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Beliefs about Childhood Obesity

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Bridgewater State University

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## **Beliefs about Childhood Obesity**

### **Abstract**

Currently in the United States, it is estimated that 25% of American children are obese. Several factors that may contribute to childhood obesity are environment, eating habits, underlying health conditions, and psychological influences. I plan on becoming an elementary teacher and I was shocked to find out that elementary schools are now cutting physical education classes to as little as thirty minutes and only every other week in some districts. While at the same time increasing the total amount of time students are using computers. I believe it is important that structural issues such as the decrease in physical education are acknowledged as a contributing factor for the increase in childhood obesity. I wanted to find what the average person believes are contributing factors for the increase of childhood obesity and if these factors are based on structural issues or an individual's behavior. For instance, do people believe that childhood obesity has increased due to the increased due to children being lazy and only playing video games or do they believe it is due to the decrease in physical education? To understand people's thoughts on childhood obesity, I used two different but connected methodologies: content analysis and interviews of parents and professionals who work with minor children. For my content analysis, I searched for articles on childhood obesity, coding commenters' opinions about factors contributing to childhood obesity. I interviewed parents and professionals who

work with children to find out what they think about childhood obesity and, specifically, how they feel about physical education in their children's schools. By performing both content data analysis and interviews with parents and professional who work closely with children I was able to find out what some people believe are the main contributing factors to increasing childhood obesity, and what people are saying, overall, about childhood obesity.

### **Introduction**

Over the past several decades the rate of childhood obesity has increased in the United States and many other countries as well. Childhood obesity is a serious epidemic for the United States, with nearly 25% of the child population being obese (Dodson et. al, 2009). A child is defined as obese if the child's body mass index (BMI) is equal to or exceeding the age-gender specific 95th percentile (Raj, Kumar, 2010). In addition to the 25% of the United States child population being obese, 17 % of children aged 2–19 years old are overweight (Dodson et. al, 2009). Childhood obesity can lead to many serious health conditions, such as cardiovascular disease and diabetes which can carry over into adulthood because a majority of obese children become obese adults (Farajian, et. al, 2014). With such a significant amount of children being obese in the United States, changes need to be made or the future of these children's health may be compromised.

Physical education classes are important, especially at the elementary level, because they help children develop motor skills, and positive attitudes towards living a physically active lifestyle. The younger a person is when they develop a habit of living a physically active lifestyle the easier it is for them to apply in their everyday life and through adulthood. Some obstacles that may stand in the way of helping children develop habits of living an active lifestyle is the decrease in physical education provided in elementary schools and the increase in technology

use. I believe it is important that structural issues such as the decrease in physical education are acknowledged as a contributing factor for the increase in childhood obesity, as well as other contributing factors such as the increase in use of technology, and weight stigmatization which are contributing factors in the rise of childhood obesity. Through my research I explain how others perceive issues that are related to childhood obesity. I was able to create a picture of our social ideas about childhood obesity by considering anonymous commenters to obesity articles as well as interviews with parents and people who work closely with children, to find out if their perceptions of childhood obesity are similar or differ from scientific understandings of obesity.

### **Literature Review**

“For the first time, North American children face a future in which experts expect that diminished opportunities for physical activity, both in and outside of the school day, will result in significant health problems” (DeCorby, K., Halas, J., Dixon, S., Wintrup, L., & Janzen, H. (2005). Currently worldwide more children are living a sedentary lifestyle compared to living an active lifestyle. Living a sedentary lifestyle results in children consuming more calories than the number of calories burned through daily physical activity which leads to continued weight gain and is one of the most common factors for childhood obesity. Energy balance is calories consumed being equal to calories expended, energy balance will reduce the prevalence of obesity among youth in the United States (Farajian, P. et.al, (2014). Current trends, such as decreasing physical education classes and lack of physical activity, as well as the increasing use of technology, are likely contributing to the amount of time children are staying sedentary, and increases the risk of a child becoming obese. It is important to reduce the amount of time children stay sedentary because “physical inactivity and sedentary behavior have been independently associated with a wide range of negative health indicators including obesity, poor cardio-metabolic health, and

poor psychosocial health” (Roblin, 2007, p. 636). Additionally obese people are often stigmatized and are stereotyped as being lazy, stupid, unattractive, and undisciplined. As a result, overweight people experience more social exclusion, isolation, and criticism compared to thin people. (Harriger, J., Calogero, R., Witherington, D., & Smith, J, 2010, p.610). Biased perceptions regarding childhood obesity, attributed to stereotypes, tend to maintain culpability to an individual level and often ignore the structural factors that play a key role in this epidemic.

### ***Technology and Nutrition***

An increase in screen based activities such as watching television, video games, and computer use have been linked to an increase in sedentary lifestyle which have been associated with obesity (Saunders, et.al 2013). “International data from the HBSC study show that 66% of girls and 68% of boys watch more than two hours of television per day, and data from a Canadian study show that youth accumulate an average of 7.8 hours of screen time daily”. Nationally 88% of youths ages 8-18 play video games (Elliott, et.al 2012). School personnel reported that technology such as television, computers, and gaming systems play a major role in the inactivity among elementary aged school children. As a result children engage in physical activities less frequently because of an increased access to entertainment-focused electronics (Odum, et, al, 2013). It has been found that children who spend most of their time watching television are more likely to be influenced by food advertisements (LeBlanc, et.al 2013). Roblin, (2007) states the results of a long-term cohort study performed in Britain, which found that children are more likely to eat only the foods being advertised which is often fast food or highly processed products and that greater amount of time viewing television in early childhood predicts a higher BMI in adulthood.

When children are watching TV or using the internet, advertising companies purposely target child audiences, by using different methods such as; spending a lot of money, advertising foods filled with ingredients that keep children coming back for more, enticing children, and targeting parents indirectly (Harvey, A. 2013). The Kaiser Foundation reported that 34 % of television advertising directed at children and teenagers is for candy and snacks, 29 % of advertisements were for cereal, but only 4 % of child and teen-directed advertisements were for dairy products, and no advertisements were for healthier food groups such as fruits and vegetables (Harvey, A., 2013). This is likely having a negative impact on children's diets, 37% of children aged 6 to 17 years consumed one or more servings of regular soft drinks, and 37% of children had 2 or more servings of fruit juice per day (Roblin, 2007). Also in both Canada and America studies performed since the early 1990s suggest there is a trend of children decreasing consumption of milk, vegetables, whole-grain breads, and eggs, and increasing intake of fruit and fruit juice (Roblin, 2007). LeBlanc, et.al, (2015), performed a correlation study of sedentary time and screen time in children around the world. The sample size of this study included 5,844 children ages 9-11 years old from study sites in Australia, Brazil, Canada, China, Colombia, Finland, India, Kenya, Portugal, South Africa, the United Kingdom, and the United States (LeBlanc, et.al, 2015). The results of this study found that children who had a greater amount of sedentary time and screen time, which includes watching TV, using computers, and video games, resulted in children more likely being overweight, which also correlates to not meeting physical activity guidelines. These results are similar to the results of another study discussed by Roblin (2007), which examined children in 34 developed countries and found that children with low physical activity levels and higher television viewing times were overweight compared to normal

weight youth. With the increase of time children spend being sedentary, this lack of physical activity has negative consequences to their health.

### *Negative Impacts from Decreasing Physical Education*

Not only does the quantity of physical education need to be increased but also the quality of the physical education. Physical education classes do not meet the required level of physical activity needed to meet daily requirements. Fifty percent of children and adolescents who participate in school physical education classes (PE) need their level of physical activity increased and students need to be physically active during at least fifty percent of PE class time (Lytle, L. A., (2001). DeCorby et al. (2005) investigated the quality of physical education at two elementary schools. In one school physical education was taught by elementary teachers and in the other a physical education specialist delivered a schoolwide program. DeCorby et. al, (2005) found that the teachers at the school without a physical educator acknowledged that they were inadequately trained and lacked knowledge in physical education. The following describes DeCorby et.al, (2005) findings when interviewing teachers at the school without a physical educator, DeCorby states,

One teacher simply said that she was not certain what she was doing because “I’m not a phys. ed. person.” That uncertainty was echoed by the other teachers. A second teacher concurred that the hardest part of teaching physical education was her lack of knowledge, admitting that “It would be much better for the kids, I think, if we had a phys. ed. specialist who kind of knew their stuff a bit more.” A third teacher described her struggle in terms of planning and knowledge of sports, activities, and games, stating that her understanding was “fairly limited so it’s trying to collect enough information to be able to run the program the way it should be done (DeCorby et al. pg. 211, 2005).

Physical education classes vary greatly all over the United States. When examining the differences in physical activity taught by physical education specialists in twenty schools in Minnesota and Texas, it was found that physical education classes varied in both level of physical activity, and the overall knowledge about physical education provided to students varied between all schools (Lytle, L. A. 2001). By having such great variations in the level of physical activity being taught, and the knowledge being provided about physical activity such as proper form and the importance of being active, student's education and activity level will vary greatly. When 2,479 elementary-aged students were asked to answer a total of 24 survey question to analyze their knowledge of appropriate instructional practices in elementary physical education, it was found that elementary-aged students had participated in, or had been exposed to, inappropriate instructional practices, such as poor form which may result in injury (Barney, et.al, 2014). A cause for many of these inconsistencies and inadequate physical education class is funding.

Proper funding for physical education is a structural reason why many physical education classes are inadequate and display great variation. If an elementary school does not have the adequate funding to provide students with the proper equipment and resources they need, the quality of education provided to students will not meet standards (Decorby, et.al, 2005). An example of this was in 2010, the Obama Administration proposed a reauthorization of the Elementary and Secondary Education Act, which eliminated six programs and consolidated 38 funding mechanisms into 11 new authorities (Elliott, et. al, 2013 as cited in USDE, 2010). As a result one of the six programs that ended up being cut was the Physical Education for Progress Grant, which would have initiated, expanded, or improved physical education programs. When this grant was eliminated it greatly impacted many elementary schools, which previously

received the Physical Education for Progress Grant (Elliott, et. al, 2013). In addition to the United States cutting grants for physical education programs, powerful lobbyist of the food industry are putting money into protecting their interests, making it difficult to decrease the risk of childhood obesity.

### ***Food Industry***

Powerful lobbyist for the food industry contribute a great deal to the childhood obesity epidemic. Many schools receive special promotions and grants by advertising food manufactures' products in their vending machines and elsewhere throughout the school. Dodson, et.al, (2009) states that in 2005, sixteen legislators and staffers from Arkansas, California, Connecticut, Illinois, Maine, Massachusetts, Nevada, New Hampshire, South Carolina, Texas, and Washington were asked to examine barriers and enablers that are contributing to the increase in childhood obesity in the United States. Over half of the legislative respondents discussed the difficulties posed by powerful lobbyists representing manufacturers of unhealthy foods and beverages and how many schools will fear the outcomes of altering school vending machines and legislating school funds. Fast-food companies, International Association of Food Organizations, and food manufacturers were opposed to making changes or banning advertisement of food directed towards children. With the level of control from the government and big corporations have over advertisement, regulations for physical education in school, and funding, it is a large contributing factor that is increasing childhood obesity. Not only are children not expending many calories being sedentary but by spending more time being inactive while watching television and being on the internet they are additionally being influenced by food advertisement companies at home and in school.

### ***Home Environment***

Physical activity, technology, and nutrition are not the only factors contributing to childhood obesity, the home environment also plays a significant role. The home environment can influence the amount of physical activity children have, how much and how often they are using technology, and if they are consuming proper nutrition. Since children have little political power and little control over their own choices, they are largely dependent on others, especially their parents (WOLFSON, et. al, 2015). Beyond that, the parent(s) or caregiver(s) of the child are also responsible for being able to identify if their child is overweight or obese. “Previous research has found that parents who recognize that their overweight child’s weight is a health problem were more likely to be ready to make changes for their child” (Odum, et, al., p.210, 2013). A situational factor due to a changes in society over the years, such as both parents working, has left many parents feeling overwhelmed and having less time to prepare nutritional meals. Additionally parents who are not educated in proper nutrition has resulted in an increase in childhood obesity (Odum, et, al., 2013).It is important for parents to have proper knowledge about nutrition because Myoungock, & Whittemore (2015) states that parental feeding practices, parental support, role modeling behaviors, and parental knowledge of a healthy diet have been strongly associated with children’s weight status and the establishment of health-related behaviors .Overall, the role of parents in the obesity epidemic is highly scrutinized, and it is important to acknowledge other situational factors that are contributing to childhood obesity.

### ***Stereotypes/Biases***

Many people have an over simplistic view about what causes someone to be overweight and obese. These views are often based on stereotypes and biases that are learned and believed to

be true among society. Stereotypes and negative views about overweight and obese people create weight stigmatization, discrimination, and bias. Obese people are stereotyped as lazy, unmotivated, less competent, lacking in self-discipline, and that they are in control of their own weight. Weiner's Attribution Theory of Stigmas (1985) suggests that the perceived causes and stability of a stigmatizing condition will influence affective responses and judgments toward target individuals (Black, Sokol, & Vartanian, 2014). An example of this would be weight stigmatization, which is defined as a "prejudice in which the attribute of being obese or overweight influences one's expectations about the person, usually in terms of negative character assessments" (Lynagh, Cliff, & Morgan, 2015, p. 595). Additionally attribution theory explains how people will ascribe the reason for why a person acts the way they do or appears the way they do based on the fact that the person is responsible for their behavior and not based off of situational factors. An example of this would be when someone blames the reason why a person is obese, to the obese individual's behavior such as their diet, and physical activity. Instead of attributing the reason why an individual is obese to situation factors, which may actually be responsible such as hypothyroidism or poverty. This is an example of fundamental attribution error, which is "the failure to recognize the importance of situational influences on behavior and the corresponding tendency to overemphasize the importance of dispositions on behavior" (Gilovich, p.172, 2015). Unfortunately these stereotypes and biases affect children as well. Wolfson, et.al, (2015), states that negative depictions of obese adults and children in the news media and elsewhere may heighten the public's blame of obese individuals and the parents of obese children. Attributing obesity to solutions within an individual's personal control leads to more blaming and stigmatizing of obese individuals and doesn't acknowledged that solutions need to be made for structural factors that also contribute to the childhood obesity epidemic.

Weight stigmatization is more common among girls starting as early as preschool age. “A recent qualitative report indicated that while mothers of 4-year-old children communicate weight concerns to both sons and daughters, it is primarily with their daughters that they instill a fear of becoming “fat” and the importance of weight control” (Harriger, et. al, 2010, p. 609). Another stereotype associated with obesity is the non-exerciser also known as the “couch potato”. Non-exercisers, like obese people, are looked at by other exercisers as people who are lacking confidence, being lazy, and unmotivated. “Further, research that examines sedentary lifestyle and active lifestyle biases may aid in removing barriers for physical activity because awareness of stereotypes can mitigate the effects of automatic stereotype activation”( Berry, et, al., p. 2986, 2011). Stereotypes and biases towards obese or overweight people affects the individuals attitudes about themselves and how they are viewed by others which may result in an individual being less motivated and will only harm them in the long run.

An individual’s attitudes and perceptions can affect how they perceive someone and influence them to make a positive or negative judgment of someone based on their attitudes and perceptions which may not always be factual. “Our physical activity behavior, whether or not we choose to go to the gym or go for a run, is impacted by attitude, and these behaviors and attitudes are strongly influenced by our experiences in physical education” (Phillips, Silverman, 2012, p. 317). This is an example of a self-fulfilling prophecy, which happens when “people act toward members of certain groups in ways that encourage the very behavior they expect” (Gilovich, T., 2015, p.425). If physical education teachers believe that obese children are lazy and unmotivated, they may give the obese child less attention in class, which may increase the chances that they will develop a negative attitude about being physically active. This is an additional reason why it is important to not only increase the quality and quantity of physical

activity in a child's life, but also to not attribute stereotypes to children so that all children have the chance to develop a positive relationship with being physically active.

In addition to attributing the cause of obesity to stereotypes such as being lazy, unmotivated, less competent, and lacking in self-discipline, people also blame childhood obesity on parents. Wolfson, et. al, (2015) found that the attribution of responsibility to parents is consistently much higher than attributions to other factors, such as schools, health care providers, the food industry, and the government. The Institute of Medicine found that negative public attitudes toward obese individuals could have a detrimental effect on efforts to reduce obesity (Wolfson, et.al, (2015). Negative attitudes towards obese individuals will only increase the rate of obesity.

Overall it has been found that the decrease in physical activity, and the increase of technology use is a contributing to the increase in childhood obesity. Additionally, the increase of technology use is not only contributing to living a sedentary life, and not burning enough calories, advertisement on the internet and TV also impacts nutritional choices made by children and parents, pushing fast food, or highly processed products. The lack of funding for physical education classes directly effects the quality and quantity of education a student will receive. Beyond increasing physical activity levels, and decreased technology use, more research needs to be done to find what changes need to be made within big corporations and the government to help parents and educators create an environment that can help decrease childhood obesity.

## Methods

To begin to understand people's ideas and understandings about childhood obesity, I performed a content analysis of comments on obesity articles and interviewed people who work with, or care, for children, to get their perspectives. Content analysis is a research method used that examines words and images from sources such as media, documents, film, art, and music. This is done by quantifying information into coded categories. Content analysis and interviews with parents of minor children are useful because I am interested in the reasons people give for increasing levels of obesity in children.

When performing my content analysis, I searched for articles related to childhood obesity. By searching for themes on Facebook related to childhood obesity such as physical education, technology, the cost of food, junk food, and educational programs, I was able to examine a variety of responses rather than if I had just used articles promoting one idea which may make my results one sided. Additionally, I focused on articles with a minimum of fifty comments. By having more comments I was able to better understand how average people conceptualize childhood obesity compared to what scientific research tells us. After I found articles with themes related to childhood obesity, I performed content analysis and coded each user's comment. By putting comments into coded categories I was able to identify what commenters stated were the cause or contributing factors of childhood obesity. I coded over 500 comments, searching for themes in people's understandings, biases, and perceptions about childhood obesity.

Article Title	Total Comments
<i>The Childhood Obesity Time Bomb</i> (Article 1)	157
<i>That Figures: the Real Cost of Childhood Obesity</i> (Article 2)	75
<i>Responsible TV and Internet Advertising Needed to Reduce Childhood Obesity</i> (Article 3)	66
<i>Parents' Denial Fuels Childhood Obesity Epidemic</i> (Article 4)	246

Based on themes I found in the articles, I coded the comments from each article into subcategories: (see *appendix* for subcategories and descriptions). For example if Sarah Smith said, “The only people to blame are the parents for their child being obese”. I would place this comment under the subcategory coded “parent”. Another example would be if Tim Benson said, “I think it’s because kids won’t eat healthy food and only want to eat junk food.” I would place this under the subcategory coded “poor nutrition”. Then I placed each coded comment into broader categories, “macrosystems” which includes social norms, corporations, and government; “microsystems” which includes family and other social networks; and “individual” which represents choices that an individual makes such as being physical active or eating a poor diet (see *appendix*). Once each comment was coded into a category and subcategory, I added each category and subcategory up to find out what the majority of responders are saying contributed to childhood obesity. In this way, I show what people perceive to be causes of childhood obesity and also show how people make assumptions and biases about childhood obesity.

In addition to performing content analysis, I also audio recorded interviews with professionals and caregivers who work closely with children. By using convenience sampling I

was able to find parents and professionals who work closely with children. All together I was able to interview five people, (see *appendix* for interviewee demographics and for interview questions).

After completing my interviews, I listened to the audio recording and created transcripts from each individual interview. After completing the transcripts I analyzed each one to find trends or themes that were reoccurring, similar or different than my content analysis results, and to find if these responses reflected scientific research. By considering anonymous comments to obesity articles as well as how parents and professionals who work with children feel about their children's schools and health, I created a picture of people's social ideas about childhood obesity, which may differ from scientific understandings of obesity.

### **Data Analysis**

After analyzing all of my data and removing comments that fell into the other category I was left with a total of 482 comments. Out of the 482 comments I found that a majority of Facebook commenters 322 in total blamed obesity on an individual's behaviors, and out of those 322 comments 140 made judgements about obese people based off of stereotypes such as labeling children as lazy, or compared their own perceived healthy lifestyle to the unhealthy lifestyle of obese people. In addition to commenters blaming children for being obese, 108 commenters blamed parents for contributing to childhood obesity (see *appendix for additional content analysis*). It is these types of biased perceptions regarding childhood obesity, attributed to stereotypes that continue to maintain accountability to an individual level and often ignore the structural factors that play a key role in this epidemic.

## Individual

After completing my data analysis I found that a majority of people perceived individual behaviors, such as an individual being physically active or not, how often they use technology, whether or not they eat a healthy diet, physical and medical conditions and lastly a combination of all the above to childhood obesity.

Out of the total 322 comments coded in the individual category a majority of commenters 140 total, made judgments' based on stereotypes and biases about obese people. Judgment's was also the most coded subcategory out of all off the subcategories. This is an example of when fundamental attribution error may occur, because with a majority of commenters making judgments about childhood obesity, it demonstrate how people fail to recognize the importance of situational influences on obesity, such as medical conditions and the high cost of nutritious food and overemphasize stereotypes and biases as the cause for obesity. Additionally, commenters focus on other individual behaviors such as diet and exercise, and although these factors may be a reason for why a child is obese there are other structural factors, such as the food provided at the child's school, which is out of the child's control and not a reflection of the child's behavior or choice. The following is a chart that displays the data from the coded individual category and subcategories.

<b>Category</b>	<b>Article 1</b>	<b>Article 2</b>	<b>Article 3</b>	<b>Article 4</b>	<b>Total</b>
<b>Individual</b>	<b>118</b>	<b>56</b>	<b>28</b>	<b>120</b>	<b>322</b>
<i>Judgements</i>	38	24	10	68	140
<i>Yes P.A.</i>	8	17	1	19	45
<i>No P.A.</i>	0	4	0	0	4
<i>Yes Tech</i>	0	2	2	1	5
<i>Poor Nutrition</i>	50	4	13	19	86
<i>Psych &amp; Medical</i>	5	0	1	2	8
<i>Combo</i>	17	5	1	11	34

The following are examples of comments coded in the individual category; Facebook commenter Angus Hillman stated “obesity is not a mental health problem! The sheer disregard of nutrients and a handed down sedentary lifestyle from parents a little more on point”. In response to this Facebook commenter Jan Finch Angus stated,

You are so right - it's not a mental health problem, it's an EATING problem. There is so much junk food around these days, and people have become extremely lazy when it comes to preparing a nourishing meal for their children. It is also very obvious that children don't seem to be outside playing. Therefore, junk food + kids sitting inside playing computer games = FAT KIDS!

This is an example of how the public uses biased perceptions regarding childhood obesity and stereotypes to blame the obese individual and the parents of obese children as the cause of childhood obesity. Doing this continues to attribute obesity solutions to an individual’s personal control, which leads to more blaming and stigmatizing of obese individuals and doesn’t acknowledged that solutions for structural factors that also contribute to the childhood obesity epidemic.

### **Microsystem**

When analyzing the four articles for comments which fell into the microsystem category, I found that out of 482 comments, 119 comments fell into the microsystem category. Since the focus of this study is on perceptions about childhood obesity, parents are considered a microsystem because since children have little power and little control over the choices their parents make they are largely dependent on their parents. (Wolfson, et. al, 2015). The following chart displays the data coded under the microsystem category;

Category	Article 1	Article 2	Article 3	Article 4	Total
<b>Microsystem</b>	<b>18</b>	<b>7</b>	<b>29</b>	<b>65</b>	<b>119</b>
<i>Parents</i>	15	7	26	60	108
<i>Lack of Edu.</i>	3	0	3	5	11

Blaming parents for the cause of childhood obesity was mentioned in 108 comments. Just as making judgments about obese children has negative consequences, blaming parents can also have negative consequences. Blaming parents for the cause of their child's obesity may actually result in a self-fulfilling prophecy. Judgments made towards parents may affect their attitudes about themselves and how they are viewed by others which may result in the parent being less motivated, and as a result contribute to their child's increase in weight.

In addition to commenters blaming parents, commenters also stated that the lack of education was a contributing factor. Lack of education was mentioned by Facebook commenter Lesley Weaver from *Responsible TV and Internet Advertising Needed to Reduce Childhood Obesity*. Lesley said:

It's not just parents who don't care. It's parents who don't KNOW. I was floored when a friend of a friend said of his morbidly obese four year old that "she eats good food, she just eats too much of it. Yesterday she had a salad for lunch, but she kept going back for more."....this child's "salad" was mostly cheese on top of a little iceberg lettuce then drowned in ranch dressing. Her parents honestly believed this was healthy. I can relate entirely too many stories exactly the same from the parents in my rural area/small town. It's also a very low income area so you can advertise on the internet all you want, these people will never see it. They can't afford internet. Or cable.

This comment also ties into factors of attribution theory because these people are from a rural small town and of low economic status so they are perceived to be less educated.

## Macrosystem

When analyzing the four articles for comments which fell into the coded macrosystem category, I found that out of 482 comments only 41 comments fell into the macrosystem category. The following chart displays the data in the macrosystem category;

Category	Article 1	Article 2	Article 3	Article 4	Total
<b>Macrosystem</b>	<b>14</b>	<b>2</b>	<b>4</b>	<b>21</b>	<b>41</b>
<i>Food Ind. &amp; Gov.</i>	8	2	2	10	22
<i>Society</i>	6	0	1	8	15
<i>Cost</i>	0	0	1	3	4

My analysis for the macrosystem category found that the food industry and government was mentioned more than changes in society and the cost of food. Facebook commenter Karyn Milos from *That Figures: The Real Cost of Childhood Obesity*. Karyn said;

the gov. has decreased physical activity out of the education system's curriculum! Disgraceful. And like cigarettes and alcohol, tax the hell out of high fat low nutrition "food" .....people can still choose to consume, but pay a bit more (after all, society needs to be compensated by costs incurred by obesity).....followed by blaming parents for causing childhood obesity.

My data from my content analysis correlates with scientific research, which states that the attribution of responsibility to parents is consistently much higher than attributions to other factors, such as schools, health care providers, the food industry, and the government (Wolfson, et. al, 2015). This fits with the findings of my content analysis, which found that out of 482 comments 108 comments blamed parents for the cause of childhood obesity, compared to only twenty-two comments that blamed government and food industries.

After performing content analysis, I used convenience sampling to find parents, and people who work closely with children, and interviewed them to have a better understanding to what people perceive to be contributing factors to childhood obesity and if these finding would correlate with my content analysis and scientific research.

### Interview Data

My interview data, similar to the data collected in my content analysis, shows that people believe parents are responsible for preventing obesity in their own children. But interviewees believed that there are other factors associated with increase in childhood obesity and that parents are not the only people responsible. I coded my interview transcripts for ideas and themes related to childhood obesity, I focused on negative perceptions, for example, how many times interviewees mentioned children not being physically active or how many times they mentioned poor nutrition as a problem. The following chart reflects the number of times themes related to contributing factors for childhood obesity were mentioned:

Categories	Times Mentioned in Interviews
<b>Poor nutrition</b>	8
• Fast food (Individual)	5
• Junk food (Individual)	4
• School meals (Macrosystem)	4
• Cost of food (Macrosystem)	2
<b>Total times mentioned:</b>	<b>23</b>
<b>Not being physically active</b>	3
• Children need more physical education (Macrosystem)	8
• Longer recess (Macrosystem)	5
• Video games (Individual)	4
• Internet use (Individual)	1
<b>Total times mentioned:</b>	<b>21</b>
<b>Negative remarks about schools</b>	5
• Children need more physical education (Macrosystem)	8
• School meals (Macrosystem)	4

• Increased recess (Macrosystem)	5
<b>Total times mentioned:</b>	<b>22</b>

When interviewees were asked, “what have you heard about childhood obesity”? All respondents agreed that childhood obesity is a problem and that childhood obesity is on the rise or increasing. In addition to interviewees acknowledging that childhood obesity is on the rise, they also compared this rise to previous generations. When asked, “What have you heard about childhood obesity?” Interviewee Sandra Mello said, “It’s on the rise, there are more kids overweight now than my generation”. Additionally respondents mentioned that childhood obesity is increasing in the United States. Interviewee Joel Malloy said, “I know that childhood obesity is real problem in our country you hear it on the news on TV about how more kids are becoming obese.”

After asking the interviewees what they have heard about childhood obesity, I wanted to find out what they perceived to be contributing factors for childhood obesity. What I found was that poor nutrition was mentioned twenty-three times as a contributing factor for childhood obesity, linking poor nutrition to individual choices such eating junk food, and fast food, and also to structural choices found in the “macrosystem” category such as the cost of food, and changes in society. Interviewee Sandra Mello said;

I think as a society we have changed, family values are no longer the biggest priority in people’s life. Now they are more concerned with being able to pay the bills, as a result both parents are working now and there are more single parents than earlier generations. People don’t have the time anymore to make homemade meals and take their kids to the park. So it’s easier when you have worked all day long to order pizza or get take out and know that you children are at least safe inside even if that means they are just sitting around playing video games.

In addition to poor nutrition, lack of physical activity was mentioned twenty-one times as a contributing factor, linking the lack of physical activity to individuals playing video games, and using the internet; and structural reasons found in the “macrosystem” category such as reduced physical education classes, and reduced recess time. One example of these findings is when asked, “What do you believe may be contributing factors for childhood obesity?” Interviewee Samantha Riley said:

A combination of things such as, family lifestyle change more families are eating on the run instead of home cooked meals at the dining room table. I also think that a big part of it is that kids now a days are not as active as I was when I was younger. When I was young on the weekends I would go to my cousin’s house and be outside playing and running around and now kids are home inside playing videogames like Minecraft.

All respondents mentioned multiple contributing factors that are contributing to childhood obesity, such as the lack of physical activity and poor nutrition, or linking poor nutrition to the cost of food for example. Interviewee Sandra Mello said:

I think that number one a lot of people can’t afford the cost of food and many families are living off of food stamps which limits the amount of money they have to pay for food. Healthy food cost more, the cost of healthy food is very expensive. Products that are processed and prepackaged are less expensive compared to fresh food which is more expensive.

This is important because it shows people have an awareness of some of the overlapping and complex factors that may contribute to childhood obesity. Further, it helps us see why preventing childhood obesity is so difficult: there are other interconnected structural factors on the “macrosystem”, such as the cost of food, affecting poor nutrition. Another example of a structural issue is the decrease in physical education classes, which is linked to changes in the national agenda in public education. As described by Elliott, S., et. al. (2013), when in 2010, the

Obama Administration proposed a reauthorization of the Elementary and Secondary Education Act, which eliminated six programs and consolidated 38 funding mechanisms into 11 new authorities (USDE, 2010). As a result one of the six programs that ended up being cut was the Physical Education for Progress Grant, which would have initiated, expanded, or improved physical education programs. This grant being eliminated greatly impacted many elementary schools, which previously received the Physical Education for Progress Grant. These are just few of the many examples that are contributing to the childhood obesity epidemic.

One topic found in my interviews that also demonstrates the “macrosystem” category, was that each of the people interviewed stated that schools are not educating children enough about being physically active and living a healthy lifestyle. All interviewees believe schools have some responsibility in preventing childhood obesity. When asked, “What responsibilities do you think schools have to help prevent childhood obesity?” Interviewees mentioned the responsibility of schools to provide nutritious meals to children. Interviewee Joel Malloy said, “I think the kids being in the school system 5 days out of the week 6-8 hours out of the day, just the fact that they [the students] are in school for that length of period of time I believe that they [the schools] do have responsibility to prevent childhood obesity”. Interviewee Nancy Pinel also responded stating that, “They have a lot of responsibility because two of the three meals are served at school. So if they are not providing healthy nutritious lunches than they are contributing to the problem”. Lastly all interviewees agreed that the schools system could be doing more to keep students physically active. When asked, “Does your child or children you are working with have recess?” Interviewee Tamara Sanchez said:

No because he is in high school, but I think they could incorporate a gym class every day because then they would be teaching that you need to be physically active every day not just twice a week. I

go to the gym every day and if they taught my son to do something active everyday it would help because it wouldn't just be coming from home it would also be coming from the school and that is secondary.

After completing my interviews and comparing them to my content analysis I found that all the interviewees stated, that parents were responsible in preventing their own child from being obese but there are other factors associated with increase in childhood obesity and other people are *also* responsible from preventing children from becoming obese. The top three factors contributing to childhood obesity found in my content analysis were parents, poor nutrition, and lack of physical activity. I also received similar responses from interviewees but interviewees recognize that although parents are the ones who hold the primary responsibility over their child's health, respondents stated that the schools also play a vital role as well. One reason interviewees felt that schools play a vital role in preventing childhood obesity has to do with meals provided by the schools. All of the interviewees state that the schools are not providing children with healthy meals. When asked, "Can you think of anything you think the schools should improve on to help promote a healthy lifestyle or being physically active?" Interviewee Nancy Pinel said:

Yes the school lunches are horrible, I always pack my son's lunch because the school's lunches even though they were supposed to improve, due to Michelle Obama, they haven't. They are still highly processed such as mozzarella sticks and my son complains that they don't taste good.

The lack of physical activity at the schools is also a concern to all interviewees and they believe that school systems could be doing more to keep children physically active during the school day. When asked, "Do you think increasing recess and gym class can help reduce or prevent children from being overweight?" Interviewee Samantha Riley responded:

I feel like it could help reduce it because if they are exposed to playing outside more and other physical activities in general they would probably not play video games as much because they would want to play more.

It is interesting to note that, unlike my content analysis, no interviewees made any judgements about obese children, such as stereotypes of being lazy. Whereas judgement played a significant role in my findings of my content analysis. This could have several factors, such as the interviewees did not feel comfortable making judgments due to the interview being in person. Commenters on a Facebook post may feel more comfortable being judgmental when on the computer because there is a barrier between them and the other commenters. These interviews were very insightful and help to create a bigger picture about what people believe is contributing to childhood obesity. Overall, although there may be minor differences between the interviewees and commenters, it was found that majority of people blame obesity on an individual's behavior such as eating a poor diet and lack of physical activity and although structural issues such as schools and government are mentioned the responsibility ultimately falls to the individual child and on parents to keep their children healthy.

### **Discussion & Conclusion**

According to my content analysis and interviews, the top three things people perceive are contributing factors for childhood obesity are, parents (*108 Facebook commenters & all interviewees*), poor nutrition (*86 Facebook commenters & mentioned 23 times by interviewees*) and lack of physical activity (*45 Facebook commenters & mention 21 times by interviewees*). Poor nutrition and lack of physical activity fall under the “individual” category which blames the individual for their behaviors. Knowing this, we have to ask ourselves are the factors that people

perceive to be contributing to childhood obesity factual. If these factors are true, further research needs to be done to find ways to improve on these issues.

Another issue I found was the amount of people who were making judgements about obese people (*140 comments*) and blaming parents (*108 comments*). Pointing the finger at somebody will not help in finding ways to decrease childhood obesity. Attribution theory shows that talking negatively about obese people and parents will most likely have the opposite effect and plays into society's stereotypical and biased opinions about obesity. Although a majority of my findings fell into the "individual" category, another issue that was barely mentioned is how majority of children are spending their time watching TV, playing video games, or on the computer. These sedentary activities are a significant reason as to why children are not being physically active and it is important to address these issues to come up with solutions to help children be physically active. Lastly another issue that is a problem in the United States is the cost of nutritious food, and only four out of 544 commenters, and two interviewees mentioned this issue as a contributing factor, which demonstrates how people are not acknowledging issues in the "macrosystem" category. Cost of food may have not been mentioned for many reasons, maybe the commenter doesn't want to appear to be in financial hardship or maybe they are unaware that some people have a difficult time affording nutritious foods.

Although Facebook and social media is a useful outlet to find out how people feel towards particular things, there is a chance that what people's comments are not how they actually feel and they may be making comments for other reasons. Also, only four articles and 544 comments were used to gather this data, with more articles and comments results may change. Additionally, the interviews conducted were only from a small sample of the population

more interviews could provide a better understanding to what people believe are contributing factors for childhood obesity.

The interviews reflect the results of the content analysis that people believe that parents are the key components in preventing their children from being obese. In addition more children are eating a poor diet and are less active than previous years. It would be beneficial to have further research within the school systems to find out what they are doing to prevent childhood obesity and if they are doing anything that is contributing to the increase in childhood obesity. It is important with so many people stating that parents are the ones responsible for preventing their child from become obese that there needs to be resources to help parents have more support in raising their children to be healthy and live a healthy lifestyle. Additionally more education needs to be provided to help parents and schools provide better nutrition to children. Lastly by incorporating more physical education classes, and free physical activities to students, it will encourage children to be more physically active resulting in fewer children becoming obese. Additionally more research need to be done to find a way to change negative attitudes towards obese individuals because negative public attitudes toward obese individuals could have a detrimental effect on efforts to reduce obesity (Wolfson, et.al, (2015). The increase of childhood obesity means we must come together and work towards a common goal in preventing childhood obesity and eliminate biased perceptions regarding childhood obesity, attributed to stereotypes, because this ignores structural factors that play a key role in this epidemic, and will only maintain culpability to an individual level.

## *Appendix*

### *Analysis Categories and Subcategories*

<b>Code Names</b>	<b>Description</b>
<b>Macrosystem</b>	
<i>Judgements</i>	For comments that are gloating about their healthy lifestyle is better and or own making judgements on other people.
<i>Food Ind. &amp; Gov.</i>	For commenters blaming government and food industry for contributing to childhood obesity.
<i>Society</i>	commenters who blamed changes in society for contributing to childhood obesity
<i>Cost</i>	For commenters that blame the cost of food/living is contributing to childhood obesity.
<b>Microsystem</b>	
<i>Parents</i>	For comments that blame the parents for contributing to childhood obesity.
<i>Lack of Edu.</i>	For comments blaming the lack of education about nutrition or living a healthy lifestyle for contributing to childhood obesity.
<b>Individual</b>	
<i>Yes P.A.</i>	For commenters that agree that lack of physical activity is contributing to childhood obesity.
<i>No P.A.</i>	For commenters who believe that lack of physical activity does not contribute to childhood obesity.
<i>Yes Tech</i>	For commenters who agree that increase in use of technology is contributing to childhood obesity.
<i>Poor Nutrition</i>	For commenters that blame poor nutrition for contributing to childhood obesity.
<i>Psych &amp; Medical</i>	For commenters that blame psychological reasons such as depression or medical reasons such as hypothyroidism for contributing to childhood obesity
<i>Combo</i>	For commenters that blame multiple reasons for childhood obesity
<b>Other</b>	For comments that are irrelevant to my research. An example of this would be sale promotions and spam.

**Content Analysis Results**

	<b>Article 1</b>	<b>Article 2</b>	<b>Article 3</b>	<b>Article 4</b>	<b>Total</b>
<b>Macrosystem</b>	<b>52</b>	<b>26</b>	<b>14</b>	<b>89</b>	<b>181</b>
<i>Judgements</i>	38	24	10	68	140
<i>Food Ind. &amp; Gov.</i>	8	2	2	10	22
<i>Society</i>	6	0	1	8	15
<i>Cost of Food</i>	0	0	1	3	4
<b>Microsystem</b>	<b>18</b>	<b>7</b>	<b>29</b>	<b>65</b>	<b>119</b>
<i>Parents</i>	15	7	26	60	108
<i>Lack of Edu.</i>	3	0	3	5	11
<b>Individual</b>	<b>80</b>	<b>32</b>	<b>18</b>	<b>52</b>	<b>182</b>
<i>Yes P.A.</i>	8	17	1	19	45
<i>No P.A.</i>	0	4	0	0	4
<i>Yes Tech</i>	0	2	2	1	5
<i>Poor Nutrition</i>	50	4	13	19	86
<i>Psych &amp; Medical</i>	5	0	1	2	8
<i>Combo</i>	17	5	1	11	34
<b>Other</b>	<b>7</b>	<b>10</b>	<b>5</b>	<b>40</b>	<b>62</b>
<b>Total</b>	<b>157</b>	<b>75</b>	<b>66</b>	<b>246</b>	<b>544</b>

**Content Analysis Final Results**

	<b>Article 1</b>	<b>Article 2</b>	<b>Article 3</b>	<b>Article 4</b>	<b>Total</b>
<b>Macrosystem</b>	<b>52</b>	<b>26</b>	<b>14</b>	<b>89</b>	<b>181</b>
<i>Judgements</i>	38	24	10	68	140
<i>Food Ind. &amp; Gov.</i>	8	2	2	10	22
<i>Society</i>	6	0	1	8	15
<i>Cost of Food</i>	0	0	1	3	4
<b>Microsystem</b>	<b>18</b>	<b>7</b>	<b>29</b>	<b>65</b>	<b>119</b>
<i>Parents</i>	15	7	26	60	108
<i>Lack of Edu.</i>	3	0	3	5	11
<b>Individual</b>	<b>80</b>	<b>32</b>	<b>18</b>	<b>52</b>	<b>182</b>
<i>Yes P.A.</i>	8	17	1	19	45
<i>No P.A.</i>	0	4	0	0	4
<i>Yes Tech</i>	0	2	2	1	5
<i>Poor Nutrition</i>	50	4	13	19	86
<i>Psych &amp; Medical</i>	5	0	1	2	8
<i>Combo</i>	17	5	1	11	34
<b>Total</b>	<b>150</b>	<b>65</b>	<b>61</b>	<b>240</b>	<b>482</b>

*Interviewee demographics*

<b>Interviewees</b>	<b>Gender</b>	<b>Age</b>	<b>Occupation</b>	<b>Parent</b>
1	Female	23	Paraprofessional	No
2	Female	38	Stay at home mom	Yes
3	Female	28	C.N.A.	Yes
4	Female	35	Elementary school nurse	Yes
5	Male	36	Trauma nurse	Yes

*Interview questions*

<b>Sample of interview Questions:</b>
What have you heard about childhood obesity?
Do you think schools educate children enough about being physically active and eating healthy?
What responsibilities do you think schools have to help prevent childhood obesity?
Do you think the parents of child are the only people who are responsible for preventing their child from being obese?
How often does your child or children you are working with have physical education?

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