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# The Influence of Food Choices, Eating Habits, and Body Image of African American Mothers on Childhood Obesity

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Abstract

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MS, University of Phoenix, 2013

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Dissertation Submitted in Partial Fulfillment

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## Abstract

The food decisions, dietary patterns, physical activity, and weight-related convictions of African American mothers are affected by their self-perceptions and views of body weight. The gap in the literature regarding the impact of these perceptions on children's food choices, eating habits, and body image is significant. Using the health belief model as the theoretical foundation and a cross-sectional survey as the research design, this study assessed the potential relationship between mothers' and children's eating habits and whether mothers' perceptions of their children's body image were reliable indicators of childhood obesity. Eighty-six mothers provided demographic information and completed the Child Feeding Questionnaire (CFQ) and the Figure Rating Scale (FRS); 86 children completed the FRS. All 172 participants self-reported weight and height. No other measurements were taken. Logistic regression and correlation analysis were used to answer the research questions. Correlation analysis showed a significant relationship between the mothers' perceptions of their children's body image and the children's self-perceptions of their body image. The results of regression analyses indicated that the mothers' perceptions of their weight as children influenced food choices for their children as well as their children's self-perception of body image. Positive social change in the African American community may occur by having community and health care professionals offer awareness programs to African American mothers.

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# Dedication

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Table of Contents

List of Tables

# Chapter 1: Introduction to the Study

In the United States, more than 68 million adults and children are overweight or obese (Mokdad et al., 2003). Historically, African American women have been identified as having a rate of obesity higher than for any other race or gender; this rate of obesity continues to increase (Mokdad et al., 2000). In addition, obesity has become an epidemic among children in the United States, particularly African American children (J. C. Lo et al., 2014). According to Ogden, Carroll, Curtin, Lamb, and Flegal (2010), African American children, ages 2–19 years, carry the greatest morbidity burden from childhood obesity, with 35.9% of children in this age range being obese.

Childhood obesity has become a national public health concern resulting from unhealthy eating practices as a child that have contributed to negative lifestyle behaviors and have led to adverse eating behaviors in adulthood (Alexander, Alfonso, & Hansen, 2015). The increased prevalence of obesity among children and adults has driven researchers and health care professionals to analyze changes in food sustenance, policies, and production systems because each area has become a potential driver of obesity (Gittelsohn et al., 2014). Changes in financial and social conditions, such as expanded access to inexpensive and ready to-eat food, have redefined normal body mass index (BMI) and raised the predominance of obesity among the U.S. population (Burke & Heiland, 2018). These factors are discussed in more detail later in Chapter 1.

## Background of the Study

Obesity and overweight have been defined as the excessive accumulation of body fat (BF; Flegal, Wei, & Ogden, 2002). Energy imbalance within the body can lead to

obesity among individuals. As explained by Lafontan (2005), energy fat disorders are the result of energy input exceeding energy output, with most additional calories being stored in the body as triglycerides in adipose or fat tissue. Obesity has been defined based on weight, height, and measurements of BF. Flegal, Kruszon-Moran, Carroll, Fryar, and Ogden (2016) contended that even though BMI and BF are correlated, BMI might vary based on sex, age group, and ethnic background. According to Martin-Calvo, Moreno-Galarraga, and Martinez-Gonzalez (2016), BMI generally has been used to define obesity in children because it corresponds well with muscle versus BF and cardiovascular risk factors. Anthropometric measures such as BMI, waist circumference, and waist-to-height ratio can also? be used to identify obesity (Martin-Calvo et al., 2016). Obesity has become a national health problem that requires complex treatment and intervention strategies. Health consequences, such as cardiovascular disease, kidney disease, diabetes mellitus, hypertension, sleep apnea, loss of limbs, and gallstones, can be associated with obesity (O'Rahilly, 2016).

The increased prevalence of obesity among African Americans has been linked to BMI and perceptions of body weight. Burke and Heiland (2018) suggested that changing weight standards might be altering the social perceptions of what constitutes normal BMI and obesity. In contrast, people seem happy with their weight by generally correlating BMI to body image. Subsequently, people might change their BMI weight standards to coincide with their weight status to justify self-perceptions of their body image.

African Americans' eating behaviors and body weight norms revolve around food traditions and cultural norms. Wilson, Musham, and McLellan (2004) suggested that

young children, especially young girls, are affected by their mothers' attitudes and behavior toward food and body image. Mothers are typically the primary food preparers in the home. They also tend to be the parents who teach their children about food and nutrition. According to Birch and Fisher (2000), recent studies have identified the role modeling of mothers as a critical indicator of their children's food attitudes and behaviors, dieting behaviors, and body size standards. It is important to learn about the ways that African American females acquire their food and eating behaviors.

The obesity rates among children in Georgia exceed the national rate (Nelson, Vos, Walsh, O'Brien, & Welsh, 2015). The prevalence of childhood obesity is higher in Georgia than in southwestern states (Nelson et al., 2015). Obesity among children has become a major national health problem that will worsen as obese children transition into obese adults.

To address the difficulty in promoting healthy weight in children based on their present eating behaviors, parents might need to be educated on alternatives that can improve upon traditional feeding practices. According to Savage, Fisher, and Birch (2007), the easy and widespread availability of cheap and calorie-dense food can advance gorging and increased weight gain. O'Rahilly (2016) concluded that there has been a relative increment in the accessibility of inexpensive, prepared, and calorie-dense food that tends to be less satisfying than nonprocessed foods, because of its lower protein concentration, less fiber, and more processed sugars. Meanwhile, a widening price gap between natural and nutritional foods that are high in fiber and protein, and foods that are

high in fat, sugars, and carbohydrates, has seen families purchase less costly and nutritionally deficient food (O'Rahilly, 2016).

## Problem Statement

Obesity is a persistent issue facing children in the United States, particularly children from African American communities (J. C. Lo et al., 2014). Ogden, Carroll, Kit, and Flegal (2012) asserted that in 2010, approximately 12.5 million American children and adolescents, ages 2–19 years, were considered obese. Santoro (2013) contended that the number of children who were overweight or obese at the time of that study was expected to double by 2020. Nationally, Alexander et al. (2015) suggested that African American children were overweight and obese because of the poor food choices made by their mothers, such as taking their children to fast food restaurants on a regular basis ("Percentage of Children Eating Fast Food on a Given Day Drops," 2015). Approximately 36% of African American children, ages 2–19 years, have been identified as having the highest level of obesity in the United States (Ogden et al., 2010).

I conducted this study to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits, and their children's body image were related to children's perceptions of their own body image and were reliable indicators of childhood obesity. I contend that the food choices and eating habits of African American mothers, such as the selection of unhealthy foods, have the potential to affect their children and result in childhood obesity (McFatrich et al., 2013). The problem is that children are likely to adopt the eating habits of their mothers and that unhealthy eating habits can lead to childhood obesity

(McFatrich et al., 2013). Some selected foods can be high in fat, sugars, and carbohydrates, all of which can contribute to weight gain in adults and children.

Household food choices, eating habits, and increased body size place African American mothers at risk of developing diabetes and also place their children at risk of becoming obese and developing diabetes (Isolauri, Rautava, Collado, & Salminen, 2015). To improve the eating habits and body image of mothers and their children, health care professionals must implement strategies that stress the importance of healthy food choices and physical activity. The development of behavioral programs will also help to improve the overall health of the next generation (Isolauri et al., 2015). Such programs will impact the eating behaviors and body images not only of mothers but also of their children (Isolauri et al., 2015).

In Georgia, 16.5% of children, ages 10 to 17 years, are obese (Kibbe et al., 2016). Kibbe et al. (2016) asserted that approximately 27% of African American children in Georgia are obese and that the rates of obesity are higher among girls than boys. According to the Trust for America's Health, Georgia ranks 17$^{th}$ in the national prevalence of childhood obesity in children ages 10 to 17 years (as cited in Kibbe et al., 2016).

In the Atlanta metropolitan area, the large population of African Americans ranges from being highly educated to uneducated, healthy to unhealthy, and upper class to lower class in socioeconomic status (SES). Several community groups familiar with community-based research agreed to participate in this study. I selected the Atlanta metropolitan area as the site of my study for two reasons because of the high number of

African Americans living in this area and I also live in Atlanta, Georgia, so the proximity of the study site facilitated data collection.

Childhood obesity is an epidemic in Georgia (Georgia Department of Public Health [GDPH], 2013). Georgia has the second highest rate of obesity in the United States. According to the 2010 Georgia Data Summary, 24% of elementary school children, 15% of middle school children, and 12% of high school children were obese at that time (as cited in GDPH, 2013). The GDPH (2013) also reported that 28,000 elementary school children, 43,000 middle school children and 55,000 high school adolescents were classified as being overweight or obese. The obesity of school-age children and adolescents has been reported as being the result of increased fetal weight gain or increased weight gain during infancy (De Hoog, van Eijsden, Stronks, Gemke, & Vrijkotte, 2011). The GDPH identified two reasons for the high rate of childhood obesity in Georgia: mothers' poor food choices and children's lack of physical activity. The Centers for Disease Control and Prevention (CDC, 2012) released an updated report summary concluding that 30% of children living in Georgia were overweight or obese.

As noted above, I conducted this study to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits, and their children's body image were related to children's perceptions of their own body image and were reliable indicators of childhood obesity. The food choices and eating habits of African American mothers, such as the selection of unhealthy foods, have the potential to affect their children and result in childhood obesity (McFatrich et al., 2013). I conducted the study in the Atlanta metropolitan area. The

study sample comprised (a) African American mothers of all SES and educational backgrounds and (b) their children, who were between the ages of 7 and 11 years and were in 2nd grade to 6th grade at the time of the study.

## Purpose of the Study

Obesity is on the rise nationally (Alexander et al., 2015). The purpose of this quantitative study was to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits are related to their perceptions of their children's body image and are reliable indicators of childhood obesity. The food choices and eating habits of African American mothers, such as the selection of unhealthy foods, have the potential to affect their children and result in childhood obesity (McFatrich et al., 2013). These factors have the potential to influence children's perceptions of their own food choices, eating habits, and body image. Two independent variables (IVs) were African American mothers' household food choices based on their responses to the Child Feeding Questionnaire (CFQ; see Appendix A; Musher-Eizenman & Holub, 2007) and their perceptions of their children's body image based on the Figure Rating Scale (FRS; see Appendix B). The dependent variable (DV) was the children's own perceptions of their body image based on the FRS (W.-S. Lo, Ho, Mak, & Lam, 2012). The mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits were examined to identify a possible relationship to the mothers' perceptions of their children's body image. In addition, the mothers' perceptions of their children's body image were examined to determine their

influence on their children's perceptions of their own body images. All three factors can have an impact on childhood obesity.

## Research Questions and Hypotheses

The following research questions guided this study:

1. Is there a relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image?

$H_{01}$: There is no relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image.

$H_{a1}$: There is a relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image.

2. Is there a relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image?

$H_{02}$: There is a no relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image.

$H_{a2}$: There is a relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image.

3. Is there a relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image?

$H_{03}$: There is no relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image.

$H_{a3}$: There is a relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image.

4. Is there a relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mothers' household food choices, and children's eating habits?

$H_{04}$: There is no relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits.

$H_{a4}$: There is a relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits.

5. Is there a relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits?

$H_{05}$: There is no relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, household mother's food choices, and children's eating habits.

$H_{a5}$: There is a relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, household mother's food choices, and children's eating habits.

## Theoretical Framework for the Study

The health belief model (HBM) can have a positive impact on lifestyle changes (Abdeyazdan, Moshgdar, & Golshiri, 2017) by guiding behavioral recommendations to control childhood obesity through program screening to detect risk factors or early stages of the disease and education. The HBM is a psychological model used to understand health practices by identifying individuals' attitudes and beliefs (Fathi, Barati, Zandiyeh, & Bashirian, 2017). I used the HBM to identify the four aspects of treatment and intervention regarding childhood obesity:

(a) perceived susceptibility to obesity (i.e., risk perception); (b) perceived severity of childhood obesity; (c) perceived benefits of behavioral change, such as eating healthier and engaging in physical activity; and (d) perceived barriers, such as cultural beliefs and traditions, to taking action (Faith et al., 2017). I used the HBM to develop recommendations that might help to address negative habits that prevent mothers from choosing to adopt healthy eating behaviors and control their body weight, both of which can help to address childhood obesity.

The HBM is directed at revising physiological and behavioral patterns toward food and health behaviors to facilitate behavioral change. An important component of the HBM is the personal choice that individuals make based on health beliefs and practices (Carpenter, 2010). The HBM highlights the importance of mothers' eating habits and

mother's impact on children from birth to adolescence. The HBM has served as the foundation of research focusing on healthy behaviors for the early detection and prevention of chronic complications resulting from obesity (Nemet, Levi, Pantanowitz, & Eliakim, 2014). The basic components of the HBM are derived from psychological and behavioral theories whose different models speculate that behavioral changes depend primarily on two individual factors: (a) having a specific health objective and (b) gauging the probability that a given activity will meet that objective (Rosenstock, 1974).

Health beliefs include not only individuals' perceptions of their susceptibility to illness or disease, but also the methods that they use to prevent illness or disease. For example, the central purposes of eating healthy foods and engaging in physical activity, along with the significance of recognizing poor eating habits and taking corrective action, early can establish limits that make people value screening for diabetes and understand the seriousness of children being diagnosed with obesity due to unhealthy eating practices. The HBM supports intervening in the problem of childhood obesity by starting with mothers who exhibit poor eating habits that have resulted in obesity or overweight.

I used the HBM to support recommendations from public health leaders that obstetricians and family practice physicians examine the dietary patterns of African American mothers and pay particular attention to diets that are high in sugar, carbohydrates, starches, and fats. I used the HBM to show mothers and their children that they can make positive behavioral changes in their eating habits if they target the factors that encourage childhood obesity (Jones et al., 2016) and work collaboratively with

health care professionals to remove the barriers to accepting appropriate treatment or intervention strategies. The HBM can also be used as a foundation that allows health experts to offer education in changing the eating behaviors of African American mothers (Mulualem, Henry, Berhanu, & Whiting, 2016). I used the HBM to make recommendations supporting the need for mothers and their children in African American communities to make behavioral changes to reduce the incidence of childhood obesity. The lack of obesity intervention and prevention programs precipitated my use of the HBM.

## Nature of the Study

I conducted this quantitative study to identify the impact of African American mothers' beliefs related to their children's proneness to obesity, household food choices, children's eating habits, and their children's body image were related to children's perceptions of their own body image. This method allowed me to identify the impact of African American mothers' household food choices and eating habits on their perceptions of their children's body image and the children's perceptions of their own body image through surveys and questionnaires. I conducted a binary logistic regression analysis to determine the extent to which the African American mothers' food choices and eating habits were related to their perceptions of their children's body image. I used the seven CFQ variables as the IVs: perceived responsibility (PR), perceived parent weight (PPW), perceived child weight (PCW), concern about child weight (CCW), restriction (R), pressure to eat (PTE), and monitoring (M). The mothers' rankings of their children's body image, and the children's self-rankings of body image were the DVs. Correlation

analysis was used to determine if there was a relationship between the mothers' perceptions of their children's body image and the children's self-perceptions of their body image. The variables included in the Spearman rank correlation analysis were mother ranking of child body image (MRBI) and child ranking of body image (CRBI). The mothers self-reported their own and their children's height and weight, which were categorized as obese, overweight, normal, or underweight.

## Definitions of Terms

*African American women:* Refers to women who have African heritage or ancestry (T. Thompson et al., 2015).

*Body mass index (BMI):* Refers to weight measured in kilograms divided by the square of height measured in meters (CDC, 2000).

*Body image:* Defined as one's physical perception of self (Antin & Hunt, 2013).

*Child Feeding Questionnaire (CFQ):* Identifies weight-related perceptions and behaviors (Birch & Fisher, 2000).

*Cultural beliefs:* Refers to social suggestions, cultural propositions, or proclamations that are emotionally or mentally acknowledged as true (Modeste & Tamayose, 2004).

*Culture:* Refers to the refinement of learned behaviors, manners, and patterns obtained by social group and/or religious structure (Kumanyika, Wilson, & Guilford-Davenport, 1993).

*Unhealthy eating desires:* Defined as the desire for foods that are high in fats, sugars, and starches (Gore, 1999).

*Figure Rating Scale (FRS):* A subjective measure of muscle versus fat and self-perception of body image (Bays, Bazata, Fox, Grandy, & Gavin, 2009).

*Normal weight:* Average weight of an adult BMI that ranges from 18.5 to 24.9 (CDC, 2000).

*Obesity:* A BMI greater than 30 in adults and equal to or greater than the 95$^{th}$ percentile in children (CDC, 2000; Statistics Canada, 2000).

*Perception:* Refers to the meaning and context within which behavior occurs (Gore, 1999).

## Assumptions

The study was based on seven assumptions:

1. African American children's food choices and eating behaviors are the same as those of their mothers.
2. African American children eat the household meals prepared by their mothers.
3. African American mothers who are obese tend to raise children who also are obese.
4. African American mothers who choose a healthy diet to maintain their ideal body weight raise their children to eat a healthy diet to maintain their body weight.
5. Culture and traditional food choices influence African American women's household food choices and eating behaviors.
6. Culture and social norms influence African American women's body image.

7. The children of African American mothers who are satisfied with their body image tend to be satisfied with their mothers' body image.

## Scope and Delimitations

This study was limited to the Atlanta metropolitan area. The study sample was limited to African American mothers and their children, ages 7 to 11 years. Mothers from other ethnic backgrounds were not considered for inclusion in this study. There were no restrictions on the educational backgrounds or SES of candidates that could have precluded their joining the study.

## Limitations

This study had three limitations:

1. The assumption is that because the children in the study were minors, they did not make their food choices or prepare their own meals. The children in this study were too young to prepare their own foods, and their food choices were based on their mother's selection.
2. This study focused on a sample of African American mothers and their children from the Atlanta metropolitan area and did not seek to obtain the perceptions of and attitudes toward food choices and eating behaviors of people in suburban and rural communities.
3. This study did not assess an in-depth understanding of the African American culture; therefore this study was not able to fully distinguish the differences in family dynamics and communications based on traditions within the African American culture.

## Significance

The significance of this study was that it tried to identify the influence of African American mothers' beliefs related to their children's proneness to obesity on the food choices and eating habits of their children. This study also tried to determine how African American mothers' perceptions of their children's body image influence the children's own perceptions of their food choices, eating habits, and body image by using a model that incorporates perceptions related to understanding behaviors. Researchers have suggested that parental eating habits, feeding practices, and body image play a significant role in shaping children's eating habits, food preferences, and body image (Birch & Fisher, 2000; Birch et al., 2001). Models that incorporate healthy eating behaviors that have a positive impact on lifestyle changes are essential to public health leaders as they try to implement interventions to reduce the prevalence of childhood obesity (Birch & Fisher, 2000).

According to Skinner, Heymsfield, Pietrobelli, Faith, and Allison (2015), childhood obesity is a major problem facing the public health system. Across the United States, children are experiencing problems related to being overweight or obese (CDC, 2012). Childhood obesity affects African American, Hispanic American, and European American children from to 21 years (CDC, 2012). Determining whether relationships exist between the eating habits, food choices, and body image of African American mothers and the potential effects of their food consumption patterns on the development of obesity in their children is crucial to the implementation of future intervention and prevention strategies to address childhood obesity.

To address childhood obesity, I studied African American mothers' beliefs related to their children's proneness to obesity, household food choices, eating habits, and body image, because maternal weight can have a strong influence on their children's weight (Zhou et al., 2011). I focused on mothers because they are the primary purchasers and preparers of food in their households for children, ages 7 to 11 years. In addition, mothers often are the heads of the households in many single-parent homes. The diets of children between the ages of 7 and 11 years are driven by their mothers' food selections. The overall goal of this study was to initiate positive social change in the African American community by collaborating with community and health care professionals to address household food choices that have the potential to lead to childhood obesity. Having increased awareness of specific behaviors that impact eating habits and body image will improve the overall health outcomes of the African American community. Once public health leaders understand whether, and if so how, perceptions influence food choices, eating habits, and body image, they will be able to develop advanced behavioral models to address childhood obesity.

## Summary

Obesity is a prevalent health issue in the United States that affects African American children in particular. The goal of this study was to examine the influence of African American mothers' beliefs related to their children's proneness to obesity, household food choices, and eating habits for their children and the relationship of their perceptions to their children's body image. Researchers have supported the contention that (a) even though eating behaviors and perceptions are influenced by cultural and

family traditions, information about the influence of culture and (b) family traditions and perceptions on eating behaviors contributing to obesity among the African American population has been limited. Understanding the ways that perceptions influence behaviors regarding household food choices and eating behaviors might help to address the increased rate of obesity among the African American population. The HBM served as the framework of this study to guide behavioral recommendations to control obesity among African American children.

Presented in Chapter 2 is the review of relevant literature on the influence of African American mothers' beliefs related to their children's proneness to obesity, food choices, and eating habits for their children and their perceptions of their children's body image related to childhood obesity. In Chapter 3, I explain the methodology by providing details about the sample size, data collection and data analysis methods, and the instruments used to collect the data. I present the results in Chapter 4, and in Chapter 5, I present an overall conclusion for the study, address implications for social change, and offer recommendations for future research.

# Chapter 2: Literature Review

Childhood obesity is an epidemic facing children in African American communities. The family food choices and dietary patterns of African American women can influence their children and result in childhood obesity (McFatrich et al., 2013). As stated in Chapter 1, the purpose of this quantitative study was to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits are related to their perceptions of their children's body image and are reliable indicators of childhood obesity.

I used the CFQ, which was designed as a self-report measure for use with the parents of children ranging in age from 2 to 11 years (Johnson & Birch, 1994). The CFQ has been used to survey parental feelings and beliefs about child-feeding practices, such as food acceptance patterns, food intake control, and obesity (Birch et al., 2001). I also used the FRS, which has been used to assess perceived body images of different racial and ethnic groups (Stunkard, Sorensen, & Schulsinger, 1983). The FRS was developed by Stunkard et al. in 1983 to measure perceptions of and satisfaction with body size (Cardinal, Kaciroti, & Lumeng, 2006). The scale comprises nine silhouettes of body image that range from underweight to overweight. The silhouettes were validated with a sample of 1,979 women of different shapes, sizes, and demographic backgrounds (Stunkard et al., 1983). Perceptions of body image can impact such health-related behaviors as eating habits, food choices, and physical activity.

This literature review provides background information on the prevalence of obesity among children in African American communities as well as the factors

contributing to childhood obesity. Childhood obesity is an epidemic affecting children worldwide, but the literature review focuses on African American children and the role of mothers in deciding on the food choices and on subsequent eating habits in their household that might have an impact on their children's eating behaviors and body image. The literature review also focuses on African American mothers' perceptions of food choices, eating habits and body image that are driven by culture and tradition. In addition, I also explained the importance of the HBM to this study and reviewed literature relevant to the prevalence of childhood obesity; the psychological aspects of childhood obesity; mothers' perceptions of household food choices, eating habits, and body image based on the African American race; the impact of household food choices and eating behaviors on childhood obesity; and African Americans' perceptions of body image and the role of body image in childhood obesity.

## Literature Review

I used the following terms to search for published and unpublished literature on the MEDLINE and Google Scholar databases: *childhood obesity*, *youth obesity*, *African American women*, *eating behaviors*, *childhood feeding*, *poor diet*, *nutritional behavior*, *health belief model*, *body image*, *body size*, *poor diet*, *culture and eating*, *culture and obesity*, *overweight*, *parental perceptions*, *perceptions of body size*, *perceptions of body image*, and *obesity perceptions*. I found 75 relevant articles from 202 scanned articles.

### Prevalence of Childhood Obesity

Since the 1970s, childhood obesity has increased dramatically and has become a critical health issue in the United States (Kumar & Kelly, 2017; Ogden, Carroll, Kit, &

Flegal, 2012). Since the early 2000s, one in every three children in the United States has been dealing with being overweight or obese. Childhood obesity is a complex and multifactorial problem that is affecting children from birth to 18 years (CDC, 2012). According to the CDC (2012), children with a reported BMI in the 95$^{th}$ percentile or higher for their age are classified as obese. The prevalence of obesity has increased concomitantly with comorbidities previously known as adult diseases, including Type 2 diabetes mellitus, asthma, psychosocial health issues, including depression, low self-esteem, and decreased quality of life (QoL), hypertension, nonalcoholic fatty liver illness, obstructive sleep apnea, and dyslipidemia. The most common reason for childhood obesity is an energy imbalance that is the result of excessive caloric intake combined with a hereditary inclination to gain weight (Kumar & Kelly, 2017). No hidden single hereditary or endocrine cause for weight gain in children has been identified (Kumar & Kelly, 2017).

Obesity, characterized as an increase in the ratio of BF to muscle, happens because of the imbalance between energy intake and energy expenditure (Pirgon & Aslan, 2015). The prevalence of obesity has been identified consistently in school-age children with higher BMI levels (Zhou et al., 2011). Previous research has shown that 26-41% of preschool children are overweight or obese, and that 42- 63% of overweight schoolchildren become obese adults (Pirgon & Aslan, 2015). Obesity is a dangerous health condition that affects children of all ages; however, it is more dangerous in infants and children under the age of 5 years and the most dangerous in children over the age of 15 years (Santoro, 2013). The morbidity resulting from childhood obesity has financial

and social impacts and also leads to approximately 30,000 early deaths annually (Ogden et al., 2010).

Developmental theories such as Skinner's (1974) behaviorist approach and Freud's (1935) psychoanalytic theory have suggested that obesity can begin early in life (as cited in Savage et al., 2007). The first years of life mark a period of rapid growth, development, and dietary changes. According to Savage et al. (2007), during these early years, children learn about sustenance, and eating assumes an important role in establishing food decisions, diet quality, and weight status. Over time, children can adopt their parents' eating patterns, especially cultural eating patterns (Savage et al., 2007). If the parents follow poor dietary patterns, it is possible that the children also will have poor dietary patterns that could continue throughout life. Savage et al. suggested that children's eating behaviors at home are controlled by their parents, and that genetics also can play role in children's eating behaviors. Parents can influence their children's eating practices by making some foods more accessible than others and by modeling healthy eating behaviors that are vital to children's development and well-being.

To explain the etiology of childhood obesity, the focus has been on such factors as lifestyle preferences, environmental factors, and cultural environment. According to Sahoo et al. (2015), familial characteristics such as parenting style and parents' lifestyle can play a role in childhood obesity. Parental factors can have an impact on childhood obesity, because children tend to model the preferences of parents and peers, such as accepting and trying new foods, thus changing "food dislikes" into "food likes" (Sahoo et al., 2015). One of the biggest factors that contributes to obesity is genetics, such as

females being more susceptible to becoming obese due to inherited hormones (Sahoo et al., 2015). The etiological model, as described by Davison and Birch (2001), suggests that dietary intake, lack of exercise, and sedentary behavior are risk factors for childhood obesity. Sahoo et al. identified such environmental factors as school policies, SES, and parents' work-related demands as impacting eating practices.

A biological finding regarding obesity relates to basal metabolic rate or metabolism, the total energy expenditure to maintain the body's normal resting functions. Basal metabolic rate could be a possible cause of obesity, because it accounts for 60% of total energy expenditure (Anderson & Butcher, 2006). According to Anderson and Butcher (2006), obese children and adults have lower basal metabolic rates. Energy intake, energy expenditure, and energy balance can be possible underlying causes of childhood obesity. For example, children who eat more, take in more calories, and burn fewer calories because of their lack of physical activity are more likely than other children to become obese.

The consequences of childhood obesity can be characterized by deficits in physical health, social and emotional health, and self-esteem. Childhood obesity has been linked to various medical conditions, including fatty liver disease, Type 2 diabetes, heart disease, sleep apnea, asthma, insulin resistance, glucose tolerance, gallstones, and orthopedic problems (American Academy of Pediatrics, 2014; Niehoff, 2009). Once only seen in adults, some of the aforementioned diseases are now seen more commonly among children. Some physical health conditions are preventable and can disappear as children lose weight. Psychological factors such as anxiety, depression, self-esteem, body

dissatisfaction, eating disorders, and emotional problems are not only the causes but also the consequences of childhood obesity (Sahoo et al., 2015). According to Cornette (2008), some level of psychological impact can be associated with weight gain because children, especially female children who lack control and overeat, will have heightened psychological consequences.

**Psychological Aspects of Childhood Obesity**

According to Sahoo et al. (2015), psychological impact can be a cause as well as a consequence of childhood obesity. Although the physical and financial consequences related to childhood obesity have been documented, research on the emotional effect of children being overweight or obese has been scant. Witherspoon, Latta, Wang, and Black (2013) conducted a cross-sectional study of 235 African American adolescents between the ages of 11 and 16 years and compared the psychological risk factors of the participants who were obese and those who were normal weight. Witherspoon et al. sought to examine the association of obesity to the self-esteem of children and adolescents. The participants' BMIs were measured according to the CDC's (2012) 95$^{th}$ percentile measurement standards. Witherspoon et al. concluded that the obese participants had lower self-esteem than the participants who were normal weight because of the weight-related issues that affected the obese participants' self-esteem.

One major finding associated with obesity is the identification of body image, classified as group-specific, in obesity. Based on different gender groups male vs. females, body image may be used to determine obesity instead of BMI standards. For example, in the African American community, women may be looked upon as shapely

oppose to obese. Powell-Young, Zabaleta, Velasco-Gonzalez, and Sothern (2013) conducted a similar study with 264 African American participants between the ages of 14 and 18 years. They measured the self-esteem of the obese participants and compared it to children and adolescents in the study who had normal body weight. Powell-Young et al. sought to understand the psychological risk factors associated with obesity in children and adolescents. The participants' BMIs were measured as being equal to or less than the 85$^{th}$ percentile. They concluded that although there was no difference in the self-esteem of both groups of children, the children who were obese had a significantly lower measure of self-perception.

Childhood obesity might lead to such psychological disorders as lower self-esteem, increased psychological distress, and loneliness, as well as children losing who they are as an individual. Although these questions were beyond the scope of my study, future researchers might consider using them as the foundations of their studies. Some key questions might arise: Does obesity predict lower self-esteem? Will childhood obesity be linked to psychological disorders later in life? Can weight discrimination potentially trigger or be a stressor for elevated psychological risk factors and subsequent psychological disorders and potential weight gain in children? Can weight loss interventions consider psychological aspects in their programs? Are psychological disorders the cause or the effect of obesity? (Karasu, 2012, 2013). Can poor body image be associated with a higher risk of depression and eating disorders? (Harriger & Thompson, 2012).

According to Goldfield et al. (2010), as well as Schwimmer, Burnwinkle, and Varni (2003), children and adolescents who are obese experience lower health-related QoL and suffer from depression more than children of normal weight do. The tendency of negative attitudes toward obesity to originate in childhood could result in increased stigmatization that could reflect the social isolation that individuals who are obese endure (Ferris, 2003). According to Cramer and Steinwert (1998), children who are obese or overweight are often discriminated against or stigmatized because of their weight or body image. Obese children also are teased more because of their weight and body figure. In addition, children can be negatively stereotyped as overeaters, with the psychological effects being depression, low self-esteem, and negative body image (Mansfield & Doutre, 2011).

The potential negative consequences associated with obesity include bullying, emotional consequences, social barriers, reduced QoL, and weight-related incapacitation (Mansfield & Doutre, 2011). Children could be subject to name-calling because of their weight or body size, or they could be excluded from friendships and group activities. The negative feelings associated with obesity can damage children's QoL and result in limited friendships, restrictive sports opportunities, and feelings of isolation (Mansfield & Doutre, 2011). Weight-related issues not only might cause embarrassment to children socially but also might hinder their educational and social opportunities.

Kaplan and Wadden (1986) found no strong correlation between obesity and self-esteem. Past research has concluded that low self-esteem can be a cause as well as a consequence of obesity: People who are obese can develop low self-esteem, and low self-

esteem can result in overeating and obesity (Witherspoon et al., 2013). Kaplan and Wadden used the Piers-Harris Self-Esteem Inventory to explore the relationship between obesity and self-esteem with a sample of 851 inner-city African American children in Grades 4 to 12. They used an ANOVA to compare groups based on relative BMI. Results showed a small mean difference in self-esteem, indicating that the statistical difference was less likely to be clinically significant. The self-esteem of the participants fell within the normal range, and the ages and genders of the participants did not affect the relationship between obesity and self-esteem. Kaplan and Wadden concluded that childhood obesity alone might not affect children's self-esteem, as previously assumed, and that other factors might come into play.

Obesity is viewed as a medical condition, not a psychological disorder. According to Cornette (2011), some researchers have argued that obesity should be considered a mental or behavioral issue. Because obesity is considered a medical condition, none of the limited research has concentrated on understanding the mental impact of living with obesity or the healthy psychological state of mind needed to improve weight status. In some cases, psychological disorders might improve with weight loss or increase with weight gain (Cornette, 2011).

Weight-related issues are a potential risk factor for obesity in children and for damage to adolescents' psychological and emotional states. Monitoring for potential psychological problems arising from obesity has been worthy of consideration. Cornette (2008) examined 10 studies published between 1995 and 2005 with samples comprising more than 50 participants. Results indicated that all participants in the studies had some

level of psychosocial affect because of their weight status. Cornette asserted that the results of the studies showed that among younger females who had an increased lack of control, overeating appeared to increase the psychosocial consequences.

Psychological factors such as depression and anxiety, low self-esteem, body dissatisfaction, emotional problems, unhealthy weight control practices, and symptoms of eating disorders can contribute to or be the result of obesity. A recent review using a clinical sample of obese adolescents with anxiety disorders which was compared to nonobese adolescents with no anxiety disorders (Rawana, Morgan, Nguyen, & Craig, 2010). Although most of the studies identified a prospective relationship between eating disorders and depression, this review was found to be bidirectional, concluding that depression can be both a cause and a consequence of obesity.

Body dissatisfaction between male and female individuals is different. Male individuals tend to be more dissatisfied than female individuals with their bodies, regardless of age (Austin, Haines, & Veugelers, 2009). Austin et al. (2009) found a linear relationship between body dissatisfaction and increased BMI in girls and a U-shaped relationship in boys. Boys tended to be more dissatisfied with their bodies when they were overweight or extremely thin (Austin et al., 2009).

Low body esteem has implications for children's health and prosperity. The etiology of unhealthy eating habits and depressive symptoms, along with their relationship to low confidence, must be considered when addressing weight-related issues. Body esteem, which has been commonly associated with weight, involves the thoughts, assessments, and feelings that individuals hold about their own bodies

(Williams et al., 2013). Recent research has suggested that adolescent girls who are obese are at increased risk of low body self-esteem. Increased weight and BMI have been found to have a negative impact on body esteem and related body image (Young-Hyman, Schlundt, Herman-Wenderoth, & Bozylinski, 2003).

From a psychopathological perspective, obese and overweight psychosocial health has been studied to measure specific issues such as depression and behavioral concerns such as binging and "closet" eating (Shoup, Gattshall, Dandamudi, & Estabrooks, 2008). Childhood obesity is related to psychosocial worries such as low confidence and self-esteem that might inhibit children's development. Emerging literature on the QoL is beginning to answer questions about children's psychosocial health and satisfaction with life. According to Shoup et al. (2008), QoL can be characterized as a multidimensional step that mirrors individuals' self-perceptions of satisfaction and fulfillment with life. QoL is found to be lower in obese and overweight children than children of normal weight. The lower level of QoL that children who are obese experience has been identified with low physical functioning and low psychosocial areas (Friedlander, Larkin, Rosen, Palermo, & Redline, 2003). QoL perceptions can depend on the degree to which children are overweight, but obese children are 5 times more likely than children of normal weight to have lower health-related QoL scores globally (Friedlander et al., 2003).

Williams et al. (2013) analyzed the relationship between BMI and body esteem in urban, mostly minority, overweight and obese children, ages 5 to 7 years, who were at the $99^{th}$ percentile for BMI for their age and sex. They conducted a randomized controlled

trial with 218 participants between the ages of 5 and 7 years. The children's self-reported body esteem, perceptions of physical well-being, and reports from parents concerning their children being bullied or rejected by peers were measured (Williams et al., 2013). According to the guidelines defined in the National Health and Nutrition Examination Survey, anthropometric measures must include child height and weight data (CDC, 2007). BMI was calculated as weight in kilograms, divided by height in meters squared. The sex-particular BMI percentile for age was figured using CDC (2000) reference measures (Kuczmarski & Flegal, 2000). The Revised Body Self-Esteem Scale was used to obtain the children's attitudes and feelings about their body and appearance (Mendelson & White, 1985). To determine how the children felt about their relationships with peers and their perceptions of their physical health, Williams et al. used the MacArthur Health and Behavior Questionnaire (Essex, Klein, Cho, & Kalin, 2002).

Williams et al. (2013) found an inverse relationship of BMI to body esteem, with the results indicating that heavier boys and girls had lower body esteem ($\beta = -0.29, -0.20$, $p < .05$, respectively). Significant affiliations were discovered for being harassed and bullied by peers and poorer perceived physical well-being. In particular, girls with higher BMI reported encountering more harassment and bullying ($\beta = 0.18$, $p < .05$). Higher BMI was related to more perceived physical health issues in girls ($\beta = 0.39$, $p < .001$) and boys ($\beta = 0.38$, $p < .001$; Williams et al., 2013).

As previously mentioned, the psychological and emotional effects of obesity are felt by girls and boys globally. In many circumstances, the household contributes to the problem because of overconsumption. To understand why and how children and adults

overconsume food, I examined eating behaviors and food choices from an African American perspective.

**Impact of Household Food Choices on Childhood Obesity**

Although the prevalence of obesity has reached epidemic proportions, research describing a hunger-weight conundrum among the low-income populace in the United States appears to be nonsensical (Dammann & Smith, 2009). In 2006, approximately 11% of U.S. families were faced with food insecurities, meaning that they did not have constant access to food in the household (Nord, Andrews, & Carlson, 2009). One might wonder how these individuals became overweight or obese instead of underweight or malnourished if they had limited access to food. According to Dammann and Smith (2009), because diets high in refined grains, sugars, and fats generally cost less than diets high in lean meats, fresh fruits, and crisp leafy foods, the low-income population have had to purchase calorie-dense food items that are easily accessible at low cost.

The overconsumption of calorie-dense food items can result in overweight or obesity. Cross-sectional studies have found a link between food insecurities and obesity in low-income women (Townsend, Peerson, Love, Achterberg, & Murphy, 2001). Obesity seems to be more prevalent in low-income households, which raises concerns about food choices and eating patterns. Mothers participating in the Food Stamp program have been associated with obesity in themselves and their young daughters (Gibson, 2003). Food access in low-income households led by women has been challenging, leaving mothers to worry about feeding their children and finding strategies to obtain food. Poor food access and food choices have seen the low-income population resort to

such tactics as dumpster diving and even skipping meals when resources to obtain food are scarce (Eikenberry & Smith, 2005).

According to Dammann and Smith (2009), parental style, attitudes toward, and knowledge of nutrition shape their dietary and health behaviors. Because mothers are the primary food preparers in most households, the stress of having a low income and not being able to feed their children adequately can have a direct effect on their attitudes. Upbringing is another factor affecting parental attitudes toward family mealtime practices and eating behaviors. Some mothers, for example, tend to practice family traditions of sit-down dinners and not leaving the table until all food has been eaten (Dammann & Smith, 2009). In addition, some mothers focus on calorie-dense but nutritionally poor foods that can keep their children full when resources are scarce.

Nutritional knowledge can play an important role in the quality of household diets, influencing the food choices and eating behaviors of the primary food preparers and purchasers. Although mothers are consciously aware of the importance of nutrition in their households, they become frustrated when they cannot afford to buy healthy foods and must choose less healthy food items instead for their households.

Various studies involving low-income families have linked the increased prevalence of childhood obesity to parents' feeding styles. Over a progression of studies with African American, European American, Hispanic American, and Asian American families with children, ages 3 to 11 years, liberal feeding styles have been found to be related to higher portion sizes self-chosen by children, with lower intake of vegetables and dairy, higher intake of calorie-dense foods, and higher child weight status (Fisher,

Birch, Zhang, Grusak, & Hughes, 2013). Mothers' emotional state can play an important role in household feeding practices. Hughes, Power, Liu, Sharp, and Nicklas (2015) examined mothers' emotional state to determine how it might influence household feeding styles. The sample comprised 290 African American and Hispanic American parents who were the primary food preparers in households from a large urban area in the southwestern United States. Of the 290 participants, 96% were mothers, 2% were fathers, and 2% were grandmothers. The Caregiver's Feeding Style Questionnaire (CFSQ; Hughes, Power, Fisher, Mueller, & Nicklas, 2005) was used to measure feeding styles of low-income parents. The feeding styles measured by the CFSQ have been related to children's dietary consumption and BMI over different examples.

The 36-item Parenting Stress Index-Short-form (PSI-SF) was a parent report scale used by Hughes et al. (2015) to measure parenting stress level. Descriptive analyses were conducted using an independent *t* test and chi-square test. ANOVA was used to examine feeding-style differences in depressive symptoms and parenting stress. Parents in this study ranged in age from 31 to 37 years. Hughes et al. concluded that parental depression, along with the children's BMI *z* score, was significantly associated with feeding styles (odds ratio [*OR*] = 0.85, 95% confidence interval [0.74, 0.98]). The total parenting stress score was added to the third model, and children's BMI *z* score and parenting stress were significantly associated with feeding styles. In summary, the results of this study provided essential information with respect to the parenting stress and parent-child eating dynamic that may foster negative child eating practices and contribute to childhood obesity within the household (Hughes et al., 2015).

**Impact of Household Eating Behaviors on Childhood Obesity**

African American children's eating practices are largely connected to their ethnic identity. According to Airhihenbuwa et al. (1996), research on African Americans' eating practices has identified behaviors and cultural attitudes that lend acceptance to these eating practices. African Americans' food habits and eating practices also might reflect their southern heritage. Preliminary results of the limited research on the regular diet plans of African Americans have suggested that food represents their ethnic background and serves a psychological function (Tate, Davis, & Yarandi, 2015). Typically, African Americans' diets are high in fat, high in sugar, and low in fruits and vegetables. These eating behaviors might be transgenerational, meaning that certain eating patterns were adopted during the era of slavery as a way to obtain nourishment and ensure survival (Bediako, Kwate, & Rucker, 2004; World Health Organization, 2014). To many African Americans, their eating behaviors and practices represent their ethnic identity. According to Bailey (2006), most African Americans see the food they eat as a way to maintain their ethnic identity, innovative self-expression, and power, particularly if their eating practices solidify communal beliefs and experiences historically. African Americans are at increased risk of chronic diseases that might be related to their eating behaviors and food practices, with unhealthy eating behaviors and lack of physical activity perhaps increasing their risk of chronic diseases and health deformities (Healthy People 2020, 2014; Reed, Dancy, Holm, Wilbur, & Fogg, 2013).

Tate et al. (2015) asserted that some African American adolescents might be obese because of ethnic identity and familial socialization, the latter of which relates to

the ways that adolescents perceive their body shape or figure based on ethnic identity or social setting. They conducted a study in Detroit to examine the influences of familial socialization and ethnic identity on the physical activity and eating behaviors of African American adolescents. The nonrandom sample of convenience comprised 145 African American adolescents (88 female and 57 male participants), ages 15 to 17 years.

Tate et al. (2015) used a descriptive, correlational design to examine the relationship between ethnic identity and familial socialization. They measured familial socialization using the Sociocultural Influences Questionnaire (SIQ; McCabe & Ricciardelli, 2001). Two of the six scales, each of which has 13 questions, were used to measure maternal influences (SIQ-M) and paternal influences (SIQ-P). Ethnic identity, characterized as the feeling of having a place within an ethnic group, also refers to the thought processes, perceptions, emotions, and behaviors that are reflective of the ethnic group (Phinney & Rosenthal, 1992). Ethnic identity was assessed using Phinney's (1996) Multigroup Ethnic Identity Measure, a 20-item survey, to measure adolescents' level of identity with their ethnic group. Responses were scored on a 4-point Likert type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*; Phinney, 1996). A descriptive analysis was performed using SPSS v.19.0. A two-tailed test was performed to reach an alpha level of 0.05.

To evaluate the impact of ethnic identity and familial socialization on the adolescents' eating behaviors and physical activity, Tate et al. (2015) used multiple regression equations. Results showed that most of the adolescents in the study could relate to their ethnic identity, and that ethnic identity was not related significantly to

eating behaviors or physical activity. However, maternal influences were found to be related significantly to the adolescents' eating behavior, with mothers having a stronger relationship to eating behaviors, and fathers having a stronger relationship to physical activity. Overall, Tate et al. concluded that perceived familial socialization was positively associated with the eating behaviors and physical activity of the adolescents in their study.

Culture and family traditions might significantly influence parental perceptions of food and eating behaviors. Porter, Shriver, and Ramsay (2016) asserted that African Americans prefer traditional foods because they provide a sense of comfort and that they feel strongly about not changing their dietary patterns because changing them would mean giving up traditions. Porter et al. conducted a study of eight focus group comprising African American parents of children, ages 3 to 5 years. They used a convenience sample of low-income participants who had diverse attitudes and beliefs about food. The parents in the study completed the CFQ to identify feeding practices related to eating behaviors and weight. Three categories were created to assess parents' perceptions of their children's weight: underestimate, match, or overestimate. Six themes emerged from the analysis of the data provided by the focus groups to identify food choices, the importance of adhering to a good diet, and maternal concerns identified with children's diet and weight.

Porter et al. (2016) found that even though the mothers were fully aware of the importance of choosing healthy foods for their families, they had misconceptions about food and nutrition. For example, the mothers thought that all foods, including wheat

bread and fruit juice, as identified by the Special Supplemental Nutrition Program for Women, Infants, and Children, were healthy and nutritious. The mothers believed that all foods would provide some sort of nutrition to their children, so they were unaware of the difference between selecting foods for health and selecting foods for nourishment.

**Perceptions About Weight Based on Culture**

It is vital to stress the importance of weight and attempt to understand the cultural and social settings that shape the practices of African American women and direct their lives. Approximately 34 million Americans, particularly African American women, are overweight and have various health problems associated with being overweight (Gore, 1999). African American women's views about body weight are less negative because of cultural norms and their perceptions of normal weight and ideal weight. Ritenbaugh (1982) analyzed the body size values of African American women and concluded that the most imperative environmental impact was the social standard of beauty defined by the various body sizes of members of the African American community. African American women have various feelings about overweight and obesity. According to Flynn and Fitzgibbon (1998), research has shown that African American women view overweight bodies as more attractive than normal weight bodies.

Cultural traditions also have heavily influenced the dietary behavior of African Americans. Blixen et al. (2006) reported that the African American women in their study felt that culture and ethnicity were important factors in preventing them from losing weight. They recalled from childhood that because greasy foods were a major part of their eating customs, they continued to eat them in adulthood. Greasy foods, high salt intake, sugar, and fatty meats continue to contribute to the excessive weight gain among African Americans. Based on culture and family traditions, some African American families prepare and eat food for satiety rather than nutrition and a healthier QoL (Blixen et al., 2006).

Woodruff et al. (2018) conducted a qualitative study to explore women's feelings about their weight and future weight gain. Participants were women between the ages of 20 and 29 years (*Mean* = 24.6), with 12.5% overweight, 65% African American, and 55% obese. The women expressed dissatisfaction with their weight and concerns about future weight gain based on family history, unhealthy lifestyles, and chronic disease. The women also had concerns about not receiving positive reinforcement as a form of validation from family and friends regarding weight loss. The African American women in the study had the greatest concerns about how their family and friends viewed their appearance, and they tended to focus on advice from family and friends because the African American culture views weight gain differently from other race cultures. Woodruff et al. concluded that the young female adults were dissatisfied with their present weight and worried about future weight gain.

Bucchianeri, Arikian, Hannan, Eisenberg, and Neumark-Sztainer (2013) conducted a similar longitudinal cohort study with female adolescents transitioning into young adulthood. The findings were similar to Woodruff et al.'s (2018) results, reflecting a significant increase in body dissatisfaction in this age group because of weight gain. The participants showed great concern about their present weight and future weight. They also tended to focus on advice from family and friends regarding weight gain instead of the advice received from health care providers.

Epperson et al. (2014) found that based on ethnicity or racial group, differences existed in the perceptions of weight and body image. Epperson et al. conducted a study of African American, Latino American, and European American adolescents to examine

their perceptions of weight, body size, and diet plans. The sample comprised 3,954 students in Grade 5 (*M* age = 11.2). The participants were selected randomly from public schools in metropolitan areas in Texas, California, and Alabama.

Past research has indicated that children and adolescents ages 8 to 18 years are more dissatisfied with weight loss programs and strategies (McCabe & Ricciardelli, 2003). Epperson et al. (2014) noted that even though individuals from all racial groups try to lose weight through diet and exercise by the time that they are in Grade 5, more attempts are made by African American and Latino American youth. All racial groups also display some sort of body size dissatisfaction. African American youth do not associate body size with weight loss attempts, whereas Latino American and European American youth do. Epperson et al. suggested that diet plans and attempted weight loss are common to adolescents from all racial groups because of their negative perceptions of their body size.

Talleyrand, Gordon, Daquin, and Johnson (2017) explored societal norms about body image and eating behaviors that can influence African American women's appearance. They conducted consensual, qualitative research to examine the experiences of the participants regarding body image, eating practices, and attitudes toward eating. The 11 African American women in the sample were selected from the Greater Washington Metropolitan area. They ranged in age from 25 to 59 years (*M* = 33) and weight ranging from 113 pounds to 238 pounds (*M* = 182).

Analysis of the perceptions of body image for the African American women produced five themes (self, media, family, peers, and companion; Talleyrand et al.,

2017). Talleyrand et al. found that the women were generally satisfied with their body image based on cultural norms and that this satisfaction was accompanied by self-motivation and environmental influences. The researchers concluded that African American women are more likely than women from other racial and ethnic groups to accept their heavier body size and be satisfied with their weight, and they determined that external influences such as media, family, and men equally influenced the body image perceptions of the African American women in the study. They also asserted that although the women had nutritional knowledge, they faced challenges related to time in preparing meals, overeating, and emotional eating, all of which affected their eating habits and body image.

Vangeepuram et al. (2016) conducted a survey using community partner methods such as coming together and sharing expertise to examine parental perceptions of their children's weight compared to the parents' overall health and lifestyle. The independent variable was parental perceptions of their children's weight and height, and the dependent variables were demographics, children's dietary behaviors, and physical activity. One hundred and sixteen parents of children ages 3 to 15 years ($M$ = 7) were surveyed. To obtain the parents' perceptions of their children's weight, Vangeepuram et al. asked them if they considered their children's weight as underweight, normal, or overweight. Results showed that the parents' perceptions of their children's weight were different from the children's actual BMIs, that is, the parents either underestimated or overestimated their children's weight compared to BMI standards. The parents who stated that their children were overweight concurred with BMI measures showing that their children were

overweight. The parents of children who were obese reported their children's weight as less than what the BMI measures reflected. Girls and boys had similar rates of overweight or obesity at 54% and 56%, respectively, with girls being more obese than boys (63% vs. 33%), a result indicating that parents underreported boys' obesity more than girls' obesity.

Parental perceptions of their children's weight are especially vital because a healthy weight in childhood establishes the foundation for a healthy weight in adulthood (Lundahl, Kidwell, & Nelson, 2014). Miller, Johnson, Miller, Miller, and Sutin (2016) conducted a survey of caregivers using a multicultural sample of women drawn from two pediatricians' offices in a city in Florida to examine their perceptions of a healthy weight for children. Four hundred and fifty-three caregivers completed the survey by recording the children's weight measures on the survey. The caregivers rated their perceptions of the weight of the girls and boys under their care using the child version of the Contour Drawing Rating Scale (Wertheim, Paxton, & Tilgner, 2004). Miller et al. gave the caregivers seven figures of girls and boys ranging from underweight to obese and asked them to circle the figure that reflected a child of healthy weight. The caregivers who also were parents were asked to rate their children based on the figures on the Contour Drawing Rating Scale. Logistic regression was used in this study to predict the status of child obesity based on the three-perception ratings of *satisfied*, *dissatisfied*, and *somewhat satisfied*.

Results indicated that the parents had different perceptions of what they accepted as a sound weight for children and how they saw their own children's weight specifically

(Miller et al., 2016). African American parental figures in low-income areas with higher BMIs did not perceive heavier girls as obese; rather, they perceived their weight as healthy and were more likely to inaccurately report their own children's weight due to their weight- related perceptions.

**African American Women and Body Image**

Speaks (2012) used interview questions, field notes, and observations to identify four subthemes related to understanding the cultural factors that influenced the perceptions of body size and eventually affected the food choices made by obese African American women. The sample comprised eight obese African American women. The purpose of the study was to describe the social outlook and acceptance of weight and perfect body size among obese African American women. Results identified the following subthemes related to the overarching theme: acceptance of a heavier body size by self, the acceptance of a heavier body size by others, cultural foods that affect heavier body size, and sedentary lifestyle that affects heavier body size. Speaks found that many of the African American women viewed their larger body size as attractive and desirable, especially among the African American population, and that loving their heavier body size gave the women a sense of self-value and self-worth. Additional studies are suggested to examine self-worth in relation to perception of body size.

Cameron, Muldrow, and Stefani (2018) wrote about African American women's perceptions of health, body image, and attractiveness related to body weight and culture. They asserted that African American women do not follow European American body norms and view their larger body size and full figure as attractive. According to Ard et al.

(2013), African Americans refer to their own culture beliefs and norms that a curvier body size is more attractive. Both groups of researchers agreed that African American women have culturally derived notions of attractiveness that relate to "big, curvy, and sexy." The researchers also suggested that African American women have more positive views of weight and attractiveness and have complained that weight charts indicate that they are less attractive than women who meet normal weight standards. African American study participants have portrayed themselves as healthy, regardless of being obese or slim, and have referred back to beliefs within the community regarding obesity that "bigger is healthier" (Brown, Hossain, & Bronner, 2014).

The prevalence of obesity continues to increase among African American women (Pickett & Peters, 2017), and weight beliefs might be contributing to this increase. Pickett and Peters (2017) examined the relationship between beliefs about African American body weight and BMI. They used a descriptive, cross-sectional design with a nonprobability sample of 150 African American women between the ages of 18 and 40 years ($M$ = 28.4). The researchers used descriptive statistics to assess the responses to the questions about the women's beliefs about their weight. The women's responses were measured on a 3-point Likert-type scale of responses: *agree*, *disagree*, and *undecided*. To predict BMI, multiple linear regression was used to examine the women's beliefs about their weight. Pickett and Peters concluded that the African American women in the study were satisfied with their weight and viewed their size as attractive. However, the women felt differently about their weight in relation to BMI weight standards because the

majority of them were obese or overweight, causing them to feel less attractive based on BMI.

Antin and Hunt (2013) used open-ended interview questions and a qualitative approach to organize themes related to food choices, eating behaviors, and weight perceptions of self and others. The sample comprised 20 African American women ages 18 to 25 years ($M$ = 22.5) who lived in low-income areas. To identify the seven emergent themes, an iterative approach was used to collect the data. The findings identified the following related themes: (a) women's satisfaction and dissatisfaction with their bodies, (b) tension between individual and societal acceptance of body image, (c) individuals' perception of their own bodies, (d) tension between internal thoughts of acceptance of one's body and external evaluations, (e) beauty defined culturally and socially, (f) perceptions of body weight multidimensional experience of African American women, and (g) self-perceptions of body weight.

Antin and Hunt (2013) found that regardless of size, the women stressed some dissatisfaction with their weight. However, many of the women also alluded to rejecting the social definition of beauty and stressed that they generally loved their bodies as they were. They concluded that African American women pay little attention to whether they are overweight and might disguise the stigmatization of weight in light of the fact that their ethnicity, sexual orientation, and social class status are associated with the risk of obesity.

Lynch and Kane (2014) assessed African American women's perceptions of body size using culturally defined body size terms. Sixty-nine African American women whose

weight fell into the categories classified by body image scale figures as overweight, obese, or too fat comprised the sample. The women selected the figure on the body image scale that most resembled their present size. Results indicated that depending on weight status, the participants did not classify their own body image as obese or overweight. None of the participants classified their figure as too fat, highlighting a difference between cultural and medical interpretations of body size among African American women.

Another tool that has been used to evaluate body image is Collins' (1991) FRS, which was developed specifically for use with children. Collins designed a progression of illustrations reflecting the body sizes of male and female children and adults. The seven figures range in size from thin to obese, and the respondents must rate which figures best represent their current and perfect body shapes. According to Gardner and Brown (2010), the scale is commonly used with children to measure their perceptions of their current body size and ideal body size

## Health Belief Model

The HBM was developed in the 1950s by Hochbaum, Rosenstock, and Kegels. Hochbaum was a public health professional who specialized in health behavior and health education. He developed the model in response to the lack of people participating in tuberculosis health screenings; it is widely used now to promote positive health actions and support health screening (Fathi et al., 2017). The HBM is one of the most widely used models in understanding health behaviors. At the time, Hochbaum was working with the U.S. Public Health Service, analyzing the factors related to participation in

tuberculosis screening programs (Hochbaum, 1956). The components of the HBM are vulnerability, seriousness, danger, advantages and boundaries, signals to move, and the making of better health choices (Glanz, Rimer, & Viswanath, 2011). Since the 1950s, the HBM has been used to explain alterations in health-related behaviors and guide health behavior interventions (Shojaei, Farhadloo, Aein, & Vahedian, 2016).

The HBM was designed to help individuals not currently suffering from diseases. The HBM relates to behavior, for example, explaining behavior related to the problem, predicting behavior related to the problem, and influencing the behavior (Fathi et al., 2017). The HBM specifies that decision making explains the choices that individuals make about alternative health behaviors (Shojaei et, al., 2016). Behavior depends on how important the outcomes are to the individuals and the likelihood that given actions will result in the desired outcomes. The main constructs of the HBM are perceived threat, or the perception of the risk of becoming ill; perceived benefits, or the perceptions of treatment and interventions to reduce the threat of acquiring disease; perceived barriers, or the failure to take health action because of denial; and cues to action, or the decision to take action to fight disease or the willingness to take action (Shojaei et al., 2016).

Children are influenced by the behaviors of their parents, especially their mothers (Porter et al., 2016). The HBM can influence the severity of the perceptions of mothers and children about childhood obesity. The HBM aims to predict whether individuals will choose or decline to engage in healthy behaviors to prevent or reduce the likelihood of disease (Glanz et al., 2011). The purpose of using the HBM is to support the theoretical

basis that engaging in behaviors based on perceptions can contribute to the modeling of behavior.

## Summary

Obesity is a health issue facing many children in the United States, especially African American children (Davis, Northington, & Kolar, 2000). Many factors are contributing to childhood obesity in the African American community. Results of the third National Health and Nutrition Examination Survey indicated that children in the United States from ethnic minorities are at high risk of cardiovascular disease because of their levels of obesity (Davis et al., 2000). Children who are obese face medical and psychological problems that can be the cause as well as the consequence of obesity. African Americans are faced with additional factors that contribute to obesity, with most African Americans not meeting current BMI standards. Perceptions of body size relate back to cultural norms that can impact offspring and future generations. Kumanyika et al. (1993) concluded that obesity is socially characterized and not defined similarly by all segments of society, especially the African American community. African Americans might not consider obesity negatively because they relate full figures to attractiveness, a positive self-image.

Children's eating practices are influenced by parental—particularly maternal—eating practices, dispositions, and feeding practices. Children tend to adopt their mothers' feeding practices and eating behaviors, factors that can be contributing to the obesity of African American adults and children. To understand the influence of maternal beliefs

related to their children's proneness to obesity, household food choices, and eating habits on childhood obesity, I discuss the research method of the study in Chapter 3.

# Chapter 3: Research Method

The purpose of this study was to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits, and their children's body image were related to children's perceptions of their own body image and were reliable indicators of childhood obesity. I explain that the rationale for using a cross-sectional research design was to get a snapshot of African American mother's beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits at the present moment.

The sample comprised 86 mothers and 86 children from the African American community in the Atlanta metropolitan area. I provide information in Chapter 3 about the sampling procedures to determine and recruit the required number of participants. I explain the data collection and data analysis protocols, along with the threats to validity and the ethical procedures that I undertook to protect the participants.

Childhood obesity is one of the more serious health challenges of the 21st century facing African Americans. African American children bear the greatest morbidity burden of childhood obesity, which has reached epidemic proportions and has become a lifelong health issue in the United States (National Institutes of Health, 2007). According to Fletcher, Cooper, Helms, Northington, and Winters (2009), the obesity rates among African American children and adolescents continue to increase and will be maintained in adulthood.

Childhood obesity is the result of parental choices as the primary food preparers in the household. Caregiver perceptions of food choices and eating habits can be a

predictor of childhood obesity (Birch et al., 2001). Research has suggested that parental food choices and eating behaviors, especially those of mothers, directly influence children's food choices and eating behaviors that can lead to obesity (Birch & Fisher, 2000). The purpose of the study was to examine the link between African American mothers' beliefs related to their children's proneness to obesity, household food choices, eating habits of their children, and how the mothers' perceptions of their children's body image influenced the children's own food choices, eating habits, and body image.

Five RQs and their hypotheses guided the study:

1. Is there a relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image?

$H_{01}$: There is no relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image.

$H_{a1}$: There is a relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image.

2. Is there a relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image?

$H_{02}$: There is no relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image.

$H_{a2}$: There is a relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image.

3. Is there a relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image?

$H_{03}$: There is no relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image.

$H_{a3}$: There is a relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image.

4. Is there a relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mothers' household food choices, and eating habits?

$H_{04}$: There is no relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and eating habits.

$H_{a4}$: There is a relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and eating habits.

5. Is there a relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, household food choices, and eating habits?

$H_{05}$: There is no relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, mother's household food choices, and eating habits.

$H_{a5}$: There is a relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, mother's household food choices, and eating habits.

## Research Design and Rationale

I conducted this cross-sectional study with a sample of African American mothers ($n$ = 86) and their children, ages 7 to 11 years ($n$ = 86). I obtained my data using the CFQ, which focuses on obesity proneness typically seen in children, ages 2 to 11 years, and the FRS to understand the participants' beliefs and perceptions about food choices, eating habits, and body image (Birch et al., 2001). The 31 items on the CFQ ask about perceptions, attitudes, and practices regarding feeding practices and food acceptance patterns between mothers and their children (Birch et al., 2001). I asked the mothers to complete the CFQ to obtain their perceptions about food choices and eating habits for their children.

The CFQ follows a seven-factor model: Four factors measure parental beliefs and perceptions about their children's susceptibility to obesity, and the other three factors measure parental attitudes toward feeding practices and food control practices (Birch et al., 2001). The seven factors of the CFQ are based on parents self-reporting their own weight, the weight of their children, concerns about their children's weight, food control practices concerning their children, support in encouraging children to eat healthy foods, role regarding feeding practices, and role in monitoring consumption in regard to quantity and frequency.

I asked the mothers and their children to respond to the FRS to compare their perceptions about their own body image. The FRS includes a progression of nine body figure illustrations of increasing body measure that ranges from thin to obese. The nine silhouettes in this study were classified as thin, normal weight, overweight, and obese. Participants rated which illustration best represented their present and perfect body shape (Stunkard et al., 1983). Ideal body size relates to the feeling or image that an individual has about body size and shape (Slade, 1994). Collins (1991) produced a similar scale designed for children that had illustrations of seven body figures ranging in size from thin to obese.

My rationale for selecting mothers to participate in this study was based on the notion that mothers, not fathers, are the primary food preparers for their household. Thus, I did not include fathers in the sample (Fielding-Singh, 2017). I obtained informed consent from the mothers and assent from the children. I asked the mothers and their

children to share their perceptions of their weight based on the body images on the FRS (W.-S. Lo et al., 2012).

## Population

I conducted the study in predominantly African American communities in the Atlanta metropolitan area. Cross-sectional sampling allowed me to select participants randomly from the African American population who were representative of the target population, not just of overweight and obese people (Patton, 1990). The mothers and children were not selected based on body size, SES, education, or physical appearance. The sample comprised 86 African American mothers and 86 children, ages 7 to 11 years who were enrolled in Grades 2 to 6 at the time of the study.

## Sampling and Sampling Procedures

I used cross-sectional sampling to recruit my participants. Target areas of recruitment included afterschool programs, community organizations, youth sports parks, and recreational centers. African American mothers of all ages, SES, and educational background who had at least one child in Grade 2 to Grade 6 were eligible to join the study.

The inclusion criteria were based on developmental factors, such as ages of the children in their food preferences and deciding what they were going to eat. The food choices of younger children ages birth to 6 years are usually guided by their parents, and as children transition into the preadolescent stage, they are more likely to have opinions about food preferences that include food choices and eating times. By the time most children reach adolescence, they are either overweight or obese. The highest rate of

obesity is seen in adolescents, ages 12 to 19 years (Ogden, Carroll, Kit, & Flegal, 2014). Older children tend to have more of a voice concerning their food choices and eating habits and are not mostly guided by their parents' decisions on eating. Younger children were more appropriate than older children to be in this study in providing the data needed because the focus was on the influence of the mothers' food choices, eating habits, and body image on their children and childhood obesity.

I obtained my data from a cross-sectional sample of African American women and children. This way of selecting the sample for the study was appropriate because of the convenience to use surveys to gather information from the mothers and children at a single given time to study eating behaviors, and the cross-sectional design was used to assess demographic characteristics and examine the characteristics of the participants (Creswell, 2003). To obtain a cross-sectional sample, I found that the best approach was to target community organizations and social locations. To determine the sample size necessary for a multiple regression model, I used G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009). With three predictors (food choices, eating habits, and body image), based on a medium effect size ($f^2 = .15$) and an alpha level of $\alpha = .05$, the sample size to achieve sufficient power (.80) was 77 participants.

## Data Collection

I collected demographic information that included each mother's name, phone number, marital status, highest level of education, household income, and reported weight, and each child's name, age, date of birth, gender, and reported weight (see Appendix C). I used the seven CFQ variables as the IVs: perceived responsibility (PR),

perceived parent weight (PPW), perceived child weight (PCW), concern about child weight (CCW), restriction (R), pressure to eat (PTE), and monitoring (M). The mothers' rankings of their children's body image, and the children's self-rankings of body image were the DVs. The actual weight of the mothers and their children were collected and recorded, but they were not used to measure perceptions; instead, the perceptions were obtained from the responses on the CFQ and the FRS. Some of the items on the CFQ asked the mothers about their own childhood weight, and in the data analysis that is presented later in the study, it became evident that their own perceptions of their weight in childhood influenced their perceptions of their children's weight.

The mothers and their children answered questions on the FRS about body image perceptions and their perceived ideal body size or body satisfaction for themselves and their children. The mothers responded to questions on the FRS regarding perceptions of their present body size and how they would like to look, as well as questions about their children's body size and how they would like their children to look. The children responded to similar questions about their own body size and how they would like to look. The children also responded to one outlier question about the ideal body size that their parents would select for them.

## Data Collection Tools

The FRS was developed by Stunkard et al. (1983) to measure perceptions of and satisfaction with body size. The FRS is a subjective measure of muscle versus BF. The scale comprises nine silhouettes of body image that range from underweight to

overweight. The FRS has good test-retest reliability of .85 because the nine silhouettes of various body images were validated in past studies (J. Thompson & Altabe, 1991).

I used the FRS to measure the mothers' perceptions of their children's actual body size in comparison to the mothers' perceptions of the perfect size that they would like their children to be (Bays et al., 2009). I also used the scale to measure the children's perceptions of their actual body size in comparison to the body size that they would like to be. I then compared the ratings of actual body size to ratings of ideal body size to determine if both mothers and children were satisfied or dissatisfied with the children's body size and if the mothers' body size impacted their children's perceptions of body size. Responses to the FRS determined if body dissatisfaction existed between the mothers and their children. Body dissatisfaction exists when there is a disconnect between the mothers and children regarding actual size and ideal body size (M. A. Thompson & Gray, 1995).

The CFQ was designed for use with the parents of children ranging in age from 2 to 11 years (Johnson & Birch, 1994). This tool consists of 31 items that support seven factors; four of the factors measure parental beliefs and perceptions about their children's susceptibility to obesity, and three factors measure parental attitudes toward feeding practices and food control practices (Birch et al., 2001). The CFQ was validated from the initial scoring above 0.70 in internal consistencies for the seven factors (Birch et al., 2001). The CFQ has also been validated by several researchers (e.g., Canals-Sans et al., 2016; O'Connor et al., 2016; Schmidt et al., 2017) to assess the beliefs and perceptions of

a variety of participants, including African Americans, Hispanic Americans, European Americans, and Mexican Americans.

I used the CFQ because the children in my study fell into the age range of 7 to 11 years. According to Birch et al. (2001), the CFQ has been used with different samples to assess parental perceptions and attitudes toward child-feeding practices and food control practices. Similar surveys, such as the Feeding Strategies Questionnaire and the Mealtime Behavior Questionnaire, also have been used to measure the feeding behaviors of and the effect of food control on younger children, typically between the ages of 2 and 6 years (Berlin, Davis, Silverman, & Rudolph, 2009; Berlin et al., 2010).

I asked the mothers to complete a separate demographic questionnaire to obtain such descriptive information as level of education, marital status, and financial status. I did not use this information in the data analysis. The mothers also reported their own weight and their children's weight. I did not use the BMI to determine obesity or overweight status because most African Americans do not meet BMI standards, and body size is culturally defined by African American females (Austin et al., 2009).

Other questionnaires on body image and feeding have been used to identify parental beliefs and practices regarding children's eating behaviors. However, I used none of them in my study. The Outcome Measure Tools: About Your Child's Eating is a 25-item questionnaire that measures parental beliefs and concerns about eating behaviors among school-age children (Davies, Ackerman, Davies, Vannatta, & Knoll, 2007). Davies et al. (2007) focused on children's frequent eating behaviors, parental concerns

about mealtime, eating concerns, and parental interactions with their children during mealtime.

## Data Collection Method

I conducted the study in the Atlanta metropolitan area in predominantly African American communities**.** I used cross-sectional sampling to select participants randomly to represent the target population of African American women and children, ages 7 to 11 years of all sizes, not just overweight and obese people (Patton, 1990). Participants were recruited at Power Body Wellness and Beauty Resides in My Image (BRIMI) events held on September 15, September 22, September 29, and October 6, 2018. Permission to host recruitment events was obtained from Power Body Wellness and BRIMI as part of the IRB process. Over the course of the four recruiting events, 86 mothers and 86 children were selected to participate in the study.

I asked the mothers to complete the 34-item CFQ (Johnson & Birch, 1994) and rate their perceptions of their children's body image using the four-item FRS (Stunkard et al, 1983. I asked the children to use the FRS to indicate which body image best described their self-perceptions of their body image. I also asked the mothers to complete a separate demographic questionnaire to obtain information about their level of education, the genders and ages of their children, and their marital and financial status. I did not use this information in the data analysis.

I administered the surveys to the mothers and children at the recruitment site in a private room designated only for use by the participants. All had provided signed consent and assent forms earlier. I gave the children adequate information about the study in a

language understandable to them. Most surveys were completed at Power Body Wellness. Some of the participants took the surveys home and returned them at a later date in person, by postal mail, or e-mail. A total of 86 surveys were completed in their entirety. These 86 surveys were used in the data analysis.

## Data Analysis

I conducted a binary logistic regression analysis to determine the extent to which the African American mothers' food choices and eating habits were related to their perceptions of their children's body image. Binary logistic regression tests the maximum likelihood that an event will occur based on the presence or absence of predictor variables (Field, 2009). Correlation analysis was used to determine if there was a relationship between the mothers' perceptions of their children's body image and the children's self-perceptions of their body image. Correlation analyses test the strength and direction of the relationship between two variables (Laerd Statistics, 2018). Prior to conducting each analysis, I compiled the survey data into a spreadsheet and then exported them into SPSS.

To assess the impact of the mothers' perceptions of food choices, eating habits, and body image on their children's food choices, eating habits, and body image, I used separate regression models. For RQ1 and RQ2, the IVs were the seven factors of the CFQ: PR, PPW, PCW, CCW, R, PTE, and M. The DV for RQ1 was the children's eating habits; the DV for RQ2 was children's food choices. For RQ3, I performed a Spearman rank correlation to determine the relationships, if any, between mothers' perceptions of their children's body image and the children's self-perceptions of body image. The variables included in the Spearman rank correlation analysis were mother ranking of

child body image (MRBI) and child ranking of body image (CRBI). For RQ4 and RQ5, I performed binary logistic regression to determine the relationship, if any, between proneness to childhood obesity, children's eating habits, and children's self-perceptions of their body image. The IVs for the logistic regression were all seven CFQ factors: PR, PPW, PCW, CCW, R, PTE, and M) The DV for RQ4 was MRBI; the DV for RQ5 was CRBI.

**Data Preparation**

The survey data set comprised the mothers' responses to the CFQ and the FRS, along with the children's responses to the FRS only. I used the mothers' responses to the CFQ to calculate seven factors related to children's proneness to obesity: PR, PPW, PCW, CCW, R, PTE, and M. The seven factors from the CFQ were calculated as follows:

1. Perceived responsibility (PR): This factor was calculated by taking the average of responses to items 1 to 3 on the CFQ. The 5-point Likert scale of responses for PR items ranged from 1 (*never*) to 5 (*always*).
2. Perceived parent weight (PPW): This factor was calculated by taking the average of responses to items 4 to 7 on the CFQ. The 5-point Likert scale of responses for PPW items ranged from 1 (*markedly underweight*) to 5 (*markedly overweight*).
3. Perceived child weight (PCW): This factor was calculated by taking the average of responses to items 8 to 13 on the CFQ. The 5-point Likert scale of responses for PCW items ranged from 1 (*markedly underweight*) to 5 (*markedly overweight*).

4. Concern about child weight (CCW): This factor was calculated by taking the average of responses to items 14 to 16 on the CFQ. The 5-point Likert scale of responses for CCW items ranged from 1 *(unconcerned*) to 5 (*concerned*).
5. Restriction (R): This factor was calculated by taking the average of responses to items 17 to 24 on the CFQ. The 5-point Likert scale of responses for R items ranged from 1 (*disagree*) to 5 (*agree*).
6. Pressure to eat (PTE): This factor was calculated by taking the average of responses to items 25 to 28 on the CFQ. The 5-point Likert scale of responses for PTE items ranged from 1 (*markedly underweight*) to 5 (*markedly overweight*).
7. Monitoring (M): This factor was calculated by taking the average of responses to items 29 to 31 on the CFQ. The 5-point Likert scale of responses for M items ranged from 1 (*never*) to 5 (*always*).

I used four variables from the FRS:

1. Mother ranking of child body image (MRBI): This variable was measured using an 8-point Likert scale of responses that ranged from 1 (*underweight*) to 8 (*morbidly obese*).
2. Child ranking of body image (CRBI): This variable was measured using an 8-point Likert scale of responses that ranged from 1 (*underweight*) to 8 (*morbidly obese*).
3. Sex: This variable was measured using dichotomous categories: Girl (1) and Boy (2).

4. Age: This variable was measured using the following values: 7 years old (1), 8 years old (2), 9 years old (3), 10 years old (4), 11 years old (5), and 12 years old (6).

The seven CFQ variables were the IVs used for the regression analyses. MRBI and CRBI were used as the DVs for the regression analyses, as well as the two variables of comparison for the correlation analysis. The variables of sex and age were used to provide descriptive statistics of the sample.

## Threats to Validity

To prevent sampling bias, I randomly selected participants who were representative of the target population and members of the African American community, not simply those who were overweight or obese individuals. The CFQ has been used with a variety of study samples and has been validated in past studies to assess feeding practices (Birch et al., 2001).

The FRS has a high test-retest reliability related to validity, and according to Gardner and Brown (2010), the simultaneous and discriminant validity and dependability of the FRS has made it valuable for use in clinical and epidemiological studies. However, the FRS also has been criticized for the small number of figures and the restricted range of body sizes (Gardner, Friedman, & Jackson, 1998). There was a threat to self-reporting the data because the respondents did not share their true weight class.

## Ethical Procedures

I gave the participating mothers the informed consent form for themselves and the assent form for the children. The informed consent included an overview of the study, a

statement of confidentiality, a description of the voluntary nature of the study, and my plan to address ethical concerns. I included my contact information on the informed consent form in case they had questions about any aspects of the study. I also gave them the option of receiving the results of the study. If they expressed an interest in receiving the results, I will mail them to the addresses listed on the informed consent once the study has been completed and published. Upon receiving the signed consent and assent forms, I asked the mothers and their children to complete the CFQ and the FRS. Once they completed and returned them to me, I gave all participants a $5 gift card to Tropical Smoothie Cafe. I received permission to use both surveys (see Appendices D & E).

After receiving approval from Walden University's Institutional Review Board (IRB Approval No. 09-12-18-0474903), I proceeded to conduct the study. I obtained the necessary consent and assent forms from the participants. I took precautions not to place any pressure on the mothers to join the study. I explained the study protocol clearly to the participants, including the fact that joining the study was voluntary and that they had the right to withdraw from the study at any time without any negative repercussions. I maintained the confidentiality and privacy of the participants by not disclosing any information to individuals not involved in this study and by storing the data on a secure hard drive and a thumb drive in a locked office that only I had access to. Three years after completing the study, I will destroy all study data, as per Walden University's IRB guidelines.

I advised the participants of the survey items and additional data that I would collect for this study. I informed the participants that only I had access to the data and

that I would secure the data only for the time required by Walden University's IRB. Some participants who felt insecure about their body image experienced some emotional distress and discomfort in having to share their eating habits. The participants did not receive any financial gain from being in this study, but they were expected to gain a better understanding of the ways that their perceptions influenced their own and their children's food choices, eating habits, and body image.

## Summary

I followed a cross-sectional approach to survey 86 African American mothers and 86 children to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits, and their children's body image were related to children's perceptions of their own body image and were reliable indicators of childhood obesity. Past researchers have contended that eating habits and perceptions about weight are related to family values, cultural beliefs, and societal beliefs. I collected data from the participants' responses on the CFQ and the FRS. I present the results in Chapter 4.

# Chapter 4: Data Analysis and Results

The purpose of this quantitative study was to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits, and their children's body image were related to children's perceptions of their own body image and were reliable indicators of childhood obesity. In this chapter, I discuss the results of the analysis of the data collected from the 86 African American mothers and 86 children, ages 7 to 11 years ($n$ = 49 boys and $n$ = 37 girls) that comprised the study sample, which totaled 172 participants.. The data were analyzed using logistic regression and correlation analyses to answer the following RQs:

1. Is there a relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image?

   $H_{01}$: There is no relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image.

   $H_{a1}$: There is a relationship between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image.

2. Is there a relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image?

$H_{02}$: There is a no relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image.

$H_{a2}$: There is a relationship between African American mothers' beliefs related to their children's proneness to obesity and the children's self-perceptions of their body image.

3. Is there a relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image?

$H_{03}$: There is no relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image.

$H_{a3}$: There is a relationship between African American mothers' perceptions of their children's body image and the children's self-perceptions of their body image.

4. Is there a relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mothers' household food choices, and children's eating habits?

$H_{04}$: There is no relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits.

$H_{a4}$: There is a relationship among African American mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits.

5. Is there a relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, mothers' household food choices, and children's eating habits?

$H_{05}$: There is no relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, mothers' household food choices, and children's eating habits.

$H_{a5}$: There is a relationship among African American children's body image, mothers' beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits.

**Descriptive Statistics**

Table 1 is a summary of participant demographics. A total of 86 mothers completed the survey. The sample comprised the mothers of 37 girls (43%) and the mothers of 49 boys (57%). Approximately 55% of the participating children were 11 years old (54.7%). Seventeen percent of the participating children were 10 years old (17.4%). Approximately 27% of the children were 9 years old or younger. One child was 12 years old at the time of the study (1.2%). Most mothers surveyed for the study

classified their children's body image as normal (38.4%), followed by toned (36.0%) and skinny (11.6%). Fourteen percent of the mothers classified their children as slightly overweight, overweight, or obese. Most children surveyed for the study classified their body image as normal (48.8%), followed by toned (33.7%) and skinny (9.3%). Approximately 8% of the children classified their body image as slightly overweight or overweight.

Table 1

*Demographic Characteristics of Child Participants*

| Characteristic | Participants ($n$ = 86) | % |
|---|---|---|
| Gender | | |
| Girl | 37 | 43.0 |
| Boy | 49 | 57.0 |
| Age (yr) | | |
| 7 | 6 | 7.0 |
| 8 | 7 | 8.1 |
| 9 | 10 | 11.6 |
| 10 | 15 | 17.4 |
| 11 | 47 | 54.7 |
| 12 | 1 | 1.2 |
| MRBI | | |
| Skinny | 10 | 11.6 |
| Toned | 31 | 36.0 |
| Normal | 33 | 38.4 |
| Slightly overweight | 8 | 9.3 |
| Overweight | 3 | 3.5 |
| Obese | 1 | 1.2 |
| CRBI | | |
| Skinny | 8 | 9.3 |
| Toned | 29 | 33.7 |
| Normal | 42 | 48.8 |
| Slightly overweight | 6 | 7.0 |
| Overweight | 1 | 1.2 |

*Note.* MRBI: Mother ranking of child body image; CRBI: Child ranking of body image

**Perceptions of Child Body Image by Sex**

Table 2 is an overview of parent and child perceptions of child body image by sex. Approximately 35% of the girls versus approximately 41% of the boys were ranked as normal weight by their mothers. Approximately 45% of the boys and 24% of the girls were classified as toned by their mothers. Nineteen percent of the girls versus 6.1% of the boys were ranked as skinny by their mothers. In addition, 10.8% of the girls versus 8.2% of the boys were ranked as slightly overweight by their mothers. None of the boys was ranked as overweight or obese by his mother. Eight percent of the girls were ranked as overweight by their mothers, and 2.7% of the girls were ranked as obese by their mothers.

Child self-rankings of body image were comparable to their mothers' rankings of their body image. Most of the girls and boys ranked their body image as normal (51.4% & 46.9%, respectively). Approximately 45% of the boys ranked their body image as toned, but only 19% of the girls ranked themselves similarly. Nineteen percent of the girls versus 2% of the boys ranked their body image as skinny. Approximately 11% of the girls versus 6.1% of the boys ranked their body image as slightly overweight or higher.

Table 2

*Ranking of Child Body Image by Participant Type and Sex*

| | Girls (*n* = 37) | | Boys (*n* = 49) | |
|---|---|---|---|---|
| | Count | % | Count | % |
| MRBI | | | | |
| Skinny | 7 | 18.9 | 3 | 6.1 |
| Toned | 9 | 24.3 | 22 | 44.9 |
| Normal | 13 | 35.1 | 20 | 40.8 |
| Slightly overweight | 4 | 10.8 | 4 | 8.2 |
| Overweight | 3 | 8.1 | 0 | 0.0 |
| Obese | 1 | 2.7 | 0 | 0.0 |
| CRBI | | | | |
| Skinny | 7 | 18.9 | 1 | 2.0 |
| Toned | 7 | 18.9 | 22 | 44.9 |
| Normal | 19 | 51.4 | 23 | 46.9 |
| Slightly overweight | 3 | 8.1 | 3 | 6.1 |
| Overweight | 1 | 2.7 | 0 | 0.0 |

*Note.* MRBI: Mother ranking of child body image; CRBI: Child ranking of body image

**Factors Related to Proneness to Obesity**

The CFQ measured seven factors related to obesity proneness in children: PR, PPW, PCW, CCW, R, PTE, and M. The seven factors were evaluated by child sex as well as child obesity status as perceived by their mothers.

**Factors by sex.** Mean scores of the factors related to childhood proneness to obesity by sex are provided in Table 3. Mothers of the boys demonstrated higher mean scores on four factors: PR, PPW, PTE, and M. Mothers of the girls outscored mothers of the boys on three factors: PCW, CCW, and R. Independent samples *t* test of mean obesity proneness factors found a statistically significant difference in mean values for one factor: CCW ($t = 0.48$, $df = 84$, $p < .01$).

Table 3

*Mean Obesity Proneness Factor Scores by Sex*

| | Girls ($n$ = 37) | | Boys ($n$ = 49) | |
|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* |
| PR | 4.25 | 0.73 | 4.32 | 0.77 |
| PPW | 3.16 | 0.43 | 3.24 | 0.32 |
| PCW | 3.35 | 0.67 | 3.23 | 0.45 |
| CCW | 3.41 | 1.27 | 2.48 | 1.43 |
| R | 3.73 | 0.77 | 3.63 | 1.03 |
| PTE | 2.65 | 1.12 | 2.90 | 1.39 |
| M | 3.86 | 0.79 | 3.99 | 0.90 |

*Note.* PR: Perceived responsibility, PPW: Perceived parent weight, PCW: Perceived child weight; CCW: Concern about child weight, R: Restriction, PTE: Pressure to eat, M: Mentoring

**Factors by perceived obesity status.** Mean scores of the factors related to childhood obesity proneness by perceived obesity status are provided in Table 4. Children whose mothers perceived their body image as "slightly overweight" ($n$ = 8), "overweight" ($n$ = 3), and "obese" ($n$ = 1) were classified as overweight for this analysis. Mothers of the overweight children ($n$ = 12) outscored mothers of non-overweight children ($n$ = 74) on four factors: PPW, PCW, CCW, and R. Mothers of the 74 non-overweight children demonstrated higher mean factor scores on three factors: PR, PTE, and M. Independent samples $t$ test of mean obesity proneness factors found a statistically significant difference in mean values for one factor: PPW ($t$ = -3.48, $df$ = 84, $p$ < .01).

Table 4

*Mean Obesity Proneness Factor Scores by Obesity Status*

| | Overweight[a] | | Not overweight[b] | |
|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* |
| PR | 4.11 | 0.64 | 4.32 | 0.77 |
| PPW | 3.60 | 0.45 | 3.14 | 0.32 |
| PCW | 3.40 | 0.39 | 3.26 | 0.58 |
| CCW | 3.22 | 1.27 | 2.82 | 1.46 |
| R | 3.72 | 1.03 | 3.66 | 0.91 |
| PTE | 2.27 | 1.28 | 2.88 | 1.27 |
| M | 3.50 | 0.70 | 4.00 | 0.86 |

[a]$n = 12$, [b]$n = 74$.

*Note.* PR: Perceived responsibility, PPW: Perceived parent weight, PCW: Perceived child weight; CCW: Concern about child weight, R: Restriction, PTE: Pressure to eat, M: Mentoring

## Results

### RQ1: Relationship between Mothers' Perceptions of Children's Eating Habits and Children's Self-Perceptions of Body Image

I conducted a binary logistic regression to determine the relationship, if any, between African American mothers' perceptions of their children's eating habits and the children's self-perceptions of their body image. All 86 survey responses from the mothers and their children were included in this analysis. The IVs for the logistic regression were the three factors related to mother' perceptions of children's eating habits: R, PTE, and M. The IV, CPO, was dummy-coded such that the children who ranked themselves as slightly overweight, overweight, or obese were coded as 1, and all other categorical rankings were coded as 0.

The Hosmer-Lemeshow test was used to determine the goodness of fit of the regression model. A chi-square ($X^2$) statistic that is not significant ($p > 0.05$) demonstrates that the data fit the model well. The regression model for CPO met the

Hosmer-Lemeshow goodness of fit test ($X^2$ = 11.86, $df$ = 7, $p$ = .11). The model explained between 7% and 13% of the variance in the log odds (based on Cox & Snell $R^2$ and Nagelkerke $R^2$, respectively) for the children who considered themselves overweight. The chi-square statistic obtained through the Omnibus Test of Model Coefficients was 6.39 ($df$ = 3). The model correctly predicted CPO at a rate of 86%, which was not statistically significant ($p$ = .09).

Beta (*B*), standard error (*SE*), odds ratio (*OR)*, Wald statistic, and significance (*p*-value) for each variable in the logistic regression for RQ1 are displayed in Table 5. *OR* represents the odds of the outcome when a factor is present versus when a factor is not present. For RQ1, OR represents the odds of children's self-perceptions of obesity when a significant factor is present versus when a significant factor is not present. As demonstrated by the Omnibus Tests of Model Coefficients, food R, PTE, and M were not statistically-significant predictors of children's self-perceptions of obesity.

Table 5

*Summary of Logistic Regression Analysis Predicting Children's Self-Perceptions of Body Image by African-American Mothers' Perceptions of Child Eating Habits*

| Variable | *B* | *SE* | *OR* | Wald statistic | *P* |
|---|---|---|---|---|---|
| R | 0.462 | 0.388 | 1.588 | 1.417 | 0.234 |
| PTE | -0.410 | 0.296 | 0.663 | 1.926 | 0.165 |
| M | -0.760 | 0.426 | 0.468 | 3.179 | 0.075 |

*Note.* R: Restriction, PTE: Pressure to Eat, M: Monitoring.

**RQ2: Relationship between Mothers' Beliefs related to Children's Proneness to Obesity and Children's Self-Perceptions of Body Image**

I conducted a binary logistic regression to determine the relationship, if any, between African American mothers' beliefs of their children's proneness to obesity and the children's self-perceptions of their body image. The IVs for the logistic regression were the four factors related to the children's proneness to obesity: PR, PPW, PCW, and CCW. The IV, CPO, was dummy-coded such that children who ranked themselves as slightly overweight, overweight, or obese were coded as 1, and all other categorical rankings were coded as 0.

The Hosmer-Lemeshow test was used to determine the goodness of fit of the regression model. A chi-square ($X^2$) statistic that not significant ($p > 0.05$) demonstrates that the data fit the model well. The regression model for CPO met the Hosmer-Lemeshow goodness of fit test ($X^2 = 10.43$, $df = 7$, $p = .17$). The model explained between 18% and 32% of the variance in the log odds (based on Cox & Snell $R^2$ and Nagelkerke $R^2$, respectively) for the children who considered themselves overweight. The $X^2$ obtained through the Omnibus Test of Model Coefficients was 16.86 ($df = 4$). The model correctly predicted CPO at a rate of 88%, which was statistically significant ($p < .001$).

*B*, *SE*, *OR*, Wald statistic, and significance (*p*-value) for PR, PPW, PCW, and CCW are displayed in Table 6. PPW was the only factor found to be a significant predictor of the children's self-perceptions of body image in the present model ($B = 3.22$, $OR = 24.96$, $p < 0.01$). *OR* for PPW signals that the odds of children's self-perceptions of obesity are nearly 24 times higher if the mother believes that she is obese. PR, PCW, and

CCW were not statistically-significant predictors of children's self-perceptions of body image.

Table 6

*Summary of Logistic Regression Analysis Predicting Children's Self-Perceptions of Body Image by Mothers' Beliefs related to Child's Proneness to Obesity*

| Variable | *B* | *SE* | *OR* | Wald statistic | *p* |
|---|---|---|---|---|---|
| PR | -0.404 | 0.518 | 0.667 | 0.564 | .453 |
| PPW | 3.217 | 0.981 | 24.955 | 10.955 | .001 |
| PCW | 0.181 | 0.675 | 1.199 | 0.184 | .668 |
| CCW | 0.315 | 0.274 | 1.370 | 3.794 | .051 |

*Note.* PR: Perceived responsibility, PPW: Perceived parent weight, PCW: Perceived child weight; CCW: Concern about child weight

**RQ3: Relationship of Mothers' Perceptions to Children's Body Image and Children's Self-Perceptions of Body Image**

Because of the small sample size ($N$ = 172) and interdependence of the comparison variables, the assumptions of chi-square analysis were not met. Because Spearman rank correlation does not have any assumptions, Spearman rank correlation was performed to determine if a relationship exists between mothers' perceptions of the children's body image and the children's self-perceptions of body image. Spearman correlation is used to determine the relationship between two variables when the variables of comparison are ordinal, that is, representing distinct categories of increasing value that are not assumed to have an equal variance in value between each category. The variables included in the Spearman rank correlation analysis were MRBI and CRBI. An overview of MRBI by CRBI is available in Table 7.

Table 7

*Cross-tab Analysis of Parent Ranking of Child Body Image by Child Ranking of Body Image*

| | CRBI | | | | |
|---|---|---|---|---|---|
| MRBI | Skinny | Toned | Normal | Slightly overweight | Overweight |
| Skinny | 7 | 1 | 2 | 0 | 0 |
| Toned | 0 | 23 | 8 | 0 | 0 |
| Normal | 1 | 5 | 26 | 1 | 0 |
| Slightly overweight | 0 | 0 | 4 | 4 | 0 |
| Overweight | 0 | 0 | 2 | 0 | 1 |
| Obese | 0 | 0 | 0 | 1 | 0 |

*Note.* MRBI: Mother ranking of child body image, CRBI: Child ranking of body image

Spearman rank correlation analysis found a significant positive correlation between mothers' rankings of their children's body image and the children's self-rankings of body image ($\rho = .71$, $p < .01$). The Spearman $\rho$ (rho) value of 0.71 indicated a strong positive correlation between MRBI and CRBI, indicating that CRBI increased as MRBI increased.

**RQ4: The Relationship among African American Mothers' Perceptions of Children's Body Image, Beliefs related to Children's Proneness to Obesity, Household Food Choices, and Eating Habits**

I conducted a binary logistic regression to determine the relationship, if any, among mothers' perceptions of children's body image, beliefs related to children's proneness to obesity, household food choices, and eating habits. The IVs for the logistic regression were all seven factors from the CFQ: PR, PPW, PCW, CCW, R, PTE, and M. The IV of mother perceived child overweight (MPCO) was dummy-coded such that mothers who ranked their children as slightly overweight, overweight, or obese were coded as 1, and all other categorical rankings were coded as 0.

The Hosmer-Lemeshow test was used to determine the goodness of fit of the regression model. A chi-square ($X^2$) statistic that not significant ($p > 0.05$) demonstrates

that the data fit the model well. The regression model for CPO met the Hosmer-Lemeshow goodness of fit test ($X^2 = 4.37$, $df = 8$, $p = .82$). The model explained between 22% and 40% of the variance in the log odds (based on Cox & Snell $R^2$ and Nagelkerke $R^2$, respectively) for the mothers who considered their children overweight. The $X^2$ obtained through the Omnibus Test of Model Coefficients was 21.33 ($df = 7$). The model correctly predicted CPO at a rate of 90%, which was statistically significant ($p < .001$).

*B*, *SE*, *OR*, Wald statistic, and significance (*p*-value) for each variable in the logistic regression for RQ4 are displayed in Table 8. Two factors were found to be significant predictors of mothers' perceptions of their children's body image: PPW and M. Mothers' perceived responsibility for children's eating habits, mothers' PCW, mothers' CCW, and PTE were not statistically-significant predictors of mothers' perceptions of their children's body image.

Table 8

*Summary of Logistic Regression Analysis Predicting Mothers' Perceptions of Children's Body Image by Beliefs Related to Children's Obesity Propensity, Household Food Choices and Eating Habits*

| Variable | *B* | *SE* | *OR* | Wald statistic | *p* |
|---|---|---|---|---|---|
| PR | -0.246 | 0.525 | 0.782 | 0.220 | .639 |
| PPW | 3.485 | 1.307 | 32.625 | 7.109 | .008 |
| PCW | 0.656 | 0.822 | 1.928 | 0.637 | .425 |
| CCW | 0.324 | 0.382 | 1.382 | 0.719 | .396 |
| R | 0.069 | 0.594 | 1.071 | 0.013 | .908 |
| PTE | 0.063 | 0.421 | 1.065 | 0.022 | .881 |
| M | -1.057 | 0.528 | 0.348 | 4.014 | .045 |

*Note.* PR: Perceived responsibility, PPW: Perceived parent weight, PCW: Perceived child weight; CCW: Concern about child weight, R: Restriction, PTE: Pressure to eat, M: Monitoring

**RQ5: Relationship of African American Children's Self-Perceptions of Body Image, Mothers' Beliefs related to Children's Proneness to Obesity, Household Food Choices, and Eating Habits**

Binary logistic regression was performed to determine the relationship, if any, between children's self-perceptions of their body image, mothers' beliefs related to their children's obesity proneness, household food choices, and eating habits. The IVs for the logistic regression were all seven factors from the CFQ: PR, PPW, PCW, CCW, R, PTE, and M. The IV, CPO, was dummy coded such that children who ranked themselves as slightly overweight, overweight, or obese were coded as 1 and all other categorical rankings were coded as 0.

The Hosmer-Lemeshow test was used to determine the goodness of fit of the regression model. A chi-square ($X^2$) statistic that not significant ($p > 0.05$) demonstrates that the data fit the model well. The regression model for CPO met the Hosmer-Lemeshow goodness of fit test ($X^2 = 4.37$, $df = 8$, $p = .82$). The model explained between 22% and 40% of the variance in the log odds (based on Cox & Snell $R^2$ and Nagelkerke $R^2$, respectively) for children who considered themselves overweight. The $X^2$ obtained through the Omnibus Test of Model Coefficients was 21.33 ($df = 7$). The model correctly predicted CPO at a rate of 90%, which was found to be statistically significant ($p < .001$).

*B*, *SE*, *OR*, Wald statistic, and significance (*p*-value) for each variable in the logistic regression for RQ5 are displayed in Table 9. Two factors were found to be significant predictors of children's self-perceptions of obesity: PPW and M. PR, PCW,

CCW, R, and PTE were not statistically significant predictors of children's self-perceptions of obesity.

Table 9

*Summary of Logistic Regression Analysis Predicting Children's Self-Perceptions of Obesity by Mothers' Beliefs related to Children's Proneness to Obesity, Household Food Choices, and Eating Habits*

| Variable | *B* | *SE* | *OR* | Wald statistic | *p* |
|---|---|---|---|---|---|
| PR | -0.246 | 0.525 | 0.782 | 0.220 | .639 |
| PPW | 3.485 | 1.307 | 23.625 | 7.109 | .008 |
| PCW | 0.656 | 0.822 | 1.928 | 0.637 | .425 |
| CCW | 0.324 | 0.382 | 1.382 | 0.719 | .396 |
| R | 0.069 | 0.594 | 1.071 | 0.013 | .908 |
| PTE | 0.063 | 0.421 | 1.065 | 0.022 | .881 |
| M | -1.057 | 0.528 | 0.348 | 4.014 | .045 |

PR: Perceived responsibility, PPW: Perceived parent weight, PCW: Perceived child weight; CCW: Concern about child weight, R: Restriction, PTE: Pressure to eat, M: Mentoring

## Summary

The purpose of this quantitative study was to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits are related to their perceptions of their children's body image and are reliable indicators of childhood obesity. A total of 86 mothers and 86 children participated in the study: The mothers completed the 31-item CFQ as well as the four-item FRS. The children completed the FRS only. Binary logistic regression and correlation analyses were used to answer the five RQs guiding the study. For RQ1, I failed to reject the null hypothesis; no relationship was found between mothers' beliefs about their children's eating habits and children's self-perceptions of their body image. For RQ2, the null hypothesis was rejected; a relationship was found between mothers' beliefs related to their children's proneness to obesity and their children's self-perception of their body image. RQ3 investigated the possible relationship between mothers' perceptions of their children's body image and children's self-perceptions of their body

image. The null hypothesis for RQ3 was rejected; a strong positive correlation was found between mothers' perceptions of their children's body image and the children's self-perceptions of their body image. For RQ4, the null hypothesis was rejected; mothers' self-perceptions of their weight as a child and current food monitoring practices were found to be significant predictors of mothers' perception of their children's body image. For RQ5, the null hypothesis was rejected; mothers' self-perceptions of their weight as a child and current food monitoring practices were found to be significant predictors of their children's body image.

Chapter 5 provides a discussion of these findings within the context of the existing literature on perceptions of body image in African American mothers and children. The chapter also outlines the implications of the results; limitations to the applicability of the findings; and recommendations for further research, policy, and practice.

# Chapter 5: Discussion, Conclusions, and Recommendations

## Overview

The purpose of this quantitative study was to determine if African American mothers' beliefs related to their children's proneness to obesity, household food choices, and children's eating habits, and their children's body image were related to children's perceptions of their own body image and were reliable indicators of childhood obesity. The rate of obesity among African American children was the stimulus for this study. Previous researchers have related childhood obesity to genetics, despite studying environmental factors to examine their impact on the childhood obesity epidemic within the African American community. The results gleaned from my study determined that for RQ1, no relationship was found between mothers' beliefs about their children's eating habits and children's self-perceptions of their body image. For RQ2, a relationship was found between mothers' beliefs related to their children's proneness to obesity and their children's self-perception of their body image. For RQ3, a strong positive correlation was found between mothers' perceptions of their children's body image and the children's self-perceptions of their body image. For RQ4, a relationship was found between mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, household food choices, and children's eating habits. For RQ5, a relationship was found between mothers' perceptions of their children's body image, beliefs related to their children's proneness to obesity, mother's household food choices, and children's eating habits

Environmental factors, such as household food choices and eating habits, are based on parental traditions and beliefs, especially the feeding practices that the mothers have followed from generation to generation (Sahoo et al., 2015). Perceptions of household food choices, eating habits, and beliefs related to their children's proneness to obesity also are based on parental beliefs and traditions, particularly the mothers' perceptions of nutrition and feeding practices, because she is usually the primary household food preparer (Birch & Fisher, 2000).

Feeding practices can relate back to pregnancy and the fetus adapting to the feeding practices of the mother and then moving into infancy, toddlerhood, early childhood, adolescence, and adulthood (Chang et al., 2015). Mothers' feeding practices can have a significant relationship to the high rate of obesity among African American children. Previous research has related childhood obesity to environmental, social, genetics and behavioral factors, and the majority of the studies have included children from different racial and ethnic backgrounds. The results of my study indicated that environmental factors, such as household food choices and children's eating habits, were related to mothers' perceptions of their children's weight and the children's self-perceptions of their own weight. If the likelihood of mothers' monitoring of household food choices and eating habits increased, then the likelihood of their children being overweight decreased, and if the likelihood of the mothers' monitoring of household food choices and eating habits decreased, then the likelihood of their children being overweight increased.

Further research is needed to examine African American mothers' own eating habits, household food choices, and beliefs related to their children's proneness to obesity (Reifsnider et al., 2013). Previous research has suggested that environmental factors and SES impact children's eating practices (Birch et al., 2001). This study focused on the ways that African American mothers' perceptions about their children's food choices and eating habits, and beliefs about their children's proneness to obesity impacted their children's own perceptions with respect to food choices, eating habits, and body image.

## Interpretation of the Findings

I studied the perceptions of African American mothers regarding their household food choices and eating habits, and their beliefs related to their children's proneness to obesity using various analytical methods. I analyzed body image classification, household food choices, and eating habits to assess the children's self-reported weight status against the mothers' perceptions of their children's weight status. I found significant relationships to support the hypothesis that mothers' perceptions of household food choices, eating habits, and body image influenced their children's perceptions of food choices, eating habits, and body image, all of which were reliable indicators of childhood obesity in the African American population. In addition, mothers who were overweight as children were more concerned about their children's body image, and mothers who had daughters were more concerned about their children's body image. In this study, 14% of the children were classified as slightly overweight or overweight, and only 1% was considered obese.

Although anticipated, the most statistically significant results showed that the mothers' perceptions of their own weight as children and actual food monitoring influenced their children's eating habits and body image. One unexpected result was that only one mother perceived her child to be obese, which led to the conclusion that the mothers' perceptions about their children's weight classifications were inaccurate, because the mothers believed that their children were smaller than they actually were. Only one child perceived self to be obese, indicating that the children also perceived themselves to be smaller than they actually were. Other results revealed that the mothers who were not overweight or obese were less concerned about monitoring their children's food choices and eating habits and also were less concerned about their children's body image.

Binary logistic regression analyses were performed on each hypothesis to determine the extent to which African American mothers' household food choices and eating habits were related to their perceptions of their children's body image. The CFQ measured seven factors related to obesity proneness in children: PR, PPW, PCW, CCW, R, PTE, and M. The seven CFQ variables were used as the IVs for the regression analyses. MRBI and CRBI were used as the DVs for the regression analyses, as well as the two variables of comparison (age & sex) for the correlation analysis. The variables of sex and age were used to provide descriptive statistics of the sample. PPW and M were found to be statistically significant measured factors, and all other factors were not significant. Correlation analysis was used to determine if there was a relationship between African American mothers' perceptions of their children's body image and

children's self-perceptions of their body image. Parent perception of their children's body image and the children's' perception of their body image were found to have a strong correlation, meaning that if the mothers in the study perceived their children as being overweight, the children also perceived themselves as being overweight.

The results determined that the African American mothers were concerned about their children's body image only if both mother and child were currently obese. In the fight against childhood obesity, African American mothers must become more proactive in their household food choices and eating habits prior to becoming obese. In addition, the mothers in this study saw being overweight or obese as a problem within their households only if they perceived themselves as obese either currently or in childhood. The mothers' perceptions of household food choices, eating habits, and body image influenced their children's own perceptions of body image. Because the mothers' beliefs and perceptions heavily influenced their children's beliefs and perceptions, I recommend that programs to educate mothers on their perceptions about food choices, eating habits, and body image be implemented prior to their becoming obese and as one way to decrease childhood obesity among African American children. The perceptions are further discussed in the next section, which explains how the mothers classified their children's weight using the FRS, and how the children classified themselves using the FRS.

**Perceptions of Child Body Image by Sex**

In this study, the perceptions of the mothers and their children about the children's body image by sex were examined. The mothers of 37 girls and 49 boys

ranked their children's body image, and the girls and boys ranked their own body image. There were more boy participants than girls in this study. As described in Chapter 4, mothers of 13 girls versus 20 boys ranked the children's weight as normal, mothers of nine girls versus 22 boys ranked the children as toned, mothers of seven girls versus three boys ranked the children as skinny, and mothers of three girls versus no boys ranked the children as overweight. Only one girl, but no boys, was ranked as obese by her mother. Based on my observation, the mothers perceived the body size of children who were overweight and obese as smaller than they actually were. Mothers of girls ranked their daughters' body size higher on PCW compared to mothers of boys. Overall, the mothers of girls felt that their daughters were more overweight when compared to the mothers of boys.

Child self-rankings of body image were comparable to their mothers' rankings. Nineteen girls versus 23 boys ranked their body image as normal. Seven girls versus 22 boys ranked their body image as toned. Seven girls versus one boy ranked their body image as skinny. Four girls versus three boys ranked their body image as slightly overweight or higher. None of the girls or boys ranked their body image as obese. The girls' perceptions were similar to those of their mothers, indicating that they perceived their body image to be smaller than they actually were. The boys' perceptions also were similar to those of their mothers, indicating that they perceived their body image to be toned or normal versus skinny or obese.

Parental perceptions of their children's body image are vital in influencing the children's own perceptions of body image. In the current study, the mothers of girls and

the girls themselves perceived their body image on a higher ranking than the boys did. The mothers also ranked the boys' body image lower than they ranked the girls' body image.

**Factors Related to Proneness to Obesity**

I used the CFQ to measure seven factors (PR, PPW, PCW, CCW, R, PTE, and M) related to children's proneness to obesity and evaluated them to the mother's ranking of their children's weight status. Mean scores of the factors related to childhood proneness to obesity by sex revealed that the mothers of boys demonstrated higher mean scores on four factors: PR, PPW, PTE, and M. Mothers of girls outscored mothers of boys on three factors: PCW, CCW, and R. Only one factor was found to be statistically different by sex: CCW. The mothers of daughters were more concerned than mothers of sons about their children's weight. Mothers of girls rated themselves higher on PCW and were concerned more about their daughters' weight, which made the mothers more restrictive in their daughters' eating habits when compared to mothers of boys. BMI was not used to rank the children's weight in this study. The girls in this study ranked their body image higher than the boys did.

In RQ3, the factors related to childhood proneness to obesity by mother's perception of child's obesity status revealed that the mothers of overweight children outscored mothers of non-overweight children on four factors: PPW, PCW, CCW, and R. Mothers of non-overweight children demonstrated higher mean factor scores on three factors: PR, PTE, and M. Only one factor was found to have a statistically significant difference in mean values. The mothers of overweight children perceived their children's

weight to be higher and were more concerned about their children's weight than were the mothers of children who were not overweight. Mothers of overweight children tended to be more restrictive in food choices and eating habits. Mothers of children who were not overweight scored higher than mothers of overweight children on the factors PTE, M, and PR. Two of the seven factors were statistically significant: PTE and M.

Miller et al., (2016), found that African American parental figures in their study, especially from low-income areas with high rates of BMI, did not perceive children, particularly girls, as obese; rather, they perceived girls' weight as normal and boys' weight as toned or husky. Obese or overweight parents were likely to rank their children as obese or overweight, especially if the parents were obese or overweight in childhood. In a study by Pickett and Peters (2017), African American mothers who were satisfied with their weight did not perceive a problem with their children's weight, even if the children were obese or overweight.

**Perceptions of Eating Habits**

I used three factors related to children's eating habits to examine the relationship between mothers' beliefs about children's eating habits and children's self-perceptions of body image: R, PTE, and M. None of these factors was a statistically significant predictor of children's self-perceptions of obesity. In RQ4 and RQ5, PCW was found not to be statistically significantly associated with mothers' belief about children's eating habits. Mothers of children who were not overweight were less likely to show concerns about R, M, and PTE.

According to Airhihenbuwa et al. (1996), African American children's eating practices are generally associated with their ethnic identity. I did not assess cultural attitudes and behaviors adequately enough to determine if they had any impact on the mothers' perceptions of their children's eating habits and food choices. Evidence has suggested that culture and family traditions can significantly influence parental perceptions of food choices and eating behaviors (Porter et al., 2016).

Maternal influences have been found to be significantly related to children's food choices, eating habits, and levels of physical activity (Tate et al., 2015). In my study, the mothers controlled their children's eating habits by restricting and monitoring them if they thought that their children were overweight or obese. More research is needed to understand the development of African American mothers' perceptions regarding household food choices and feeding practices for their children. As the psychological development of how African mothers perceive food and feeding practices become more clearly understood, the easier it will be to understand the impact of their perceptions on the food choices and eating habits of their children.

**Mothers' Perceptions of Children's Body Image and Children's Self-Perceptions of Body Image**

In this study, there was a strong positive correlation between the mothers' rankings and the children's self-rankings. A total of 33 mothers perceived their children to be normal weight, 31 perceived their children to be toned, 11 perceived their children to be skinny, eight perceived their children to be slightly overweight, three perceived their children to be overweight, and one mother perceived her child to be obese. The

children's self-rankings of body image were comparable to those expressed by their mothers. Most of the children ($n$ = 42) perceived their body image to be normal, 29 perceived their body image to be toned, eight perceived their body image to be skinny, six perceived their body image to be slightly overweight, and one child perceived body image to be overweight. None of the children perceived body image to be obese.

The majority of mothers ($n$ = 64) ranked their children as normal weight or toned, perceptions that reflected satisfaction with their children's body image. The majority of the children ($n$ = 71) self-ranked their body image as normal weight or toned, perceptions that reflected those of the mothers. There was a significant positive correlation in the satisfaction of the mothers and the children regarding the children's body image.

**Impact of Mothers' Influence on Children's Perceptions**

Mothers' perceptions of food and body image shape children's attitudes toward their own eating practices, perceptions about food, and perceptions about size and body image (Dammann & Smith, 2009). In this study, I found a significant relationship between mothers' perceptions of their own childhood weight and their own beliefs of their body image. For example, if the mothers thought that they were overweight or obese as children, this belief was reflected in their perceptions of their present weight status as indicated on the CFQ. I also found another strong positive correlation between the mothers' perceptions of their children's weight and the children's self-perceptions of their weight. For example, the mothers of nine girls and 22 boys ranked the children as toned; in comparison, seven girls and 22 boys ranked their body image as toned. The mothers of 13 girls and 20 boys ranked the children as normal weight; in comparison, 19

girls and 23 boys ranked their body image as normal. The mothers of seven girls and three boys ranked the children as skinny; in comparison, seven girls and one boy ranked their body image as skinny. The mothers of three girls and no boys ranked their children as overweight; in comparison, four girls and three boys ranked their body image as slightly overweight or higher. Only one girl was ranked as obese by her mother, but no girls and boys ranked themselves as obese. The mothers who wanted their children to be smaller perceived their children's weight as lower than they actually were. The same result was evident for the children. The mothers of girls ranked their daughters' body image higher compared to boys, and girls ranked their body image higher compared to boys.

In addition, the mothers' perceptions of their own childhood weight as well as food monitoring were found to be significant predictors of the mothers' perceptions of their children's weight and the children's self-perceptions of their weight. The mothers who ranked themselves as obese or overweight as children were more likely to perceive their children's body image as overweight. If the mother's perceived weight as a child was overweight or obese, their monitoring and restriction of their children's food choices and eating habits increased.

In this study, the mothers who ranked themselves as obese also ranked their children as overweight or obese. The mothers' beliefs about their own weight influenced their perceptions of their children's weight. In African American culture, a curvier body size is considered more attractive. Ard et al. (2013) asserted that African Americans' cultural beliefs relate "big, curvy, and sexy" to attractiveness.

The influence of culture and traditions regarding household food choices, eating habits, and body image can have a negative impact on childhood obesity. For example, most African American mothers know the importance of choosing healthy foods for their families, but they also believe that all foods provide their children with some sort of nutrition, a belief that makes them less aware of household food choices and eating behaviors (Porter et al., 2016).

## Implications for Social Change

Public health professionals have acknowledged that the obesity of African American children has become a national public health concern resulting from unhealthy eating practices (Alexander et al., 2015). African American women have been identified as having obesity rates higher than for any other race or gender in the United States (Mokdad et al., 2000). Results of the current study indicated that the eating habits and body image of African American mothers had a significant impact on their children's eating habits and body image, both of which are reliable indicators of childhood obesity.

To address the obesity of African American children more assertively and effectively, health care professionals, public health professionals, community leaders, and parents must collaborate to implement educational and training programs targeting mothers of children of all ages. The programs should focus on perceptions, beliefs, and traditions to raise awareness and understanding of the roles of these factors in food control, eating behaviors, nutrition, and weight control. The mothers will acquire more knowledge of proper portion sizes, appropriate household food choices, food control, weight control, reduced BMI, and increased physical activity, all which can help to

reduce the incidence of childhood obesity. Mothers are usually the primary food preparers in their households (Birch & Fischer, 2000), so designing affordable community programs for mothers might help to amend their perceptions toward food and body image and help to reduce or even prevent childhood obesity.

Our results suggested that health care professionals and public health professionals should focus more on including beliefs which can lead a person to belief something is true without any actual proof and perceptions which reveals how a person sees something from their standpoint into educational programs to raise awareness of their roles in childhood as well as adulthood obesity. Perceptions can influence ill-informed health-related behaviors that must be addressed by health care professionals to guide health behavior interventions. Refraining from addressing the issue and failing to make recommendations are no longer acceptable options. Addressing perceptions, beliefs and cultural awareness are key to reducing the increased incidence of childhood obesity in the African American community.

In the past, environmental factors were addressed by researchers such as Davis and Birch (2001) and Sahoo et al. (2015), and they should continue to be addressed in the African American community to promote positive social change. Environmental factors play a major role in childhood obesity, because children are impacted by the environment in which they live. Many African American communities lack grocery stores that could provide people with a wide variety of healthy foods and fresh produce stands; restaurants that offer healthy food options; and safe parks for children to play, exercise, and participate in recreational activities. These environmental factors contribute to childhood

obesity and must be addressed by public health leaders and community leaders through policy implementation and community action.

My results might promote positive social change by providing health care professionals and public health leaders with data and tools, such as surveys and surveillance systems, that they could use to target the obesity of children in African American communities. Health care practitioners could use the data to recommend intervention programs that could be informative to mothers and children. Public health leaders and community leaders could use these data and tools to influence policies and procedures to target environmental conditions, especially those in poverty-stricken areas of African American communities. Social change will help to address the high rates of childhood obesity in African American communities and increase the lifespan of children.

## Recommendations for Action

Community and global action are needed to address childhood obesity. Health care professionals must continue to address the rate of childhood obesity and also to invite parents, schools, churches, social groups, community organizations, and community leaders to collaborate in developing and providing programs and services to educate mothers and children about the consequences of childhood obesity. Health care professionals must become initiators in working with mothers and children to make them more aware of this widespread health problem.

Offering counseling and other intervention strategies that involve family members might help to amend mothers' current beliefs about household food choices, eating habits, and body image which can be factors that influence their children's perceptions. Having families work together as a team to change their beliefs about household food choices, eating habits, and body image is a proactive way to also persuade mother's to change their beliefs of their household food choices, eating habits, and body image which can be factors that influence their children's perceptions.

Educational programs should be affordable, accessible, creative, colorful, enjoyable, and informative to attract the attention of mothers and their children. Health care professionals might find it challenging to change the perceptions and beliefs of mothers whose behaviors impact their children, but if they can develop and then implement educational programs that appeal to the mothers, their efforts would have a positive influence on the food choices, eating habits, and weight concerns of mothers and children. Addressing the reasons for childhood obesity might help to improve the health of children in African American communities. The greatest impact of educational awareness is behavioral modeling, meaning that if the mothers adopt more positive health behaviors, their children will do the same now and into the future. Mothers must make the decision with the help of health professionals and public health professionals to engage in healthy behaviors to give their children a healthy start in life.

Public health professionals might consider engaging in research to address childhood obesity in the African American community. They along with health care practitioners could disseminate the results of this research to increase awareness and

implement intervention programs. Sharing information with community leaders and policymakers could be the impetus to address childhood obesity in the African American community. Examining previous programs that were unsuccessful in addressing childhood obesity could lead to program reforms and intervention strategies to help mothers and their children to address obesity and reduce the burden of childhood obesity in the African American community.

## Recommendations for Future Study

Future research is imperative to reduce the obesity rates of children in the African American community. One way to address childhood obesity is to compare the mothers and children who practice healthy eating behaviors and incorporate routine physical activity into their lives to those who do not. This comparison could lead to the development of educational programs that can meet the needs of the community. It also might be helpful to research the role of community partnerships in establishing community nutritional and exercise programs, safe parks, and perhaps community kitchens. Future studies could focus on the role of fathers in household food choices, eating habits, and body images. Examining the fathers' perceptions of the mothers' household food choices, eating habits, and body image of her children could allow researchers and public health professionals to address childhood obesity from a different perspective. Although these questions were beyond the scope of my study, future researchers might consider using them as the foundations of their studies. Some key questions might arise: Does obesity predict lower self-esteem? Will childhood obesity be linked to psychological disorders later in life? Can weight discrimination potentially

trigger or be a stressor for elevated psychological risk factors and subsequent psychological disorders and potential weight gain in children? Can weight loss interventions consider psychological aspects in their programs? Are psychological disorders the cause or the effect of obesity? (Karasu, 2012, 2013). Can poor body image be associated with a higher risk of depression and eating disorders? (Harriger & Thompson, 2012).

## Limitations

I observed that neither the mothers nor their children were completely honest in ranking their body images. Only one mother ranked her child as obese and admitted to being obese herself as a child. None of the children ranked themselves as obese, which limited the number of obese mothers and children and their proneness to obesity in this study. To ensure adequate representation of children of different weights, I could have added weight estimates to the questionnaire or used the measured BMIs of the participants to examine the mother's perception of their weight and the children's perceptions of their own weight. Based on the answers provided by the mothers and the setting of the study being restricted to the Atlanta metropolitan area, these results cannot be generalized to the entire African American population in the United States because the study was conducted only in the targeted demographic area. The mothers' influence on their children's food choices and eating habits was based on the mothers' perceptions of the food choices and eating habits of children ages 7 to 11 years only, and not children of all ages, thus reducing generalizability.

In addition, I did not assess changes in cultural attitudes and behaviors in enough depth to determine if they had any impact on the mothers' perceptions of their children's eating habits and food choices. Cultural attitudes have changed in recent years as you have African American Muslims who don't eat beef or pork. Many African American communities are becoming vegans and vegetarians which reflects changes in cultural attitudes and belief concerning food choices and eating habits. The addition of more

questions to the survey could have examined the mothers' cultural beliefs about food choices and eating habits as children to present.

## Summary

Childhood obesity has become a severe public health problem in the United States, particularly in African American children. Factors such as lifestyle preferences and environmental and cultural factors have been identified as predictors of childhood obesity. Researchers have identified psychological and biological factors to explain the etiology of childhood obesity. Previous researchers have also identified BMI, portion size, and genetics as other factors impacting the weight status of mothers and their children.

The results of this study indicated that the mothers' childhood weight influenced their food monitoring and perceptions of their children's own body image. The mothers' perceptions of their children's body weight heavily influenced their children's self-perceptions of their body image. Positive behavioral change such as individual adapted health behavior change programs such as local community nutritional cooking classes and exercise classes catered to both mothers and children are important in helping the mothers to change their beliefs about the household food choices, eating habits, and body image to help them develop a foundation of healthy eating habits for life. Understanding health behaviors by examining the mothers' beliefs and perceptions of household food choices, eating habits, and body image can promote positive health actions such as the development of healthy eating habits and healthy food choices, enhanced physical activity and creating walking trails for children in African American communities and

thereby help to alleviate the current high rates of obesity among African American children.

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# Appendix A: Child Feeding Questionnaire

## APPENDIX A: CHILD FEEDING QUESTIONNAIRE

The Child Feeding Questionnaire (CFQ)
Leann L. Birch, Ph.D., Susan L. Johnson, Ph.D., Karen Grimm-Thomas, & Jennifer O. Fisher, Ph.D.
Pennsylvania State University Revised 10/30/98

ID #_____

Date_____

## The Child Feeding Questionnaire (CFQ)

Using the scale below, please circle one number for each question which best corresponds to your answer. Please answer about your child who is in the study.

| | Never | Seldom | Half of the time | Most of the time | Always |
|---|---|---|---|---|---|
| 1. When your child is at home, how often are you responsible for feeding him or her? | 1 | 2 | 3 | 4 | 5 |
| 2. How often are you responsible for deciding what your child's portion sizes are? | 1 | 2 | 3 | 4 | 5 |
| 3. How often are you responsible for deciding if your child has eaten the right kind of foods? | 1 | 2 | 3 | 4 | 5 |

Using the scale below, please indicate how you would classify *your own weight* at each of these four time periods. Please circle only one number for each question.

| | Markedly underweight | Under weight | Average | Over weight | Markedly overweight |
|---|---|---|---|---|---|
| 4. Your childhood (5 to 10 years old) | 1 | 2 | 3 | 4 | 5 |
| 5. Your Adolescence | 1 | 2 | 3 | 4 | 5 |
| 6. Your 20's | 1 | 2 | 3 | 4 | 5 |
| 7. Currently | 1 | 2 | 3 | 4 | 5 |

Using the scale below, please indicate how you would classify *your child's weight* at each of these four time periods. Please circle only one number for each question.

| | Markedly underweight | Under weight | Average | Over weight | Markedly overweight | N/A |
|---|---|---|---|---|---|---|
| 8. Your child during the first year of life | 1 | 2 | 3 | 4 | 5 | |
| 9. Your child as a toddler | 1 | 2 | 3 | 4 | 5 | |
| 10. Your child as a pre-schooler | 1 | 2 | 3 | 4 | 5 | |
| 11. Your child kindergarten through 2nd grade | 1 | 2 | 3 | 4 | 5 | |
| 12. Your child from 3rd through 5th grade | 1 | 2 | 3 | 4 | 5 | |
| 13. Your child from 6th through 8th grade | 1 | 2 | 3 | 4 | 5 | 0 |

Using the scale below, please circle one number for each question which best corresponds to your answer. Please answer about your child who is in the study.

| | Unconcerned | Slightly Unconcerned | Neutral | Slightly Concerned | Concerned |
|---|---|---|---|---|---|
| 14. How concerned are you about your child eating too much when you are not around him or her? | 1 | 2 | 3 | 4 | 5 |
| 15. How concerned are you about your child having to diet to maintain a desirable weight? | 1 | 2 | 3 | 4 | 5 |
| 16. How concerned are you about your child becoming overweight? | 1 | 2 | 3 | 4 | 5 |

89

The Child Feeding Questionnaire (CFQ) ID #_____

Leann L. Birch, Ph.D., Susan L. Johnson, Ph.D., Karen Grimm-Thomas, & Jennifer O. Fisher, Ph.D.
Pennsylvania State University Revised 10/30/98 Date_____

Using the scale below, please circle one number for each question which best corresponds to your answer. Please answer about your child who is in the study.

| | Disagree | Slightly Disagree | Neutral | Slightly Agree | Agree |
|---|---|---|---|---|---|
| 17. I have to be sure that my child does not eat too many sweets *(candy, ice cream, cake or pastries)*. | 1 | 2 | 3 | 4 | 5 |
| 18. I have to be sure that my child does not eat too many high fat foods *(fast food, fried foods)*. | 1 | 2 | 3 | 4 | 5 |
| 19. I have to be sure that my child does not eat too much of his or her favorite foods. | 1 | 2 | 3 | 4 | 5 |
| 20. I intentionally keep some foods out of my child's reach. | 1 | 2 | 3 | 4 | 5 |
| 21. I offer sweets *(candy, ice cream, cake, pastries)* to my child as a reward for good behavior. | 1 | 2 | 3 | 4 | 5 |
| 22. I offer my child his or her favorite foods in exchange for good behavior. | 1 | 2 | 3 | 4 | 5 |
| 23. If I did not guide or regulate my child's eating, he or she would eat too many junk foods. | 1 | 2 | 3 | 4 | 5 |
| 24. If I did not guide or regulate my child's eating, he or she would eat too much of his or her favorite foods. | 1 | 2 | 3 | 4 | 5 |
| 25. My child should always eat all of the food on his or her plate. | 1 | 2 | 3 | 4 | 5 |
| 26. I have to be especially careful to make sure my child eats enough. | 1 | 2 | 3 | 4 | 5 |
| 27. If my child says "I'm not hungry," I try to get him or her to eat anyway. | 1 | 2 | 3 | 4 | 5 |
| 28. If I did not guide or regulate my child's eating, he or she would eat much less than he or she should. | 1 | 2 | 3 | 4 | 5 |

Using the scale below, please circle one number for each question which best corresponds to your answer. Please answer about your child who is in the study.

| | Never | Rarely | Sometimes | Mostly | Always |
|---|---|---|---|---|---|
| 29. How much do you keep track of the sweets *(candy, ice cream, pies, pastries)* that your child eats? | 1 | 2 | 3 | 4 | 5 |
| 30. How much do you keep track of the snack food *(potato chips, Doritos, cheese puffs)* that your child eats? | 1 | 2 | 3 | 4 | 5 |
| 31. How much do you keep track of the high fat foods *(fast food, fried foods)* that your child eats? | 1 | 2 | 3 | 4 | 5 |

*Thank you for taking the time to answer these questions!*

# Appendix B: Figure Rating Scale

Parent Form (for parent evaluation of child)

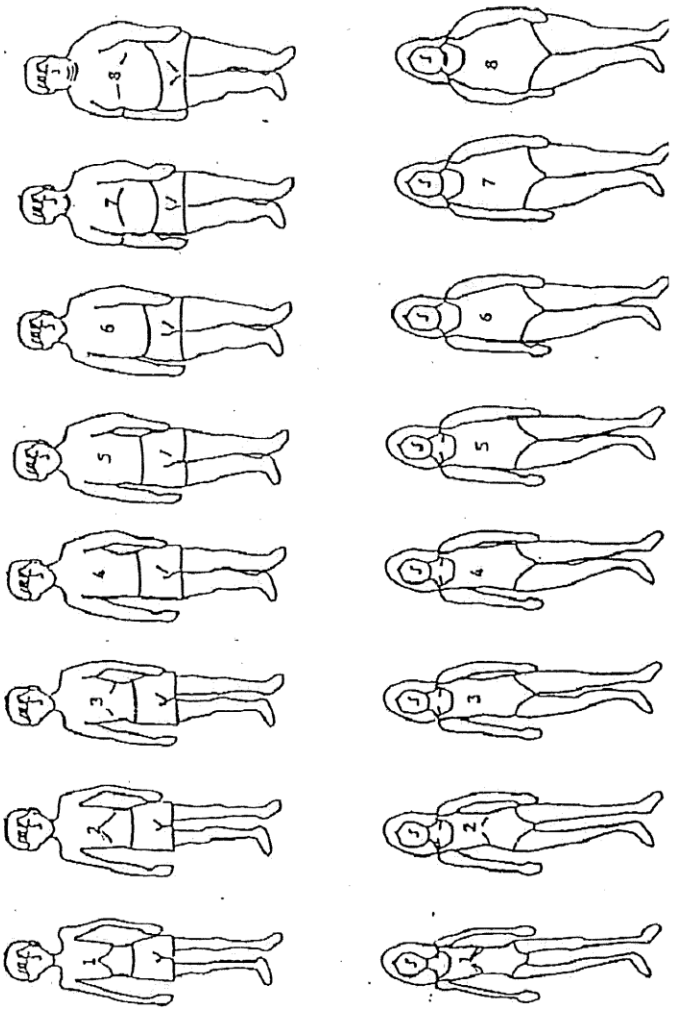
Please take a moment to look at all nine of the figures on the scale. Circle the figure that best matches how your child looks today. When you make your choice, think about the entire body image rather than specific sections of the body such as arms, legs or mid-section.

Child Form (for child evaluation of self)

Please take a moment to look at all nine of the figures on the scale. Circle the figure that best matches how you look today. When you make your choice, think about the entire body image rather than specific sections of the body such as arms, legs or mid-section.

***All forms will be gender specific and will represent the gender of the person being asked the questions or the gender of the person being asked about. One form will be used for each question that is asked.***

91



# Appendix C: Demographic Survey

1. Please indicate your gender.

   Male  Female

2. Please select the category that includes your age.

   Under 18  18-24  25-34  35-44  45-54  55-64  65 or Above

3. Do you currently have children under the age of 18 living in your household?

   Yes  No

4. If yes, how many children under the age of 18 live in your household?

5. What best describes your marital status?

   Single, Not Married  Married  Living with partner  Separated

   Divorced  Widowed  Prefer not to answer

6. What best describes your employment status?

Employed full time Trade or Vocational degree Not employed, but looking for work Not employed and not looking for work Retired Student Homemaker Prefer not to answer

7. What best describes your level of education?

Some high school High school graduate or equivalent Trade or Vocational degree Some college Associate degree Bachelor's degree Graduate or professional degree Prefer not to answer

8. In which state do you live?

9. Which one of the following ranges includes your total yearly household income before taxes?

1. Under $20,000 $20,000 - $29,999 $30,000 - $39,999 $40,000 - $49,999 $50,000 - $69,999 $70,000 - $99,999 $100,000 - $149,999 $150,000 or more Prefer not to answer

10. What is your current weight?

11. What is your child's current weight?

Appendix D: Permission Letter (Birch)

March 26, 2018

Dr. Leann Birch,

University of Georgia

[Contact information redacted]

Re: Usage of Child Feeding Questionnaire (CFQ)

Dear Drs. Birch and Johnson

My name is Debrua Coleman, MHA and I'm currently a doctoral student in Public Health at Walden University. I am conducting my dissertation research entitled: The Link between Food Choices, Eating Habits and Body Image of African American Mothers and the Influence It Has on Their Children Regarding Childhood Obesity. The study will be conducted in Atlanta, Georgia where I currently reside. The methodology for the study requires volunteer participants to complete survey questionnaires and their body figure will be rated using the Figure Rating Scale. The CFQ will be used to assess mother's child-feeding practices, attitudes, and household practices and their relationship to children's developing eating habits and obesity susceptibility (Birch, 2006). Therefore, I am requesting that you grant me permission to use the Child Feeding Questionnaire. You can rest assured that proper citation and credit will be given in my dissertation research. If you have any questions, please contact me at: 678-xxx-xxxx or email at: xxx@waldenu.edu.

Respectfully,

Debrua Coleman, MS

Dear Debra,

The instrument is in the public domain and you have my permission to use it.

Best of luck,

Susan Johnson

Susan L. Johnson, PhD

Professor, Section of Nutrition/Department of Pediatrics

Director, The Children's Eating Laboratory

Associate Director, NIDDK T32 Nutrition Training Grant

University of Colorado Anschutz Medical Campus

Appendix E: Permission Letter (Stunkard)

March 26, 2018

University of Pennsylvania

Dr. Kelly C. Allison

Associate Professor of Psychology in Psychiatry

Perelman School of Medicine at the University of Pennsylvania

Center for Weight and Eating Disorders (Suite 3027) and

Stunkard Weight Management Program (Mezzanine)

[Contact information redacted]

Re: Usage of The Figure Rating Scale

Dear Dr. Allison

My name is Debrua Coleman, MHA and I'm currently a doctoral student in Public Health at Walden University. I am conducting my dissertation research entitled: The Link between Food Choices, Eating Habits and Body Image of African American Mothers and the Influence It Has on Their Children Regarding Childhood Obesity. The study will be conducted in Atlanta, Georgia where I currently reside. The methodology for the study requires volunteer participants to complete survey questionnaires and their body figure will be rated using the Figure Rating Scale. The participants will report their weight and

height which will be used to compare body image perception and satisfaction with body size and weight. The Figure Rating Scale will also be used to determine body image perception and satisfaction with body size and weight. Therefore, I am requesting that you grant me permission to use Figure Rating Scale. You can rest assured that proper citation and credit will be given to you in my dissertation research. If you any questions, you may contact me at: 678-xxx-xxx or email at: xxx@waldenu.edu.

Respectfully,

Debrua Perniece Coleman, MHA

Hello Debrua,

Please see the message below from Dr. Allison regarding using the figure rating scale.

I give permission to use Dr. Stunkard's silhouettes (copyrighted) subject to clear attribution of authorship.

Reprinted from Stunkard AJ, Sorenson T, Schulsinger F. Use of the Danish Adoption Register for the study of obesity and thinness. IN: SS Kety, LP Rowland, RL Sidman, SW Matthysse (Eds.) The Genetics of Neurological and Psychiatric Disorders. New York: Raven Press, 1983, pp. 115-120.

Good luck with your project.

Best wishes,

Kelly C. Allison, Ph.D., FAED

Associate Professor of Psychology in Psychiatry

Perelman School of Medicine at the University of Pennsylvania

Center for Weight and Eating Disorders (Suite 3027) and

Stunkard Weight Management Program (Mezzanine)

[Contact information redacted]