consumers (Turner, 2011). Therefore, this section of the literature review briefly examines the effects of food advertising on children.

Advertising is one of the triggers contributing to childhood obesity since they mostly carry unhealthy products (Lobstein & Dobb, 2005). Previous studies have found that there is a strong association between children's exposure to television food advertising and children's diet related health issues. Crespo et al. (2001) and Mcnutt et al. (1997) found that television viewing was positively associated with obesity among children. Matheson et al. (2004) conducted an experiment to understand whether there is an impact of the amounts and types of foods consumed during television watching on children's body mass index (BMI). Their first sample had ethnically diverse third-grade children and second sample was mostly fifth-grade Latino children. This study found that even though the amount of food consumed during television viewing was not associated with children's BMI, there was an association between the fat content of foods consumed during television viewing and BMI in the third-grade children sample group. Although Matheson et al. (2004) did not specifically examine food advertisements targeting children, but general television viewing, the results can still be considered valid for children as well, since children tend to watch advertisements among series or programs (Abelman & Atkin, 2000). Powell et al. (2017) also examined the relationship between being exposed to food and beverage advertisements and BMI in young adolescent. The authors found that exposure to cereal advertisements is significantly associated to young adolescents' BMIs.



Harris et al. (2009) also conducted an experimental study on elementary school age children and adults to examine whether exposure to food advertising increased snack consumption and triggered obesity. The study found that after exposure to food advertising, children ate 45% more snacks. The authors emphasized that because the participants did not report that they were hungry during the experiments, snack consumption because of the effect of food advertising might have contributed to obesity.

In addition, Goris et al. (2010) conducted a cross-sectional study to understand the influence of television food advertisements on the extend of obesity among children aged 6 to 11 years old in Australia, Great Britain (England and Scotland), Italy, the Netherlands, Sweden, and the U.S. Goris et al. (2010) found that the influence of television food advertisements on obesity was highest in the U.S. If there were no food advertisements, approximately 40% of children in the U.S. might not have been obese. Similarly, Veerman et al. (2009) developed a mathematical simulation model to understand whether reducing exposure to food advertisements on television positively influences the obesity. Veerman et al. (2009) concluded that if children in the U.S. were not exposed to food advertisements on television, the prevalence of obesity in the U.S. would have been decreased from 17.8% to 15.2% for boys and from 15.9% to 13.5% for girls.

### **Social Cognitive Theory**

Social cognitive theory was developed by Albert Bandura in 1986 as an extension of social learning theory in the 1960s (Luszczynska & Schwarzer, 2005). Social cognitive theory seeks to understand how individuals learn through observation of others' roles and behaviors in their environment which can occur via media (Bandura & Walters, 1977).

Media are important sources to facilitate observational learning for individuals (Bandura, 1995). Individuals, especially children, tend to imitate what they see on television (McArthur & Resko, 1975). Within the context of this study, social cognitive theory suggests that when children are exposed to specific type of food advertisement on television, their eating behaviors will be influenced by these advertisements (Dixon et al., 2007; Harris et al., 2009). For example, many studies found a relationship between children's exposure to food advertising and consuming high-fat energy dense foods (Buijzen et al., 2008; Halford et al., 2008; Lobstein & Dobb, 2005; Mehta et al., 2010). A study which was conducted among elementary school children (Grade 5) showed that being exposed to soft drink and fast food advertisements on television increases consumption of these products (Andreyeva et al., 2011). Similarly, Coon et al. (2001) found that children who watched television during at least 2 meals per day consumed more meat, pizza, salty snacks, and sodas and less fruits, vegetables, and juices than children who are not exposed to television during meals. Dixon et al. (2007) also found similar results in Australia indicating that children who were heavy viewers of television showed more positive attitudes toward junk food and this led to increase in their junk food consumption.

Gorn & Goldberg (1982) conducted an experimental study to understand the relationship between exposure to television food advertisements and children's (5 to 8 years) food preferences and consumptions. Using a two weeks long summer camp setting, the authors created four conditions: (i) candy advertisement; (ii) no advertisement; (iii) fruit advertisement; and (iv) public service announcements. After viewing television programs with these specific advertisements, children selected fruits, candies, and juices as snacks.

Gorn & Goldberg (1982) found that children who were in candy advertisement condition group chose to eat more candy over fruits than children who were in fruit advertisement condition group.

In addition, Borzekowski & Robinson (2001) examined the association between exposure to television food advertisements and their effects on 2 to 6 years old preschool children's food preferences. The authors showed children a videotape of a top-rated children's program either with or without inserted advertisements. The advertisements included juices, doughnuts, sandwich bread, etc. Children who viewed the videotape with the inserted advertisements were more likely to prefer the advertised items than children who viewed the same videotape without advertisements.

Similarly, Halford et al. (2007) conducted an experimental study with 93 children aged 5-7 years to understand how food advertisement exposure affected calorie intake and food choices of younger children. The authors found that there was a positive association between food advertisement exposure and food intake in younger children. Food advertisements increased consumption in younger children. After interviewing parents and children aged 6-12 years, Roberts & Pettigrew (2013) also found that food advertising on television strengthened psychological eating among children.

According to Bandura (2009), there are four subprocesses for observational learning from media: attention, retention, production, and motivation. The attention subprocess decides what is selectively observed and what information is obtained from the modeled events. There are several factors that guide examination and interpretation of what is

modeled. While some of the factors are related to cognitive skills, prejudices, and value preferences of the observer, some of them are related to salience and attractiveness of the model. For example, children tend to watch television networks which are specifically targeted for them, such as Cartoon Network, Nickelodeon, or Disney Channel (Hentges et al., 2013). It is important to understand what kind of food products are presented in these channels to their target audience since being exposed to these products is the first step of learning from media. Previous content analyses of food advertisements targeting children found that in the U.S., children were exposed various food product types; including sweets and snacks (mostly sugared), cereals (mostly sugared), beverages (mostly sugared), and fast foods, etc. On the other hand, vegetables and fruits were almost never displayed in the food advertisements (Brown, 1977; Castonguay et al., 2013; Condry et al., 1988; Gamble & Cotugna, 1999; Gantz et al., 2007; Kunkel & Gantz, 1992; Powell et al., 2007a; Stitt & Kunkel, 2008; Taras & Gage, 1995).

The second subprocess, retention, refers to remembering the observed events gained through the attentional process. According to Bandura (2009), when children are exposed to same products over and over on television, this makes easier for them to remember what they have seen and this reinforces their learning process. Therefore, it is important to calculate the frequency of each food product types in the advertisements because the more displayed food products will more likely to stay in a child's memory than the less displayed one. For example, several previous content analyses found that sweets and snacks were the most appeared products in the advertisements targeting children (Cotugna, 1988; Gantz et al., 2007; Harrison & Marske, 2005; Powell et al., 2007a).

After attending and retaining the events through observation, these should be produced. In other words, it is time to translate the cognition process into action. The production subprocess is also critical for children since the previous studies found that children mostly consume products containing high proportions of fat, sugar, and salt etc. that they had seen in advertisements (Hastings et al., 2003). Eventually this learning and imitating behaviors from advertisements may cause childhood obesity and this can lead to other health problems; such as Type 2 diabetes, heart disease, and stroke (World Health Organization, 2015).

Finally, the fourth subprocess is motivation which refers to reinforcements, such as punishments or rewards. Bandura (1969) explained this subprocess as having a good reason to imitate the behavior displayed in advertisements. For example, several studies signified that advertisers promote their food products mostly along with fun, happiness, and excitement (Connor, 2006; Folta et al., 2006; Page & Brewster, 2007; Stitt & Kunkel, 2008). In addition, children will learn easily when the model is attractive. For example, the advertisers use celebrities and favorite characters due to the fact that celebrities enhance children's attention to the advertisements and they heighten the credibility of the advertised products (Gantz et al., 2007). According to Boyland & Halford (2013), advertisers are willing to use promotional characters and celebrities in the advertisements of foods high in fat, salt, and sugar to attract children. In the U.S., 73% of food advertisements targeting children employ a familiar character (Castonguay et al., 2013). Fast food advertisements also commonly use licensed characters and slogans to increase their brand recognition (Connor, 2006). This study focuses on the first three subprocesses of social cognitive theory.

As it is discussed, learning from observation is the fundamental of social cognitive theory. According to Bandura (2009), “social cognitive theory explains the psychosocial functioning in terms of triadic reciprocal causation.” In this triadic reciprocal causation model of social cognitive theory, behavioral determinants, personal determinants (including cognition, affect, and biology), and environmental determinants mutually influence each other. In other words, individuals’ behaviors are initiated by personal, behavioral and environmental influences. For example, when children are affected by mass media (as an example of environment), it can influence their behaviors. This influence is also a function of different personal and situational factors. Children with different sociodemographic status, ages, races, and genders may receive different messages from mass media and eventually, effects of the media on them can be different. As an example, according to a study, children with lower sociodemographic status and minority race were more likely to consume fast food (Andreyeva et al., 2011).

According to Baran & Davis (2014), media contribution to this learning process occurs through observational learning, inhibitory effects, disinhibitory effects, vicarious reinforcement, and social prompting. Observational learning states that individuals can learn how to rob a bank by just watching a movie about it. Inhibitory effects refer to that if individuals see a character is punished for a behavior on media, they will less likely engage with this kind of behavior. On the other hand, disinhibitory effects explain that if individuals see a character who is rewarded for a threatening behavior, they will more likely to engage with this kind of behavior. Vicarious reinforcement states that it is enough for individuals to observe reinforcements, such as rewards and punishments on media rather than to experience

them directly. Finally, social prompting refers to repeating the observed behavior as long as it is socially acceptable.

Finally, one of the important aspects of social cognitive theory is that the learning process that individuals go through starts from their early ages. Therefore, it is important to examine the food advertisements on television to determine what types of products (healthy versus unhealthy) children are exposed to by taking into account that they will be influenced by these products and they will increase consuming these products. Since the learning process starts early in a child's life, changing this consumption habit may be difficult to alter (Damiano, 2003).

## RESEARCH QUESTIONS

Based on the previous studies, research questions of this study are:

**RQ1:** What is the proportion of food advertisements targeting children within all advertisements in television?

**RQ2a:** What are the most common product categories that appear in food advertisements targeting children?

**RQ2b:** To what extent has food advertisements changed since the last content analysis was done?

**RQ3:** What is the nutritional quality of foods promoted in the advertisements targeting children?

**RQ4:** How do product types and their nutritional quality in food advertisements change when they target children at different ages?



## CHAPTER 3: METHOD

### Sample

This study's main goal is to examine food product types on television advertisements targeting children. The television networks examined in this study are three cable networks which primarily target children: Cartoon Network, Disney Channel, and Nickelodeon. These cable networks were chosen because they are the most viewed children's television networks in the U.S. (Hentges & Case, 2013). According to another study, these cable networks are the top three choices for children aged 2-11 and in top four choices for adolescents aged 12-17 (Gantz et al., 2007).

In this study, children's programming was recorded from 6:00 a.m. to 7:00 p.m. from July 13 through July 17, 2020 (Monday through Friday) using SnapStream software on the University of Houston main campus. The reason for recording the children's programming until 7:00 p.m. is that Cartoon Network switches to Adult Swim after 7.00 p.m. and the channel starts to broadcast programming targeting adults and individuals older than 14 years. The weekends were not coded and analyzed because there were fewer children's programming targeting preschoolers compared to weekdays. In order to have a fair number of children programs targeting different age groups, the weekends were excluded. Excluding weekends were consistent with previous studies' findings. For example, as cited in Powell et al. (2007a), according to Nielsen Media Research in 2000, only 6% of total weekly viewing time of children aged 2 to 11 years occurred on Saturdays from early morning to afternoon. In addition, the month of July was chosen for this study because according to Adweek/Harris Poll survey, since children do not go to school during summer, they have more free time and

consequently spend more time watching television (“Most Parents Loosen Rules for Children’s Media Consumption During the Summer,” 2011).

After finishing recording and downloading the children programs on Cartoon Network, Disney Channel, and Nickelodeon, some technical issues were determined in several children programming. Therefore, 1 episode of 5 programs (Teen Titans Go and Craig of the Creek on Cartoon Network, Blue’s Clues & You and Paws Patrol on Nickelodeon, and T.O.T.S. on Disney) from July 13, 1 episode of 2 programs (Paw Patrol on Nickelodeon and Craig of the Creek on Cartoon Network) from July 14, 1 episode of 2 programs (Coop & Cami Ask the World on Disney, The Amazing World of Gumball on Toon) and 2 episodes of 1 program (SpongeBob SquarePants on Nickelodeon) from July 15, and finally 1 episode of 3 programs (SpongeBob SquarePants on Nickelodeon, Big City Greens on Disney, Total DramaRama on Cartoon Network) from July 17 were not recorded properly and excluded from the data.

Eventually, a total of 60 hours of 29 different children programs on Cartoon Network, Disney Channel, and Nickelodeon were coded and analyzed from July 13 through July 17. The list of children programming which was analyzed in this study is provided in Appendix A.

It is also important to note that in this study, duplicate advertisements were also considered during the data analysis by adapting Turner’s (2011) strategy. Each food product advertisement, regardless of the similarity or brand, calculated how many times they appeared in the total of 60 hours of children programming. The frequency of the food

products that appeared in the advertisements were accounted for because the second subprocess of social cognitive theory, retention, emphasizes that when individuals are exposed to same models over and over on television, this makes easier for individuals to remember what they have seen (Bandura, 2009; Turner, 2011). Therefore, it is important to include duplicate advertisements because food products that appeared most often will more likely to stay in a child's memory than the less appeared.

### **Coding Variables**

The advertisements are coded using the following guideline. The content analyses are performed using IBM SPSS Statistics software (Norusis & Norusis, 1993). The coding guide is provided in Appendix B.

### ***Food Product Types***

The coding scheme for food product types was adopted from previous content analyses performed by Gantz et al. (2007) and Powel et al. (2007a). In addition to these previous analyses, this study added vitamins and medicines to the coding scheme.

The food categories were: cereal (hot and cold cereal and oatmeal); sweets/snacks (breath mints candy, candy bar, chewing gum, cookie dough, cookies, cupcakes, frozen novelties, prepared gelatin, gelatin mix, ice cream, ice cream novelties, pastry, and snack cakes); salted snacks (crackers, nuts, popping corn, potato chips, and tortilla chips); beverages (bottled water, cocoa mix, coffee, 100% fruit juices, regular and diet soft drinks, drink mix, isotonic drinks, noncarbonated drinks, fruit drinks, fruit juices, iced coffee and tea, and vegetable juice); dairy products and substitutes (milk, cheese, yogurt); breads,

pastries, and pastas; meat, poultry, and fish; prepared foods (soups, jellies and jams, peanut butter); fruits and vegetables; vitamins and medicine; fast food restaurants; non-fast food restaurants; combination foods; and other (baby foods, baking mix, beans, entrees (prepared), entrees (frozen), French toast (frozen), hot dogs, infant formula, mayonnaise, mustard, pasta sauce, pickles, preserves, rice mix, salad dressings (bottled and mixed), salsa sauce, barbeque sauce, steak sauce, Worcestershire sauce, sour cream, syrup, waffles (frozen), whipped topping, etc.).

In addition to this coding scheme, cereals, sweets/snacks, and beverages in the advertisements were determined if they were sugared. Sugared cereals or sugared sweets/snacks were identified if sugar was one of the first three in their ingredients lists and the beverages were considered sugared if they contained added sugar, similar to Castonguay et al. (2013) and Stitt & Kunkel (2008). The ingredients and nutritional facts of the applicable products was obtained from manufacturers' websites. If this information was not available online, the nutritional information was obtained from product packaging.

This study also categorized the foods shown in advertisements using the food nutrition guide prepared by U.S. Department of Health & Human Services (USDHHS). This food nutrition guide was published as a part of a public information campaign called "ways to enhance children's activity & nutrition" (a.k.a. "We can!"). In this guide, there are three different food categories: GO, SLOW, and WHOA. GO foods can be eaten almost anytime and contains high nutritional foods including fresh and frozen vegetables and fruits; whole grain breads, pastas, cereals; fat-free or 1% low-fat milk, yogurt, and cheese, etc. This category does not include any kinds of sweets and snacks at all. SLOW foods can be eaten

“sometimes or less often”. This category includes all vegetables with added fat and sauces; dried fruits; white refined flour bread, rice, and pasta; 2% low-fat milk, ice milk bars, low-fat or fat-free frozen yogurt and ice cream; 100% fruit juice, etc. Finally, WHOA foods can be eaten “only once in a while or on special occasions.” This category contains low nutritional foods including French fries and deep-fried vegetables; sugared cereals, muffins; whole milk, whole milk yogurt; cookies, ice cream; butter; etc. (“Eat Right | U.S. Department of Health & Human Services,” n.d.).

Even though many individual products are clearly identified in the USDHHS nutrition guide, in the advertisements targeting children, there was a food product named “lunchables” that included more than one food category. For example, the “lunchables” box included lean turkey, crackers, reduced fat cheddar, Capri sun 100% fruit juice, and gummy worms. Since there are more than one product in this box, this product and similar products were coded by categorizing the individual products in the boxes and coding the average (Castonguay et al., 2013). For instance, this “lunchables” product contains lean turkey (Slow = 2), crackers (Whoa = 1), reduced fat cheddar (Slow = 2), Capri sun 100% fruit juice (Slow = 2), and gummy worms (Whoa = 1). Then, this “lunchables” product was coded as a Slow product because  $8 / 5 = 1.6$  (average).

### ***Advertisements and Children’s Age***

The recorded television programming was grouped depending on their target age group and their broadcast time blocks during the day. This helped determine if product types in the food advertisements varied for children’s different age groups. In order to do this, the

methodology by Hentges et al. (2007) was adapted and children programming recorded from Cartoon Network, Nickelodeon, and Disney Channel was coded following one or more of the criteria listed below:

- (i) TV rating guidelines (TV-Y for preschool, TV-Y7 for school-aged, TV-G or TV-PG for adolescent),
- (ii) Scheduled time slot (i.e., programs early in the morning mostly targeted preschoolers),
- (iii) Television network's own descriptions.

For example, Paw Patrol (Nickelodeon) and Puppy Dog Pals (Disney Channel) target preschool aged children (TV-Y) and these programs are mostly broadcast early in the morning (6 a.m. – 11 a.m.). The Loud House (Nickelodeon), Big City Greens (Disney Channel), and The Amazing World of Gumball (Cartoon Network) target school-aged children (TV-Y7) and these programs are mostly broadcast in the afternoon. In addition, Cake My Day (Nickelodeon), Bunk'd (Disney Channel), Teen Titans Go (Cartoon Network) target adolescents (TV-G or TV-PG) and broadcast during various times of the day.

### **Pre-test**

In order to ensure the coding guide was appropriately prepared, before starting to analyze the actual data and train an independent coder, a pre-test was conducted. The researcher of this study coded 79 food advertisements from Cartoon Network and Disney Channel on May 26<sup>th</sup>, 27<sup>th</sup>, and June 4<sup>th</sup>. A few changes and additions were completed to the coding guide and sample of the study after the pre-test. For example, one of the alterations

occurred in food category in coding guide. “Combination foods” category was added to the coding guide after recognizing there was a food product which included variety of foods in a box called “lunchables” in the advertisements during pre-test.

Another modification occurred in sample of the study. After recognizing that Cartoon Network switches to Adult Swim after 7.00 p.m. during the pre-test, analyzing the data from 7 a.m. to 8 p.m. exchanged to 6 a.m. to 7.p.m. for all networks.

The pre-test results verified that the rest of the decisions on sample and the rest of the food categories and variables in coding guide were appropriate to conduct the study.

### **Intercoder Reliability and Data Analysis**

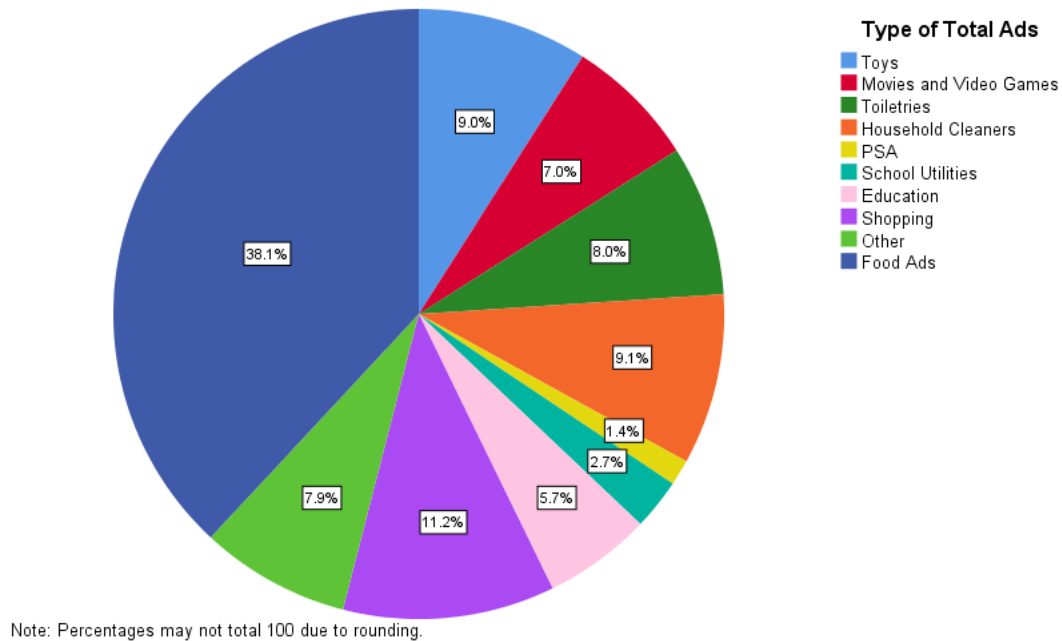
Prior to coding the data, the researcher of this study trained one independent coder. The independent coder was a graduate student at University of Houston major in Public Relations. The trainings were conducted via Zoom. There were two different trainings in different days and these trainings lasted 60 minutes in total. After examining and discussing each variable in the coding guide and agreeing 100% on the variables and definitions, the independent coder was given the coding book and coding guide. In addition, 19 different children programs from July 13 were provided to the independent coder via One Drive. Hence, the independent coder coded 10% of the food advertisements. The Cohen’s Kappa intercoder reliabilities were: .99 for the food category, .94 for the U.S. Department of Health & Human Services (USDHHS), .97 for the sugared cereals, snacks, and beverages, and 1 for ad’s and show’s target age. All reliability coefficients achieved the rule of thumb coefficient level, .70 (Rust and Cooil 1994).

In order to answer research questions of this study, frequency analyses and chi-square tests were conducted.



## CHAPTER 4: RESULTS

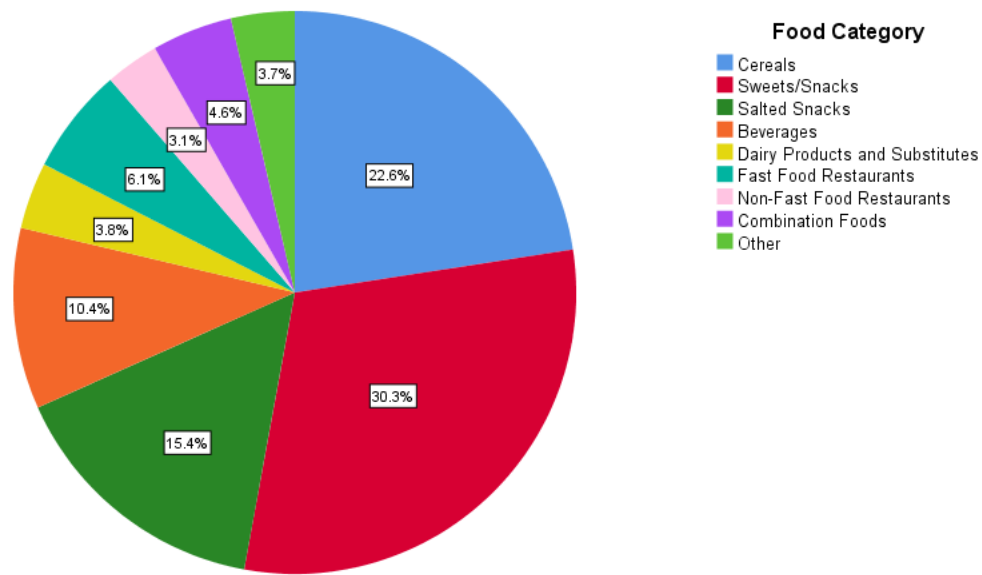
The first research question of the study examined the proportion of food advertisements targeting children within all advertisements in television. In order to answer the first research question, frequency analyses were conducted. There were a total of 4,628 advertisements coded and analyzed in the study. 38.1% of these advertisements were related to food advertisements ( $N = 1,762$ ). 61.9% of these advertisements were related to non-food advertisements ( $N = 2,866$ ) including shopping ( $N = 519$ , 11.2%), household cleaners ( $N = 419$ , 9.1%), toys ( $N = 417$ , 9%), toiletries ( $N = 369$ , 8%), movies and video games ( $N = 323$ , 7%), education ( $N = 264$ , 5.7%), school utilities ( $N = 125$ , 2.7%), public service announcements (PSA) ( $N = 63$ , 1.4%), and other ( $N = 367$ , 7.9%). All of the proportions of the advertisements are displayed in Figure 1.



**Figure 1: Proportion of the total advertisements in the study.**

## **Type of Foods Products in Children Advertising**

The second research question has two parts. Research Question 2a asked the most common product categories that appeared in food advertisements targeting children. Frequency analysis results determined that sweets/snacks were the most dominant food category (30.1%), followed by cereals (22.4%), salted snacks (15.3%), then beverages (10.3%). Advertisements for fast food restaurants also had an important share of food advertising targeting children (6.1%). In addition, 4.6% of food advertisements viewed by children were combination foods, 3.8% of food advertisements were for dairy products and substitutes, and 3.1% of food advertisements were for non-fast food restaurants. Only 0.4% of food advertisements were for vitamins and medicine and 0.2% of food advertisements were for breads, pastries, and pastas. 3.6% of food advertisements were for “other” category. There were no advertisements for meat, poultry and fish; prepared foods; and fruits and vegetables, at all. All the proportions of the advertisements are shown in Figure 2.



Note: Bread, pastries, and pasta category (0.2%) and vitamins and medicine category (0.4) excluded from the pie chart due to their low frequency. Percentages may not total 100 due to rounding.

**Figure 2: Distribution of Food Product Categories, % of Total.**

Research question 2b asked to what extent food advertisements had changed since the last content analysis was done. Table 1 presents findings of content analyses of food advertising targeting children on television from 1977 to the current study. Even though some of the information was not stated in the studies, the proportion of food advertising targeting children was up to 69% of all advertisements in 1977 while the current study found that 38.1% of advertisements were related to food in all advertisements. Before 2007, cereals were more frequently advertised products in all food advertising. Since 2007, for some cases sweets and snacks were the most popular products in all food advertising. While findings of the last content analysis of food advertising provided that 36.2% of food advertisements were for cereals, the current study found that 22.4% of food advertisements were for cereals. In addition, while findings of the last content analysis of food advertising provided that 19% of food advertisements were for sweets and snacks, the current study found that 30.1% of food

advertisements were for sweets and snacks. This meant in 2015, the most popular food advertisement targeting children was cereals while in 2020, the most prevalent food advertisement targeting children was sweets and snacks. For restaurant advertisements, the current study found a decrease from the most of the previous content analyses including the last content analysis which was published in 2015 by Hingle et al.

**Table 1: Content Analyses of Food Advertising to Children on Television.**

Source	Food ads of total advertising (%)	Cereal Ads of total food ads (%)	Sweet/snacks of total food ads (%)	Restaurant ads of total food ads (%)
Brown (1977)	69%	41%	37%	N/A
Condry et al. (1988)	N/A	31.8% in 1983 20.5% in 1985 22.8% in 1987	19.6% in 1983 14.5% in 1985 17.2% in 1987	15% in 1983 18.5% in 1985 12.5% in 1987
Cotugna (1988)	71%	31%	34%	N/A
Kunkel & Gantz (1992)	49.3%	22.4%	18.4%	5.7%*
Kotz & Story (1994)	56.5%	37.5%	N/A	11%*
Taras & Gage (1995)	47.8%	34.1%	29%	15.6%
Gamble & Cotugna (1999)	62.8%	37.8%	21.6%	27.4%*
Harrison & Marske (2005)	29.9%	14.9%#	43.8%	34.2%
Powell et al. (2007a)	27.2%	27.6%	29.9%	12%*
Gantz et al. (2007)	50%	29%	34%	17%
Stitt & Kunkel (2008)	46%	26%	20.8%	20.8%
Castonguay et al. (2013)	N/A	24%	15%	40%

Source	Food ads of total advertising (%)	Cereal Ads of total food ads (%)	Sweet/snacks of total food ads (%)	Restaurant ads of total food ads (%)
Harris et al. (2013)	N/A	16.7%	14.5%	N/A
Hingle et al. (2015)	N/A	36.2%	19%	26.8%
Current Study (2020)	38.1%	22.4%	30.1%	9.2%

Note: \* Only fast food restaurants were reported.  
# The study combined cereals and breads.  
& The study combined sweets and snacks with soft drinks.  
N/A not available.

### Nutritional Quality of Foods

The third research question of the study (RQ3) asked about the nutritional quality of the food products in the food-related advertisements targeting children by categorizing them according to nutrition guide “We Can!” evaluated by USDHHS. There were 1,594 food advertisements which were measured according to USDHHS nutrition guide. 168 food advertisements were excluded. These food advertisements were for fast food restaurants and non-fast food restaurants. Fast food restaurants and non-fast food restaurants were excluded from USDHHS nutrition guide because while some of them included foods (i.e., pizza, burger, and chicken), most of them were promoting their take-out and drive-through option without presenting the foods. In the context of USDHHS nutrition guide, fast food restaurants and non-fast food restaurants were difficult to measure. Finally, while more than half of food advertisements promoted WHOA foods (66.3%), 33.7% of food advertisements promoted SLOW foods ( $N = 1,594$ ). There were not any food advertisements that promoted GO foods.

In addition, a chi-square test was calculated comparing the frequency of USDHHS nutrition guide across different food product categories. The difference in frequency of the USDHHS nutrition guide by food product categories was statistically significant,  $\chi^2 (7, N = 1,594) = 1594.00, P < .01$ . As shown in Table 2, all sweets/snacks (100%); cereals (100%); dairy products and substitutes (100%), and food products in the other category (100%) prevalently promoted WHOA foods more than other food product types in the advertisements. All salted snacks (100%); beverages (100%); combination foods (100%); and bread, pastries, and pastas (100%) promoted SLOW foods in the advertisements targeting children. Thus, the result implies that the disproportionate category is due to product ingredients.

This study also tested whether cereals, sweets/snacks, and beverages in the advertisements targeting children were sugared. In total, 30.1% of food advertisements were for sweets/snacks, 22.4% were for cereals, and 10.3% were for beverages ( $N = 1,108$ ). A chi-square test was calculated to find out the frequencies of cereals, sweets/snacks, and beverages which were sugared. The different proportions were statistically significant,  $\chi^2 (6, N = 1,108) = 2216.00, P < .01$ . As shown in Table 3, all sweets/snacks (100%) and cereals (100%) were sugared. For the beverages, while 71.4% of beverages were sugared, 28.6% of beverages were not sugared.

**Table 2: Distribution of USDHHS Nutrition Guide by Food Product Types.**

	WHOA Foods	USDDHS SLOW Foods	Total
<b>Cereals</b>	395 100.0%	0 0.0%	395 100.0%
<b>Sweets/Snacks</b>	531 100.0%	0 0.0%	531 100.0%
<b>Salted Snacks</b>	0 0.0%	270 100.0%	270 100.0%
<b>Beverages</b>	0 0.0%	182 100.0%	182 100.0%
<b>Dairy Products and Substitutes</b>	67 100.0%	0 0.0%	67 100.0%
<b>Breads, Pastries, and Pastas</b>	0 0.0%	4 100.0%	4 100.0%
<b>Combination Foods</b>	0 0.0%	81 100.0%	81 100.0%
<b>Other</b>	64 100.0%	0 100.0%	64 100.0%
<b>Total</b>	1057 66.3%	537 33.7%	1594 100.0%

$\chi^2 (7, N = 1,594) = 1594.00, P < .01.$

**Table 3: Distribution of Sugared Cereals, Sugared Sweets/Snacks, and Sugared Beverages.**

	No Sugared	Sugared Cereals	Sugared Sweets/Snacks	Sugared Beverages	Total
<b>Cereals</b>	0 0.0%	395 100.0%	0 0.0%	0 0.0%	395 100.0%
<b>Sweets/Snacks</b>	0 0.0%	0 0.0%	531 100.0%	0 0.0%	531 100.0%
<b>Beverages</b>	52 28.6%	0 0.0%	0 0.0%	130 71.4%	182 100.0%
<b>Total</b>	52 4.7%	395 35.6%	531 47.9%	130 11.7%	1108 100.0%

$\chi^2 (6, N = 1,108) = 2216.00, P < .01.$

## Food Advertisement and Target Age

The fourth research question (RQ4) of the study asked whether product types and their nutritional quality in food advertisements changed when they targeted children at different ages. In order to answer research question 4, several chi-square tests were conducted.

First, the researcher tried to understand differences in food products when they targeted different age groups of children. The chi-square test results indicated that the differences in frequency of the product categories and age groups were statistically significant,  $\chi^2(20, N = 1,762) = 1068.32, P < .01$ . As shown in Table 4, the frequency of food advertisements which were high in cereals, sweets/snacks, salted snacks, beverages, fast food restaurants, and combination foods were concentrated on the category of school-aged children. Most of the cereal advertisements ( $N = 327, 82.8\%$ ) appeared in children programs targeting school-aged children and 17.2% of cereal advertisements ( $N = 68$ ) appeared in children programs targeting adolescents. There were not any cereal advertisements targeting preschoolers. Similarly, most of the sweet and snack advertisements ( $N = 418, 78.7\%$ ) were concentrated on school-aged children, 20.7% of sweets and snacks advertisements ( $N = 110$ ) were concentrated on adolescents, and .6% of sweets and snacks advertisements ( $N = 3$ ) were concentrated on preschoolers. In addition, while there were not any advertisements for salted snacks targeting preschoolers, 60.4% of these advertisements ( $N = 163$ ) appeared in children programs targeting school-aged children and 39.6% of these advertisements ( $N = 107$ ) appeared in children programs targeting adolescents.



For beverages, there were 110 advertisements (60.4%) targeting school-aged children and there were 72 advertisements (39.6%) targeting adolescents. There were not any beverage advertisements targeting preschoolers. More than half of the advertisements for dairy products and substitutes ( $N = 37$ , 55.2%) targeted adolescents while 32.8% of these advertisements ( $N = 22$ ) were concentrated on school-aged children. Only 11.9% of dairy products and substitutes ( $N = 8$ ) appeared in children programming targeting preschoolers. Even though there were a few advertisements for breads, pastries, and pastas, all these advertisements ( $N = 4$ , 100%) targeted only preschoolers. Similarly, although there were a few advertisements for vitamins and medicine, most of these advertisements ( $N = 6$ , 85.7%) targeted preschoolers. Only one advertisement for vitamins and medicine (14.3%) targeted adolescents.

Most of the advertisements for fast food restaurants ( $N = 72$ , 67.3%) appeared in children programs targeting school-aged children while 32.7% of advertisements for fast food restaurants ( $N = 35$ ) appeared in children programs targeting adolescents. There were not any advertisements for fast food restaurants targeting preschoolers. More than half of the advertisements for non-fast food restaurants ( $N = 30$ , 55.6%) appeared in children programs targeting preschoolers while 33.3% of advertisements for non-fast food restaurants ( $N = 18$ ) appeared in children programs targeting school-aged children. 11.1% of these advertisements ( $N = 6$ ) targeted adolescents. For combination foods, there were 58 advertisements (71.6%) that targeted school-aged children and there were 23 advertisements (28.4%) that targeted adolescents. There were not any combination food advertisements targeting preschoolers. In addition, 62.5% of advertisements in the other category ( $N = 40$ ) appeared in children

programs targeting preschoolers while 34.4% of advertisements in the other category ( $N = 22$ ) appeared in children programs targeting school-aged children. 3.1% of these advertisements ( $N = 2$ ) targeted to adolescents.

**Table 4: Distribution of Different Food Product Categories Targeting Children at Different Age Groups.**

	Ad's Target Age			Total
	Preschoolers	School-aged Children	Adolescent	
<b>Cereals</b>	0 0.0%	327 82.8%	68 17.2%	395 100.0%
<b>Sweets/Snacks</b>	3 0.6%	418 78.7%	110 20.7%	531 100.0%
<b>Salted Snacks</b>	0 0.0%	163 60.4%	107 39.6%	270 100.0%
<b>Beverages</b>	0 0.0%	110 60.4%	72 39.6%	182 100.0%
<b>Dairy Products and Substitutes</b>	8 11.9%	22 32.8%	37 55.2%	67 100.0%
<b>Breads, Pastries, and Pastas</b>	4 100.0%	0 0.0%	0 0.0%	4 100.0%
<b>Vitamins and Medicine</b>	6 85.7%	0 0.0%	1 14.3%	7 100.0%
<b>Fast Food Restaurants</b>	0 0.0%	72 67.3%	35 32.7%	107 100.0%
<b>Non-Fast Food Restaurants</b>	30 55.6%	18 33.3%	6 11.1%	54 100.0%
<b>Combination Foods</b>	0 0.0%	58 71.6%	23 28.4%	81 100.0%
<b>Other</b>	40 62.5%	22 34.4%	2 3.1%	64 100.0%
<b>Total</b>	91 5.2%	1210 68.7%	461 26.2%	1762 100.0%

$\chi^2(20, N = 1,762) = 1068.32, P < .01.$

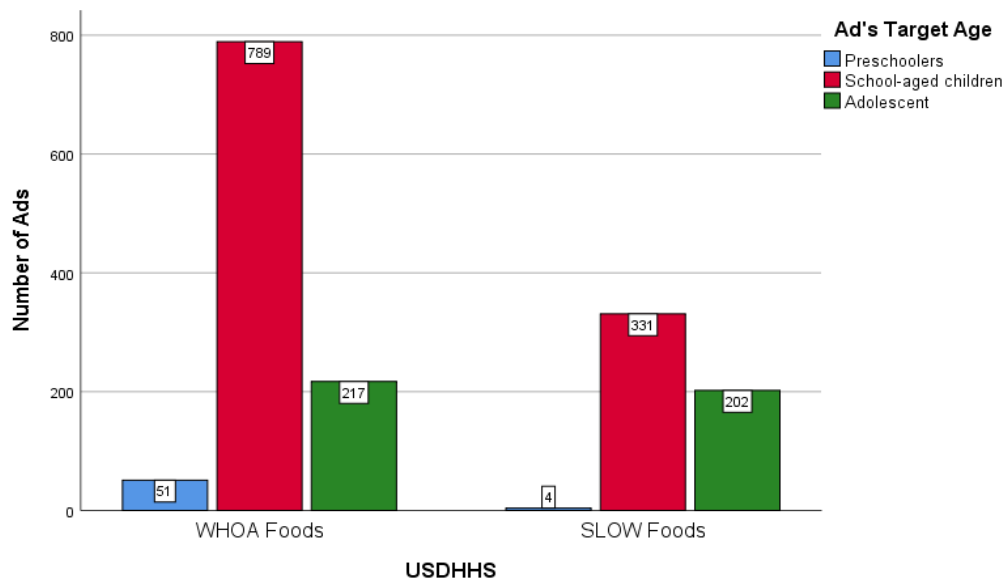
Finally, the chi-square test results demonstrated that most of the food advertisements ( $N = 1,210, 68.7%$ ) targeted school-aged children while 26.2% of food advertisements ( $N = 461$ ) targeted adolescents. Only 5.2% of food advertisements ( $N = 91$ ) targeted preschoolers.

Second, the researcher tried to understand if there are differences in the frequencies of food products according to USDHHS nutrition guide when they targeted to children at different ages. The chi-square test results were statistically significant,  $\chi^2 (2, N = 1,594) = 65.30, P < .01$ . As shown in Table 5, the majority of food ads in WHOA food category of USDHHS nutrition guide ( $N = 789, 74.6\%$ ) targeted school-aged children, followed by adolescents ( $N = 217, 20.5\%$ ) and preschoolers ( $N = 51, 4.8\%$ ), respectively. Similarly, the majority of food ads in SLOW food category of USDHHS nutrition guide ( $N = 331, 61.6\%$ ) targeted school-aged children, followed by adolescents ( $N = 202, 37.6\%$ ) and preschoolers ( $N = 4, .7\%$ ), respectively. There were not any food advertisements that fitted in the GO food category of the USDHHS nutrition guide. Figure 3 also illustrates the differences in USDHHS nutrition guide by target age.

**Table 5: Distribution of USDHHS Nutrition Guide by Target Age.**

	Preschoolers	School-aged Children	Adolescent	Total
<b>WHOA Foods</b>	51 4.8%	789 74.6%	217 20.5%	1057 100.0%
<b>SLOW Foods</b>	4 0.7%	331 61.6%	202 37.6%	537 100.0%
<b>Total</b>	55 3.5%	1120 70.3%	419 26.3%	1594 100.0%

$\chi^2 (2, N = 1,594) = 65.30, P < .01$ .



**Figure 3: Number of Advertisements of USDHHS Nutrition Guide by Target Age.**

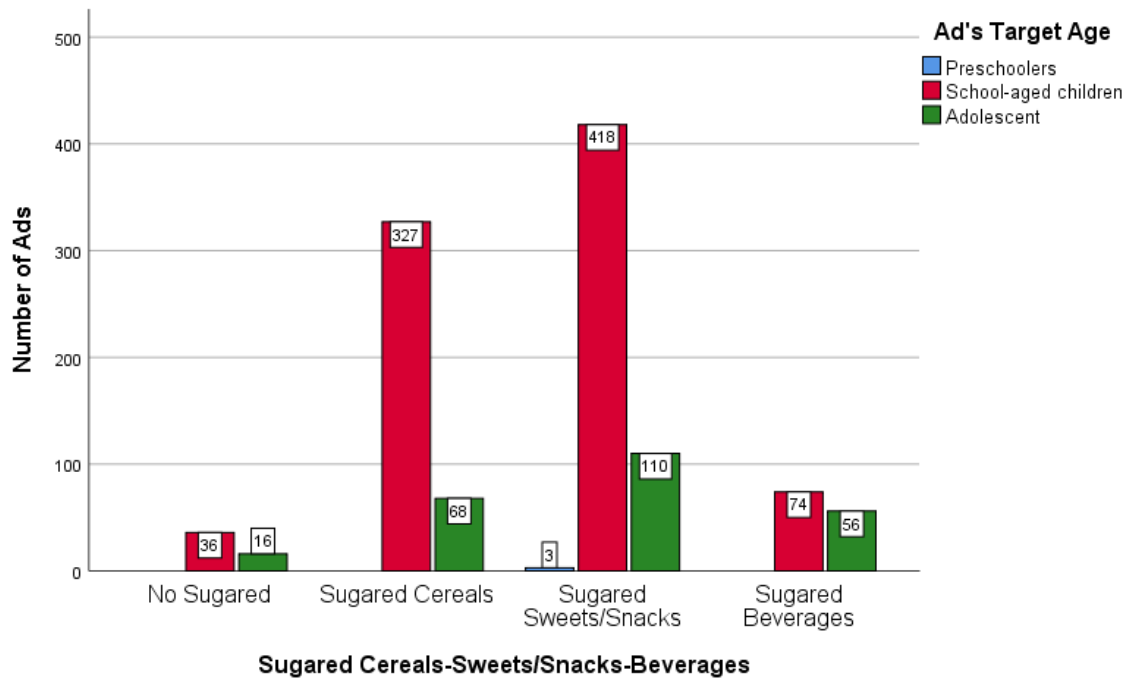
Finally, the researcher tried to understand differences in sugared cereals, sugared sweets/snacks, and sugared beverages in the advertisements when they targeted to children at different ages. The chi-square test results were statistically significant,  $\chi^2(6, N = 1,108) = 43.97, P < .01$ . As shown in Table 6, a substantial portion of the advertisements for sugared cereals ( $N = 327, 82.8\%$ ) appeared in children programs targeting school-aged children while 17.2% of sugared cereals advertisements ( $N = 68, 17.2\%$ ) appeared in children programs targeting adolescents. As had been expected, there were not any sugared cereals advertisements targeted to preschoolers because there were not any cereal advertisements that targeted preschoolers. In the context of sugared sweets and snacks, most of the advertisements ( $N = 418, 78.7\%$ ) targeted school-aged children while 20.7% of advertisements for sugared sweets and snacks ( $N = 110$ ) targeted adolescents. .6% of advertisements for sugared sweets and snacks appeared in children programs targeting preschoolers. There were not any advertisements for beverages targeted preschoolers;

therefore, as had been expected there were not any sugared beverages targeted preschoolers. On the other hand, in the context of sugared beverages, most of the advertisements for sugared beverages ( $N = 74$ , 56.9%) targeted school-aged children while 43.1% of advertisements for sugared beverages ( $N = 56$ ) targeted adolescents. Unlike cereals and sweets/snacks categories, there were also beverages which were not identified as sugared. While most of the advertisements for non-sugared beverages ( $N = 36$ , 69.2%) appeared in children programs targeting school-aged children, 30.8% of advertisements for non-sugared beverages ( $N = 16$ ) appeared in children programs targeting adolescents. The results also demonstrate that in total, there were more sugared beverages ( $N = 130$ ) than non-sugared beverages ( $N = 52$ ) in food-related advertisements. Figure 4 also illustrates the differences in sugared cereals, sugared sweets/snacks and sugared beverages in the advertisements by target age.

**Table 6: Distribution of Sugared Cereals, Sugared Sweets/Snacks, and Sugared Beverages by Target Age.**

	Preschoolers	School-aged Children	Adolescent	Total
<b>Sugared Cereals</b>	0 0.0%	327 82.8%	68 17.2%	395 100.0%
<b>Sugared Sweets/Snacks</b>	3 0.6%	418 78.7%	110 20.7%	531 100.0%
<b>Sugared Beverages</b>	0 0.0%	74 56.9%	56 43.1%	130 100.0%
<b>No Sugared Beverages</b>	0 0.0%	36 69.2%	16 30.8%	52 100.0%
<b>Total</b>	3 0.3%	855 77.2%	250 22.6%	1108 100.0%

$\chi^2(6, N = 1,108) = 43.97, P < .01.$



**Figure 4: Number of Advertisements of Sugared Cereals, Sweets/Snacks, and Beverages by Target Age.**

## CHAPTER 5: DISCUSSION

This study explored the food product categories of advertisements targeting children and compared the findings to the previous content analyses of food advertising in order to understand to what extent food advertisements targeting children has changed since the last content analysis was done. In addition, using the nutrition guide prepared by USDHHS, the study examined the nutritional quality of the food products in the advertisements. Finally, this study investigated how food product types and their nutritional quality varied depending on the age of the target audience by grouping the advertisements targeting preschoolers, school aged children, and adolescent. This study contributes to the literature and offers an update about television food advertising targeting children. The study is significant because not many studies examined the relationship between food advertisements and targeting children different age groups. In addition, this study is the first to examine merely food product types and their nutritional guide on children's cable networks.

The study found that foods (38.1%) were the most dominant products that appeared in children programming followed by shopping (11.2%) and household cleaners (9.1%). Kunkel & Gantz (1992) found that toy advertisements (33.8%) were the products in children programming that appeared most. Interestingly, in the current study, toy advertisements (9%) placed themselves in fourth row and this implies that there has been a huge decline on toy advertisements targeting children over 28 years.

In the context of food product types, this study confirmed several previous content analyses' findings that sweets and snacks (30.1%) were the most frequently advertised food products in food advertisements targeting children (Cotugna, 1988; Gantz et al., 2007;

Harrison & Marske, 2005; Powell et al., 2007a). Even though other previous content analyses found that cereals were appearing more frequently than sweets and snacks, the proportion of cereals (22.4%) that appeared in the current study was quite similar to some of these previous studies; for instance, Condry et al. (1988) found 20.5% in 1985 and 22.8% in 1987; Kunkel & Gantz (1992) found 22.4%, and Castonguay et al. (2013) found 24% cereal advertisements in their study. In addition, similar to the previous content analyses, fruits and vegetables were not found in the multitude of food advertising (Brown, 1977; Gamble & Cotugna, 1999; Gantz et al., 2007; Kotz & Story, 1994; Powell et al., 2007a).

For the nutritional quality of these food products, similar to previous content analyses, the majority of the food advertisements promoted WHOA foods (66.3%) which are recommended for children to stay away and only eat on special occasions (Castonguay et al., 2013; Kunkel et al., 2015; Stitt & Kunkel, 2008). Moreover, there were not any food advertisements that promoted GO foods which are considered healthy foods that children can consume, anytime. All sweets/snacks and cereals promoted WHOA foods. In addition, the study found that all cereals and sweets/ snacks were sugared in advertisements targeting children. Since sugar is considered one of the harmful items to health, it is consistent cereals and sweets/snacks were sugared and also placed themselves in WHOA foods category. On the other hand, all beverages promoted SLOW foods in the advertisements targeting children. In addition, while 71.4% of beverages were sugared, 28.6% of beverages were not sugared. The reason for the beverages promoting SLOW foods is that the products in the advertisements for beverages included 2% low-fat milk and 100% fruit juices. However, this did not change the fact that these products did not include added sugar in their ingredients.



Therefore, these products for beverages fit in SLOW food category which refers to foods that children can drink sometimes because of its disproportionate ingredients.

Another important finding of the study is that most of the food advertisements (68.7%) appeared in children programs targeting school-aged children and food product types and their nutritional quality in advertisements changed when they targeted children at different ages. The majority of food advertisements that were high in cereals, sweets/snacks, salted snacks, beverages, fast food restaurants, and combination foods were concentrated on the category of school-aged children. Similarly, the majority of food ads in WHOA food category (74.6%), sugared cereals (82.8%), sweets/snacks (78.7%), and sugared beverages (56.9%) appeared children programs targeting school-aged children.

Targeting mostly school-aged children is not really surprising considering their market value. Previous studies showed that school-aged children in the U.S. spent their own money while shopping. They also influence their parents' shopping choices, as an example, in 2002, children affected around \$650 billion worth of their parents' shopping choices (Schor & Ford, 2007). In the context of advertising, taking into account the fundamental goal is to sell products, it seems to be a clever choice targeting school-aged children.

On the other hand, the overwhelming promotion of high-sugared foods and foods with low nutritional value focused on such defenseless children can be seen as abuse since children do not understand that advertisements' ultimate goal is to sell their products and do not have the capacity of apprehend the advertising (Kotz & Story, 1994). Moreover, claims, including “1% low-fat,” “2% low-fat,” and “100% fruit juice” were prevalent in food

advertising targeting children. However, understanding the nutritional value of food products may be really difficult for children. Previous studies found that preschoolers (children under seven years old) and school-aged children (more specifically, children aged 10 years old) do not really understand the real intents and messages of food advertisements (Oates et al., 2002). Because of the lack of ability of younger children to comprehend advertisements, it is argued that advertisers should be much more cautious when targeting children (Kunkel et al., 2004).

In addition, the current study found that only 26.2% of food products and 5.2% of food products targeted adolescents and preschoolers, respectively. Powell et al. (2007b) only examined the adolescents' exposure to televised food advertising and the authors found that 26% of food advertisements targeted adolescents. The findings of these two studies in the context of food advertising targeting adolescents are extremely consistent.

The impact of television advertisements on children's food consumption is crucial to consider. According to Sanyaolu et al. (2019), the occurrence of childhood obesity has doubled in school-aged children and tripled in adolescents over the last 30 years. As cited in the same study, the most recent data from the National Health and Nutrition Examination Survey indicated that the frequency of obesity among school-aged children and adolescents was 18.5% in 2015-2016 in the U.S. In addition, the frequency of obesity among preschoolers was 13.9%. The increase of obesity in school-aged children also supports the findings of this study as the majority of food ads in WHOA food category, sugared cereals, sweets/snacks, and beverages appeared in children programs targeting school-aged children. There has been evidence that there is a relationship between the abundance of watching

television and exposure to food advertisements and potential health problems including childhood obesity (Dietz & Gortmaker, 1985; Harris et al., 2009; Goris et al., 2010; Lobstein & Dobb, 2005; Matheson et al., 2004; Mcnutt et al., 1997; Veerman et al., 2009).

The findings of this study also indicate that even though government and its agencies (i.e., FTC, HHS, and CFBAI) aim to diminish these negative effects on children's health and well-being by initiating various campaigns to regulate content of food advertisements, television advertising targeting children still continues to promote unhealthy dietary components.

### **Theoretical Implications**

Social cognitive theory provides a theoretical foundation for this study. The theory explains how individuals learn by observing and imitating others, especially through media (Bandura, 1995; Bandura & Walters, 1977). Social cognitive theory is highly dependent upon findings from content analyses because in order to fully understand the possible effects of the contents of food advertising, there is a need to continue to analyze the content itself (Turner, 2011).

Based on the findings of this study, social cognitive theory advocates that because the majority of the food products promoted WHOA foods and all cereals, sweets/snacks, and most of the beverages were sugared in the food advertisements targeting children, children appear more likely to want to consume these unhealthy products that they had seen in the advertisements. This implication is based on the attention subprocess of social cognitive theory. It is essential to comprehend the kind of food products presented in children networks

because being exposed to these products is the first step of learning from media. As Bandura (2001) indicated that children can learn merely from observation (watching advertisements is as an example of the environmental component of the social cognitive theory), without interacting or experiencing the events firsthand. That means regardless of the messages or claims in the advertisements, viewing an unhealthy product in an advertisement is enough for a child to learn it and want to consume it. It is also important to keep in mind that personal and situational factors and reinforcements can boost the observational learning process.

In addition, the study found that sweets and snacks were the most dominant products that appeared in children's advertising. Social cognitive theory explains the frequency of items with its "retention" subprocess. Since sweets and snacks appeared more frequently in advertising targeting children, sweets and snacks will more likely stay in children's memory than the less appeared one, such as breads, pastries and pastas. This eventually will lead to children want to consume sweets and snacks rather than the other less-frequently appearing products.

Even though the current study did not analyze the appeals that were used in the food advertisements, based on the findings of previous studies, the motivation subprocess of social cognitive theory also has implications for the current study. Individuals' motivation for buying a product is mostly based on ration or emotion (Albers-Miller & Stafford, 1999). Rational advertising relies on the persuasive power of arguments to convince the consumer regarding a certain brand or the product. These advertising may rely on the quality or performance of a particular product (Albers-Miller & Stafford, 1999). On the other hand, emotional advertising aims to make the consumer feel confident about a likeable or friendly

product. In other words, this type of advertising relies on consumer's feelings (Albert-Miller & Stafford 1999). Emotional appeals aim to get the attention of the target audience to the products (Panda et al. 2013). A study that was conducted in United Kingdom found that food advertisements apply emotional appeals such as fun and happiness to increase the consumption of products that were presented in the advertisements (Boyland & Halford, 2013; Lewis & Hill, 1998). Similarly, studies that were conducted in U.S. signified that advertisers promote their food products mostly with fun, happiness, and excitement (Connor, 2006; Folta et al., 2006; Page & Brewster, 2007; Stitt & Kunkel, 2008). Based on the findings of these previous studies, it is arguable that how ethical using appeals is, such as fun and happiness in the advertisements for unhealthy food products, such as sweets/snacks or cereals when targeting children. It seems that children appear mostly exposed to these products by watching kids in the advertisements who have an enjoyable time while eating. Eventually, that enhances children's attention to the advertisements.

Consequently, the production subprocess of social cognitive theory supported that many previous studies of food advertisements found that due to the contents of food advertisements that children were exposed to, they consumed more unhealthy foods, such as junk food, sweets and snacks as well as soft drinks (Andreyeva et al., 2011; Borzekowski & Robinson, 2001; Buijzen et al., 2008; Coon et al., 2001; Dixon et al., 2007; Gorn & Goldberg, 1982; Halford et al., 2007; Halford et al., 2008; Harris et al., 2009; Lobstein & Dibb, 2005; Mehta et al., 2010). Eventually, consuming unhealthy foods led to serious health problems; for instance, obesity, hearth diseases, and Type 2 diabetes (Dietz & Gortmaker, 1985; Harris et al., 2009; Goris et al., 2010; Lobstein & Dibb, 2005; Matheson et al., 2004;

McNutt et al., 1997; Veerman et al., 2009). Most of these effect studies explained their findings in the light of social cognitive theory. Speculatively, similar outcomes can be expected for children based on the current study's findings.

There has also been evidence that diet and exercise patterns can influence these outcomes and these serious health problems follow from childhood to adulthood (Shrestha & Copenhaver, 2015). Therefore, there is a strong relationship between eating behaviors established during childhood and health later in adulthood. Social cognitive theory suggests that observational learning process are long-lasting and may be difficult to alter later in the life (Damiano, 2003).

### **Practical Implications**

The findings of the study offer several practical implications for policy makers, marketing practitioners as well as for consumers. The current content analysis supports that sugared sweets/snacks, sugared cereals, and sugared beverages are still the most prevalent product types in food advertisements targeting children. Food advertising targeting children mostly promotes WHOA foods and the majority of these unhealthy food products appeared in children television programs targeting school-aged children. Scientific and governmental agencies, including FTC, HHS, and CFBAI, etc. suggested industry self-regulation of food advertising targeting children. In particular, the findings support the view that agencies need to be more straight on their recommendations; moreover, more legal regulations and actions are needed to protect younger children from potentially eating unhealthy food products because of their observational learning process of food advertising. As suggested by several researchers, advertisers should be much more vigilant when targeting children (Kunkel et al.,

2004). Policy makers should also use PSAs to promote healthy eating as a potential mechanism to develop children's perceptions of nutrition, food consumption patterns, and weight outcomes (Powell et al., 2007a). In addition, this study recommends that policy makers and marketing practitioners should pay special attention to advertising targeting school-aged children.

Social cognitive theory explains that children with different sociodemographic status, ages, races, and gender may receive different messages from mass media and eventually, effects of the media can be different. As an example, children with lower sociodemographic status and minority race were more likely to consume fast food (Andreyeva et al., 2011). Therefore, this study advocates that policy makers should develop more targeted policies according to children at different racial/ethnic groups, and socioeconomic status.

From the standpoint of marketing practitioners, even though the study indicates that they chose the right target age to promote their products due to school-aged children's market value, they need to consider the fact that they may potentially damage their consumers' childhood well-being as well as their adulthood. Marketing practitioners should consider promoting more GO foods instead of WHOA foods when targeting children. They need to avoid advertising sugared cereals, sweets/snacks, and beverages, etc. in children programming by adapting the recommendations of governmental and scientific agencies.

Taking into account the lack of ability of younger children to comprehend advertisements, this study advocates that parental involvement is the most significant factor in controlling of the children's diet. Previous studies found that most of the parents (75%) do

not limit and control the amount that their children watch television. As cited in Harrison & Marske (2005), parents involvement plays a mediator role to decrease the impact of television food advertising on children's shopping requests. Therefore, this study suggests that parents should limit and control their children's television viewing as well as shopping requests. In addition, parents should be educated and encouraged to find healthy products for their children, more specifically, they can be introduced to "We Can!" nutrition guide since it is written in a clear and fun format.

In addition to parents, schools also play an important role in educating children regarding to increase healthy eating. Children do not understand the nutritional facts of the products that they consume. Therefore, public agencies, schools, and parents need to educate children how to read nutritional facts of food products and also encourage children checking these facts before consuming.

### **Limitations and Suggestions for Future Research**

This study has limitations that should be distinguished. First, the content analysis sample was limited to food advertisements targeting children from July 13 to July 17 in 2020 television programs targeting primarily children. Hence, the generalizability of the results is limited. Future studies need to examine product types in food advertisements from other time periods and other media including social media and video games.

The second limitation is that this study adopted the "We can!" nutrition guide prepared by USDHHS. Future studies can adopt other nutrition guides. For example, Powell et al. (2013) used Interagency Working Group (IWG) nutrition recommendations to guide



their study. Moreover, future studies can examine more specifically the ingredients of food products (i.e., sodium, fat and calorie intake) that appeared in the advertisements targeting children.

Third, while content analysis offers an overview of the frequencies of food product types and shows us what is currently being practiced, it cannot explain the efficiency of advertisements in interacting with their target audiences. Future studies can examine how food advertising affects audience perceptions and behaviors towards products they had seen in the advertisement.

Fourth, the current study examined food advertisements in three cable networks primarily target children. Future studies can examine product replacements or the foods themselves in the actual children programs. For example, broadcast channels as PBS or the popular television network, Netflix, can be good to conduct such studies.

Finally, since the findings of current study found that food advertisements frequently appeared in children's programming targeting school-aged children, further assistance needs to focus on the relationship between school-aged children and food advertisements.

Despite the limitations, the reported results improve knowledge on the content of food advertising targeting children and provide a foundation for future research.

## **Conclusion**

The product types and their nutritional quality in food advertisements targeting children have not shown significant development in the past 40 years. The patterns

recognized in the findings of the current study look notably similar to previous content analyses on televised food advertising targeting children. Substantially, this study argues that advertisers mostly target school-aged children when they promote food products which the majority of them are considered unhealthy. Taking into account advertising in society plays a role as mirrors, “the way people think, what moves them, how they relate to each other, how they live, eat, relax, and enjoy themselves,” it is possible that a society’s food choices and consumptions relate to its advertising content (Paek et al., 2011).

Researches, policy makers, and marketing practitioners should be aware of the fact that televised food advertising is a strong influence on children and continues to recommend for industry self-regulation or try to assess more strict regulations on food advertising targeting children. On the other hand, it should not be forgotten that television is an economic enterprise where advertisements are their biggest support. Therefore, consumers may need to act more realistically and develop strategies for their diet regardless of the expectation from the government or its agencies to prevent such types of advertising (Gamble & Cotugna, 1999).

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## **APPENDIX A**

The list of children programming which is analyzed in this study listed below:

### Cartoon Network:

1. The Amazing World of Gumball
2. Apple & Onion
3. Teen Titans Go!
4. Craig of the Creek
5. Mao Mao: Heroes of Pure Heart
6. Total DramaRama
7. We Bare Bears

### Disney Channel:

8. Puppy Dog Pals
9. Mira, Royal Detective
10. T.O.T.S.
11. Mickey Mouse
12. Miraculous: Tales of Ladybug and Cat Noir
13. Big City Greens
14. Amphibia
15. Bunk'd
16. Raven's Home
17. Coop & Cami Ask the World
18. Jessie
19. Sydney to the Max

20. Bluey

21. Disney Channel Summer Sing-Along

Nickelodeon:

22. Paw Patrol

23. Bubble Guppies

24. Rio

25. SpongeBob SquarePants

26. Blue's Clues & You

27. The Loud House

28. Nickelodeon's Unfiltered

29. Cake My Day

## APPENDIX B

### Coding Guide

The advertisements will be coded using the following guideline. The analyses will be performed using IBM SPSS Statistics software.

#### FOR ALL ADVERTISEMENTS:

1. **Ad Number** – All advertisements will be numbered in the order of broadcast date and time.
2. **Food Related (Yes/No)** - If the advertisement is food related (yes), it will be coded as #1, if it is not food related (no), it will be coded as #0.

#### FOR THOSE ARE NO:

1. **Type of Ads:** Each type of advertisements except foods will be identified.
  - a. Toys - will be coded as #1, i.e., I Dig Monsters, Cry Babies, Barbie Dream House, Boom City Racers, etc.
  - b. Movies and Video Games – will be coded as #2, i.e., Nintendo, CN Arcade, Pokémon Go, etc.
  - c. Toiletries – will be coded as #3, i.e., Dove Shampoo, Gold Bond Ultimate, Crest Toothpaste, etc.
  - d. Household Cleaners – will be coded as #4, i.e., Clorox Products, Blueland Cleaning Products, Gain Essential Oil Detergent, Bounce Wrinkle Guard, etc.
  - e. Public Service Announcements (PSA) – will be coded as #5, i.e., #Kidstogether, #Washhands



- f. School Utilities – will be coded as #6, i.e., Cra-Z-art Colored Pencils, Pilot Pen, etc.
- g. Education – will be coded as #7, i.e., K12 Education, ABCmouse.com, Connections Academy, etc.
- h. Shopping – will be coded as #8, i.e., Amazon, Walmart, Target, Macys, Lowe’s, Old Navy, etc.
- i. Other – will be coded as #9, i.e., Insurance Companies, Autocare, Telecommunications Companies, etc.

List the name and description of any other type of advertisements that does not fall into the previous categories here:

- i. \_\_\_\_\_
- ii. \_\_\_\_\_

FOR THOSE ARE YES:

1. **Date** – The day of the advertisement is broadcast will be recorded.
2. **Starting Time** – The starting time of the advertisement will be recorded.
3. **Ending Time** – The ending time of the advertisement will be recorded.

(The reason for coding starting and ending time of advertisements is to understand how many minutes/hours children are exposed to food advertisements per day.)

4. **Ad 2 Number** - Here, if there are duplicate advertisements, these will be coded with the same number. For example; if Cheerios ad is coded as #2, it will be coded as #2 every time it appears.
5. **Product Brand** – The brands in the food advertisements will be recorded.

**6. Food Category** – Each food product type will be identified (Gantz et al., 2007; Powel et al., 2007a).

- a. Cereals - will be coded as #1; i.e., Kellogg's Apple Jacks, Post Cocoa Pebbles, etc.
- b. Sweets/Snacks - will be coded as #2; i.e., Snickers, Jolly Rancher Hard Candy, etc.
- c. Salted Snacks - will be coded as #3; i.e., Ritz Original Crackers, Lays Classic Potato Chips, etc.
- d. Beverages - will be coded as #4; i.e., Coca Cola, Powerade, Fuze tea, Fruit juices including 100% Fruit juices etc.
- e. Dairy Products and Substitutes - will be coded as #5, i.e., Horizon Low Fat Milk, Frigo Cheese Heads String Cheese, etc.
- f. Breads, Pastries, and Pastas - will be coded as #6, i.e., Nature's Own Honey Wheat Bread, Barilla Penne, etc.
- g. Meat, Poultry, and Fish - will be coded as #7, i.e., Tyson Cornish Hen, Oscar Mayer Bologna, etc.
- h. Prepared Foods (soups, jellies and jams, peanut butter) - will be coded as #8, i.e., Smucker's Seedless Strawberry Jam, Jif Creamy Peanut Butter, etc.
- i. Fruits and Vegetables - will be coded as #9.
- j. Vitamins and Medicine - will be coded as #10, i.e., One A Day Kids Trolls Complete Multivitamin Gummies, etc.
- k. Fast Food Restaurants - will be coded as #11, i.e., Burger King, Taco Bell, etc.

- l. Non-Fast Food Restaurants - will be coded as #12, i.e., Chilis, Olive Garden, etc.
- m. Combination foods – will be coded as #13, i.e., Lunchables (the box includes lean turkey, reduced fat cheddar, crackers, Capri sun 100% juice, and gummy worms.)
- n. Other - will be coded as #14, i.e., baby foods, baking mix, beans, entrees (prepared), entrees (frozen), French toast (frozen), hot dogs, infant formula, mayonnaise, mustard, nondairy creamer, pasta sauce, pickles, pizza (frozen), preserves, rice mix, salad dressings (bottled and mixed), salsa sauce, barbeque sauce, steak sauce, Worcestershire sauce, sausage, sour cream, syrup, waffles (frozen), whipped topping, etc.)

List the name and description of any other type of product that does not fall into the previous categories here:

iii. \_\_\_\_\_

iv. \_\_\_\_\_

**7. Nutrition Guide by U.S. Department of Health & Human Services (USDHHS)**

- a. GO Foods -will be coded as #3
  - i. Vegetables (All fresh, frozen, and canned vegetables without added fat and sauces)
  - ii. Fruits (All fresh, frozen, and canned in juice)
  - iii. Breads and Cereals (Whole grain breads, pita bread, tortillas, pasta; brown rice; hot and cold unsweetened whole grain breakfast cereals.)

- iv. Milk and Milk Products (Fat-free or 1% low-fat milk, yogurt, and cheese)
  - v. Meats, Poultry, Fish, Eggs, Beans, and Nuts (Trimmed beef and pork; extra lean ground beef; chicken and turkey without skin; tuna canned in water; baked, broiled, steamed, grilled fish and shellfish; beans, split peas, lentils, tofu, egg whites and egg substitutes)
  - vi. No sweets and snacks
  - vii. Fats/Condiments (Vinegar; ketchup; mustard; fat-free creamy salad dressing; fat-free mayonnaise; fat-free sour cream)
  - viii. Beverages (Water, fat-free milk, or 1% low-fat milk; diet soda; unsweetened ice tea or diet iced tea and lemonade)
- b. SLOW Foods (will be coded as #2)
- i. Vegetables (All vegetables with added fat and sauces; oven-baked French Fries; avocado)
  - ii. Fruits (100% fruit juice; fruits canned in light syrup; dried fruits)
  - iii. Breads and Cereals (White refined flour bread, rice, and pasta. French toast; taco shells; combread; biscuits; granola; waffles; and pancakes)
  - iv. Milk and Milk Products (2% low-fat milk; processed cheese spread)
  - v. Meats, Poultry, Fish, Eggs, Beans, and Nuts (Lean ground beef, broiled hamburgers; ham, Canadian bacon; chicken and turkey with skin; low-fat hot dogs; tuna canned in oil; peanut butter; nuts; whole eggs cooked without added fat)

- vi. Sweets and Snacks (Ice milk bars; frozen fruit juice bars; low-fat or fat-free frozen yogurt and ice cream; fig bars, ginger snaps, baked chip; low-fat microwave popcorn; pretzels)
  - vii. Fats/Condiments (Vegetable oil, olive oil, and oil-based salad dressing; soft margarine; low-fat creamy salad dressing; low-fat mayonnaise; low-fat sour cream.
  - viii. Beverages (2% low-fat milk; 100 percent fruit juice; sport drinks)
- c. WHOA Foods (will be coded as #1)
- i. Vegetables (Fried potatoes including French fries and hash browns; other deep-fried vegetables)
  - ii. Fruits (Fruits canned in heavy syrup)
  - iii. Breads and Cereals (Croissants; muffins; doughnuts; sweet rolls; crackers made with trans fats; sweetened breakfast cereals)
  - iv. Milk and Milk Products (Whole milk; full-fat American, cheddar, Colby, Swiss, cream cheese; whole-milk yogurt)
  - v. Meats, Poultry, Fish, Eggs, Beans, and Nuts (Untrimmed beef and pork; regular ground beef; fried hamburgers; ribs; bacon; fried chicken, chicken nuggets; hot dogs, lunch meats, pepperoni, sausage; fried fish and shellfish; whole eggs cooked with fat)
  - vi. Sweets and Snacks (Cookies and cakes; pies; cheesecake; ice cream; chocolate; candy; chips; buttered microwave popcorn)

- vii. Fats/Commitment (Butter, stick margarine; lard; salt pork; gravy; regular creamy salad dressing; mayonnaise; tartar sauce; sour cream; cheese sauce; cream sauce; cream cheese dips)
- viii. Beverages (Whole milk; regular soda; calorically sweetened iced teas and lemonade; fruit drinks with less than 100% fruit juice)

FOR THOSE ARE CEREALS, SWEETS/SNACKS, AND BEVERAGES:

**8. Sugared Cereals, Sweets/Snacks, and Beverages** (Castonguay et al., 2013; Stitt & Kunkel, 2008)

- a. Sugared Cereals - will be coded as #1; sugared cereals will be identified if sugar is one of the first three in their ingredients lists.
- b. Sugared Sweets/Snack - will be coded as #2; sugared sweets/snacks will be identified if sugar is one of the first three in their ingredients lists.
- c. Sugared Beverages - will be coded as #3; beverages will be considered sugared if they contained added sugar.
- d. If cereals, sweets/snacks, and beverages are not sugared, they will be coded as #0.

FOR TARGETED AGE AUDIENCE:

**9. Network's Show name** (i.e., The Loud House, Puppy Dog Pals) – Which show is displayed in the recorded sample.

**10. Show's Start Time** - The starting time of the show of each network will be recorded.

**11. Show's End Time** – The ending time of the show of each network will be recorded.

**12. Show's Target Age** – will be coded following one or more of the criteria

(Hentges et al. 2007):

- i. TV rating guidelines (TV-Y for preschool, TV-Y7 for school-aged, TV-G or TV-PG for adolescent);
- ii. Scheduled time slot (i.e., programs early in the morning mostly targeted preschoolers);
- iii. Television network's own descriptions.

After determining the targeted age of the shows,

- a. Shows targeted to preschoolers will be coded #1,
- b. Shows targeted to school-aged children will be coded #2,
- c. Shows targeted to adolescent will be coded #3.

**13. Ad's Target Age** – will be coded as the same with show's target age. For example, if show's target age is coded as #1, the advertisements within this show will be coded as #1 means targeting to preschoolers.