ABSTRACT

Title of Document: **EXPLORING CHILDHOOD OBESITY THROUGH MULTIPLE LEVELS OF INFLUENCE: A QUALITATIVE EXAMINATION OF THE SOCIAL AND ENVIRONMENTAL CONTEXT FOR HEALTHY WEIGHT AMONG MINORITY YOUTH AND PARENTS**

Chandria Denise Jones, Doctor of Philosophy, 2014

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Childhood obesity is a major public health problem disproportionately affecting low-income minority populations. Although obesity is prevalent in these communities, little is known about how social and environmental factors affect behaviors related to achieving and maintaining a healthy weight among minority youth and parents.

In this dissertation, two studies were conducted on data from 14 focus groups with African American, Hispanic and Latino, and American Indian parents over the age of 18 and youth ages 11-17 across the country to better understand the multiple levels of influence affecting minority youths' ability to achieve and maintain a healthy weight. In study 1, youth and parents identified four behaviors related to healthy weight: engaging in primary prevention, taking care of your mental health, eating healthy foods, and being physically active. Several community level barriers, such as cost, time constraints, and safety, were identified, but few societal level barriers were discussed. Community and societal level facilitators (e.g. school resources, government assistance, heritage-based

foods) were limited. Interestingly, youth and parents across all racial and ethnic groups experienced similar barriers and facilitators, which imply socioeconomic status, may be the important variable rather than race and ethnicity.

In study 2, focus group data was examined to understand how media (e.g. television, movies, texting, social media, Internet, radio) influences behaviors related to healthy weight and explore preferred digital/ social media communication strategies. Analyses highlighted positive associations with media through information and encouragement, negative relationships between media and unhealthy behaviors, and problematic perceptions about the influence of marketing in media. Preferred digital/ social media communication strategies were discussed in terms of source, message, channel, and receivers. Participants wanted to see people who looked like them and had similar experiences. Many of the same communication strategies successful in traditional media would work for digital and social media. Community-based conversations provide first-hand knowledge about how youth and parents think and feel regarding healthy weight. Through this discourse, practitioners, researchers, and community advocates gain insight into how to develop interventions and policies that can result in long-term behavior change to improve healthy weight in minority populations.

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YOUTH AND PARENTS

by

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Dedication

The road to my purpose and passion has been full of unexpected twists and turns; however, the journey was as great as the final prize. This dissertation and all of the work leading up to it is dedicated to my loving family who inspired me, prayed for me, and supported me along the way. To my mom, Dr. Debra Allen, my sister, Dr. Stephanie Jones, and my dad, Professor Robert Jones thanks for joining me on this journey. Your laughter, tears, prayers, and words of encouragement made all of this possible. It is with you that I give all of the glory to God for this major accomplishment.

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So Jesus answered and said to them, "Have faith in God. For assuredly, I say to you, whoever says to this mountain, 'Be removed and be cast into the sea,' and does not doubt in his heart, but believes that those things he says will be done, he will have whatever he says. Therefore I say to you, whatever things you ask when you pray, believe that you receive them, and you will have them.
Mark 11:22-24 New King James Version (NKJV)

Mark 11:22-24 is one of the most profound, practical, life-changing scriptures by which anyone can live. According to my mom, it has the formula for faith - always have confidence and trust in God and the creative power of your words. This scripture fueled me, energized me, and gave me a pep talk each time I said it over and over again. It gave me confidence to know that all things are possible with God. It is to Him that I am eternally grateful.

Today, I acknowledge that faith, prayer, friends and family helped me on this journey. There is no way any of this would have been possible without the motivation, inspiration, and support of my friends, family, classmates, and co-workers. I couldn't have done any of this without all of you!

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My journey does not end here…..it's just a new beginning!

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Chapter 1   Introduction

1.1   Statement of the Problem

Childhood obesity is one of the most significant public health challenges of the day, not only because of the great number of youth affected, but also because of the long-term consequences associated with developing debilitating and costly chronic diseases (IOM, 2012). Currently, an estimated $14.1 billion per year in direct medical costs is spent on childhood obesity and associated illnesses (IOM, 2012). It is expected that these costs will increase dramatically as obese children are likely to become obese adults. In June 2013, the American Medical Association (AMA) officially recognized obesity and overweight as "a chronic medical condition (de facto disease state) and urgent public health problem" that requires a range of medical interventions for treatment and prevention (American Medical Association, 2013, p.1). The AMA's groundbreaking decision acknowledging obesity as a "disease" underscores the need for more obesity treatment and prevention efforts that result in long-term effectiveness.

Childhood obesity is defined as body mass index (BMI) at or above the 95th percentile for children of the same age and sex (Barlow, 2007; Centers for Disease Control and Prevention, 2012). Severe childhood obesity occurs when BMI is greater than 120% of the 95th percentile for children of the same age and sex. Body mass index is calculated using the child's weight and height. Over the past 30 years, the rates of childhood obesity have been on the rise in the U.S. (Centers for Disease Control and Prevention, 2012; Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Currently, the Centers for Disease Control and Prevention (CDC) (2012) reports that 17% (or 12.5 million) of children and adolescents between the ages of 2 to 19 are obese (Ogden, Carroll, Curtin,

Lamb, & Flegal, 2010). Among middle and high school children, the number increases to 20% with 6.5% of 12 to 19 year olds being severely obese (Doheny, 2013; Skinner & Skeleton, 2014). When we examine the rate of childhood obesity in minority populations, the numbers are even higher, especially for African American and Hispanic adolescents (Kumanyika & Grier, 2006; Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). In children ages 2 to 19, 20.2% of African Americans and 22.4% of Latinos were obese compared to 14.3% of their white counterparts (Ogden, Carroll, Kit, & Flegal, 2014). African American girls and Hispanic boys have higher rates of obesity with prevalence rates at 22.7% and 24.4% respectively (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Although the prevalence of obesity for American Indian youth varies by region and tribe, estimates indicate that before the age of 10, 40 to 50% of American Indian children are overweight or obese (Styne, 2010). The high prevalence of obesity in ethnic minority populations leads to poorer health outcomes and greater disparities in health (Trust for America's Health, 2014; Wilson, 2009).

According to a recent report from the Trust for America's Health (TFAH) and the Robert Wood Johnson Foundation (RWJF) (2013), childhood obesity rates in the United States appear to be stabilizing. According to the report entitled "F as in Fat: How Obesity Threatens America's Future 2013" (Trust for America's Health, 2013), rates of childhood obesity have remained statistically the same for the past 10 years. The only exception to this trend, which is based on data from the CDC, is the prevalence of obesity among 2-19 year old boys, which increased from 14 percent in 1999-2000 to 18.6 percent in 2009-2010. Even with this trend towards stabilization, the rates of obesity among children ages 2 to 19 are still too high, especially for minority youth (Doheny, 2013).

A key to reversing the childhood obesity trend for minority youth is to address the childhood obesity epidemic through multiple spheres of influence. By understanding individual, relationship, community, and societal influences on minority youth behavior, public health practitioners and organizations can build the foundation to increase minority youth engagement in healthy foods and physical activity which can be sustained over time. The following sections of this chapter include an overview to the causes and consequences of childhood obesity, the significance and purpose of the study (including aims and research questions), the theoretical framework, and definitions of key terms

1.2   Causes of Childhood Obesity

There are several contributing causes of the childhood obesity epidemic, including sedentary lifestyle, unhealthy eating habits, peer and media influences, and lack of access to healthy food options and/or opportunities for physical activity.

Sedentary Lifestyle

The link between sedentary activities such as TV viewing and playing sedentary video games is well established in the literature (Anderson & Butcher, 2006; Brennan, Castro, Brownson, Claus, & Orleans, 2011; Dietz & Gortmaker, 2001). Some of the more popular activities for children today include Internet surfing, playing video games, watching television, and using cell phones. New technologies lead to lower levels of physical activity and patterns of lethargy (IOM, 2012). Fewer youth, especially those from low-income families and from racial and ethnic minority groups, are engaging in physical activity outside of the home, preferring to stay inside in front of a television or computer screen (Whitt-Glover et al., 2009). Additionally, public transportation and

increased vehicle ownership has led to less walking and bicycle usage (Sallis & Glanz, 2006). In many communities, public policies and financial investments favor travel by automobiles and public transportation. Consequently, this has resulted in decreased use of walking and bicycling for transportation and less public policy focus on improvements and additions to communities that would promote walking and cycling (Sallis, Floyd, Rodriguez, & Saelens, 2012).

Dietary Behavior

Food consumption is a behavior that underlies the growing disparity in obesity-related health conditions among racial and ethnic minority adolescents (Powell, Han, & Chaloupka, 2010). Adolescents consume more fat, sugar, soft drinks, and salty snacks than dietary recommendations suggest, and less than the recommended amounts of fruits and vegetables (Gidding, et al., 2005; Guenther, Dodd, Reedy, & Krebs-Smith, 2006; Powell, Han, & Chaloupka, 2010). However, the complex environment in which they live largely influences what youth and adolescents choose to eat. Food options are based on a variety of factors, including what is available at home, distance to the nearest supermarket, number and location of fast food restaurants, and even how foods are subsidized by the government (Booth et al., 2001; Khan et al., 2009; Larson & Story, 2009; Ver Ploeg, et al., 2012). As a consequence, researchers need to understand the multiple levels of influence and how environmental factors affect healthy eating.

Family, Peers, and Media

Families, peers, and the media all affect food and physical activity choices. Many family level characteristics, such as family income, household composition, educational

level of parents, and employment status may affect access to and choice of food for youth (Powell, Han, & Chaloupka, 2010). For example, family income and household composition may affect purchasing power and the ability to select healthier foods because of increased prices while education and employment may affect the time and resources for food preparation and demand for healthier types of food (Larson & Story, 2009; Powell, Han, & Chaloupka, 2010). As parents become less active, their children follow in their footsteps, preferring to be driven to school instead of walking or opting for video games instead of playing outside (Rideout, Foehr, & Roberts, 2010; Sallis, Floyd, Rodriguez, & Saelens, 2012).

Youth preferences for food and physical activity are often influenced by peer groups and the media. Youth participation or lack of participation in sports may often be associated with friends' participation in sports (Maturo & Cunningham, 2013). Ethnically targeted marketing may contribute to high calorie food and beverage intake among minority adolescents (Kumanyika, 2008). Since minority and low-income youth watch more television than white, non-poor youth, they are exposed to more commercials advertising low-nutrient, high-calorie food (Kumanyika & Grier, 2006). Moreover, Internet advertising and advergames in virtual environments and social media networks are quickly becoming a preferred method for enticing minority youth to purchase food products (White House Task Force on Childhood Obesity, 2011).This chronic exposure to targeted food advertising can affect food preferences (Kumanyika & Grier, 2006).

Access and Availability

Many communities, especially those in low-income neighborhoods where minorities are frequently overrepresented, often lack access to healthy foods (Kumanyika,

2008; Larson & Story, 2009). This may be due to the limited availability of grocery stores and markets that sell fresh fruits and vegetables, lack of transportation to get to areas/neighborhoods with healthier food options, or limited financial resources to purchase the often more expensive healthy foods (Cummins & Macintyre, 2006; Ver Ploef et al., 2012). Furthermore, these communities also experience fewer opportunities for physical activity in places where children live, learn, and play (Auchincloss et al., 2013; Casagrande, Whitt-Glover, Lancaster, Odoms-Young, & Gary, 2009). Violence, drugs, and lack of appropriate, safe parks and playground equipment burden many low-income neighborhoods. When organized sporting or physical activities are available, they are often at prices outside the reach of many low-income families (Casagrande, Whitt-Glover, Lancaster, Odoms-Young, & Gary, 2009; Kumanyika, 2008; Sallis & Glanz, 2006).

Additional Causes

Other causes of childhood obesity may include child characteristics such as gender, age, chronic stress, nutritional knowledge and attitudes, exercise and physical activity skills, and genetics or familial susceptibility to weight gain. Community, demographic, and societal characteristics affect healthy weight through societal and cultural norms, food and agricultural policies, and food assistance programs that influence eating habits (Delva, Johnston, & O'Malley, 2007; United States Department of Health and Human Services, Healthy People 2020, 2011).

1.3   Consequences of Childhood Obesity

Co-morbid conditions are increasingly seen in obese youth, including insulin resistance, type 2 diabetes, hypertension, obstructive sleep apnea, poor self-esteem, and lower health-related quality of life (Erickson, Hahn-Smith, & Smith, 2009; Nadeau, Maahs, Daniels, & Eckel, 2011; Rosenbloom, 2002; Sorof, Lai, Turner, Poffenbarger, & Portman, 2004; Stern, et al., 2007; Wing, et al., 2003). Precursors of cardiovascular disease, type 2 diabetes, and sleep apnea are being seen in obese minority youth at an alarming rate (May, Kuklina, & Yoon, 2012). Type 2 diabetes, the most common form of the disease, is a condition that until recently was almost never seen in children and adolescents (Imperatore et al., 2012; Rosenbloom, 2002). In 2001, the SEARCH for Diabetes in Youth study (SEARCH) estimated that about 154,000 people under the age of 20 years in the U.S. were living with diabetes and that each year approximately 3,700 youth are diagnosed with type 2 diabetes mellitus (Imperatore et al., 2012). Moreover, type 2 diabetes is more common among African American, American Indian, and Hispanic youth than among whites (Fagot-Campagna et al., 2006; Kumanyika & Grier, 2006; May, Kuklina, & Yoon, 2012). Furthermore, many overweight and obese youth have unhealthy blood pressure, cholesterol, or blood sugar levels that put them at risk for future heart attacks and other cardiac problems (May, Kuklina, & Yoon, 2012; Sorof, Lai, Turner, Poffenbarger, & Portman, 2004). Fifty percent of overweight youth and 60 percent of obese youth have at least one risk factor for future heart disease (May, Kuklina, & Yoon, 2012). There are also mental and social consequences for a child or adolescent who is obese such as peer bullying, depression, and low self-esteem (Anderson, Cohen, Naumova, Jacques, & Must, 2007; Wang & Veugelers, 2008). Given

the high prevalence of obesity in ethnic minority youth, targeting prevention efforts toward minority children and adolescents has the potential to reduce health disparities across multiple disease conditions.

Studies have shown that obese youth are likely to become obese adults (Rasmussen et al., 2006; U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010). Many health conditions, such as hypertension and diabetes, that begin in youth as a result of obesity often track into adulthood (Field, Cook, & Gillman, 2005; Ramirez & Ayala, 2013). The long-term consequences of childhood obesity could have lasting economic and societal effects as well. As obese youth are likely to become obese adults, programs and policies aimed at helping youth achieve and maintain a healthy weight will help prevent some of the long-term consequences of obesity.

1.4   Significance of the Study

This dissertation study informed research efforts aimed at impacting the Healthy People 2020 objectives related to Nutrition and Weight Status and Physical Activity as well as progressing the recommendations outlined in the Institute of Medicine's (IOM's) Report *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation*. One of the Healthy People 2020 objectives is to "reduce the proportion of children and adolescents who are considered obese" (NWS-10.4). The goal is to "promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights" (NWS, para. 1). To help achieve the goal of reducing childhood obesity, the authors of Healthy People 2020 call for an increase in legislative polices for the built environment that enhance access to and availability of

physical activity opportunities. Not only do individual behaviors that change eating habits, physical activity, and weight need to be addressed—significant and sustained change will also require policy and environmental supports. Long-term reductions in childhood obesity rates is most likely to occur when we engage youth in the behavior change process, and develop supportive social and physical environments (Flores, 2013).

The IOM's Committee on Accelerating Progress in Obesity Prevention was charged with developing recommendations for obesity prevention over the next decade. Recommendations from the IOM's Report underscores the notion that more work needs to be done to decrease the rates of childhood obesity and to help minority youth achieve a healthy weight. The authors of the report note the importance of individuals, families, and communities feeling "empowered to work for change so their environment will support them in their efforts to achieve and maintain a healthy weight" (Preface, p. x).

Higher rates of obesity among racial and ethnic minority children and adolescents combined with the adverse health effects of obesity may contribute to the continued racial and ethnic differences in health outcomes. Even though rates of childhood obesity appear to be stabilizing over the past decade, the rates are still too high and we are not seeing a decline in childhood obesity within minority youth populations. Therefore, again, steps must be taken to go beyond individual behavior change to understand the social and physical environments in which youth live, which either encourage or inhibit opportunities for healthy eating and physical activity. This study engaged minority youth and parents directly, to ascertain their perceptions about health, healthy food options, and physical activity, exploring multiple levels of influence on youths' ability to achieve and maintain a healthy weight.

1.5   Purpose of the Study

The purpose of this qualitative study was to gain an understanding of how attitudes towards health, beliefs about healthy food options and physical activity, and perceptions about the influence and usefulness of media technology, affect youths' abilities to achieve and maintain healthy weights. The study used audio files, transcripts, and focus group notes from youth and parent focus groups to answer specific research questions. Data for this secondary analysis was collected as part of a larger research agenda supported by the Robert Wood Johnson Foundation (RWJF) to advance its goal of reversing childhood obesity. The RWJF, the fourth largest private philanthropic foundation in the country, has as its mission "to improve the health and health care of all Americans" (RWJF, 2013, para 1). To this end, RWJF partnered with Westat, a social science research firm, to conduct a series of 14 focus groups around the country to better understand physical activity and eating habits of minority adults and children. Input from these focus groups was used to help the RWJF plan new programs and prioritize where to spend resources to prevent childhood obesity. Through the use of focus groups, the larger study explored how culture, community perspectives, and issues related to healthy weight affect some of the nation's most vulnerable populations. The goal was to gain first-hand knowledge and a grounded understanding of these issues from the viewpoint of the community.

1.6   Study Aims and Research Questions

The specific aims of this study were to (1) understand what behaviors African American, Hispanic and Latino, and American Indian youth (between the ages of 11-17)

and parents believe are related to healthy weight; (2) examine societal and community level barriers and facilitators associated with healthy weight; (3) understand how media influences African American, Hispanic and Latino, and American Indian youth and parents' healthy weight behaviors; and (4) explore effective communication strategies that could be used to help youth and parents achieve and maintain a healthy weight. Through the analysis of qualitative data collected from 14 focus groups (6 -12 participants in each group) with African American, Hispanic and Latino, and American Indian youth and parents, two research studies answered the following research questions:

Research questions related to Aims 1 and 2 (Study #1)

1. What behaviors, beliefs, and attitudes do youth and parents think are necessary for healthy weight?

2. What are the societal and community level barriers and facilitators to healthy eating and physical activity?

Research questions related to Aims 3 and 4 (Study #2)

3. How does media, such as television, movies, texting, social media, the Internet, and radio influence behaviors related to healthy weight for African American, Hispanic and Latino, and American Indian youth and parents?

4. What digital and social media communication strategies would be most effective in helping African American, Hispanic and Latino, and American Indian youth and parents engage in healthy eating and physical activity?

The qualitative nature of these studies presented an opportunity to explore multiple levels of influence affecting healthy weight for minority youth. Given many of

these factors have not been examined in these populations, these studies are exploratory, leading to the generation of research hypotheses rather than the testing of hypotheses. The research questions and theoretical framework guided the qualitative data analysis.

1.7   Theoretical Framework

This dissertation study aspired to move the field of childhood obesity prevention forward using a multi-systems approach, examining social and environmental contexts related to achieving healthy weight. A variety of models have been developed based on Bronfenbrenner's ecological systems theory (1979), which views the individual as developing within a multi-layered system of relationships and typifies the interdependent relationship between the individual and her/his environment. This dissertation study adapted the social ecological model modified by the CDC (2009) and based on the work of Dalhberg and Krug (2002). Initially used to understand violence and the effect of potential violence prevention strategies (Dalhberg and Krug, 2002), this model depicts the complex interchange among individual, relationship, community, and societal factors. The CDC's adaptation of the social ecological model was useful in understanding the barriers and facilitators for healthy weight in minority youth.

The social ecological model, as displayed in Figure 1, depicts the interrelationship between the multiple levels of influence and provided the conceptual framework for the study. Various levels influence healthy food choices and opportunities for physical activity, including:

- **Individual** – takes into consideration age, race/ethnicity and socioeconomic status;
- **Relationship** – examines interactions with friends and family members;

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- **Community –** explores the relationship between economic resources, geography, built environment, available grocery/food stores, community resources, transportation, worksite, and schools; and

- **Societal –** considers the effect of media and messaging, social and cultural norms, and policies.

Figure 1. Conceptual Framework Based on the Social-Ecological Model
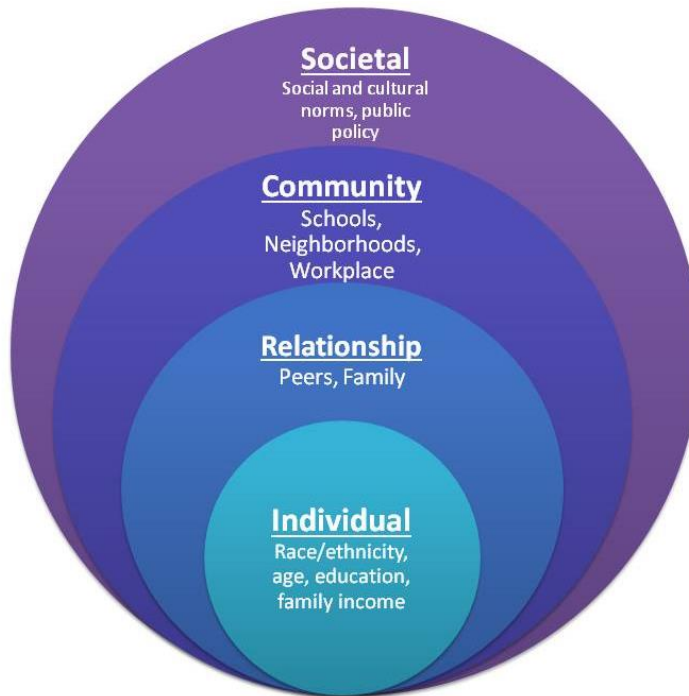
Source: Adapted from Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2009, September 9). The Social-Ecological Model: A Framework for Prevention.

Table 1 demonstrates how the social ecological model was operationalized for this study. For each level of the model, the associated youth and parent questions are displayed.

Table 1. Operationalization of the Social-Ecological Model (SEM)

	Research Question	SEM Level	Operationalization	
			Youth Questions	**Parent Questions**
#1	What behaviors, beliefs, and attitudes do youth and parents think are necessary for healthy weight?	Individual	What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use?	What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use?
		Relationship	How can friends, family, and/or teachers help you be healthier?	How can friends, family, and/or teachers help you be healthier?
#2	What are the societal and community level barriers and facilitators to healthy eating and physical activity?	Community	Tell us what helps you to be healthy. What stops you from being healthy? Are there things about your community that make it hard for you to be healthy? [Probe on the value that the community places on health]	Tell us what helps you to be healthy. What stops you from being healthy? Are there things about your community that make it hard for you to be healthy? [Probe on the value that the community places on health]
		Societal	Tell us what helps you to be healthy. What stops you from being healthy? [Probe on social norms and practices]	Tell us what helps you to be healthy. What stops you from being healthy? [Probe on social norms and practices]
#3	How does media such as television, movies, texting, social media, the Internet, or radio influence behaviors related to healthy weight for African American, Hispanic and Latino, and American Indian youth and parents?	Societal	In what ways does television, movies, the Internet, or radio help you be healthy? In what ways does it keep you from being healthy? How might marketing of unhealthy food keep you from being healthy? What influence do you think things like texting, Facebook and the other technology have on your ideas about healthy food? Physical activity? A recent study about children's breakfast cereals found that cereals with high sugar content were advertised more on kids' TV shows. Do you believe that? How does that make you feel?	In what ways does television, movies, the Internet, or radio help you be healthy? In what ways does television, movies, the Internet, or radio keep you from being healthy? How might marketing of unhealthy food keep you from being healthy?

Table 1. Operationalization of the Social-Ecological Model (SEM) (continued)

	Research Question	SEM Level	Operationalization	
			Youth Questions	**Parent Questions**
#4	What communication strategies would be most effective in helping African American, Hispanic and Latino, and American Indian youth and parents engage in healthy eating and physical activity?	Societal	What are some ways that technology such as Internet websites and Facebook can be used to encourage you to eat healthier food or be physically active? How might that work?	How could technology such as Internet websites and Facebook be used to encourage you to buy and prepare healthier meals for your family? How might that work? How could it be used to make certain that your child eats healthier snacks and foods? How could Internet websites and Facebook be used to encourage you and your children to be more physically active? How might that work?

1.8   Definition of Terms

African American: According to the U.S. Census, the term "Black or African American" refers to people who have origins in any of the Black racial groups of Africa (Humes, Jones, and Ramirez, 2011). For the purposes of this study, the term African American is used to refer to anyone who self-identifies as Black, African American, or being of African, Caribbean, and/or West Indian descent. A demographic survey that was administered before the beginning of each focus group was used to collect self-reported information on race and ethnicity.

American Indian: The term "American Indian or Alaska Native" is used to refer to anyone having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment (Humes, Jones, and Ramirez, 2011). This term is operationalized in this study to refer to anyone who self-identifies as American Indian/Alaska Native on the demographic survey. A demographic survey that was administered before the beginning of each focus group was used to collect self-reported information on race and ethnicity.

Auditing: A method for assessing the validity of qualitative data analysis in which a researcher not involved in the study examines the process and products of the data analysis to evaluate accuracy and conclusions (Cohen & Crabtree, 2008).

Childhood obesity: Childhood obesity is defined as body mass index (BMI) at or above the 95th percentile for children of the same age and sex (Barlow, 2007; Centers for Disease Control and Prevention, 2012).

Codes: Codes are the categorization of statements made by participants about a specific topic. "Coding" is a method for collecting all the statement about a specific topic

in order to develop themes. Transcripts will be coded and the statements brought together in a single "node" (Richards, 1999).

Digital and social media: The Digital Media Alliance Florida (2013) defines digital media as "the creative convergence of digital arts, science, technology and business for human expression, communication, social interaction and education" (para. 1). Social media are defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan & Haenlein, 2010, para. 1). For the purpose of this study, digital and social media is a combined term, similar to new media, that refers to on-demand access to content on any digital device (i.e., computer, cell phone, tablet, gaming device, etc.) that allows for interaction among people to create, share, or exchange information through communities or networks.

Healthy food: The definition of healthy food varies with source. Segen's Medical Dictionary (2012) defines healthy food as "any food believed to be 'good for you,' especially if high in fiber, natural vitamins, fructose, etc." (para. 1). For the purpose of this proposal, healthy foods are those that provide essential nutrients and energy to sustain growth, health, and life.

Healthy weight: For children and adolescents, a healthy weight would be any weight within the 5th percentile to less than the 85th percentile BMI-for-age by gender (Centers for Disease Control and Prevention, 2011a).

Hispanic and Latino: The term "Hispanic or Latino" refers to a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race (Humes, Jones, and Ramirez, 2011). In this study, the term is

operationalizes as anyone who self-identifies as Hispanic or Latino regardless of their racial designation as indicated on the demographic survey. The demographic survey that was administered before the beginning of each focus group was used to collect information on race and ethnicity.

Minority: Compelling evidence suggests that race and ethnicity correlate with persistent, and often increasing, health disparities among U.S. populations (Centers for Disease Control and Prevention, Office of Minority Health and Healthy Equity, 2012). According to the Centers for Disease Control and Prevention, Office of Minority Health and Health Equity (2012) racial and ethnic minority populations are defined as Asian American, Black or African American, Hispanic or Latino, Native Hawaiian and Other Pacific Islander, and American Indian and Alaska Native. For the purpose of this study, minority is a collective term referring to African Americans, Hispanics and Latinos, and American Indians.

Nodes: In NVivo 10, a node is a collection of references about a specific theme. References are determined by "coding" segments of content from transcripts (Richards, 1999).

Physical activity: The National Institutes of Health, National Heart, Lung, and Blood Institute define physical activity as "any body movement that works your muscles and requires more energy than resting" (NIH, National Heart, Lung, and Blood Institute 2011, para 1). Examples of physical activity include walking, running, dancing, swimming, yoga, and gardening. For the purpose of this study, physical activity may be used interchangeably with exercise to denote any bodily movement that results in the expenditure of energy.

Social ecological model: The social ecological model is a conceptual model that depicts the individual as developing within a multi-layered system of relationships and depicts the complex interchange among individual, relationship, community, and societal factors (Centers for Disease Control and Prevention, 2009).

Youth: Merriam Webster (2014) defines youth as "the time of life when one is young; the period between childhood and maturity (adulthood)" (para. 1). In this document, the terms youth and "children and adolescents" are used interchangeably. For the purpose of this study, youth is a collective term referring to both children and adolescents between the ages of 11-17.

Chapter 2   Literature Review

The purpose of this literature review is to examine what is currently known about healthy weight among minority youth and to identify gaps in the literature regarding social and environmental factors associated with childhood obesity, especially among minority children and adolescents. The chapter consists of several sections. The first part is a summary of the research on youth and healthy weight. It provides a review of childhood obesity trends among African American, Hispanic and Latino, and American Indian youth, including factors particular to each racial and ethnic group. The second part provides a brief overview of the social and environmental context that influences healthy weight among minority youth and highlights the need for empowering youth to advocate for change in their community. The final sections provide descriptions of qualitative studies that have examined factors related to healthy weight for minority youth and the significance of using qualitative data to inform efforts to help youth adopt healthy behaviors.

2.1   Obesity Prevalence Among Minority Youth

The prevalence of obesity and overweight has increased dramatically over the past few decades. Using data from the National Health and Nutrition Examination Survey (NHANES) 2007-2008, which is a representative sample of the U.S. population, researchers examined the weight and height of 3,281 children and adolescents between the ages of 2 to 19 to estimate BMI and analyze trends in prevalence from 1999-2008. Analyses indicated that for children and adolescents between the ages of 2 to 19, 11.9% were at or above the 97th percentile of the BMI-for-age growth charts (extreme obesity),

16.9% were at or above the 95th percentile (obese), and 31.7% were at or above the 85th

percentile of BMI for age (overweight) (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010).

These estimates differed by age, gender, and race/ethnicity. Figure 2 shows the

prevalence of childhood obesity by race, ethnicity, and gender for youth ages 12-19 based

on data from NHANES 2007-2008.

Figure 2. Childhood Obesity Rates by Race, Ethnicity, and Gender, 2007-2008
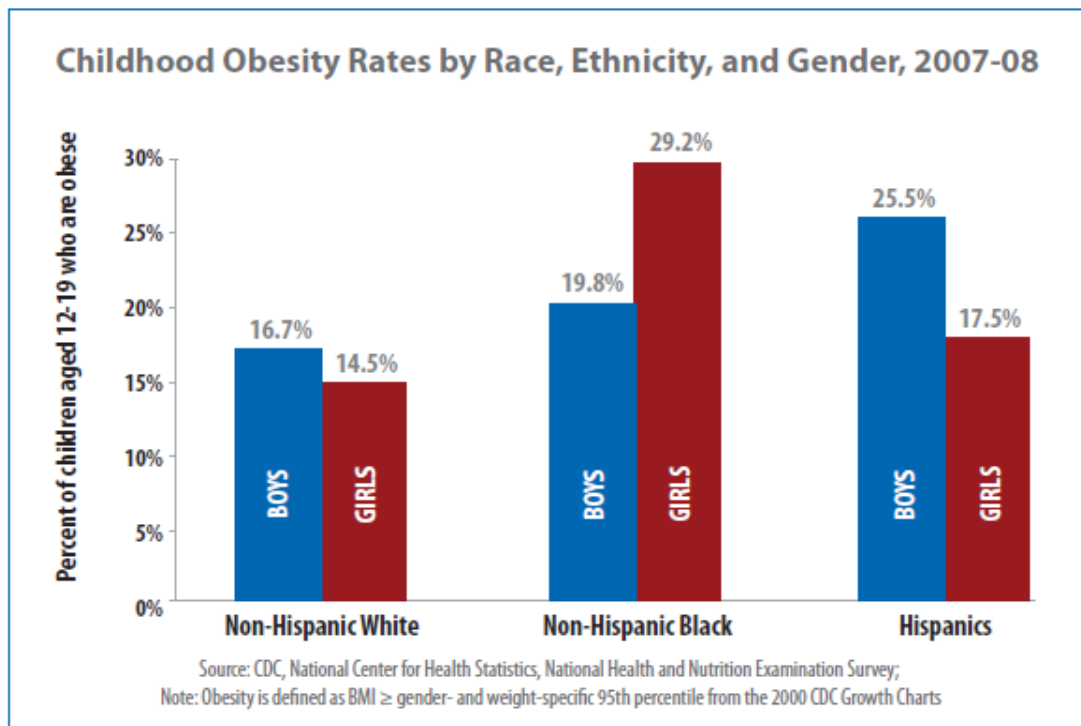
Taken from: White House Task Force on Childhood Obesity (2011). Year One Progress Report, p.5

Although childhood obesity has been increasing in all ethnic groups, its

prevalence is higher in minority groups, especially African Americans, American

Indians, and Hispanics and Latinos. Research that focuses on childhood obesity

specifically in racial and ethnic minority and low-income populations is growing but

more needs to be done (Delva, Johnston, & O'Malley, 2007; IOM, 2012; Kumanyika &

Grier, 2006). Data from NHANES 2007-2008 also revealed that non-Hispanic African American girls between the ages of 12-19 have the highest prevalence of obesity among all other racial and ethnic subgroups at a rate of 29% (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). When adjusting for income, African Americans girls and Mexican American boys have the highest prevalence of obesity except when family incomes are 130% or more below poverty levels. At this point, Mexican American girls have the highest obesity prevalence (IOM, 2012).

As the number of Hispanic and Latino adult and children in the United States increases, Hispanic and Latino youth are becoming the nation's largest at-risk group for childhood overweight and obesity (Flores, 2013). The percentage of Hispanic and Latino children in the U.S. under the age of 18 is expected to continue to rise from 17% in 1998 to 22% today with an expected 30% by 2025 (Ramirez & Ayala, 2013). Data from NHANES 2007-2008 indicated that Hispanic boys between the ages of 12-19 had the highest rate of obesity for their gender at 25.5%. More recent NHANES data from 2009-2010 indicates that 39.2% of Hispanic and Latino children between the ages of 2-19 are overweight or obese compared with 31.8% of all children aged 2-19 (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). When considering Hispanic and Latino subpopulations, Mexican American children have the highest prevalence of obesity at 38% (Gonzalez, Villanueva, & Grills, 2012; Ogden, Carroll, Curtin, Lamb, & Flegal, 2010).

As with most other minority youth groups, the prevalence of overweight and obesity has been increasing among American Indian youth. Rates of overweight and obesity vary with tribe and region (Styne, 2010). Current estimates indicate that the prevalence of overweight among American Indian schoolchildren ranges from 35 to 40%

(Arcan et al., 2012; Story et al., 2001). For those children living on reservations, 40% are overweight or obese by age five (Zephier, Himes, Story, & Zhou, 2006).

2.2   Youth Development

Between the ages of 11 to 17, youth experience biological, psychological, and social changes that make mid-childhood and adolescence particularly vulnerable periods (Adair, 2008; Christie & Viner, 2005; Hutchinson, 2012). Biologically their bodies are growing and evolving as they enter puberty. Internal physical changes interact with psychological and social changes to place youth at risk for behaviors that increase the likelihood of becoming overweight or obese (Adair, 2008; Christie & Viner, 2005; Daniels, 2006).

During puberty, body image and self-esteem become major concern for youth (Perrin, Boone-Heinonen, Field, Coyne-Beasley, & Gordon-Larsen, 2010; Stern et al., 2007; Strauss, 2005). Cornette (2008) reviewed articles published from January 1995 to December 2005 about the psychological impact of obesity and overweight on children. Studies included youth from any gender or ethnic, cultural, and sociodemographic background. The author found that most all participants reported some level of psychological impact from being overweight or obese. Additional studies have shown that younger children, girls, and those with little control over eating are often most vulnerable to weight-related stigma, poor self-esteem and body dissatisfaction (Erickson, Hahn-Smith, & Smith, 2009; Franklin, Denyer, Steinbeck, Caterson, & Andrew, 2006; Mirza, Davis, & Yanovski, 2005).

2.3   Defining Healthy Weight

Childhood obesity is defined as body mass index (BMI) at the 95th percentile for age and height by gender while overweight is defined as BMI at the 85th percentile for age and height by gender (Barlow and the Expert Committee, 2007; Centers for Disease Control and Prevention, 2012). For children and adolescents, a healthy weight would be any weight within the 5th percentile to less than the 85th percentile BMI-for-age by gender (Centers for Disease Control and Prevention, 2011a). Although BMI is the most commonly used measure to assess overweight and obesity, some have argued that it may not be the best indicator of healthy weight (Mei et al., 2002). Without a clear definition of healthy weight, individuals, youth in particular, may be stigmatized by the label of overweight or obese due to BMI measures. Other methods such as skinfold calipers, bioelectrical impedance, underwater weighing, dual-energy x-ray absorptiometry (DXA), magnetic resonance imaging (MRI), or computed tomography (CT) may provide more accurate assessments of weight status (Centers for Disease Control and Prevention, 2011a; Moyad, 2004). Table 2 shows the relative advantages and disadvantages of different anthropometric measures for weight. Although these measures may provide a better estimate of healthy weight, there is still variability in the range of health issues associated with any particular weight (Mei et al., 2002).

Weight is determined by energy (calories) in and energy out. Although many factors, such as genetics, biology, and environment, may affect energy expenditure, an imbalance of energy through an excess of calories in or a decline in calories out leads to obesity (Centers for Disease Control and Prevention, 2011b; Krebs et al., 2008). Thus, achievement and maintenance of healthy weight can be accomplished through changes in

diet and physical activity. For youth, this can be accomplished through changes in knowledge and skills, reduced access to nutrient poor and high calorie food, improved access to nutrient rich foods at affordable prices, and improved opportunities for physical activity (Ammerman et al., 2007). When accompanied by peer support, supportive social norms, and private and public sector collaborations, community-based programs and nutrition-focused policies aimed at creating energy balance through healthy foods and physical activity can help prevent childhood obesity and facilitate achievement and maintenance of healthy weight for minority youth (Ammerman et al., 2007).

Most studies related to energy expenditure and their associations with healthy weight have examined either physical activity or basal metabolic rate (BMR). Results of these studies have been mixed. Bandini, Schoeller, & Dietz (1990) determined that obese adolescents do not have a lower than average BMR. This suggests that energy expenditure related to BMR may not be the cause of obesity in adolescents. However, long-term studies on physical activity and BMI have had stronger associations, indicating that increases in physical activity decrease BMI over time (Sallis, Prochaska, & Wendell, 2003). The strongest links have been between sedentary activities, such as screen time and television viewing, and obesity. One of the earliest studies conducted in 1985 by Dietz & Gorthmaker on television viewing and childhood obesity found that the prevalence of obesity increased by 2% with each additional hour of television per day. The time spent watching television often competes with the time youth could be engaging in physical activity.

Table 2. Advantages and Disadvantages of Different Anthropometric Measures for Weight

Method	Advantage	Disadvantages*
Medscape® www.medscape.com		
Bioelectrical impedance	Rapid, easy to measure, and portable device.	Equipment is expensive in many cases.
Body mass index (BMI)	Simple, inexpensive, and should be measured in most clinical settings.	An increase in muscular tissue can falsely elevate this value.
Crude weight	Simple and inexpensive.	Does not take into account the height and/ or increase in muscular mass of the patient.
Densitometry (hydrostatic weighing)	Accurate past method of measuring fat tissue concentrations.	Cost and time make it less useful in current clinical and epidemiologic studies.
DEXA	Accurate current assessment of fat tissue and the gold standard for osteoporosis screening.	Cost is the biggest issue, and a certified operator and new software are needed.
Lean body mass	Most calculations are easy and just require the individual's age, height, and weight.	Assumes a complex formula fits for a population, and more muscular frames are not taken into account.
Skinfold thickness (skin calipers)	Simple, cheap, and easy to perform at many sites.	Poor measurement of abdominal adipose tissue.
Waist-to-Hip ratio (WHR)	Fairly accurate assessment of abdominal obesity and all that is needed is a tape measure. Should be measured in most clinical settings along with BMI.	Intra-abdominal tissue (area of interest) is difficult to differentiate between subcutaneous tissue and measurement can be affected by the individual's postprandial status, depth of inspiration, standing position, etc.

*Note: All of the above listed anthropometric parameters need further research in a variety of ethnic groups.

Source: Urol Nurs © 2004 Society of Urologic Nurses and Associates

Moyad, M.A. (2004). Fad diets and obesity – Part I: Measuring weight in a clinical setting. *Urol Nurs, 24(2),* 114-119.

2.4 Associations Between Healthy Weight in Childhood and Adulthood

Because obese youth are likely to become obese adults, improvements in nutrition and physical activity need to start in childhood (Rasmussen et al., 2006; U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010). Field, Cook, & Gillman (2005) conducted a prospective study of 314 children, who were 8 to 15 years old at baseline, and followed up 8 to 12 years later to determine if weight status in childhood was a predictor for becoming overweight or hypertensive in early adulthood. Trained research staff obtained weight, height, and blood pressure for each of the children. Statistically significant results indicated that high normal weight status in childhood predicted becoming overweight or obese as an adult. Additionally, elevated BMI among the boys in childhood predicted risk of hypertension in young adulthood (Field, Cook, & Gillman, 2005).

The Bogalusa Heart Study followed 2,400 biracial (black-white) children between the ages of 5- to 14-years-old for an average of 17 years (range of 8 to 24 years). Between 1973 to 1974 in Ward 4 of Washington Parish, LA, height and weight were collected from African American and white schoolchildren. Measurements were taken again from 1992 to 1994 during adulthood. Results indicated that 65% of overweight white girls and 84% of overweight African American girls became obese adults. For boys, 71% of white boys and 82% of black boys were obese adults. Thus, the study supports the finding that overweight or obese youth grow up to be obese adults and those racial and ethnic differences in BMI continue into adulthood (Freedman et al., 2005).

Healthy weight in childhood may prevent many chronic conditions in adulthood. Health conditions associated with childhood obesity that can continue into adulthood may include pulmonary, orthopedic, neurologic, gastroenterologic, endocrine, and cardiovascular problems (Erickson, Hahn-Smith, & Smith, 2009; Rosenbloom, 2002; Sorof, Lai, Turner, Poffenbarger, & Portman, 2004; Stern, et al., 2007; Wing, et al., 2003). Over time adults who were obese children may develop other chronic conditions such as cancer, diabetes, hypertension, sleep apnea, and renal failure (Ramirez & Ayala, 2013). With the increasing rates of obesity, type 2 diabetes is becoming more prevalent in minority youth. For example, as the rates of obesity among American Indian youth have increased, so has the prevalence of type 2 diabetes, which is one of the leading causes of morbidity and mortality among American Indian adults (Story et al., 2001). Once rarely seen in American Indian children, today type 2 diabetes is very common in children 10 years of age and older (Fagot-Campagna et al., 2000).

Eating patterns established in childhood often track into later life (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010). Nutritional patterns in youth change and decline in quality over time due to a decreased intake of fruit, vegetables, milk, and fruit juice and an increase in soft drink consumption (Rasmussen et al., 2006; van der Horst et al., 2007). Langevin et al. (2007) conducted a cross-sectional study to examine diet quality and weight status in 248 randomly selected ethnically diverse low-income urban children, aged 7 to 13 years. Using food frequency questionnaires, authors determined intake of total calories, food groups, selected micronutrients, and calories from sweets. Results indicated that more than 75% of participants failed to meet Food Guide Pyramid recommendations and the Dietary

Reference Intake recommendations for servings of grains, vegetables, dairy, and fruit groups. Such decreases in healthy food consumption have been associated with many obesity-related health conditions, such as some types of cancer, heart attacks, and strokes (May, Kuklina, & Yoon, 2012; Robinson, 2008; Rosenbloom, 2002; U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010).

Physical activity habits established in childhood help promote a healthy lifestyle that can provide health benefits in childhood and adulthood (Biddle, Gorely, & Stensel, 2004). The Centers for Disease Control and Prevention (2011b) recommends that youth ages 6-17 get at least 60 minutes of moderate or vigorous intensity physical activity every day. Moderate intensity physical activity would be any activity that accelerates the heart rate, while vigorous intensity physical activity would be any activity that requires a large amount of effort, causes rapid breathing, and substantially increases the heart rate (World Health Organization, 2014). For most youth, this would include activities such as playing basketball, jumping rope, dancing, playing tag, walking, and running. Additionally, muscle and bone strengthening activities, such as gymnastics or push-ups should occur at least three days per week as part of the 60 or more minutes (IOM, 2012).

However, studies examining whether minority youth are achieving optimal physical activity levels have had mixed results. A study of African American adolescents living in the South showed that the mean daily moderate-to-vigorous physical activity level (MVPA) for the total sample (N=116) of youth ages 12 to 16 was about two-thirds of recommended levels (40.4 min/day, SD = 27.5) (Baskin et al., 2013). The mean MVPA level for girls was significantly less (29.4 min/day, SD = 20.7), which was

consistent with other findings indicating boys are more physically active than girls (Jago, Anderson, Baranowski, & Watson, 2005; Baskin et al., 2013).

In another study, secondary analysis of national accelerometer data from the National Health and Nutrition Examination Survey (NHANES) collected in 2003–2004 (N = 2,531) indicated that achievement of recommended levels of physical activity ranged across racial and ethnic subgroups from 2% among 12–15-year-old non-Hispanic White girls to 61% among normal weight 6–11-year old non-Hispanic Blacks youth (boys and girls). Mean hours per day spent in sedentary behavior ranged from 5.5 (SE = 0.14) among 6–11-year-old normal weight non-Hispanic White youth (boys and girls) to 8.5 (SE = 0.25) among 16–19-year-old non-Hispanic Black boys (Whitt-Glover et al., 2009). Inconsistency in study findings suggest that more research is needed to really understand the underlying disparities in physical activity levels among minority youth.

It has become imperative that childhood obesity be addressed in minority youth. Programs and policies aimed at preventing adult obesity and its associated complications should start in early childhood and should include not only overweight or obese children but also children and adolescents as low as the 50th percentile of BMI for age and gender. By promoting healthy eating patterns and physical activity in childhood, we may be able to better address racial and ethnic disparities in obesity during adulthood.

2.5 Correlates of Healthy Weight for Minority Youth

The reasons for the differences in prevalence of childhood obesity among African American, Hispanic and Latino, and American Indian youth as compared to their non-Hispanic white counterparts are complex. Research clearly indicates that childhood obesity affects some groups more than others and can be associated with age, income,

gender, race and ethnicity, and geographic region (Anderson & Bucher, 2006; Barlow et al., 2007; Baskin et al., 2013; Bethell, Simpson, Stumbo, Carle, & Gombojav, 2010; Caprio et al., 2008; Lytle, 2009). The interaction between individual behaviors, genetics, physiology, culture, socioeconomic status (SES), and environment and how they influence eating and physical activity for minority youth needs to be better understood (Kumanyika, 2005).

Childhood obesity research often focuses on how individual behaviors of minority youth affect their weight. In regards to eating habits, numerous studies have examined the association between weight status or BMI and the consumption of fast food, high-density foods with low nutritional value, sugar sweetened beverages, and snacks or junk food such as chips, baked goods, and candy (Anderson & Butcher, 2006; Bandini et al., 2000; Fulton, McGuire, Caspersen, & Dietz, 2001; Ebbeling et al., 2004;James et al., 2004; Ludwig, Peterson, & Gortmaker, 2001; Paeratukul et al., 2003; Phillips et al., 2004; Thompson et al., 2004; Trojano et al., 2000). Youth between the ages of 11-17 consume more fat, sugar, soft drinks, and salty snacks than dietary recommendations suggest, and minority adolescents consume less than the recommended amounts of fruits and vegetables (Gidding, et al., 2005; Guenther, Dodd, Reedy, & Krebs-Smith, 2006; Powell, Han, & Chaloupka, 2010). As a result, youth and adolescent minority groups, especially those from low-income families, are at a greater risk for developing obesity and other chronic conditions that contribute to the widening disparities in health (Robinson, 2008).

Income, poverty, and socioeconomic status may affect weight status for many minority youth. Socioeconomic disadvantages create barriers for minority youth to access healthy foods and opportunities of physical activity (Leviton, 2013). The Pediatric

Nutrition Surveillance Survey (PedNSS) uses actual measurements instead of self-reported data to examine children from the ages of 2 to 4 from low-income families. A recent study using PedNSS data found that 14.4 percent of these children were obese compared with 12.1 percent of all U.S. children of a similar age. The prevalence of obesity among children from low-income families increased from 12.7 percent in 1999 to 14.4 percent in 2011 (Trust for America's Health, 2013). Additionally, schools in low-income communities are less likely to participate in obesity-prevention efforts, often prioritizing funding and efforts towards new academic standards and drug abuse and violence prevention (Kumanyika & Grier, 2006).

Regional differences exist in regards to childhood obesity rates in the United States. A study by Strauss and Pollack (2001) found regional differences in weight status for African American and Hispanic youth, with children in the South and the West being most likely to be overweight. They found no significant difference between rural and urban children although other studies have seen urban and rural differences. As seen in Table 3, data from the 2011 National Survey of Children's Health (NSCH) indicate that seven of 10 states with the highest rates of obesity for children were located in the South (Trust for America's Health, 2013). Some researchers have hypothesized that rates of childhood obesity are higher in the South due to a cultural factors resulting from traditions that emphasize high fat and fried foods and socioeconomic disparities (Beech, Fitzgibbon, Resnicow, & Whitt-Glover, 2011; Delva, Johnston, & O'Malley, 2007; Larson & Story, 2009). Several of the most obese states also have the lowest median household income and the largest density of fast food restaurants (Anderson & Butcher, 2006; Ball, Timperio, & Crawford, 2006; Powell, Han, & Chaloupka, 2010).

Many factors contribute to the increased prevalence of obesity among Hispanic and Latino youth, one of which is acculturation. Defined as "changes of original cultural patterns of one or more groups when they come into continuous contact with one another," acculturation to the U.S. has been associated with lower frequency of physical activity and healthy eating among Latino youth (Caprio et al., 2008, p.2215). Studies have shown that fruit and vegetable consumption by Latinos decreases and soda consumption increases with subsequent generations (Caprio et al., 2008; Crespo, Smit, Carter-Pokras, & Andersen, 2001; Larson & Story, 2009). These changes in food preferences and physical activity may be due to many factors included media exposure, accessibility to fast-food, and social pressures that encourage accepting the food choices of the dominant culture (Caprio et al., 2008; McGinnis, Gootman, & Kraak, 2006; Satia-About, 2003).

Table 3. Top 10 States with the Highest Rates of Obesity for Children 10 to 17 Years Old

STATES WITH THE HIGHEST RATES OF OBESE 10- TO 17-YEAR-OLDS		
Rank	States	Percentage of Obese 10- to 17-year-olds (95 percent Confidence Intervals)
1	Mississippi	21.7% (+/- 4.4)
2	South Carolina	21.5% (+/- 4.9)
3	D.C.	21.4% (+/- 5.5)
4	Louisiana	21.1% (+/- 4.0)
5	Tennessee	20.5% (+/- 4.2)
6	Arkansas	20.0% (+/- 4.2)
7	Arizona	19.8% (+/- 4.6)
8	Kentucky	19.7% (+/- 3.9)
9	Illinois	19.3% (+/- 3.9)
10	Texas	19.1% (+/- 4.5)

Note: For rankings, 1 = Highest rate of obesity.

Trust for America's Health. (2013). F as in Fat: How Obesity Threatens America's Future 2013. Washington, D.C., p.11.

2.6   Social and Environmental Factors Affecting Healthy Weight

In order to help minority youth achieve a healthy weight, a greater depth of understanding of the social and environmental influences on healthy food options and opportunities for physical activity is needed. Recently research has begun to focus on environmental determinants of behavior as driving forces for increasing obesity prevalence and how the environment affects eating habits and opportunities for physical activity (Ball, Timperio, & Crawford, 2006; Brennan, Castro, Brownson, Claus, & Orleans, 2011; Larson & Story, 2009). Youth dietary behaviors are likely to be strongly influenced by environmental factors, since youth over the age of 13 have a strong level of autonomy in food choices and leisure time activity van der Horst et al., 2007.

Sociocultural Environment

Social, cultural, and physical environments can play a role in minority youths' consumption of healthy food and engagement in physical activity (Ball, Timperio, & Crawford, 2006; Rasmussen et al., 2006). The sociocultural environment relates to the beliefs, customs, practices and behavior that exists within a population to create social and cultural norms (Fleury & Lee, 2006). Parents, peers, social networks, and organizational support are all social influences within the sociocultural environment (Fleury & Lee, 2006; van der Horst et al., 2007).

Home environments may affect obesity rates where there is a single-parent household, lower parental education, and economic insecurity. Time and money are real concerns for single-parent households when it comes to meal preparation (Caprio et al., 2008). Weight norms and modeling of eating behaviors also occur in the home (Kumanyika & Grier, 2006). In many racial and ethnic groups, families are often the

source of beliefs and social norms regarding weight and body image, and attitudes about excess weight tend to be less negative and more accepting in African American, Hispanic and Latino, and American Indian populations (Arcan et al., 2012; Caprio et al., 2008; Contento, Basch, & Zybert, 2003). For example, among African-American parents, overweight or obese children are often referred to as "big-boned" and their weight status is deemed an acceptable part of who they are due mostly to parental or genetic factors (Davis et al., 2008). One study of low-income Latina mothers and their children between the ages of 5 to 7 (N = 187) determined that Latina mothers indicated a preference for thin figures for themselves but plumper figures for their children (Contento, Basch, & Zybert, 2003). However, cultural variations within the Latino population in the U.S. exist with thinner body size being preferred by Latinas from the Caribbean while Latinas from Mexico and Central America prefer slightly larger sizes (Contento, Basch, & Zybert, 2003; Snooks & Hall, 2002). Moreover, American Indian youth may perceive excess weight as favorable or at least not harmful to health (Arcan et al., 2012). One study of 1,441 American Indian elementary school children in 41 schools representing seven tribes found that normal weight children perceived slightly heavier body sizes as being most healthy (Story et al., 2001). These factors demonstrate a need for minority youth to have a better understanding of the causes and consequence of unhealthy weight and how to improve their healthy food options and opportunities for physical activity.

Additionally, family environments are important in determining attitudes, beliefs, and behaviors relating to healthy eating and physical activity. Youth tend to model parent and sibling food choices and physical activity behavior (Davidson & Birch, 2001). As parents become less active, their children follow in their footsteps, preferring to be driven

to school instead of walking or opting for video games instead of playing outside. Parenting styles and family characteristics may affect weight through sibling interactions, child feeding practices, and lack of social support (Anderson & Butcher, 2006). Thus, parents and the family environment are strong influential factors when it comes to healthy eating and physical activity for youth.

In addition to family and siblings, peers and friends have an effect on behaviors related to food choices (Salvy, Howard, Read, & Mele, 2009; Salvy, Kieffer, & Epstein, 2008). Personal identity and relationships with peers become an important part of the sociocultural environment as youth are challenged with a growing independence and autonomy (Christie & Viner, 2005). Considering the positive effect of peers, youth have been shown to have a preference for healthier foods such as fruits and vegetables when their friends also consume healthy foods and snacks as a result of peer modeling or because it is seen as favorable amongst their peers (Addessi, Galloway, Visalberghi, & Birch, 2005; Hendy, 2002).Conversely, overweight youth may increase calorie consumption in the presence of their overweight peers due to the lack of inhibition in the presence of others like them (Salvy, Romero, Paluch, & Epstein, 2007). In the presence of non-overweight peers or peers that are unfamiliar to them, overweight youth have lower calorie consumption possibly due to the fear of bullying and stigmatization (Salvy, Romero, Paluch, & Epstein, 2007).

Physical activity is also influenced by the sociocultural environment. Youth often learn behaviors from and are influenced by family, peers, and teachers (Ammerman et al., 2007). Association between parents' perceptions of neighborhood safety and lack of physical activity has been found in some research studies (Baskin et al., 2013; Lumeng,

Appugliese, Cabral, Bradley, & Zuckerman, 2006; Potwarka, Kaczynski, & Flack, 2008; Sallis & Glanz, 2006). Parents' often unintentionally limit youth's physical activity and encourage sedentary activity by not allowing them to play outside due to concerns about safety and neighborhood crime (Caprio et al., 2008).

Additionally, cultural and gender preferences must be taken into consideration when determining opportunities for physical activity. For example, dance classes are an effective way to encourage African American girls to be physically active while resistance training is more acceptable to Latino boys (Caprio et al., 2008; Robinson et al., 2003; Stovitz, Steffen, & Boostrom, 2008). However, more research needs to be conducted to understand the relationship between physical activity and other sociocultural factors such as social networks and social norms for minority youth.

Physical Environment

How communities are organized affect youth's ability to achieve and maintain a healthy weight because physical and built environments affect the availability and opportunity for healthy and unhealthy choices (Ball, Timperio, & Crawford, 2006). Supermarket availability and prices of healthy foods have been linked to fruit and vegetable intake (Isaac, Rowland, & Blackwell, 2007; Kumanyika & Grier, 2006). Racial and ethnic minority communities have fewer than average supermarkets and convenience stores that stock fresh, good-quality, affordable foods such as whole grains or low-fat dairy products (Caprio et al., 2008; Kumanyika & Grier, 2006). The resulting "food desert" makes purchasing healthy, fresh foods difficult in these communities (Cummins & Macintyre, 2002, p. 436). In addition, the cost of healthy foods, such as fruits and vegetables tend to be higher in racial and ethnic minority communities (Langevin et al.,

2007). It is hard for minority youth to make healthy food choices when unhealthy food options are prevalent and cost less. Some schools provide access to soda and high-fat, high-sugar foods in vending machines that may compete with federally set nutritional standards of cafeteria foods (Kumanyika & Grier, 2006).

The built environment in many low-income neighborhoods can affect opportunities for physical activity (Beech, Fitzgibbon, Resnicow, & Whitt-Glover, 2011). Opportunities for safe walking or cycling to school, recreational activities, and playing outside are often limited in low-income minority neighborhoods (Caprio et al., 2008). Studies have shown that the lack of available recreational facilities and commercial or public recreation opportunities in low-SES and minority neighborhoods has contributed to disparities in physical activity among adolescents (Casagrande, Whitt-Glover, Lancaster, Odoms-Young, & Gary, 2009; Sallis, Prochaska, & Taylor, 2003). In a study examining how healthy weight status among youth was related to proximity to parks, Potwarka, Kaczynski, & Flack (2008) found that the quality of park facilities was important in promoting physical activity. Children with a nice quality park playground within one kilometer (km) of their home were almost five times more likely to have a healthy weight compared to those children without playgrounds in nearby parks. Sallis & Glanz (2006) found that lack of sidewalks, long distances, and crossing busy streets discourages walking and biking to school for many youth. Although studies regarding the link to physical activity and the built environment are strong, more studies need to be conducted that directly associate the built environment to childhood obesity. Minority and low-income adolescents typically live in neighborhoods that have more fast-food restaurants and fewer health food vendors than wealthier or predominantly white

neighborhoods, thus making unhealthy foods more readily available (Kumanyika & Grier, 2006).

Media and Messaging Environment

Differences in marketing and types of media influence may contribute to the differences in eating and physical activity across racial ethnic groups (Powell, Schermbeck, Szczypka, Chaloupka, & Braunschweig, 2011; O'Keeffee & Clark-Pearson, 2011; Yancey et al., 2009). Marketing targeted towards minority youth and excessive TV watching may contribute to the consumption of large amounts of high calorie foods and beverages among minority youth (Caprio et al., 2008; Grier, & Kumanyika, 2008; Kumanyika, 2008). Exposure to commercials advertising low-nutrient, high-calorie food can affect food preferences (Bibeau et al., 2012; IOM, 2006; Kumanyika & Grier, 2006). Furthermore, the social and cultural value attributed to high calorie foods may add to increased consumption of these products when youth are inundated with media messages about them (Kumanyika, 2008; Rasmussen et al., 2006).

Minority youth are often a target for the food and beverage industry because of the amount of time spent receiving information through various forms of media (IOM, 2006). Additionally, target marketing to minority youth, specifically African American and Latino, creates loyal "super consumers" who became repeat customers for their brands and products (Kumanyika, & Brownson, 2007, p. 216). Although television advertising is the dominant form of marketing to youth, the food and beverage industry also uses Internet advertising, product packing, magazine advertisements, in-school marketing, billboards, and contests to entice youth to purchase their products (White House Task Force on Childhood Obesity, 2011). A study by Yancey et al. (2009)

examined whether African Americans, Latinos, and people in low-income neighborhoods were disproportionately exposed to marketing of high-calorie, low nutrient-dense foods and sedentary entertainment. Outdoor advertising density and content in Los Angeles, Austin, New York City, and Philadelphia were examined. The authors found that the amount, type, and value of advertising varied by ZIP code with African American and Latino ZIP codes having the highest advertising density for unhealthy foods and sedentary activity (Yancey et al., 2009). Very little is known about the effects of marketing on physical activity. However, commercial media messages are likely to encourage sedentary activities that would take the place of more active endeavors (Federal Trade Commission, 2008; IOM, 2006; Yancey et al., 2009).

Youth spend more waking time in the media messaging environment than in school. On average 8 to 18 year olds spend more than 7.5 hours per day using multimedia (IOM, 2012). Powell, Schermbeck, Szczypka, Chaloupka, & Braunschweig (2011) estimated that youth between the ages of 2 to 11 saw 11-13 television ads per day in 2009. Since minority youth view significantly more amounts of television than their white counterparts, these numbers are likely to be higher (Grier & Kumanyika, 2008). Harris, Schwartz, & Brownell (2010) estimate that African American youth view 36% more food and beverage product advertisements and 21% more restaurant advertisements than most other youth. Digital marketing, or product placement on digital media (e.g., Internet, mobile devices), is growing rapidly (IOM, 2012). Internet-based advergames, virtual environments, or stealth marketing (e.g., eight-minute interaction with a product in an advergame) on social networks is quickly becoming an inexpensive way for food and beverage companies to target minority youth. Although much is known about

marketing to minority youth through traditional media, little is known about the direct

effects of social media on youth's eating and physical activity behavior (Cavallo et al.,

2012; O'Keeffee & Clark-Pearson, 2011).

The cultural environment of parental facilitation and peer influence, the perceived

physical environment of availability of fruits and vegetables, and the social environment

of exposure to mass media and commercials all combine with psychosocial individual

level factors to influence ethnic minority youths' healthy food consumption and physical

activity levels (Kumanyika, 2008; Rasmussen, et al., 2006; Robinson, 2008). There is a

clear need for community-based, theory-driven studies that examine cultural influences

and contextual factors related to healthy food options and opportunities for physical

activity among minority adolescents. These types of studies may yield new insights about

how to intervene effectively to reduce disparities in obesity prevalence among ethnic

minority adolescents. Understanding how biological and behavioral determinants interact

with physical, cultural, and social surroundings will be necessary to help youth advocate

for program and policies that influence healthy food options and opportunities for

physical activity.

2.7   Prevention through Policy and Practice

Programs and policies that influence youth and the environments in which they

live, work, go to school, and play should have as their focus, preventing obesity through:

(1) increased access to healthy fruits and vegetables through healthier food retail, (2)

engaging in physical activity, and (3) decreasing consumption of sugary drinks through

increased access to fresh, potable water (Centers for Disease Control and Prevention,

2013). Policies and practices that are currently impacting the childhood obesity epidemic

rely on evidence-informed strategies. When youth are active proponents for such obesity prevention efforts in their community and among their peers, the impact of individual efforts is likely to be expanded. However, an understanding of the policies and practices that are being implemented effectively on national, state, and local levels is needed if we are to reduce childhood obesity, particularly for low income racially and ethnically diverse populations where the prevalence of obesity is highest.

In 2010, President Barack Obama established the first-ever Task Force on Childhood Obesity to develop an action plan to address the issue of childhood obesity and reduce the obesity rate to 5% by 2030 (White House Task Force on Childhood Obesity, 2011). The Task Force was charged with reviewing programs and policies related to child nutrition and physical activity and implementing an inter-agency plan that would maximize federal resources and set benchmarks for achieving this goal. The report presents a series of 70 recommendations that focus on five areas: creating a healthy start for children, empowering parents and caregivers, providing healthy food in schools, improving access to healthy, affordable foods, and increasing physical activity (White House Task Force on Childhood Obesity, 2011).

First lady Michelle Obama's *Let's Move!* campaign was developed in conjunction with the Task Force on Childhood Obesity. *Let's Move!* aims to "solve the problem of obesity within a generation" by providing healthier foods in schools, ensuring access to healthy, affordable foods where people live, and helping children become more physically active (Let's Move, 2012, para 1). In 2011, a report was written that provided an update on the progress of recommendations from the Task Force. The report indicated that much work had been done to develop the infrastructure for long-term policy change.

For example, the Affordable Care Act requires that chain restaurants with 20 or more locations display calorie counts for their food. Research conducted on a similar menu labeling process in New York City that was enacted before the Affordable Care Act indicates that menu labeling may result in better eating habits although the data is not conclusive (Wisdom, Downs, & Loewenstein, 2010).

Additionally, many communities across the country were already beginning to show signs of progress. During the 2003-2004 academic year, the San Francisco Unified School District established school policies that set improved nutritional standards for all food sold in school. As a result of these new policies, the school district is noticing increased satisfaction with school meals, increased provision of fruits and vegetables, and better nutritional content in a la carte foods (Wojcicki & Heyman, 2006).

The Healthy, Hunger-Free Kids Act of 2010 was critical legislation that authorized funding and set policies to promote better nutrition and reduce childhood obesity by providing healthier, more nutritious foods in schools (United States Department of Agriculture, 2013b). Due to this legislation major improvements are being made to core child nutrition programs such as the National School Lunch Program, the School Breakfast Program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the Summer Food Service Program, and the Child and Adult Care Food Program. The U.S. Department of Agriculture serves more than 31 million children every day through programs such as the National School Lunch Program, the School Breakfast Program, and other federally funded school meal programs (United States Department of Agriculture, 2013a). Data from the 2005 third School Nutrition Dietary Assessment Study (SNDA-III) show that children who

participate in the School Breakfast Program are less likely to skip breakfast and more likely to have lower BMI and that participation in the National School Lunch program was associated with reduced intake of sugar-sweetened beverages (Gleason et al., 2009).

Additionally, many national policies and programs are focused on building physical activity habits among young people. The Presidential Active Lifestyle Award, which now includes a healthy eating component, seeks to help youth make physical activity a regular part of their lives (The President's Council on Fitness, Sports, and Nutrition, 2013). National organizations and sports leagues partnered with the President's Council on Fitness and Sports (now called the President's Council on Fitness, Sports, and Nutrition to include a focus on healthy eating) to help over one million Americans achieve an Active Lifestyle Award by September 2011. The Carol White Physical Education Program (PEP), which is administered through the Department of Education, has improved their grant application requirements by integrating nutrition programming with state-based physical education requirements (President's Council on Fitness, Sports, and Nutrition, 2013).

Although much is being done on the national level to prevent childhood obesity, states and local communities must play a significant role in addressing the problem. Schools have been a key source of change in many communities. Some schools have limited the type of "competitive foods" that are sold on their campuses while others have improved food placement and pricing in cafeterias to support healthy food choices (White House Task Force on Childhood Obesity, 2011). The number of school districts prohibiting junk foods in vending machines increased from 29.8 percent in 2006 to 43.4

percent in 2012, according to the CDC's 2012 School Health Policies and Practices Study (IOM, 2012).

Moreover, many State and local officials are trying to make it easier for families to buy healthy, affordable foods and beverages in their neighborhood. In September 2013, the Los Angeles County Department of Public Health launched a new program, *Choose Health LA Restaurants*, aimed at fighting obesity by getting restaurants to offer smaller versions of entrees and healthier kids' meal options. The goal of Choose Health LA Restaurants and other similar programs in LA County is to educate the public on the benefits of healthier food choices and physical activity (Kim, 2013). Additionally, in Mississippi school districts across the state are coming up with ways to make lunches healthier for students. From removing deep fryers from its schools to eliminating fried foods from the lunch menu, Mississippi school districts are looking for ways to meet federal regulations for serving healthy lunches to students (Aguilera & Berry, 2013).

States and communities are also working to create safe, convenient places for children to play. The 1000 Friends of New Mexico leads the Albuquerque Alliance for Active Living which focuses on improving public policies related to physical activity. The Alliance works to develop safe and convenient walking and bicycle paths (Bors et al., 2009). Across the country more school districts are requiring elementary schools to teach physical education, partnering with local community organizations like the YMCA or Boys & Girls Club to offer physical activity opportunities (Ohri-Vachaspati et al., 2012).

Policies and evidence-based programs are needed to increase healthy food options and opportunities for physical activity, particularly for low income racially and ethnically

diverse populations where the prevalence of obesity is highest. These types of programs should focus not only on individual behaviors, but also on improving the social and physical environments for these youth (Stice, Shaw, & Marti, 2006; Wilson, 2009).

2.8   Social Ecological Approaches to Understanding Healthy Weight

Studies have demonstrated that working only at the individual level to change eating and physical activity behaviors has limited effectiveness (Ammerman et al., 2007; Flores, 2013; IOM, 2012; Lowe, 2003). Such limitations on existing health promotion and prevention programs underscore the need to employ more comprehensive models that examine multiple levels of influence (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003; Peters, 2003). Ecological and social ecological models are unique in providing a framework, or set of theoretical principles, for understanding the interrelationships between personal and environmental factors (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003; Fleury & Lee, 2006; Stokols, 1996). Models like those highlighted in Table 4 go beyond interpersonal and intrapersonal factors to provide an understanding of the social and environmental context for behavior change (Fleury & Lee, 2006). Sallis, Owen, & Fisher (2008) stated that the following four core principles are represented in each model:

- There are multiple influences on specific health behaviors, including factors at the intrapersonal, interpersonal, organizational, community, and public policy levels.
- Influences on behaviors interact across these different levels.

- Ecological models should be behavior-specific, identifying the most relevant potential influences at each level.

- Multi-level interventions should be most effective in changing behavior.

Table 4. Sample Ecological Models Used for Designing Behavioral Interventions

Author, Citation, Model	Key Concepts
Rudolph Moos (1980)	Four categories of environmental factors: (1) physical Social Ecology settings—features of the natural (weather) and built environment (building); (2) organizational settings—size and function of worksites and schools; (3) the "human aggregate"—sociocultural characteristics of the people in an environment; and (4) "social climate"—supportiveness of a social setting for a particular behavior.
Thomas Glass and Matthew McAtee(2006) Ecosocial Model	Conceptualizes hierarchies of influences on behavior within biology and society, which has social and physical environment dimensions. Structural contingencies provide opportunities and constraints, and biological processes regulate expression of behavior.
Kenneth McLeroy and others (1988) Ecological Model of Health Behavior	Five sources of influence on health behaviors: intrapersonal factors, interpersonal processes and primary groups, institutional factors, community factors, and public policy.
Daniel Stokols (1992, 2003) Social Ecology Model for Health Promotion	Four assumptions: (1) health behavior is influenced by physical environments, social environments, and personal attributes; (2) environments are multidimensional, such as social or physical, actual or perceived, discrete attributes (spatial arrangements) or constructs (social climate); (3) human-environment interactions occur at varying levels of aggregation (individuals, families, cultural groups, whole populations); and (4) people influence their settings, and the changed settings then influence health behaviors.
Deborah Cohen and others (2000) Structural-Ecological Model	Four categories of structural influences: (1) availability of protective or harmful consumer products, (2) physical structures (or physical characteristics of products), (3) social structures and policies, and (4) media and cultural messages
Karen Glanz and others (2005) Model of Community Food Environments	Proposes key constructs that affect eating behaviors: availability, price, placement, and promotion of foods, as well as nutrition information. Applies to restaurants and food stores.
Edwin Fisher and others (2005) Resources and Skills for Self-Management Model	Based on integration of individuals' skills and choices with support they receive from the social environment, as well as physical and policy environments of communities.

Sallis, J.F., Owen, N., and Fisher, E.B. (2008). Ecological models of health behavior. In Glanz, K., Rimer, B.K., and Lewis, F.M. (eds). (2008). *Health Behavior and Health Education: Theory, Research, and Practice*, *4th edition,* p.468-469. San Francisco, CA: Jossey-Bass.

Few studies have used a social ecological model to understand healthy weight and associated behaviors in minority youth. Elder and colleagues (2007) used a social ecological framework to guide the development of an intervention to reduce the decline in physical activity among adolescent girls. The trial of activity for adolescent girls (TAAG) framework was implemented in multiple centers investigating interventions that prevent the decrease of physical activity in adolescent girls. This framework incorporated intrapersonal and interpersonal level theories such as operant learning theory and social cognitive theory with community level theories of organizational change and diffusion of innovations. Davidson and Birch (2001) conducted a review of the literature using ecological systems theory (EST) to summarize research assessing predictors of childhood overweight. The ecological systems theory proposes that human development is influence by multiple systems which influence behavior at different times along the life course. Reviewed studies examined dietary intake, physical activity, and sedentary behavior in the context of the familial, school, community, and larger social environments. They concluded that risk factors for childhood obesity are deeply rooted in the family and interventions that include parents and youth are most effective when they address the contexts and environments in which these behaviors occur (Davidson & Birch, 2001).

Because there is such a wealth of information in regards to individual level factors, when applying a social ecological framework to understanding healthy weight, more research needs to focus on the community and societal levels of the social ecological model and how the social and environmental context affects healthy food options and opportunities for physical activity. Such research would encourage going beyond the level of the individual to examine how environment and policies support

healthy food choices and physical activity and how social norms and social support from family and friends affect healthy weight. When consideration is given to the environments in which individuals and groups operate and make decision, behavior change is maximized (Sallis, Owen, & Fisher, 2008). It is only thorough examining larger social and contextual factors that individual behavior change is likely to be sustained. Social ecological models view youth in the context of their families, communities, and cultures (Ammerman et al., 2007).

2.9   Examining Healthy Weight for Minority Youth Using a Social Ecological Model

This dissertation used the social ecological model to understand the factors that influence healthy weight for minority youth. This model explores four-levels to understand healthy weight and the effect of policies and programs targeted to improve consumption of healthy food and engagement in physical activity. Concentric overlapping circles are used to convey the complex interaction between the multiple levels of influences (Figure 1).

Individual

The innermost circle relates to biological and personal factors that may increase the likelihood of becoming obese. Some of these factors include age, genetics, education, family income, race, and ethnicity. Programs and policies targeted at this level are often designed to promote attitudes, beliefs, and behaviors that encourage eating healthy foods and engaging in physical activity. Specific approaches for individual level factors may include increased awareness, education, and skills training.

Relationship

The second circle explores interpersonal relationships that increase the risk of becoming obese. Peers, friends, and family members influence behavior and affect choices and decisions. Programs and policies at this level target interactions between individuals and can include mentoring and peer programs designed to encourage healthy eating and physical activity and family-oriented programs that promote healthy relationships.

Community

The third circle examines the settings in which social interactions occur. Schools, workplaces, churches, synagogues, and neighborhoods may have features that are associated with becoming obese. Programs and policies at this level are typically designed to impact the systems that help or hinder healthy food options and opportunities for physical activity.

Societal

The outermost circle identifies the broad societal factors that help create an environment in which obesity is accepted or frowned upon. These factors include values, customs, and social and cultural norms. Issues of power, racism, sexism, and the eradication of culture, particularly for American Indians, have the most effect at the societal level. Public policies that can improve healthy food options and opportunities for physical activity are also included. Programs and policies targeted at this level must take into consideration large societal factors, like the economic and educational policies, that create inequalities between groups in society.

2.10   Importance of Qualitative Studies

When examining the many factors influencing childhood obesity, it is helpful to research the issue using both quantitative and qualitative data. As previously mentioned, this dissertation was qualitative in nature. Qualitative studies have frequently been used as part of the formative research phase in developing programs and interventions. Ammerman et al. (2007) used interviews and focus groups as part of a larger formative research effort to develop a nutrition and physical activity environment self-assessment instrument to assess policies and practices in child care settings. An intervention model using the self-assessment instrument was implemented to encourage healthy changes to child care environment. Researchers conducted three focus groups with a total of 17 participants. Parents from diverse racial and ethnic backgrounds who had young children in child care were included in the study. The goal was to gain insight into parent views on the nutrition and physical activity environments of child care centers in North Carolina and to identify opportunities to change these environments to encourage better nutrition and physical activity behaviors. Thus, this study provides an example of how qualitative research, focus groups in particular, can be a valuable tool for collecting first-hand information from diverse populations about issues related to nutrition and physical activity.

In a study by Bibeau et al. (2007), researchers used photovoice and focus groups to determine how African American adolescent girls perceive the food marketing environments in their communities. Girls (N=9) were asked to photograph their environment and participate in a focus group to discuss what influences them to eat what

they eat. Results indicated that type of food product, availability and price influence girls'

food choices.

An essential aspect of any qualitative study is the data. Qualitative research

involves the use and collection of a variety of empirical materials – case study, personal

experience, introspective, life story, interview, focus group, observational, historical,

interactional and visual texts – that describe routine and problematic moments and

meanings in individuals' lives (Denzin & Lincoln, 1994). Data sources for qualitative

research include oral words (conversations, sentences, monologues); written words

(journals, letters, texts); recorded field notes of observers or participants (meetings,

ceremonies, rituals, family life); life histories and narrative stories (oral or written); and

visual observations (live, videotaped, photos) (Cohen & Crabtree, 2006; Denzin &

Lincoln, 1994). Analytic methods for qualitative data allow for "deep reading" (in the

sense of text interpretation that goes beyond the surface to elicit underlying meanings)

that is not possible with quantitative data (Devers, 1999).

Creswell (1998) cites many reasons for conducting qualitative research including

but not limited to: the need to explore the topic; the nature of the research question; the

desire to present a detailed view of the topic; the wish to study individuals in their natural

setting; the availability of sufficient time and resources for data collection; and the

receptiveness of audiences to qualitative research. A qualitative approach was used for

this study for many of these reasons. Understanding how minority youth conceptualize

health and how these conceptualizations, as well as conceptualizations around food

options and physical activity, are perceived to be influenced by community requires an

exploratory investigation. While aspects of their beliefs about food can be quantified, in

order to develop programs and policies that are culturally relevant for low-income

African American, Hispanic and Latino, and American Indian youth, scholars and

practitioners need to better understand how youth conceive of these concepts and the

factors that influence their thinking and behaviors. These topics need to be explored

because it is likely that important community and cultural variables have yet to be

identified that may influence healthy weight and eating and physical activity behaviors.

Additionally, few behavioral theories are readily available that adequately explain

these behaviors, especially in African American, Hispanic and Latino, and American

Indian youth. Although limited to the specific population proposed in this study,

qualitative analysis will help to present a detailed view of the topic and provide an in-

depth understanding that could lead to the development of social and environmental level

theories and interventions. The goal of the approach for this study is to generate ideas that

explain how minority youth conceptualize health and how those conceptualizations are

influenced by social and environmental factors.

Chapter 3   Study 1 – Voices from the Community: A Qualitative Study of Behaviors Related to Healthy Weight Among African American, Hispanic and Latino, and American Indian Youth and Parents[1]

Abstract

Higher rates of obesity among racial and ethnic minority children and adolescents combined with the adverse health effects of obesity may contribute to the continued racial and ethnic differences in health outcomes between majority and minority groups. Because we are not seeing a decline in childhood obesity within minority youth populations, steps must be taken to encourage these youth to take action in their lives and in their communities to improve healthy food options and opportunities for physical activity. This study engaged minority youth directly to ascertain their perceptions about behaviors related to healthy weight and explored how social and environmental factors influence their ability to achieve and maintain a healthy weight.

This study examined African American, Latino, and American Indian youth and parents' perceptions regarding factors that influence healthy weight. An analysis of qualitative data comprising transcripts from 14 semi-structured focus group interviews with African American, Hispanic and Latino, and American Indian youth between the ages of 11-17 and adult parents over the age of 18 was conducted. Data sources for the analysis included audio files, transcripts, and focus group notes. Transcripts were imported into NVivo 10 for coding, sorting, and quantifying thematic content of interest within strata defined by ethnic group. Using a codebook based on the social ecological

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[1] A paper to be presented at The Obesity Society Annual Meeting in Boston, MA, November 4, 2014. This paper will also be submitted for publication in *Health Education and Behavior*.

model, research questions, and review of the focus group notes and protocol, segments of the transcripts were coded, data was examined separately for youth and parents to determine behaviors related to healthy weight and community and societal level barriers and facilitators to these healthy behaviors. Four themes and 14 sub-themes about behaviors related to healthy weight emerged from the data analysis. Behaviors, beliefs, and attitudes associated with primary prevention, consumption of fruits and vegetables, physical activity, and mental health were discussed by the youth and parents. Similarities were seen across the racial and ethnic groups with parents and youth differing on ideas related to primary prevention and mental health. The study also examined community and societal level facilitators and barriers associated with healthy eating and physical activity. Several community level barriers were identified including time constraints, cost, opportunities to make poor food and physical activity choices, safety, and lack of community value in health. Fewer societal level barriers were discussed, but those mentioned focused on culture and tradition. Community and societal level facilitators were fewer in number and varied by location. However, some of the facilitators included the benefits of small communities, availability of parks and sidewalks, school resources, government assistance, and heritage-based foods. Youth and parents across all racial and ethnic groups experienced similar barriers and facilitators.

This study provided insight into behaviors related to healthy weight across multiple racial and ethnic groups. By adding the voice of the community to conversations about healthy weight, we can create interventions that are culturally, politically, and socially successful for African American, Hispanic and Latino, and American Indian youth and parents.

Introduction

Childhood obesity is one of the most significant public health challenges of the day, not only because of the great number of youth affected, but also because of the long-term consequences associated with developing debilitating and costly chronic diseases (IOM, 2012). Over the past 30 years, rates of childhood obesity have been on the rise in the U.S (Centers for Disease Control and Prevention, 2012; Ogden, Carroll, Kit, & Flegal, 2014). However, in recent years, we are beginning to see stabilization in those rates for some populations (Ogden, Carroll, Kit, & Flegal, 2012; 2014). The Centers for Disease Control and Prevention (CDC) (2012) reports that 17% (or 12.5 million) of children and adolescents ages 2 to 19 are obese with African American girls and Hispanic boys at the greatest risk for obesity with prevalence rates at 22.7% and 24.4% respectively (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Although the prevalence of obesity for American Indian youth varies by region and tribe, estimates indicate that before the age of 10, 40 to 50% of American Indian children are overweight or obese (Styne, 2010). Data from the Pediatric Nutrition Surveillance Survey (PedNSS) in 2011 showed that obesity rates were highest in children between the ages of 2 to 5 from lower-income families who were American Indian and Alaska Native (20.8%) (Ogden, Carroll, Kit, & Flegal, 2012; Trust for America's Health, 2014).

Because obese youth are likely to become obese adults, improvements in nutrition and physical activity need to start in childhood (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010). However, the racial, ethnic, and income diversity in the United States presents a major challenge in creating effective childhood obesity interventions that are sustainable over time. Most obesity treatment and

prevention interventions focus on changing easily amenable behaviors related to physical

activity and eating patterns in childhood. Although effective on a limited basis, these

interventions rarely consider how these behaviors will be maintained outside of the

intervention setting. For African American, Hispanic and Latino, and American Indian

youth, barriers to positive behavior change exist beyond the individual level and are

intertwined with social and environmental constraints. By engaging youth and parents in

discussions about behaviors related to healthy weight, researchers and practitioners in

health behavior and health education will be able to create effective community-based

obesity treatment and prevention interventions that address the complex social,

behavioral, and community needs minority youth face when trying to implement healthy

behaviors.

One of the keys to reversing the childhood obesity trend for minority youth is to

address the childhood obesity epidemic through multiple spheres of influence. A variety

of models have been developed based on Bronfenbrenner's ecological systems theory

(1979), which views the individual as developing within a multi-layered system of

relationships and typifies the interdependent relationship between the individual and

her/his environment. However, to date most interventions have focused on individual

level factors such as improving eating/increasing fruit and vegetable consumption,

physical activity/limiting sedentary activity, and limiting consumption of sugary drinks

(AlMarzooqi & Nagy, 2011). These studies demonstrated that working only at the

individual level to change eating and physical activity behaviors has limited effectiveness

(Ammerman et al., 2007; Davidson et al., 2013; Flores, 2013; IOM, 2012). Such

limitations on existing health promotion and prevention programs underscore the need to

employ more comprehensive models that examine multiple levels of influence (Backholer et al., 2014; Davidson et al., 2013).

When applying a social ecological framework to understanding healthy weight, more research needs to focus on the community and societal levels of the social ecological model and how the social and environmental context affects healthy food options and opportunities for physical activity (Glanz & Bishop, 2010). Such research would encourage going beyond the level of the individual to examine how environment and policies support healthy food choices and physical activity and how social norms and social support from family and friends affect healthy weight. When consideration is given to the environments in which individuals and groups operate and make decisions, behavior change is maximized (Sallis, Owen, & Fisher, 2008). It is only through examining and changing larger social and contextual factors that individual behavior change is likely to be sustained.

Recently researchers have begun focusing on environmental determinants of behavior as driving forces behind the increasing obesity prevalence as well as on how the environment affects eating habits and opportunities for physical activity (Ball, Timperio, & Crawford, 2006; Brennan, Castro, Brownson, Claus, & Orleans, 2011; Larson & Story, 2009). Youth dietary behaviors are likely to be greatly influenced by environmental and societal factors, given youth 13 and older have a strong level of autonomy in food choices and leisure time activity (van der Horst, et al., 2007). To help minority youth achieve a healthy weight, a greater depth of understanding of the social and environmental influences on healthy food options and opportunities for physical activity is needed.

How communities are organized affect youth's ability to achieve and maintain a healthy weight because physical and built environments affect the availability and opportunity for healthy and unhealthy choices (Franzini et al., 2010; Ball, Timperio, & Crawford, 2006). Supermarket availability and prices of healthy foods have been linked to fruit and vegetable intake (Dulin-Keita, Thind, Affuso, & Baskin, 2013; Isaac, Rowland, & Blackwell, 2007; Kumanyika & Grier, 2006). Racial and ethnic minority communities have fewer than average supermarkets and convenience stores that stock fresh, good-quality, affordable foods such as whole grains or low-fat dairy products (Caprio et al., 2008; Richardson, Boone-Heinonen, Popkin, & Gordon-Larsen, 2012). The cost of healthy foods, such as fruits and vegetables tend to be higher in racial and ethnic minority communities (Langevin et al., 2007). The resulting "food desert" makes purchasing healthy, fresh foods difficult in these communities (Walker et al., 2011). The abundance of fast food restaurants and convenience stores in low-income minority neighborhoods is leading to the development of "food swamps," or "areas in which large relative amounts of energy-dense snack foods inundate healthy food options" (Ammerman, 2012, p.384). It is hard for minority youth to make healthy food choices when unhealthy food options are prevalent and cost less. Although legislation and public policies have been put into place to improve the quality of food in schools, some schools still provide access to soda and high-fat, high-sugar foods in vending machines that may compete with federally set nutritional standards for cafeteria foods (Kumanyika & Grier, 2006).

Qualitative research facilitates an understanding of the way people interpret and make sense of their experiences and the world in which they live (Cohen & Crabtree,

2006). It helps to capture lived experiences through the meanings people give these experiences (Corti & Bishop, 2005). Focus groups were selected as the method of inquiry because the use of focus groups can help capture the lived experiences of minority youth and parents and the meanings these youth and parents give their experiences (Krueger & Casey, 2009). Specifically, this study sought to answer: 1) what behaviors, beliefs, and attitudes do youth and parents think are necessary for healthy weight; and 2) what are the societal and community level barriers and facilitators through which youth and parents are expected to navigate to implement behaviors related to healthy weight.

Methods

The current study was part of a larger qualitative study conducted by Westat, an employee owned research firm, funded by the Robert Wood Johnson Foundation; the purpose of the larger study was to explore and understand: (1) the importance of health in African American, Hispanic/Latino, and Native American communities and factors that inhibit or facilitate healthy weight; (2) the role of healthy food and physical activity in the lives of African American, Hispanic/Latino, and Native American adults and youth; (3) how marketing and digital and social media influence ideas about healthy food and physical activity; and (4) adult and children's beliefs about advocating for change in their communities.

Recruitment

Recruitment for the focus groups occurred over a 30-day period from September 25 to October 25, 2013. Youth focus group participants had to be males or females between the ages of 11-17 and self-identify as Black/African-American, Hispanic or

Latino, or American Indian. The eligibility criteria for adult focus group participants

included: male or female, a parent/caregiver under the age of 40, has a child/children

under the age of 18, and self-identifies as Black/African-American, Hispanic or Latino,

or American Indian. Participants were recruited through partnerships with *Salud*

America!, the RWJF Research Network to Prevent Obesity Among Latino Children, the

African American Collaborative Obesity Research Network (AACORN), and the Notah

Begay III Foundation. Locations that offered cultural and regional diversity were selected

for the focus groups.

Sample

The original study included 15 focus groups (1 pilot and 14 implementation

groups) conducted with youth and adults in eight states across the country: Florida, North

Carolina, South Carolina, Maryland, Arkansas, Oklahoma, Texas, and New Mexico

(Table 5). Each focus group was limited to one racial and ethnic group. A total of 149

individuals participated in the focus groups of which 72.5% were female, 26.8% were

male, 37.6% African American, 36.2% Hispanic or Latino, and 26.2% American Indian

(Figure 3). Table 5 indicates the breakdown of participants by race and ethnicity,

location, and age.

Procedures

All focus group materials, including recruitment protocols, consent and assent

forms for youth and adults, and moderator guides were reviewed and approved by the

Westat Institutional Review Board, the Chickasaw Nation Institutional Review Board.

The University of Maryland College Park Institutional Review Board reviewed the

procedures for the secondary data analysis. Teams of two people, a moderator and a note

taker, led focus groups. All moderators and note takers completed a two-hour training and were selected based on their skills, including language proficiency, experience, and matched to the racial/ethnic composition of focus group participants. Each focus group was audio-recorded using digital audio recorders. Of the 14 implementation focus groups, two were conducted in Spanish, two were conducted in English and Spanish, and the remaining 10 were conducted in English. Questions asked during the focus groups centered on the meaning of health, healthy foods, physical activity, marketing, and community advocacy. Table 6 presents the focus group questions used for this analysis. At the end of the focus group, participants filled out a brief 7-item survey that included basic socio-demographic information. Participants were provided either a $50 gift card or cash in appreciation of their time.

Analysis

As noted earlier, the purpose of the analysis was to use data from the larger study to determine factors associated with healthy behaviors and what are community and societal level barriers and facilitators to those behaviors. Data sources for the analysis included audio files, transcripts, and focus group notes. All audio recordings were transcribed. Spanish and bilingual focus groups were translated into English and then transcribed. To ensure reliability of the transcription process, three members of the research team listened to all recordings and reviewed all transcripts.

As the first step in the data analysis process, the researcher developed a codebook, or dictionary of concepts, based on the social ecological model, research questions, and review of the focus group notes and protocol. Each code was accompanied by an operational definition to allow for clarity and consistency in the coding process.

Immersion in the data through reading and rereading helped the researcher become intimately familiar with the data (Marshall & Rossman, 2006). To aid in this process, each transcript was entered into NVivo 10, a qualitative-data management software package that allows coding, retrieval, and data management (Richards, 1999). Additionally, NVivo 10 was useful for breaking down, examining, comparing, conceptualizing, and categorizing data. Using the social ecological model as a first step in coding provided a framework for conceptualizing the interrelationships between the social and environmental contexts for healthy weight and helped guide the analysis. Additional codes were added to the analysis based upon a review of the focus group transcripts. This allowed for the emergence of new and relevant codes based upon recurrence across transcripts.

Data reduction was necessary to make the information readily accessible and understandable to determine themes and patterns (Berg, 2007). Relevant coded narrative segments of text were extracted from NVivo and imported into Microsoft Excel. During data reduction, separate tables for youth and parents were created in Microsoft Excel with one column for each of the focus groups and one row for each coded segment. The columns were clustered by racial and ethnic groups. Comments from the transcripts were imported into each cell so comparisons could be made across racial and ethnic groups and between parent and youth groups. Categories were grouped together to create major themes. The identification of connections between categories or codes was important in developing broader themes. Each of the major themes was accompanied by sub-themes that helped clarify context and meaning. This process allowed for the evolution of themes across groups and a comparison of similarities and differences. Overarching themes

emerged that applied to all racial and ethnic groups as well as between parents and youth. Data was analyzed in relation to individual research questions. The output of content from the transcripts related to these codes was examined to determine how social interactions and neighborhood factors affected food choices and physical activity.

Validity and Reliability

Auditing as described by Cohen and Crabtree (2008) was used as a process for monitoring the validity of the study. An external consultant assisted in the auditing process by examining the process the researcher used to conduct the analysis and determine the findings. Audit trail materials included raw data, data reduction and analysis products in the form of Excel files, reconstruction and synthesis products, and notes (Carcary, 2009). The external consultant reviewed a sampling of the audit trail materials to evaluate the strength of the analysis. Any alternative meanings were discussed with the external consultant and taken under advisement.

Moreover, member checks were also used to assess validity. The researcher shared findings with 16 representatives from the various community partner organizations to ensure findings were accurate and consistent and that no other plausible alternative explanations existed (Maxwell, 1998; Warren & Karner, 2010). Responses were received from 3 of the 16 members with no alternative findings resulting from the member check.

A second coder was used to conduct inter-rater reliability checks. The researcher served as the primary coder and established the starts and stops for the coded segments. The second coder independently coded all indicated segments of text using the coding dictionary. Using NVivo 10, inter-rater reliability percentages and Kappa coefficients

were calculated at selected nodes for each source transcript. Kappa scores were between zero and one depending on the level of agreement or disagreement. Low Kappa scores were the result of differences in the unit of measurement, which was the text character length and not in inter-rate agreement, which ranged between 92-100%. Coding stripes filtered by user allowed the researcher to identify discordant codes and confirm level of agreement. Discordant coding was discussed until consensus between the researcher and second coder was reached. No second round of coding occurred because the initial benchmark of 80% agreement was achieved.

Results

Findings reflecting behaviors, beliefs and attitudes related to healthy weight are presented first. This section is followed by findings regarding community and societal level barriers and facilitators. The themes in the first section are presented as they occurred during the focus group discussions, in part reflecting the structure of the protocol. Major themes are presented as section titles with sub-themes highlighted by italics.

Behaviors, beliefs, and attitudes related to healthy weight

Analysis of the data identified four major themes and 14 sub-themes related to the behaviors, beliefs, and attitudes youth and parents think are necessary for healthy weight (Table 7). Comments related to the themes and sub-themes are highlighted in the following text with additional quotes provided in Table 8.

Primary prevention is necessary for healthy weight.

An interesting concept that emerged from the focus groups is the relationship between primary disease prevention and healthy weight. Parents described primary prevention in terms of activities that are necessary to prevent disease and that should be practiced on a regular basis. Youth talked about primary prevention in terms of doing things to prevent you from becoming sick such as eating a good breakfast, getting shots, and going to the doctor for checkups. Three different sub-themes emerged from discussions around engaging in primary prevention: *reacting to health problems; learning from others; and taking care of yourself*.

Reacting to health problems. Across all racial and ethnic groups, disease prevention typically did not occur until an obesity-related health problem such as diabetes or high blood pressure was indicated in oneself. One Hispanic parent remarked "one doesn't value health until you are really sick and you have a big problem." Parents talked about being told by their doctor that they needed to exercise more or having to change eating habits when they got sick.

> *"My blood sugar was low and then on top of that my blood pressure was*
> *extra high because I was working two jobs, going to school, dealing with*
> *my child, and my body just wasn't used to it so it shut down. That's when I*
> *noticed I'm getting a little too big; I got to get some [weight] off of me."*

African American Parent

Learning from others. Parents and youth recognized the importance of engaging in primary prevention when they realized the effect poor health had on friends and family members. Youth remarked about how their food choices were influenced by family

members who were dealing with health conditions. One Hispanic youth stated, "Well my dad is sick right now so he has to eat salad, so we eat salad." Both parents and youth appreciated that conditions like diabetes were endemic in minority populations and that steps needed to be taken to prevent these conditions in their families. For example, one American Indian youth remarked:

"My mom has mild diabetes and my grandma has diabetes, so they try to help us pick the right foods to eat, like we can only have a certain kind of pop at home and so they try to help us since they have diabetes, they don't want us to be like that."

Parents were more motivated to change behaviors for themselves and their children when they saw how health problems affected someone close to them. One African American parent stated,

"……just watching like my family member and friends around me…..I see that they didn't do a healthy lifestyle…and what came of that – them passing early. I pretty much watch my nutrition and what I put in my body so that I can have a long life and live for my kids. I try to teach them the same thing……"

Taking care of yourself. Parents in each of the groups believed in and ascribed to the notion of personal responsibility, or "taking care of yourself and working on what needs to be fixed." Hispanic and Latino parents spoke about how changing your diet and exercise to be healthier helps with treatment and prevention of other diseases (e.g., juvenile rheumatism, obesity, kidney transplants). However, fear, denial, and lack of

motivation could keep you from seeking care or changing habits. Fear was most often

discussed in terms of "find[ing] out of they are healthy or not."

"There's a lot of denial that they are diabetics or they have a problem so I

think that denial also is a factor that helps us to, or prevent[s] us to do

things like – like exercising, you just don't want to do it or you are

denying that it's needed."

American Indian Parent

Hispanic and Latino parents discussed how taking care of sick children or family

members can take a toll on your personal health and happiness. The need to take care of

others may lead to stress and depression which leads to overeating. One Hispanic parent

remarked, "even if you are not the one who is sick, taking care of a sick person does not

cause happiness…." Therefore, parents stressed the importance of adopting a healthy

lifestyle.

"….you really want to live the lifestyle and you go to do those things right

and take care about yourself because we always talk about being healthy

and we want our kids to be healthy but how can our kids be healthy if we

are not healthy?"

African American Parent

Taking care of your mental health is necessary for healthy weight.

Parents in all focus groups talked about the importance of taking care of your

mental health in order to have a healthy weight. In several of the groups, health was

described from a wholesome, holistic perspective that included being "spiritually,

physically, and mentally" healthy. Four sub-themes emerged as importance aspects of taking care of your mental health: *limiting stress and getting enough sleep; having a positive outlook; fostering spirituality and religion; and maintaining healthy relationships*.

Limiting stress and getting enough sleep. In order to have positive mental health it was important to limit stress and get enough sleep. Being stressed out and sleep deprived often resulted in making poor food choices or not being physically.

> *"It's just the whole routine of the stress what we all parents have and then by the time you get home, you cook for your kids then you have no energy left to do some exercise or activities."*

> Hispanic Parent

Having a positive outlook. Many parents and youth noted that taking care of your mental health resulted in being happy, positive, and full of energy. A clear connection was made between engaging in physical activity as a means to promote a positive outlook.

> *"I walk. It kind of helps my mental and physical you. I like to – really early mornings, it [is] so quiet and not many people are out and so I walk at – you know, before the whole work rush."*

> American Indian Parent

Fostering spirituality and religion. Spirituality and religion were noted as important aspects of mental health. Hispanic parents talked about how "God wants us to be healthy and happy." Thus, beliefs and religion which are often culturally-based can

create opportunities for good mental health. African American parents talked about how religious practices of prayer and fasting create conditions for positive mental health.

> *"When they [church] call a corporate fast depending on how many days, for example the 21-day fast there would be no meat, no sweets, and no yeast. So it's kind of like a detox process and by the end of the 21-days you feel lighter, your face is clearing up, you have more energy, all the junk in your system is clearing out."*
>
> African American Parent

Maintaining healthy relationships. Isolation and unhealthy relationships can negatively affect mental health. Parents remarked about how negativity from other people can affect your attitude and emotions. Healthy relationships and being able to get along with others was important for good mental health. One African American parent stated, "I try to keep healthy relationships and healthy reasons for us you know all to get along and stuff like that. So there's a lot of different ways to be healthy."

Eating healthy foods such as fruits and vegetables and avoiding unhealthy foods is necessary for healthy weight.

Across all focus groups youth and parents discussed the importance of eating healthy nutritious foods as a necessary behavior for maintaining a healthy weight. Four sub-themes were discussed in relation to eating healthy foods: *knowing about healthy foods; eating heritage-based foods; limiting unhealthy food; and making healthy food choices*.

Knowing about healthy food. When it came to knowledge about healthy food, youth and parents knew the basics, such as which foods are healthy and which ones are unhealthy. Hispanic youth and parents talked about the need for foods to be fresh, organic, home grown, and not processed. Youth and parents discussed the importance of eating fruits and vegetables, limiting fats and fried foods, and not consuming large amounts of junk food. They also talked about the usefulness of community gardens and the ability to have access to fresh foods that were not processed. Parents wanted to know more about how healthy foods tasted and how they could be prepared in ways that would be appealing to their children.

Eating heritage-based foods. Cultural considerations in food preferences are important. For those youth or parents who had strong ties to countries outside of the U.S., country of origin food was perceived as healthier. For most youth and parents, it was when they began to eat more food from the U.S. that the quality and choices became unhealthy. For example, some members of the African American parent group were from the Virgin Islands and the Bahamas; they discussed how foods from these island countries were locally grown and thus healthier for you.

> *"I'm from the Virgin Island and…..we eat a lot and lot of vegetables in the Virgin Island and one thing, there is – it's a small island so there's not that many fast food restaurants….. You have to drive a distance if you want to go to McDonalds."*

<div align="right">African American Parent</div>

Hispanic parents and youth talked about how in Mexico parents would spend more time cooking healthy foods for their families. In all Hispanic and Latino focus groups, participants mentioned there were fewer fast food restaurants in their home countries when compared to the U.S., limiting the availability of unhealthy fast foods.

> *"Most of us are Hispanic and our way of eating is different than what's here because here they have a whole bunch of fast food restaurants and everything and in Mexico you wouldn't see that as much."*
>
> Hispanic Youth

Limiting unhealthy food. Parents try to limit the purchase of processed, packaged foods, fast foods, and sugary drinks by not buying them on a regular basis and reviewing school menus for when they will be served. Parents in all of the focus groups recognized their responsibility in helping to control what their children ate.

> *"Mom and dad want to make the change at home but then there is a controversy at school and then in the environment too. Such as cokes, fast food restaurants. There should be some coordination in everything at a level from those on top."*
>
> Hispanic Parent

They knew unhealthy foods were bad for their children and tried to limit sugary beverages or junk foods by not bringing them into their homes. However, some parents did admit to allowing these types of food to be eaten on special occasions or as treats. Parents also recognized their responsibility in ensuring schools provide healthy foods.

"My kids changed a lot now that they entered school because since they were kids, I would give them fruits, vegetables, I would blend apples, I would give them mashed bananas. And once the child entered Headstart, it was like 'eww' because they give them other foods over there and once they get here."

Hispanic Parent

Making healthy food choices. People need to make a conscientious choice to eat right, make healthy choices, and not eat unhealthy food. All groups, except for the Hispanic and Latino youth, talked about the role of individual choice in eating right and making healthy choices. One African American parent remarked "I pretty much watch my nutrition and what I put in my body so that I can have a long life and live for my kids." One African American parent remarked "It's your choice if you want to be healthy or not. The fast food stores have nothing to do with how you eat." Youth talked about how they try to eat healthy but often lack the ability to do it consistently. One main reason for this was that they are motivated by what they see. Temptation was a concept mentioned by all groups except Hispanic and Latino youth and American Indian parents. The other groups spoke extensively about how they are easily motivated to make unhealthy food choices based on what others around them are eating, what they see on television, and how they feel. One American Indian youth remarked "McDonald's and Burger King and all that, there is one around all the time. That's what makes it hard for me because when I see it, that's what I want."

Being physically active is necessary for healthy weight.

Youth and parents in all focus groups believed being physically active was necessary for healthy weight. The three sub-themes that emerged from discussions about physical activity related to healthy weight included: *engaging in sports, active work, or exercise*; *involving others; and creating daily routines.*

Engaging in sports, active work, or exercise. Youth and parents noted a variety of physical activities are available to them, including sports, their jobs, or exercising. Again, both youth and parents talked about many forms of physical activity including soccer, football, exercising, Zumba classes, and physically demanding jobs.

Involving others. Youth and parents recognized the importance of involving others in physical activity. Parents wanted to have more opportunities to engage the entire family in physical activity while youth were more interested in activities that included their friends. Parents in the focus groups discussed the need for activities where the entire family could be involved, that were affordable, and close to home (within walking distance). Whether programs were available varied by community; however, most youth and parents remarked that available programs were either expensive or far away. Again, parents mentioned they wanted to engage in physical activity as a family unit in places close to home.

> *"I have a park that – two blocks from my house but there's never nothing*
>
> *there. It would be nice to [have] .....something that involves the family that*
>
> *you can walk with them…. Something local, where you are able to walk if*
>
> *you don't have a car."*

Hispanic Parent

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Youth talked about how their preferred activities would involve their friends in sports, walking around the block, or playing active games.

"What I think to be healthy is because I usually walk around the block for

an hour or two or I'll play basketball with my dad and my little brother

and my sister or I'll usually run around the block to go to my friend's

house and we'll run all the way down to the park which is probably like an

hour away."

African American Youth

Creating daily routines. Physical activity needs to be part of a daily routine. African American parents explained physical activity should be part of a regular regime that includes eating right.

"Find a regiment and just stick to it, eating certain things, exercising,

maybe just walking 30 minutes a day and being consistent."

African American Parent

Both youth and parents talked about how people need to make a conscientious choice to be active on a daily basis. Youth talked about wanting to stay inside and play video games instead of going outside to run around and play. However, they knew that "going outside daily, to play and stuff" was better for them, so they tried to do that more often.

Societal and Community Level Barriers and Facilitators

In order to provide context about challenges and facilitators that affect implementing behaviors that could improve healthy weight, youth and parents were asked to define "community." Community was discussed most frequently in terms of *people and place. People* are the foundation of any community. Participants described community as "the people around you," "people you associate with," or "people in your geographic area." For example, one African American parent remarked, "You are surrounded with people whether you are at work or at home. It's the people that you surround yourself with. That's your community."

When discussing specifics about the categories of people who comprise a community, Hispanic and Latino youth said people in their community include friends but not necessarily teachers, indicating a clear difference between a peer and an authority figure. African American youth and parents included neighbors, co-worker, and church members as part of their community while American Indian youth included friends, family, and those with whom they work. African American youth spoke of having more than one racial group in their community but those other races were still minorities, Haitians or Hispanics.

In terms of *place,* youth and parents talked about neighborhoods, tribal locations, and geographic locales such as towns or cities. African American youth talked about place as "the place that you grew up or where you are living." This indicated the importance of a history or relationship with a specific area. American Indian youth spoke of place in terms of the reservation or the town. The reservation could be made of different tribes and you did not have to be of one particular tribe to be part of the

community. Hispanic and Latino youth described their neighborhoods as being racially segregated and usually made up of one ethnicity, Hispanics.

Youth and parents had varying views on how they or others perceived their communities. Hispanic and Latino youth perceived their community as not having a good reputation while American Indian youth described their community as "trashy and messy." African American youth and parents had mixed views regarding how they perceived their community. Some youth described their communities as "somewhat dirty but quiet" while others described them as "somewhat clean" and "quiet or peaceful, pretty, clean and helpful." African American parents described their communities as unsafe.

Discussions about community and societal level barriers and facilitators were put into perspective by first understanding how youth and parents defined community. As previously mentioned, accurate knowledge about healthy foods and physical activity is reaching African American, Hispanic and Latino, and American Indian communities. However, youth and parents were not always able to implement these behaviors because of community and/or societal barriers. Using the social ecological model, at the community level we explored the relationship between economic resources, geography, built environment, available grocery/food stores, community resources, transportation, worksite, and schools, while at the societal level we considered the effect of media and messaging, social and cultural norms, and policies. Table 9 presents a list of community and societal level barriers and indicates which barriers youth and parents (by racial and ethnic group) endorsed. The text that follows highlights some of the barriers and provides insight into variations in endorsements.

Community Level Barriers

Youth and parents talked about many barriers to eating healthy and engaging in physical activity at the community level. Parents discussed how work influenced time spent eating, what is eaten, the amount of money available to purchase food and engage in physical activity, level of physical activity (e.g., manual jobs), and food preferences based on what's available. One Hispanic parent said "mothers work and sometimes they don't have the time necessary to care for their kids and the fastest most economic thing is to run to the hamburgers or the pizza. For them it's faster because they save time and they save a little of money."

Both parents and youth felt eating healthy was expensive. Many parents noted fresh fruits and vegetables often cost more than junk food and that fried fast food is cheaper than the healthier options. One American Indian parent remarked, "The grilled chicken sandwich is a lot more expensive than three chicken strips. It's like $5 for a chicken sandwich and it's only like $2 for something fried. Stuff like that it's very expensive."

Parents and youth talked about being exposed to many opportunities to make poor food choices (from convenience stores, corner stores/"store houses," "candy lady/candy man," ice cream trucks, etc.) or opt out of engaging in physical activity. African American youth talked about how the "candy lady" or "candy man" increased exposure to unhealthy food. "Candy man is a man living out here selling candy at his house and candy woman is a woman living out here selling candy." Hispanic and Latino youth talked about how local stores sell junk food and don't have a variety of healthy food options. African American youth mentioned how many of their peers sell junk food for

money. American Indian parents talked about how unhealthy food was easily available at work and the many drive-thru restaurants. One African American parent remarked "They need to stop making fast-food spots because that [is] a hazard right there because it's like everywhere you go it's a fast food spot everywhere you go."

Unhealthy foods are easily accessible at home, school, and in the community. Some parents purchased unhealthy foods such as pizza or chips in limited quantity to serve as special treats. They also end up purchasing these items because children ask for them and they are inexpensive compared to the healthier options. Additionally, youth talked about how unhealthy food was readily available at school.

"In my school we have a store but in my class one kid….he keeps bringing candy in his bag and he tries to tempt you to buy it."

African American Youth

Youth mentioned how adults, particularly in school, talk to you about eating healthy and making good choices but only provide you with poor food options.

"They talk to you about being healthy but they have pizza so you have no other choice but to get pizza."

Hispanic Youth

The community as a whole not valuing health was seen as a deterrent. Youth and parents felt there was little community-based support in the form of access to and affordability of programs.

"Because it's almost like there's no effort, there's no 'umph,' so it's almost kind of like the negative part [of] trying to be healthy, the cost of food, there's not access to the gym, it's kind of like "why do it?" So everyone [is] just hopeless about trying to eat healthy and live healthy. It's kind of sad. No one takes it seriously."

African American Parent

Hispanic and Latino youth believe people, not just organizations, have to make an effort. Such that even if resources were available, people would still have to make the effort to use them. All groups believed youth from different neighborhoods had varying access to opportunities for physical activity. African American youth believed higher-income neighborhoods with parks and gyms tended to value health more.

Youth in all groups felt their neighborhood environment limited their opportunities for physical activity, primarily due to safety concerns. Hispanic and Latino youth talked about how parents did not let their children go to the park because of drug deals and how children are afraid to ride their bikes because of dogs. American Indian youth talked about the lack of sidewalks and presence of drunk drivers.

Societal Level Barriers

As indicated in Table 9, few societal level barriers emerged from the focus groups. Those that were mentioned focused more on the role of culture and tradition. For example, culturally, people infer a great deal and make judgments about their health and others based on appearance. Health status is often based on physique or build whether it is accurate or not. Hispanic and Latino parents and youth talked about how chubby kids

were perceived as healthier while African American parents talked about how skinny kids were perceived as sickly. However, as demonstrated in the following quote, contentment with body shape seemed to be more closely associated with health regardless of size.

> *"Everybody is not the same size, so when I say being comfortable, some people are like thin and can be healthy, some people are bigger [and] can be healthy."*

<div align="right">African American Parent</div>

Adopting the unhealthy ways of western, modern life in the United States was seen as a barrier. Abandoning their own culture and traditions were perceived as barriers to eating healthy and engaging in physical activity. Parents and youth talked about how foods in the U.S. are prepared in unhealthy ways and that people often overindulge in these foods. Culturally-based foods such as beans, tortillas, and greens (which can be healthy) were often prepared in unhealthy ways. African American parents and youth talked about how foods in the African American culture, such as collard greens and fried chicken, are prepared with lots of grease and fat, making them unhealthy. Hispanic youth noted that American food was "bad" and moving to the U.S. promoted unhealthy food habits, such as eating fast food. Cultural events in American Indian communities promoted eating unhealthy foods as sweets and junk food were given as treats as part of cultural celebrations.

Community Level Facilitators

As seen in Table 10, few community level facilitators promoted eating healthy; more facilitators were mentioned in relation to physical activity. Parents across racial and

ethnic groups talked about the benefits of small communities (e.g., unity, collectivism and cohesion) that allowed them to share, grow, and learn together with strong influences from the church. One Hispanic parent remarked "we find out about something and we communicate it with our friends so that they can participate. If we know that it is something good and we know that they will get something beneficial from it."

Variable conditions and availability of parks and sidewalks existed across groups. Parks allowed children to play sports on basketball courts and soccer fields. However, Hispanic and Latino and American Indian youth talked about how they are interested in activities, like volleyball and swimming, but parks are not setup for these activities. African American and American Indian youth and parents talked about how even though some parks were available, they could be of better quality as they were often "burnt" or vandalized.

Schools provided some benefits regarding physical activity, although participants often mentioned the schools needed to do more. For example, Hispanic and Latino youth and parents talked about how sports and activities are provided during school, but there are no options for physical activity when schools are closed. Attending school was noted by Hispanic and Latino and American Indian youth as being a facilitator to healthy eating as it "can be a distraction from wanting to eat unhealthy foods." Hispanic and Latino and American Indian youth also stated that being in class and doing homework consumed the time that they would be using to eat unhealthy foods. Parents and youth discussed how schools try to provide some healthy foods but the school food can also be unappealing at times, described as "gross," "isn't the best," "cold," and "greasy."

Societal Level Facilitators

Societal level facilitators were extremely limited; those mentioned had to do with the influence of government assistance programs and returning to traditional non-American practices. Government assistance programs such as Women, Infants, and Children (WIC), Temporary Assistance for Needy Families (TANF), and Supplemental Nutrition Assistance Program (SNAP) created opportunities for participants to try new healthier foods that may otherwise be deemed too expensive or uninteresting. Parents talked about how marketing healthy foods and being provided funds to purchase healthy foods allowed them to be exposed to new and different healthy options.

> *"I don't know if any of ya'll have kids on WIC. But when I first signed my son up for WIC, they gave us a DVD. And we were eating the apples, and the peanut butter, and going to the health food stores."*

> African American Parent

Youth and parents had different perceptions about food from their countries of origin compared to food in the U.S. More vegetables and fruits were eaten in their home country because time was spent cultivating their own food. Hispanic parents and youth believed food from home countries (like Mexico) were healthier. Hispanic youth described how they would walk in their native country but drive in the U.S. African American parents discussed how food from the Bahamas or the U.S. Virgin Islands was healthier because people grew their own food and eating out was not common. American Indian youth talked about how, historically, they were planters and runners, which lead to healthier lifestyles.

Discussion

The social ecological model has been used to understand healthy weight and associated behaviors in youth (Richard, Gauvin, & Raine, 2011; Sallis, Floyd, Rodriguez, & Saelens, 2012. However, few, if any studies, have used it as a guiding framework to examine behaviors related to healthy weight across three racial and ethnic groups. Applying the social ecological model in this study allows for the examination of behaviors related to healthy weight across individual, relationship, community, and societal levels with particular emphasize on barriers and facilitators at the community and societal levels. Because social ecological models view youth in the context of their families, communities, and culture, they provide a holistic view of healthy behaviors and allow for examination and comparison of these behaviors in a variety of contexts. Our study demonstrated there are differences and similarities in cultural influences around healthy weight, as well as in the role friends and family play, and how the community affects youths' ability to achieve and maintain healthy weight.

With examining primary prevention strategies, the goal is to protect healthy people from becoming overweight or obese (Katz & Ather, 2009). Education about good nutrition, the importance of regular exercise, and periodic exams and screening tests to monitor risk factors for illnesses (such as diabetes and high blood pressure) are all examples of primary prevention efforts to combat childhood obesity. Youth and parents in our focus groups recognized the importance of primary prevention whether they or their family members regularly engaged in it or not. It was typically after an illness or serious risk factors had already been diagnosed in themselves or others that parents saw the importance of engaging in healthy eating and physical activity, with the goal of

halting or slowing down the progress of diseases such as diabetes, high blood pressure, and morbid obesity. Parents in particular wanted to do whatever it takes to make sure their children achieved and maintained a healthy weight. Thus, parents recognized the importance of taking care of themselves in order to manage complicated, long-term health problems such as diabetes, heart disease or to prevent physical deterioration and maximize quality of life.

Parents in all racial and ethnic groups were knowledgeable about the connection between maintaining a healthy weight, overall health and primary prevention. Although the prevalence of obesity with other chronic conditions is well documented in the literature (Chen, Kim, Houtrow & Newacheck, 2010; Van Cleave, Gortmaker, & Perrin, 2010), the notion of obesity prevention may not always be at the forefront of thoughts and actions for minority youth and parents as they are managing other chronic conditions. However, parents in our focus groups were aware of the beneficial effects of modifying diet and physical activity to improve overall health and well-being.

Although many studies have examined psychological factors associated with childhood obesity, little is known about the relationship between mental health and childhood obesity (Russell-Mayhew, McVey, Bardick, & Ireland, 2012). Among the limited number of longitudinal studies available, some have found evidence that mental distress predicts overweight or weight gain (Anderson, Cohen, Naumova, & Must, 2006; Goodman & Whitaker, 2002) while others found no associations between weight status and mental health (Stice, Presnell, Shaw, & Rhode, 2005; Tanofsky-Kraff, et al., 2006). Additionally, most of these studies were not focused on minority populations. Participants in this study spoke more about the importance of having a healthy mental

and emotional state and how that can be achieved. Research has demonstrated association between stress and lack of sleep with weight gain (Boin, Nozoe, Polesel, Andersen, & Tufik, 2013; Gundersen, Mahatmya, Garasky, & Lohman, 2011; Schmeer, 2012). For low-income minority families, stress can come from many different sources (e.g., financial instability, lack of health insurance, food insecurity, mental and physical health problems, etc.). Parents realized the importance of having coping mechanisms such as walking, spirituality and religion, and support from friends and family to deal with their stressors. Healthy coping mechanisms typically result in positive dispositions and are associated with wanting to engage in healthy eating and physical activity. As discussed by youth, peers influence decisions directly (pressure or motivation) and indirectly through exposure (temptation). Thus, maintaining healthy relationships not only provides the opportunity to engage in healthy eating and physical activity, but also help maintain positive mental health (Caccavale, Farhat, & Iannotti, 2012; Salvy et al., 2009).

Analysis of the data indicates the lived experiences of youth and parents from different racial and ethnic groups were often similar in regards to knowledge about healthy food. This permeation of knowledge indicates information about the importance of fruits and vegetables and physical activity is reaching low-income minority communities (Lachal et al., 2013). Clearly, efforts to education youth and parents are effective because participants were able to discuss different types of healthy foods and different types of physical activity. Thus, these findings highlighted that knowledge is necessary but not sufficient for sustained behavior change related to healthy weight.

Research has shown that moving from countries where the population is less to more obese creates a shift towards weight gain (Brownwell et al., 2010). Among those

who have lived in the United States for 15 years or longer, acculturation has led to a preference for the unhealthy foods readily available here (Tiedje et al., 2014). In our study, participants who have not lived in the U.S. as long preferred foods they are familiar with, which makes sense, but they also perceived these foods as healthier. Focus group discussions support findings by Rawlins, Maynard, & Harding (2013), who suggest that dietary acculturation among children of immigrants is common because these children are more likely to engage in U.S. food customs than their parents. Studies have shown that fruit and vegetable consumption by Latinos decreases and soda consumption increases with subsequent generations (Buscemi, Beech, & Relyea, 2011; Elder et al., 2010). These changes in food preferences and physical activity are likely due to a variety of factors, including media exposure, accessibility to fast-food, and social pressures that encourage accepting the food choices of the dominant culture (Buscemi, Beech, & Relyea, 2011; Torres, Meetz, & Smithwick-Leone, 2013). For Hispanic and Latino parents who may have emigrated from Mexico and African American parents who emigrated from the Caribbean, cultural influences regarding perceptions of their native foods being healthier were quite prevalent.

Setting limits and identifying external barriers to healthy eating may be the key to maintaining healthy behaviors over time. Similar to findings from other studies (Hughes, Sherman, & Whitaker, 2010; Lindelof, Nielson, & Pedersen, 2010), parents in these focus groups (many of whom were from low-income or underserved groups) were trying to limit unhealthy food consumption in their children and promote making healthy food choices. However, balancing restriction of these foods with the desire to use unhealthy food as a reward is challenging for low-income minority parents. One way to promote

healthy food choices is through considering the positive effect of peers. Youth have been shown to have a preference for healthier foods such as fruits and vegetables when their friends also consume healthy foods and snacks as a result of peer modeling or because it is seen as favorable amongst their peers (Addessi, Galloway, Visalberghi, and Birch, 2005; Hendy, 2002). Conversely, overweight youth may increase calorie consumption in the presence of their overweight peers due to the lack of inhibition in the presence of others like them (Salvy, Romero, Paluch, and Epstein, 2007). In the presence of non-overweight peers or peers who are unfamiliar to them, overweight youth have lower calorie consumption, possibly due to fear of bullying and stigmatization (Salvy, Romero, Paluch, and Epstein, 2007).

Friends and family are significant contributors to physical activity for minority youth and parents. As we heard in the focus groups, both youth and parents learn from friends and family, want them involved with their physical activity and can be helpful in helping create daily physical activity routines. Our findings support research from other studies that demonstrate family is important in minority populations when it comes to behaviors related to healthy weight (Arauz Boudrea et al., 2013; Osei-Assibey, Kyrou, Kumar, & Matyka, 2010). Being able to do things together such as exercising is beneficial because youth tend to model parent and sibling physical activity behavior and because of traditions, families help to establish patterns (good or bad) early on (Ickes & Sharma, 2011). Additionally, family environments are important in determining attitudes, beliefs, and behaviors relating to physical activity. Youth tend to model parent and sibling physical activity behavior (Davidson & Birch, 2001). As parents become less active, their children follow in their footsteps, preferring to be driven to school instead of

walking or opting for video games instead of playing outside. Thus, parents and the family environment are strong influential factors when it comes to physical activity for youth.

Social and physical environments such as families, schools, workplaces, and neighborhoods can have significant direct and indirect effects on behaviors, beliefs, and attitudes related to healthy weight. Environments can act as stressors which can negatively influence mood, performance, and physiology (Bauer, Yang, & Austin, 2004). Significant changes in their children's weight are not maintained over time because parents may not be placing enough limits on television viewing, sugary beverage or junk food consumption, or children may be finding unhealthy foods and sedentary activities outside the home. Thus, low income minority groups may need additional supports to counteract the deleterious effects of the neighborhood environment. Neighborhood variables (e.g., a plethora of fast food restaurants; lack of safety) interfere with trying to limit unhealthy food consumption and increase physical activity. Brownell and colleagues (2012) discuss how much easier it is to make personal changes if there are also environmental supports available, such as healthy food store options.

Environmental conditions can override knowledge by narrowing choices and making the more unhealthy option more appealing. Youth and parents can be extremely responsive to environmental cues. Thus, even small changes in access, pricing, or marketing can be powerful drivers towards unhealthy eating or sedentary activity (Brownwell et al., 2010). An association between parents' perceptions of neighborhood safety and lack of physical activity has been found in some research studies (Baskin et al., 2013; Lumeng, Appugliese, Cabral, Bradley, & Zuckerman, 2006; Potwarka,

Kaczynski, & Flack, 2008; Sallis & Glanz, 2006). Parents often unintentionally limit youths' physical activity and encourage sedentary activity by not allowing them to play outside due to concerns about safety and neighborhood crime (Caprio et al., 2008).

The built environment in many low-income neighborhoods affects opportunities for physical activity (Beech, Fitzgibbon, Resnicow, & Whitt-Glover, 2011). Opportunities for safe walking or cycling to school, recreational activities, and playing outside are often limited in low-income minority neighborhoods (Caprio et al., 2008). Studies have shown that lack of available recreational facilities and commercial or public recreation opportunities in low-SES and minority neighborhoods has contributed to disparities in physical activity among adolescents (Casagrande, Whitt-Glover, Lancaster, Odoms-Young, & Gary, 2009; Sallis, Prochaska, and Taylor, 2003). In a study examining how healthy weight status among youth was related to proximity to parks, Potwarka, Kaczynski, and Flack (2008) found the quality of park facilities was important in promoting physical activity. Children with a nice quality park playground within one kilometer (km) of their home were almost five times more likely to have a healthy weight compared to those children without playgrounds in nearby parks. Sallis and Glanz (2006) found that lack of sidewalks, long distances, and needing to cross busy streets discourages walking and biking to school for many youth. Although studies regarding the link to physical activity and the built environment are strong, more studies need to be conducted that directly associate the built environment to childhood obesity. Minority and low-income adolescents typically live in neighborhoods that have more fast-food restaurants and fewer health food vendors than wealthier or predominantly white

neighborhoods, thus making unhealthy foods more readily available (Kumanyika & Grier, 2006).

Social and physical environments such as families and communities can also have a positive influence on healthy behaviors. In recent years many policies have been put into place requiring schools to overhaul their food systems and provide more healthy options. Schools have been a key source of change in many communities. Some schools have limited the type of "competitive foods" that are sold on their campuses while others have improved food placement and pricing in cafeterias to support healthy food choices (White House Task Force on Childhood Obesity, 2011). The number of school districts prohibiting junk foods in vending machines increased from 29.8 percent in 2006 to 43.4 percent in 2012, according to the CDC's 2012 School Health Policies and Practices Study (IOM, 2012). As mentioned during the focus groups, parent and youth perceptions of schools' efforts to increase healthy food options were mixed. The variability often correlated with resource availability and location of school districts. Parents and youth recognized schools were trying to do better but were not succeeding, due in part to how foods are being prepared, the quality of foods, and the variety of the foods (i.e., foods youth do not like or are not familiar with and therefore do not eat).

When talking about societal and community considerations influencing belief systems, we must remember the context in which behavior change is taking place—a western, competitive, fast paced society where the status quo is eating large portion sizes of processed foods. The community environment includes the relationship between economic resources, geography, built environment, available grocery/food stores, community resources, transportation, worksite, and schools; and the societal context

considers the effect of social and cultural norms and public policies. Findings around community and societal level barriers were consistent with other studies that examined these aspects in African American and Hispanic communities (DiSantis et al., 2013; Dulin-Keita, Thind, Affuso, & Baskin, 2013; Elder et al., 2010). However, few studies have examined these issues in American Indian communities. The similarities across racial and ethnic groups suggest the need to examine barriers and facilitators by socioeconomic status as opposed to, or in addition to racial and ethnic composition.

Strengths and Limitations

There are several strengths to this study. First, using qualitative data provided a rich and diverse stock of information that garnered detailed knowledge about how youth perceive their social and physical environments and how these environments influence their perceptions of healthy weight. Second, the data analysis followed a rigorous methodological approach with attention to issues of validity and reliability. Third, this study provided youth and parents with the opportunity to express their thoughts and opinions about healthy weight and to discuss some of the social and environmental challenges they experience on a daily basis. Fourth, the study helped to answer the explanatory "why" questions related to healthy weight for minority youth. Specifically examining social and environmental factors related to healthy weight is novel given that most literature focuses on individual factors. Fifth, obesity prevention is an area in which new approaches that use the social ecological model are needed. Finally, as part of the original research team, this researcher was a primary data collector and also has access to the original data sources (recordings, transcripts, and notes), but more importantly had an intimate understanding of the context in which data was collected.

Although there are strengths, there are also several limitations. First, qualitative data collection and analysis is often under scrutiny because of a lack of consensus on standards of excellence in qualitative research (Devers, 1999). The subjective and reflective nature of this type of analysis may be viewed as a negative by some researchers in the field, while others see it as a positive aspect of research. Second, analyzing data from a larger study offers many possibilities but also limits the scope of the research questions to the data collected and does not allow for an original line of questioning. Third, there was a large age range among youth who participated in the focus groups. Although many of the groups contained youth who were within 1-2 years of each other, three of the groups contained youth with age difference of 4 or more years (e.g., ages of 11-17 or 13-17). In these instances, the wide range of ages may have affected group dynamics. Younger participants may have been passive and self-censoring due to the potentially dominant influence of older youth. Fourth, data saturation may not have occurred in this sample. Data saturation is often contingent upon concurrent data analysis and data collection. Given data collection and analysis did not occur concurrently in this study, it is difficult to determine if new categories or themes would have emerged with additional focus groups (Tuckett, 2004). Additionally, if more responses had been received from the member check alternative findings could have emerged. Finally, because of the number of participants, issues of generalizability are present. Again, a convenience sample recruited through partner organizations using word of mouth and fliers was used. Thus, participants in the study constitute a very select subset of youth and parents who may already be knowledgeable about healthy eating and physical activity or who may be more willing to discuss these topics. However, these limitations in many

ways also reveal the strengths of this study—data reflecting the voices, ideas, and understandings of African American, Hispanic and Latino, and American Indian youth and parents.

Few studies allow researchers the opportunity to hear directly from ethnically diverse groups of youth and parents about their perceptions and beliefs related to healthy weight. This study provided insight into how individual behaviors operate within the constraints of the physical and social environments. Findings from this study will provide public health researchers with a means to design obesity prevention interventions that alter the social, cultural, and physical environment in which minority youth and parents are expected to make decision regarding healthy eating and physical activity.

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Table 5. Distribution of Participants by Location and Racial and Ethnic Composition

State (City/Town)	African American N (Ages)	Hispanic and Latino N (Ages)	American Indian N (Ages)
Arkansas (Texarkana)	10 (25-39) 11 (13-17)		
Florida (Ft. Lauderdale)	9 (22-38) 10 (10**-14)		
Maryland (Baltimore)	8 (18-26)		
Maryland (Gaithersburg)		10 (34-41)	
New Mexico (Zuni Pueblo)			11 (23-62) 12 (11-14)
North Carolina (Winston-Salem)	8 (ages 17-35)*		
Oklahoma (Ada)			10 (17**- 31) 6 (14-17)
South Carolina (Columbia)		12 (21-66) 12 (11-17)	
Texas (Brownsville)		10 (34-40) 10 (14-17)	
Total (149)	56	54	39

*Pilot focus group

**Participant met all other eligibility requirements and was having a birthday soon.

Figure 3. Participant breakdown by gender, race and ethnicity
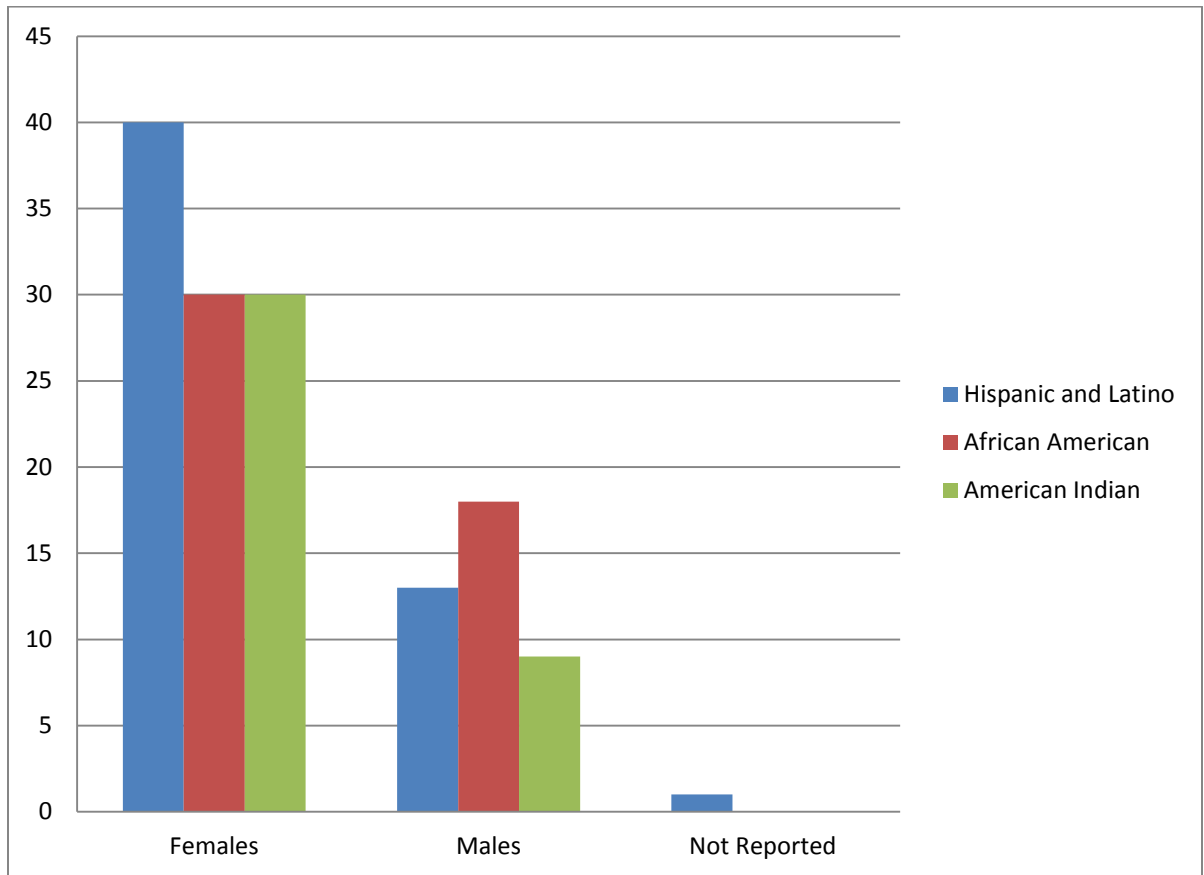
Table 6. Sample Focus Group Questions for Parents and Youth

SEM Level	Sampling of Focus Group Questions
Individual	What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use? Tell us what helps you to be healthy. What stops you from being healthy?
Relationship	How can friends, family, and/or teachers help you be healthier?
Community	What are some things about your community that help you be healthy? Are there things about your community that make it hard for you to be healthy?
Societal	Are there things about your community that make it hard for you to be healthy? [Probe on the value that the community places on health; Probe on cultural beliefs, social norms and practices]

Table 7. Major Themes and Sub-Themes Comparison by Racial and Ethnic Groups

	Hispanic and Latino		African American		American Indian	
	Parents	**Youth**	**Parents**	**Youth**	**Parent**	**Youth**
Engaging in primary prevention						
Reacting to health problems	X		X		X	
Learning from others	X	X	X		X	X
Taking care of yourself	X		X		X	
Taking care of your mental health						
Limiting stress and getting enough sleep	X		X			
Having a positive outlook	X	X	X	X	X	
Fostering spirituality and religion	X		X		X	
Maintaining healthy relationships	X		X	X		
Eating healthy foods						
Knowing about healthy foods	X	X				
Eating heritage-based foods	X	X	X			
Limiting unhealthy food	X		X		X	
Making healthy food choices	X		X	X	X	X
Being physically active						
Engaging in sports, active work, or exercise	X		X	X	X	X
Involving others	X	X	X	X	X	X
Creating daily routines	X		X	X	X	

Table 8. Sample Quotes Related to Major Themes and Sub-Themes

	Hispanic and Latino	African American	American Indian
Engaging in primary prevention			
Reacting to health problems	*I started at 160 pounds. Two years ago they were going to do dialysis on me. I have high blood pressure. I've had to go to the hospital. But I still keep doing exercise and maintain my diet.* Hispanic Parent	*...seeing what happens to other people through my lifetime. Seeing what happens to people that wasn't being healthy or wasn't leading a healthy lifestyle.* African American Parent	*I mean especially if they find out they're like borderline diabetic. I don't know if that will trigger them to realize it's time to eat healthy and take care of yourself.* American Indian Parent
Learning from others			*Well and because my husband is diabetic I try to have a lot of fruit for the kids and he gets upset because I don't buy chips and all of that.* American Indian Parent:
Taking care of yourself	*Health is mainly about taking care of yourself. I always say that health is our own responsibility and well God wants us healthy and happy.* Hispanic Parent		*Basically just taking care of yourself. I mean especially here in Zuni you have a high rate of diabetes.* American Indian Parent
Taking care of your mental health			
Limiting stress and getting enough sleep	*Health is…three compartments. You have to have the nutrition part of it. You have to have the physical and also socio-emotional because you can have two out of three and you are not healthy. You are stressed.* Hispanic Parent	Moderator: *No sleep. So that affects how you eat?* African American Parent: *Mm-hm.* African American Parent: *No sleep is unhealthy.* African American Parent: *Because once I sleep, I don't want nothing but something to drink because I'll be thirsty but other than that, I won't be wanting nothing to eat. I want nothing to eat.* African American Parent: *Everybody else will eat and I won't eat, and I go to sleep.* African American Parent: *It's stress and no sleep.*	Moderator: *How does someone who is stress free look if you've ever seen anyone?* American Indian Parent: *Happy*

Table 8. Sample Quotes Related to Major Themes and Sub-Themes (continued)

	Hispanic and Latino	African American	American Indian
Taking care of your mental health			
Having a positive outlook	*I would describe someone who is healthy as full of energy, someone who is happy.* Hispanic Parent	*For me it's a person that is positive….but it is also reflected when a person is positive and sees everything.* African American Parent	
Fostering spirituality and religion		*Health is more than just going to the doctor and seeing if you are okay. You got to be overall healthy, including spiritual too. Everything got to be right to be healthy.* African American Parent	
Maintaining healthy relationships	*I think that in this case it would be to isolate yourself from others. For example, if someone has recently arrived from another state or city, and they don't know anyone, then they don't have information about community activities. So, if those people isolate themselves, they keep themselves from many things.* Hispanic Parent	*When I think of the word healthy, I think of a lot of different reasons to be healthy – healthy relationships, healthy in your body, healthy this and healthy that.* African American Parent	Moderator: *And how do you take care of mental health?* American Indian Parent: *Family support*
Eating healthy foods			
Knowing about healthy foods	*So it's not just going to eat but also knowing what you are eating. It's good to do classes, and the kids can tell you about it.* Hispanic Parent		Moderator: *How does knowledge help you be healthy?* American Indian Youth: *It makes you think of what is the bad food and what is the good food.*
	Because we have the information, in fact here I have participated in nutrition talks that they've given. In other places too, at church they have always given us the information. Hispanic Parent		*Knowing how to give your children a [healthy] diet and not give them a lot of unhealthy foods such as fries, hamburgers, and all of that. Give them fruit, vegetables.* American Indian Parent

Table 8. Sample Quotes Related to Major Themes and Sub-Themes (continued)

	Hispanic and Latino	African American	American Indian
Eating healthy foods			
Eating heritage-based foods	*We come from our country and maybe because we are poor there is no money to buy meat, or all that junk. So then over there we eat vegetables and greens.* Hispanic Parent	*Well I'm from Jamaica and in Jamaica they eat what I would say is healthy... They cook there. They cook healthy at home. We eat vegetables, yam, salt fish, healthy eating.* African American Parent	American Indian Youth: *It started way before we were born.* Moderator: *You were told to be healthy by doing what?* American Indian Youth: *Planting* American Indian Youth: *...We grew our own stuff and we always walked and stuff and didn't have cars.*
Limiting unhealthy food	*If there's someone at home like in my situation where at my house we eat healthy because there aren't unhealthy choices during the week, there's only one day out of the week my wife will say "Okay" we can go out to eat and all the rest of the time there's an adult in the house making healthy choices about food for the whole family.* Hispanic Parent	*For me, make sure you get the healthy meals a day because it's healthy for you to eat your meals but make sure you watch what you eat, don't just go and eat a lot of junk food. Make sure you eat three times a day.* African American Youth	*.....my mom was like raisins was candy so you know that's what we got with candy you know. So like my kids, they get Halloween candy and Christmas candy and birthday candy and that's about it. We don't really do the whole "well let's just get you know, this ice cream." It's fun sometimes but I try not to put on too much.* American Indian Parent
Making healthy food choices	*To avoid the unhealthy food choices I have to stop buying those things at the store because that's what the children gravitate towards, you got chips or junk foods, they like that.* Hispanic Parent	*It's your choice. If you want to be healthy or not. The fast-food stores have nothing to do with how you eat.* African American Parent	Moderator: *...healthy, what does that mean to you?* American Indian Parent: *Exercising, being active and eating things you are supposed to eat and not... fast food and things like that.*
		Right because no one can make you eat what they give you and only you can make yourself eat it. You are eating it because you want to eat it. African American Youth	American Indian Youth: *Don't eat the junk food like Cheetos.* Moderator: *You have to just not eat it at all?* American Indian Youth: *You have a choice.* American Indian Youth: *You can eat it once in a while but not every day.*

Table 8. Sample Quotes Related to Major Themes and Sub-Themes (continued)

	Hispanic and Latino	African American	American Indian
Being physically active			
Engaging in sports, active work, or exercise	*And then there are also these classes like they give free Zumba classes here in the neighborhood so that's also something.* Hispanic Youth	*There are certain things you do job wise– to keep you healthy for instance me being a garbage man to help me be healthy because I'm constantly moving so I have a lot of exercise in doing what I'm doing.* African American Parent	*For my kids, I think just in being active. Doing sports, taking – and doing as many physical activities and possibly playing basketball, it's just getting out there.* American Indian Parent
Involving others	*If somebody is at home being physically active, going to the gym, encouraging all the family, let's go take a walk then those things happen and as far as the food is concerned that's also very important.* Hispanic Parent		*My brother and everyone in our household, we like go outside for half of the day.* American Indian Youth
Creating daily routines		*Find a regiment and just stick to it, eating certain things, exercising, maybe just walking 30 minutes a day and being consistent.* African American Parent	*Exercise and I stay active I do and I eat right and portion control….I don't know, I've always eaten healthy like physical activity is just part of my daily routine.* American Indian Parent

Table 9. Parent and Youth Barriers by Community and Societal Level and Race and Ethnicity

	Hispanic and Latino		African American		American Indian	
	Parents	**Youth**	**Parents**	**Youth**	**Parents**	**Youth**
TO HEALTHY EATING						
COMMUNITY LEVEL						
Close/easily accessible fast food, junk food (e.g., Convenience)		X	X	X	X	X
Ice cream truck/candy lady, storehouses, corner stores				X		
Junk food at local stores/no healthy options		X	X		X	
No stores nearby/distance		X	X	X		
Poor school food	X	X	X			X
Price of food	X	X	X	X	X	X
Schools/teachers/students selling unhealthy food		X		X		
SOCIETAL LEVEL						
Cultural food traditions and events	X			X	X	
How cultural food is prepared		X	X	X		
Cultural preferences for types of food	X			X		
Use of unhealthy foods as incentives and rewards				X		
TO PHYSICAL ACTIVITY						
COMMUNITY LEVEL						
Cost Of gyms/programs	X		X		X	X
Lack of cleanliness/ Parks that are vandalized, burnt	X		X	X	X	X
Lack of parks/gyms	X		X			
• Parks w/o volleyball, equipment, pools	X	X		X		X
Lack of programs/funding	X				X	
No options when school is closed	X					
No sidewalks	X				X	X
Safety						
• Lack of lights	X				X	
• From teenagers, fighting	X	X	X		X	
• drug dealers,	X	X	X	X		X
• prostitutes,	X			X		
• dogs,	X	X				X
• violence (shootings)			X			
• cars/traffic/drunks	X	X			X	X
SOCIETAL LEVEL						
Use of TV/games as incentives and rewards						

Table 10. Parent and Youth Facilitators by Community and Societal Level and Race and Ethnicity

	Hispanic and Latino		African American		American Indian	
	Parents	**Youth**	**Parents**	**Youth**	**Parents**	**Youth**
TO HEALTHY EATING						
COMMUNITY LEVEL						
Community garden/fruits or veggies				X	X	X
School as a distraction to eating bad		X				X
School provides some healthy foods (e.g., apples)	X	X	X		X	X
SOCIETAL LEVEL						
WIC/TANF (e.g., Exposure to new foods and limiting costs)	X		X		X	
TO PHYSICAL ACTIVITY						
COMMUNITY LEVEL						
Community events (runs, games, Zumbathons, etc.)	X	X	X	X	X	X
Community gym/Wellness Center			X	X	X	X
Homes with backyards/playing outside		X		X		X
Not having a car and having to walk everywhere/having things within walking distance	X	X	X	X		X
Parks with basketball courts, soccer fields	X	X		X	X	
PE classes/sports programs in school (e.g., football and cheerleading)	X	X		X		X
School – soccer field, football field, basketball court, track			X	X		
Sidewalks for running/walking; bike trails	X	X			X	
Zumba classes		X		X		X
SOCIETAL LEVEL						
Government assistance programs			X		X	
Foods from home country	X	X	X			

Chapter 4   Study 2- The Good, the Bad, and the Ugly: The Influence of Media on Healthy Weight Among Ethnically Diverse Youth and Parents[2]

Abstract

Many public awareness campaigns and social marketing efforts have tried to curb the obesity epidemic by promoting increased physical activity and consumption of healthy foods. Of those communication efforts designed specifically for minority populations, strategies and messages have not sustained behavior change over time, possibly due to media and messages not resonating with the reality of African American, Hispanic and Latino, and American Indian youth and parents' lives. Using data collected from 14 focus groups with African American, Hispanic and Latino, and American Indian youth and parents, this study examined how media, such as television, movies, texting, social media, the Internet, or radio influences behaviors related to healthy weight for African American, Hispanic and Latino, and American Indian youth and parents. Additionally, we explored what digital and social media communication strategies would be most effective in helping African American, Hispanic and Latino, and American Indian youth and parents engage in healthy eating and physical activity. Results from the qualitative data analysis revealed that the influence of media on healthy weight was discussed in terms of *positive associations with media through information and encouragement, negative relationship between media and unhealthy behaviors, and the influence of marketing in the media.* Youth and parents also identified digital and` social media communication strategies that could be used to encourage healthy eating and

physical activity in minority youth and parents. Data were analyzed in terms of how the source, messages, channels, and receivers could be adapted to be useful in the digital and social media environments. Participants wanted to see people who looked like them and had similar experiences. Many of the same communication strategies that are successful in traditional media would work for digital and social media. By better understanding how media influences behaviors related to healthy weight in these populations, communication strategies can be developed that are more likely to result in long-term, positive behavioral change.

Introduction

Childhood obesity is a major public health problem that disproportionately affects low-income minority populations. Four out of ten African American and Mexican American girls are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2012). Few studies provide estimates of obesity rates in American Indian populations. A cross-sectional study using a nationally representative sample of U.S. children born in 2001 reported in 2005 that four-year-old American Indian children had the highest prevalence of obesity among five major racial and ethnic groups (Anderson & Whitaker, 2009). Youth between the ages of 2 -17 who live in economically disadvantaged areas (i.e., distressed urban and rural neighborhoods or American Indian reservations) have higher rates of obesity compared to their more economically advantaged counterparts (Kenney, Wang, & Iannotti, 2013; Ogden, Lamb, Carroll, & Flegal, 2010). Many public awareness campaigns and social marketing efforts have tried to curb the obesity epidemic by promoting increased physical activity and consumption of healthy foods. Of those communication efforts designed specifically for minority populations, strategies and

messages have not sustained behavior change over time, possibly due to media and messages not resonating with the reality of African American, Hispanic and Latino, and American Indian youth and parents' lives. By better understanding how media influences behaviors related to healthy weight in these populations, communication strategies can be developed that are more likely to result in long-term, positive behavioral change.

Media, including radio, television, movies, videos, newspaper, magazines, video games, texting, and the Internet, serves as a vehicle for communicating about childhood obesity. Mechanisms through which media is associated with obesity include communicating cultural norms, disseminating health education information, and food and beverage marketing channels (Rideout, Foehr, & Roberts, 2010). Carey (2008, p.12) defines communication as "the transmission of signals or messages over distance for the purpose of control." In our daily lives communication consists of conversations with family and peers, instruction received via print or electronic media, or messages seen on television or in the news (Carey, 2008). The source or sender of a message (person, organization, company), transmits a message (story, picture, advertisement), through a particular channel (newspaper, television, Internet), to the receiver of the message (person, group) (De Mooji, 2013). How people process information (encoding) and the parameters by which that information is interpreted (decoding) may vary based on individual behaviors, relationships, and community, and societal context. For low-income minority groups, encoding and decoding are likely to be highly influenced by social and environmental factors. Thus, when communicating with minority groups about behaviors related to healthy weight, it is important to understand how the message is being processed and how it is then interpreted.

Social marketing has frequently been used to change behavior by communicating the risks associated with unhealthy behaviors, such as excessive fast food consumption or limited physical activity, or by communicating the benefits of healthy lifestyle choices, such as eating fruits and vegetables and exercising (Backholer et al,. 2014; Evans, Christoffel, Necheles, & Becker, 2010). Most childhood obesity communication efforts have been campaigns to increase fruit and vegetable consumption, decrease intake of sugary beverages, or increase physical activity. These campaigns try to appeal to the populace with statements about drinking water instead of sugary drinks, exercising for at least 30 minutes a day, and eating fruits and vegetables (Bell et al., 2013; Gracia-Marco, Moreno, & Vicente-Rodriguez, 2012). They frequently incorporate signage and environmental cues at schools or workplaces that promote improving diet and physical activity levels, or distribute population-wide tips and techniques for engaging in physical activity or following healthy eating guidelines (Backholer et al, 2014). However, social and environmental factors greatly affect African American, Hispanic and Latino, or American Indian youth and parents living in low socioeconomic neighborhoods. Going to the park to play may not be as easy as it sounds, or choosing a fruit snack over a cookie may not be an option if the cost of the fruit is prohibitive.

Differences in marketing to low-income and minority populations also contribute to the differences in healthy eating and physical activity levels across racial ethnic groups (Powell, Schermbeck, Szczypka, Chaloupka, & Braunschweig, 2011; O'Keeffee & Clark-Pearson, 2011; Yancey et al., 2009). Marketing targeting minority youth and excessive TV watching may contribute to the consumption of high calorie foods and beverages among these youth (Caprio et al., 2008; Grier, & Kumanyika, 2008;

Kumanyika, 2008). Exposure to commercials advertising low-nutrient, high-calorie food can affect food preferences (Bibeau et al., 2012; IOM, 2006; Kumanyika & Grier, 2006). Although television advertising is the dominant form of marketing to youth, the food and beverage industry also uses Internet advertising, product packing, magazine advertisements, in-school marketing, billboards, and contests to entice youth to purchase their products (White House Task Force on Childhood Obesity, 2011). A study by Yancey and colleagues (2009) examined whether African Americans, Latinos, and people in low-income neighborhoods were disproportionately exposed to marketing of high-calorie, low nutrient-dense foods and sedentary entertainment. Outdoor advertising density and content in Los Angeles, Austin, New York City, and Philadelphia were examined. The authors found the amount, type, and value of advertising varied by ZIP code with African American and Latino ZIP codes having the highest advertising density for unhealthy foods and sedentary activity (Yancey et al., 2009). Very little is known about the effects of marketing on physical activity. However, commercial media messages are likely to encourage sedentary activities that would take the place of more active endeavors (Federal Trade Commission, 2008; IOM, 2006; Yancey et al., 2009).

Youth spend more waking time in the media messaging environment than in school. On average 8 to 18 year olds spend more than 7.5 hours per day using multimedia (IOM, 2012). Powell, Schermbeck, Szczypka, Chaloupka, and Braunschweig (2011) estimated that youth between the ages of 2 to 11 saw 11-13 television ads per day in 2009. Given minority youth view significantly more television than their white counterparts these numbers are likely to be higher for minority youth (Grier & Kumanyika, 2008). Harris, Schwartz, and Brownell (2010) estimate that African

American youth view 36% more food and beverage product advertisements and 21% more restaurant advertisements than most other youth. Digital marketing, or product placement on digital media (e.g., Internet, mobile devices), is growing rapidly (IOM, 2012). Internet-based advergames, virtual environments, or stealth marketing (e.g., 8-minute interaction with a product in an advergame) on social networks is quickly becoming an inexpensive way for food and beverage companies to reach minority youth. Although much is known about marketing to minority youth through traditional media, little is known about the direct effects of social media on low-income minority youth's eating and physical activity behavior (Li et al., 2013; O'Keeffee & Clark-Pearson, 2011).

The purpose of this study is to determine how media, such as television, movies, texting, social media, the Internet, or radio influences behaviors related to healthy weight for African American, Hispanic and Latino, and American Indian youth and parents. Additionally, we sought to understand what digital and social media communication strategies would be most effective in helping African American, Hispanic and Latino, and American Indian youth and parents engage in healthy eating and physical activity. A better understanding of how media is being used and which communication strategies are preferred by African American, Hispanic and Latino, and American Indian youth and parents will help guide the development of more effective health promotion messages and interventions in low-income minority communities.

Methods

This study consisted of a secondary analysis of data from a series of 14 focus groups with African American, Hispanic and Latino, and American Indian youth and parents around issues related to healthy weight. The purpose of this analysis was to better

understand the influence of media on behaviors related to healthy weight and to determine communication strategies that will increase healthy eating and physical activity in African American, Hispanic and Latino, and American Indian youth and parents.

Design

Between October 1 – 30, 2013, 14 focus groups (eight with parents and six with youth—not family dyads) were conducted in Arkansas, Florida, Maryland, New Mexico, Oklahoma, South Carolina, and Texas with African American, Hispanic and Latino, and American Indian youth and parents (Table 11). Youth and parents participated in one 2-hour and were asked about issues related to healthy weight and completed a seven item demographic questionnaire. Each participant received a $50 gift card (or cash) to thank them for their time. The study was approved by the Westat Institutional Review Board and the Chickasaw Nation Institutional Review. The University of Maryland College Park Institutional Review Board approved the secondary analysis protocol.

Eligibility, Recruitment, and Consent

The eligibility criteria for the youth focus groups were male or female youth between the ages of 11-17 who self-identified as Black/African-American, Hispanic or Latino, or American Indian. The eligibility criteria for parent focus groups were male or female parents/caregivers under the age of 40 who self-identified as Black/African-American, Hispanic or Latino, or American Indian, who had a child/children under the age of 18. Fifteen focus groups (1 pilot and 14 implementation groups) were conducted with youth and adults in eight states across the country

Recruitment for the focus groups occurred over a 30-day period from September 25 to October 25, 2013. National organizations (Salud America!, African American

Collaborative Obesity Research Network, and Notah Begay III Foundation) that work closely with minority populations around issues related to healthy weight were responsible for making connections with community organizations that then recruited participants from their local communities. Because of the short period of time allotted for focus group implementation, in some locations participants were being recruited while at other focus groups were being conducted. Announcements for participation in the focus groups were posted in community organizations' local offices and shared in electronic format through email with potential participants. Individuals interested in participating in the focus group could call the organization for additional information and were provided with the date, time, and location of the focus group if they met eligibility requirements. Because of possible attrition issues, 10-12 participants per focus group were recruited (expecting to have 7-10 participants in each group).

Prior to beginning focus group discussions, informed consent to proceed and audio-record the session was obtained using a parental consent and youth assent form (Appendix C) and parental consent form (Appendix D). The consent forms included information about the purpose of the study, study procedures, confidentiality, risks, benefits, voluntary participation, and who to contact for questions.

Sample

Youth focus groups varied by age depending on the preference of the community organization staff (Table 11). For example, some community organizations predominantly worked with youth between the ages of 11-13. Therefore, they chose to recruit participants in this age range while other community organizations served youth across a wider age spectrum. Although the goal was to have focus groups consisting of

two age groups, 11-14 year olds and 15-17 year olds, actuality there was a wide range of age variability within focus groups. For example, one focus group had a 10 year old participant who met all other eligibility requirements and was having a birthday soon. Each focus group was limited to one racial and ethnic group.

A total of 149 individuals participated in the focus groups. More than half of the participants were female (72.5%) and 26.8% were male. Racial and ethnic breakdown of participants was 37.6% African American, 36.2% Hispanic or Latino, and 26.2% American Indian. Tables 12 and 13 provide gender and racial and ethnic breakdown of participants along with other demographic variables. Over 80% of parent participants had incomes less than $50,000 with more than 45% having income levels under $10,000. More than half of parents had less than a college education (Table 12) and more than one-third of the youth had another language besides English as their first language (Table 13).

Focus Group Methods

Each focus group was led by a team of two people, a moderator and a note taker. Moderators were matched to the racial and ethnic composition of focus group participants and selected based on their moderation skills, language proficiency and experience. Seven moderators and three note takers participated in a two-hour training conducted by the study manager (this researcher) on implementing study procedures, data collection, and human subjects' protection. Each moderator was also trained to serve as a note taker for the focus groups and served in this capacity on three occasions. Two moderators were African American, three moderators were Hispanic and Latino (all of whom facilitated the Spanish only adult focus groups or bilingual youth groups), and two moderators were American Indian (one from the Zuni Pueblo and one from the Chickasaw Nation). This

author moderated the two African American youth focus groups and served as note taker for three of the other youth groups. Each focus group was audio-taped using digital audio recorders. At the end of the focus group, participants completed a brief survey that included basic sociodemographic information (Appendix I and Appendix J).

The discussion guide explored five topics: general information about health, eating healthy, physical activity, marketing for healthy behaviors, and community advocacy. A pilot focus group (N = 8 participants) was conducted in Winston-Salem, NC, with a sample of African American parents. Based on feedback from this focus group, the content and direction for the final protocol was developed. The final protocol was designed to cover topics such as awareness and usefulness of the built environment, availability of specific paths and community parks, diet, physical activity, access to food stores, food preparation, targeted food marketing to minority youth, digital and social media use, and motivation for community advocacy. Data analyzed for this study only focused on food marketing and digital and social media use (Table 14).

Analysis

Descriptive statistics were used to analyze demographic data. Focus groups were digitally audio-recorded, transcribed and entered into NVivo 10, a qualitative-data management software package for coding and analysis (Richards, 1999). Spanish and bilingual focus groups were transcribed and then translated into English. Three members of the research team, who compared the audio recordings to the transcripts, reviewed transcripts for accuracy.

A secondary data analysis was conducted on data from the focus groups. Transcriptions from the audio recordings and notes from the focus groups were reviewed.

Each transcript was uploaded into NVivo 10, a qualitative-data management software package for coding and analysis (Richards, 1999). A codebook based on the focus group protocol questions and the social ecological model was developed to identify segments of transcripts related to societal and community factors. Table 13 presents the protocol questions that contributed to the development of the codebook and were the focus of this data analysis. Additional codes were added to the coding dictionary based on review of the transcripts. Each code was accompanied by an operational definition that allowed for clarity and consistency in the coding process. Coding of the data was based on an iterative process of constant comparison, allowing for the emergence of new codes and ideas. Segments of the transcripts related to the questions about marketing for healthy weight were coded Additionally, a keyword text search was conducted on each transcript using the terms "Facebook," "Twitter," "social media," "TV," "radio," "marketing," "advertising," "commercials," "ads," "Internet," or "website" in order to find other passages in the transcripts that may relate to digital and social media or marketing.

Once coding of the transcripts was complete, data was exported into Microsoft Excel to allow for further analysis and elucidation of themes. Data was organized by racial and ethnic group, and separate tables for youth and parents were created in Microsoft Excel. This process allowed for the evolution of themes across groups and a comparison of similarities and differences. Overarching themes emerged that applied to all racial and ethnic groups and parents and youth groups.

Validity and Reliability

Auditing as described by Cohen and Crabtree (2008) was used as a process for monitoring the validity of the study. An external consultant assisted in the auditing

process by examining the process the researcher used to conduct the analysis and determine findings. Audit trail materials included raw data, data reduction and analysis products in the form of Excel files, reconstruction and synthesis products, and notes (Carcary, 2009). The external consultant reviewed a sampling of the audit trail materials to evaluate the strength of the analysis. Any alternative meanings were discussed with the external consultant and taken under advisement.

Moreover, member checks were also used to assess validity. The researcher shared findings with 16 representatives from the various community organizations to ensure findings were accurate and consistent and that no other plausible alternative explanations exist (Maxwell, 1998; Warren & Karner, 2010). Responses were received from 3 of the 16 members with no alternative findings resulting from the member check.

A second coder was used to conduct inter-rater reliability checks. This researcher served as the primary coder and established the starts and stops for the coded segments. The second coder independently coded all indicated segments of text using the coding dictionary. Using NVivo 10, inter-rater reliability percentages and Kappa coefficients were calculated at selected nodes for each source transcript. Kappa scores were between zero and one depending on the level of agreement or disagreement. Low Kappa scores were the result of differences in the unit of measurement, which was the text character length and not inter-rater agreement, which ranged between 92-100%. Coding stripes filtered by user allowed the researcher to identify discordant codes and confirm level of agreement. Discordant coding was discussed until consensus between the researcher and the second coder was reached. No second round of coding occurred because the initial benchmark of 80% agreement was achieved.

Results

When asked about the influence of media on healthy behaviors, youth and parents had mixed reactions. The following section presents the "good" (positive influences), the "bad" (negative influences), and "ugly" perceptions regarding the influence of marketing on healthy weight behaviors.

The Good – Information and encouragement, positive associations with media

Youth and parents believed in the potential for media to be used to positively influence healthy behaviors related to weight. Parents and youth talked about how there are television programs and stations dedicated to providing helpful information about health. Parents mentioned the Food Network, Discovery Channel, and shows like Dr. Oz. Programming on these stations often related to healthy eating and proper nutrition.

> *"…….. when there is nothing on television I will watch the food network and watch the healthy food and I'm like 'Yeah, I want to try to –'so my daddy goes out and I try to make some of that stuff."*

> African American Youth

Youth discussed how channels such as Nickelodeon and the Disney Channel promoted physical activity and healthy eating. For example, Nickelodeon has exercise breaks where they encourage youth to get up and move during their favorite programs. Commercial breaks like "Try This" on the Disney Channel introduce youth to new ideas on types of exercise or healthy foods.

"Disney channel and all those things, they always have this thing they call

'try it.' They show you different foods from different places and stuff, all

vegetables. They don't show you all these fattening foods and stuff."

African American Youth

Parents talked about how movies and DVDs could be used to promote healthy

eating. One African American parent mentioned how the Women Infant and Children

(WIC) healthy food DVD helped her child to eat healthy foods. "He was so motivated,

honestly I believe watching that over and over and over, just to eat and eat healthy stuff."

African American youth talked more about the influence of major motion pictures.

"Movies like Mission impossible and stuff like that, that make you like if

you're fat and you know you are fat, chubby and stuff, and you want to be

like them they encourage you to get active and try to lose weight and stuff

so you can get healthy. To start eating better food and stuff."

African American Youth

When it came to online resources, parents remarked they could get ideas for

healthy recipes on the Internet. One American Indian parent stated, "The Internet can

give you knowledge about how to be healthy." African American and Hispanic parents

went on to talk about how the Internet could be used for finding information about

healthy meals and health conditions.

"I do that all the time. When I'm cooking something and I have for

example meat but I don't know how to cook it, to be a healthy meal or I'll

just have certain things and I need an idea to throw together but still to

make it healthy I'll go online, it's just research, trying to find recipe,

ideas, I'll type in Google. Recipe ideas for pork chops, so recipe ideas for

beef ribs and a lot of things come up, just take one and end up cooking

that."

African American Parent

"You know, do research on the website and see what's healthy, what's not

healthy or try to find like different recipes or whatever. I do that

sometimes at work."

African American Parent

"I don't have a lot of information on how to do it but I looked for my

daughter, my daughter's disease. I put on there, what foods can you eat to

prevent gastritis? Or prevent whatever thing, that's how I look for

information. But I don't have a specific page. I would look at the options

it gave me."

Hispanic Parent

As indicated in the following exchange between African American parents,
different types of information is available online that influences healthy
behaviors.

African American Parent: *It can help you. I mean it can help you with*
recipes, like how to make it less fattening, richer flavor.

African American Parent: *Tell you the calories, like this has how many*
calories and all that.

African American Parent: *Right.*

African American Parent: *You can always look up what you are interested in. Like if you want to find out how to make the food that you have more healthy, you can go on the Internet and find that. It can still taste good. I have done it quite a few times.*

Parents and youth also talked about how social media could be a source of information, encouragement, motivation, and inspiration.

"I get on Pinterest a lot and I follow this one board and she's all about healthy eating. Sometimes she has really cool recipes on there. I'm just like 'Yeah, this is pretty awesome.'"

American Indian Parent

A few African American parents who had lost a substantial amount of weight remarked how they would use Facebook to post pictures of their weight-loss progress.

When you see other people losing weight and then you see their before and after pictures, it starts to motivate you to want to – well maybe I can do something just to get – you know especially when you see a dramatic change in such a short period of time.

African American Parent

The comments and "likes" received from family and friends were a source of motivation for them to keep going. One parent remarked, "it makes you feel better about yourself knowing that others are cheering you on." Another parent talked about how she posted pictures of her meals online to encourage other parents to cook for their children instead of going out and buying fast food.

Youth talked about how social media promotes the exchange of ideas.

"They make you more sociable so you can exchange ideas about new stuff

in restaurants or something like that."

<div align="right">Hispanic Youth</div>

As described by the following comments from Hispanic and African American youth,

Twitter was noted as being useful for following hashtags related to exercise and

bodybuilding while texting could be used to organize outdoor activities.

Hispanic Youth: *There's pages on Twitter that are just basically about*

healthy food with healthy food pics,

Hispanic Youth: *And there's retweeting so somebody else can read it.*

Interviewer: *Do you follow people that encourage you to be healthy or to*

be physically active?

Hispanic Youth: *Yeah because they're always tweeting stuff and it pops*

up.

"…….you can talk to your friends on Facebook or Twitter. On go on and

say hashtag twitter 'going outside to play football' and say 'anyone

coming' hashtag. People come outside, the next day."

<div align="right">African American Youth</div>

As shown in the following conversation, not all youth believed that media was

healthy as an initial reaction.

Moderator: *Does it [media] help you to be healthy or make healthy food*

choices?

Hispanic Youth: *Not usually.*

Hispanic Youth*: I think it does. On Facebook, they have apps. This girl, she lost a lot of weight at school because she had this app on her phone that every time she was on it, she would see a skinny girl so it would persuade her not to eat junk food and to eat healthier and it had tips on there on what to eat and what not to eat. So I think it helped her.*

Overall it appeared youth had more positive things to say about digital and social media when compared to parents. There appeared to be no differences regarding the positive impressions across racial and ethnic groups

The Bad - The relationship between media and unhealthy behaviors

When asked about how media (i.e., television, movies, texting, social media, the Internet, or radio) influenced behaviors related to healthy weight, youth and parents' initial reaction was negative in that they did not believe media could help you be healthy. Participants believed using media promoted unhealthy behaviors, such as snacking, sitting, and wasting time.

Sitting was the primary unhealthy behavior associated with media use. Parents talked about how their children would sit inside all day playing video games or watching television. These types of sedentary activities "make you lazy." One African American parent remarked, "If you are watching TV, you ain't moving, you ain't doing nothing to be healthy." American Indian and Hispanic parents also believed these sentiments related to inactivity.

"I don't think there is any way that it really helps….. really I don't see any way that it ever helps. It's like one of the biggest thing that [keep] people for being

active….. I know me whenever I do like have a little bit of time like there's a

couple of shows that I like to watch but if you have time, like I'd rather watch that

show than go run."

<div align="right">American Indian Parent</div>

"I think that the TV is not healthy at any time because you are giving a sedentary

lifestyle because there are children that spend all day and not just the children,

the moms too sometimes. Many times in front of the TV. Then the "novellas"

[soap operas] that leave nothing good. So for me I don't think that television

healthy."

<div align="right">Hispanic Parent</div>

Youth echoed this commentary from parents by stating texting and being on the Internet promoted sitting and inactivity.

"To me on Facebook you don't want to do nothing so you ain't worried

about doing nothing but sitting down and texting, place status and put

pictures on there. So you ain't worried about doing nothing. You just

sitting there."

<div align="right">African American Youth</div>

One Hispanic youth remarked, "If you're on the computer for longer than thirty minutes, it's not good."

"To me it doesn't help because you are just sitting there……it helps and it

don't help. The way it doesn't help because you are just sitting there and

you are not getting any fruit or anything but on the other hands it does

because it gets your mind off eating but some people they just sit and play

[games] like 24/7"

<div align="right">African American Youth</div>

Youth and parents also discussed how media use was associated with mindless eating. Both talked about how when you watch television you find yourself snacking and eating unhealthy foods. One Hispanic parent remarked, "I think it doesn't help you because when you do watch a movie, you have a bag of Doritos, and then have a can of Coke…"

Media use was also associated with unhealthy behaviors because it was time-consuming. For example, both parents and youth noted how social media like Facebook could be addictive and distract from other activities, like exercising. Youth described how they spent a great deal of time checking Facebook status, posting pictures, or texting with friends and family. As one American Indian youth remarked, social media could become so engrossing that "people don't have a life outside of Facebook." The following quotes highlight the time-consuming nature of social media.

> *"It takes away my time. Because I used to be on Facebook a lot and it took away a lot of my time."*

<div align="right">Hispanic Youth</div>

> *"All I ever do is just upload pictures…..but some people they just get on there just to see what's going on because if you get on Facebook, you are going to know everything that you didn't know."*

<div align="right">African American Youth</div>

"It consumes our time. I think that's one of the things that keeps you from being healthy you know, you get home and you are tired, you don't want to even think, you just want to look at the TV or whatever, we don't have cable at my house so I don't – or Internet, I mean Internet, we don't have cable so we just have only Netflix but it's the same thing if they are watching TV, so I think it takes time, it takes off your time…."

Hispanic Parent

During one of the focus groups with Hispanic youth, several participants commented on the hindrance of media.

Hispanic Youth: *They distract you.*

Hispanic Youth: *They distract you. You know you're supposed to be doing something and you're texting……*

Hispanic Youth: *It takes a lot of time away from you. You could do a lot of other stuff.*

Hispanic Youth: *They make you lazy.*

American Indian youth and parents talked about the negative influence of media in terms of bullying and cyber bullying. Parents and youth remarked how children can be negative and "mean" on social media and how that can lead to poor mental health, depression, or unhealthy coping behaviors.

American Indian Parent: *I think Facebook has been negative. I mean there's too much that happens on Facebook and I think all the criticism on there with each other has been mentality down to where they think they are better than you and so your mentality just comes down.*

American Indian Parent: *Negative.*

Moderator: *In what ways?*

American Indian Parent: *Bullying, cyber bullying.*

American Indian Parent: *Yeah.*

The Ugly - The influence of marketing in media

A sentiment shared across all groups was that media marketing companies do not care about your health. Youth and parents alike believed big name companies were only interested in getting you to spend more money.

American Indian Youth: *They just care about the money.*

Moderator: *They want you to tell your parents to buy it?*

American Indian Youth: *Yeah.*

American Indian Youth: *…… they just want you to buy more sugary stuff instead of healthy stuff.*

American Indian Youth: *They don't really care about your health.*

Youth and parents believed this (making money) was why companies that sell fast food, sugary beverages and snacks, and unhealthy foods spend so much money on advertising these unhealthy products, especially to children. One Hispanic youth

remarked, "Well once they taste the good cereals, the ones that have a lot of sugars, they don't want to go back to the other ones…..basically they want junk food."

> *"Frosted Flakes like you know, like how the tiger and stuff like they make it seem like so healthy and stuff like at the bottom, bottom of the cereals it's a whole bunch of sugar at the bottom"*
>
> African American Youth

Youth believed that even when these companies promoted healthier items, those items were actually still quite bad for you and the companies were falsely advertising unhealthy food as being healthy.

> *"They're saying it's low fat and stuff and they make it look all healthy on TV and they put fresh fruit and stuff like that, they make the salad look good. So when you go to the place, it still looks good but it's not healthy. Not how they advertised it."*
>
> Hispanic Youth

> *Because all that's in commercials is food. They try to persuade you to go to fast food places, like you see McDonalds, all those commercials.*
>
> Hispanic Youth

> **Hispanic Youth:** *They just say that because they want more people to buy it.*
>
> **Hispanic Youth:** *Like at Burger King they give you low cholesterol fries but you know it's just the same fries.*

American Indian youth also commented about how food and beverage companies promote their products as healthy even when those products appear to be unhealthy.

> **American Indian Youth**: *Sometimes they don't help you be healthy because they just like fake it.*
>
> **Moderator:** *They fake it? How's that?*
>
> **American Indian Youth:** *Yeah, they say they have fresh products. Like Wal-Mart they have a guy on there talking about fresh products and then there's a bunch of chemicals in it.*

Youth and parents were aware that minority television and radio stations had a larger portion of advertisements for unhealthy foods.

> *"They invest heavily in commercials and directly to children. Those commercials, they invest so much, they are very well made and sometimes couple them with movies or cartoons that they see, and they put that together with junk food and that is stronger for them and that influences them to want to buy those things."*
>
> Hispanic Parent

Moreover, they also realized more commercials were shown for sugary snacks and beverages on channels for children and that now more ads were being seen online through video games and social media.

> *"The marketing – like they advertise more of junk food than healthy food because I guess it is what all the sales is going to. And like they try to*

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make like a pick 5 for $25, like they'll never have no advertising about

healthy foods."

African American Youth

When discussing how sugary cereals were targeted to youth, the following interaction

highlights how African American youth felt.

African American Youth: *How many times have you seen this is*

rhetorical question how many times have you seen a cinnamon toast

crunch commercial come on especially because it has cinnamon and has

so much sugar that one commercial comes on multiple times on the Disney

channel times a day......

African American Youth: *It comes on five times a day not that much.*

African American Youth: *See, he even memorizes it so. So does what's*

another cereal? Trix? Comes on almost all the time.

Moderator: *So, how does it make you feel that they are targeting kids*

with all of these high sugary cereals and bad foods?

African American Youth: *I feel bad because kids are really not really*

getting the proper proteins.

African American Youth: *Oh, it make me feel worse, it makes me feel*

like you have diabetes. Yeah like the kids are going to get diabetes. I eat

the cereal but I never think of it. I know it have a lot of sugar maybe that's

why I still do like it, I mean and but when you like sit there and think about

it, it makes you feel like you're eating too much sugar. You're gonna get

high pressure and all that stuff and you are going to have diabetes.

African American Youth: *Yeah, sugar diabetes is just like if someone*

tells you that what you are eating you have so much sugar in it……..

African American Youth: *I feel that most kids don't realize the danger*

and problems that it might face like, the kids might face eating all of that

sugar until you sick and sit in one of these focus groups and talk about

what it can cause and what it can do to you.

One of the best ways to influence parents to purchase items is to win over their children. An American Indian parent remarked "kids remember more than parents so they advertise at school and on children's networks." Companies use jingles and cartoon characters to market unhealthy foods to children. One Hispanic youth remarked, "All fast food restaurants, they have that going for them, little jingles they have like McDonalds." Another Hispanic youth stated "…..there are a lot of appeals to the way those little kids like cartoon characters…." Parents and youth talked about how parents would often end up giving in to their children's request for soft drinks, sugary cereals, and potato chips even though they knew they were not the healthiest option for their kids.

Hispanic Youth: *…. the way the little kids react when the parents say no,*

that also has a lot to do with it because they whine and they are going to

cry and of course they are going to throw the tantrums "But mom I want

this" and all stuff like that .

Hispanic Youth: *So basically the parents spoil them.*

Digital and Social Media Communication Strategies

Youth and parents had mixed feelings about how media influenced healthy behaviors, but they also talked about ways digital and social media in particular could be used to promote healthy eating and physical activity.

Source

Information source was an important determinant in how recommendations for healthy eating and physical activity would be received. Hispanic youth mentioned social media role models can have positive influences on them and their peers, "they motivate me to try to be like them."

"Like if you admire someone 'Oh I want to be like them' so you started working out or something."

Hispanic Youth

"Well it really does have to do a lot with who you admire and what they are doing."

Hispanic Youth

All youth talked about how they would be more responsive to athletes and celebrities as described in the following interaction.

Hispanic Youth: *.....you see like professional athletes, I like track – I like watching all that. I want to be "Oh I want to – I want to get as good as them to be there so I would go outside"*

Hispanic Youth: *If they can then I can.*

Hispanic Youth: *Yeah if they did it, I want to do that too.*

However, parents talked more about having people in positions of authority provide information. Both youth and parents agreed there would be great value in hearing from friends and family about their experiences, which is one of the benefits of digital and social media.

The important factor was making sure sources were "relatable people." As one African American described it, "If you know that you are targeting primarily black people, don't come there with white people talking about this woman lost 200 something pounds…." One Hispanic youth described it as "It has to do with the connection over the person if that's something that you guys share in common."

Message

Message content and delivery was discussed as an important element of communication strategies. Parents were more interested in the informational type messages that provide instructions.

"For Facebook…..it would be nice if it would have a quick five-minute or 30-minute recipes or 15-minute recipe that while you are checking it "Oh that's really good" click on that link while you are checking on Facebook......20-minuate quick dinner or a quick snack. So they can use Facebook to do a quick advertisement for healthy [food]."

Hispanic Parent

"I think if they gave you shopping list to go by in a way you know what to buy, a whole week's worth of meals, that would probably make it a lot easier, by the way you are not having to guess like the brand and the you

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know, that way you know okay, this is what I need and figure it all before

you go to the store…..”

<div align="right">American Indian Parent</div>

Hispanic Parent: *Giving more information on what can happen if you eat*

such product in excess.

Hispanic Parent: *Like how they did with the cigarette. That they put on*

there that it causes cancer. The same thing can be done with the cokes

and junk foods there are.

Hispanic Parent: *Having the people informed on what can happen if you*

take something in excess.

Youth and parents remarked that materials and products should be visually appealing and present positive images. One African American youth talked about the appeal of seeing "happy thin kids eating vegetables" as a motivator for behavior change while an African American parent said "ads with families doing healthy activities" would be appealing.

"And you know like I said earlier way earlier about the ranch commercial

or the hidden valley ranch commercial, how they have ice cream well

vegetables as ice cream and pizza as carrots shaped into a pie and make

you want to eat it and all. Seeing all those kids so happy and so thin eating

all this vegetables and fruit will make me want to go out and eat

vegetables.”

<div align="right">African American Youth</div>

Youth and parents discussed what messages they would want to receive. American Indian youth were interested in messages around limiting the amount of time in sedentary activities like playing video games. African American youth were interested in messages about how healthy foods could benefit you and anti-junk food messages, similar to those seen in anti-smoking campaigns.

"You know that when you listen to radio you can hear……those [people] talking about how you should - You know how they have like anti-smoking and they can have something like that but with food so you can stop eating fast food and we can start eating more healthy."

African American Youth

"May be by giving the examples of how healthy foods can benefit you in life. Like how let say if once you grow up you eat all the junk food at our kind of age and then when we grow up and become seniors or adults, about that time when we are not in a good state. We might get diabetes. We might have that time that be feeling healthy and we might not be as active as we are supposed to be at our age"

African American Youth

As highlighted in the following interaction, Hispanic youth talked about the need to have visually appealing messages with more pictures than text.

Hispanic Youth: *If the ad was a foreign article or something or they gave you facts, the way that they insert it with the ad also is important.*

Hispanic Youth: *Because usually they just say it's good for you but they don't tell you [more]*

Hispanic Youth: *Or also like – don't like reading a lot so if it has a lot of things and it's like something healthy. I'll probably just look at the picture but not read anything.*

Hispanic Youth: *Make it look good*

Hispanic Youth: *Yeah if they make it look good then I'll probably eat it.*

The messages should also be associated with "catchy slogans or songs."

Channel

The primary focus of the discussions was around using digital and social media as communication channels. Discussions centered on the use of motivational videos, social networking sites, games, and online competitions.

"I think for us they should probably be putting more – I'd say motivation videos. Like when I see for example – ball players like Derek Rose, I see his workout videos and stuff and I'm like 'Okay.' I see how hard he's working and that kind of motivates me to keep working...."

Hispanic Youth

"The way they are going to show you how they do- they are going to show videos about how, what they do for the first day of their life, the second day, how they committed to eating healthy. How they committed to the gym. How they committed to exercising."

African American Youth

"There should [be] videos, information there because most of those using social media are usually young people. Then they have contacts, they reach up to one thousand contacts. Then if they share all that information,

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or if that information at least falls in the social media then all those kids

would receive that information. Whether it be food, sports, or things in the

long term as discussed here. Take care of your health because then you

can get this illness. Then all that information should be received by the

kids."

Hispanic Parent

Youth talked about being able to follow healthy things on Facebook. Both African American and Hispanic and Latino youth mentioned being able to post pictures of people you know and finding healthy recipes as important elements.

"Like for example on Instagram people just be posting anything they are

doing. So like, my teacher……she said that her daughter post like

everything that she is eating. So like if you make healthy food like when

you post it on Instagram and then like people will say that like it, what's

the ingredients and stuff like you know they will give it to you and

stuff……"

African American Youth

"Even in video games, there should be more video games that have

vegetables instead of like Candy Crush that has a lot of candies or sugar.

One thinks it doesn't influence but it does. I mean if you are seeing a lot

of candies and cotton candies and marshmallows then you are tempted to

eat candies. If they would have carrots, tomatoes, cucumbers and lettuce,

then you would say 'mom, make me a salad.' Everything is influencing like

the video games that you see influence the bad things that the young kids

do sometimes.

<div align="right">Hispanic Parent</div>

African American youth also mentioned using competitions with rewards as motivators for changing behaviors.

"We would come out with like – everyone has to come up with those

websites, come up with your own websites like the healthy website you

know tell them like hey this is good for you to eat and this is not so good.

We should go together and you know, try to eat what's right for us."

<div align="right">African American Youth</div>

"There are physical trainers and stuff and they'll post pictures of their

breakfast and stuff and will be eating all healthy and stuff and you will see

the comments and see some of the comments will be like what's the

ingredients, how do you make it and stuff."

<div align="right">African American Youth</div>

Receiver

Youth and parents talked about the importance of understanding those who would be the recipients of these digital and social media strategies. Youth talked about the importance of understanding how others will interpret the information and messages.

"*And another thing is like let's say you put up a salad and they're like*

"Oh my gosh, that person is so health conscious, how annoying" or

something like that."

<div align="right">Hispanic Youth</div>

"Honestly I think that can have like double effects, it can have a positive

and a negative. Like some people……… she sees that and she's like 'Oh

my gosh I'm going to do that' but there are also people like 'Oh my gosh

they're so skinny. Oh my gosh I'll never be that way' and so it depressed

them."

Hispanic Youth

For parents, conversations centered around access and use. African American and
Hispanic and Latino parents in particular noted that not everyone has access to social
media like Facebook and Twitter. One African American Parent remarked, "If you don't
have a computer and you have to travel, that's a problem." Hispanic parents had similar
issues with access.

"Some people they don't have computer, the libraries has a lot of

computers. Maybe the people when we don't have computer, we can go to

the library, we can check. Some people don't have a car, don't have

access to go."

Hispanic Parent

Hispanic Parent: *………for example she told about the recipes because*

you can check in the Internet if they gave other information recipes for a

good food or healthy food. Salad, you can do it in five minutes, chicken

you can do it in ten minutes –

Hispanic Parent: *That's wonderful if you have Internet access, what*

about of those who don't or don't even have computer literacy? You have

people coming – growing up without computers.

For most youth and parents digital and social media was not the first place to go for information about healthy eating and physical activity but it was a source of connecting with friends and family.

African American Parent: *Facebook, like for my newsfeed, there is stuff like that because on my newsfeed it will be like this person liked such and such and it can be like a recipe to something that they like. So, Facebook could be helpful but Facebook is not really helpful.*

African American Parent: *The only thing that's helpful for me about Facebook is that I can talk to my family, because I am not here with my family. I am here with my man's family.*

Youth and parents relied heavily on word-of-mouth from friends and family. After some probing, both could see how digital and social media could be used. Hispanic and Latino youth talked about providing information for upcoming events and opportunities for physical activity.

Hispanic Youth: *It can though. Because you see a lot of people, they're playing football or soccer, baseball, volleyball, they put out there, soccer field at 5.30, you know come out anybody, so that informs you that you can go out and play.*

Hispanic Youth: *Basically what she was saying. If you want to invite somebody to come over to have a soccer game or a basketball game and you can't go to their house, you can text them, message them or put it out there for people to come.*

Youth and parents saw digital and social media as viable tools for organizing and publicizing events and activities but still preferred the use of these channels along with traditional media such as radio and print.

Discussion

The purpose of this study was to understand how media influences behaviors related to healthy weight for low-income minority youth and parents. Analysis of the focus group transcripts indicated media influences could be "good," "bad," or "ugly," implying positive and negative associations. Positively, media, such as television, radio, movies/DVDs, Internet, and social media, could be sources of helpful information related to preparing healthy foods and planning group exercise activities. Conversely, media was also perceived as contributing to sedentary behaviors and unhealthy consumption of junk food, to be time consuming, and could potentially result in negative emotional states. The "ugly" aspects of media influence related to marketing. Youth and parents appeared to be media "savvy," not believing the messages promoted by big brand marketing companies; instead marketing companies were perceived as not really caring about consumers' health. The predominant belief was that these companies only wanted to sell their products and make money. The analyses also revealed preferences around digital and social media communication strategies that would be effective in encouraging minority youth and parents to engaging in healthy eating and physical activity. For example, parents and youth talked about strategies in terms of relatable sources, messages promoting the benefits of healthy eating and physical activities, channels that included videos and social interactions, and receivers who were understood as having particular needs and interests.

Several reasons exist for the variable findings around media's influence on behaviors related healthy weight. Of particular relevance in these focus groups discussions is the over marketing of unhealthy foods, distrust of the media industry, the difference between using media for information seeking versus using it for pleasure, variable access to different types of media, and the connection with and relevance of new media.

Over-Marketing of Unhealthy Foods

Minorities are often a target for the food and beverage industry, in part because of the amount of time spent receiving information through various forms of media (IOM, 2006). Additionally, target marketing to minority youth, specifically African American and Latino youth, creates loyal "super consumers" who become repeat customers for specific brands and products (Kumanyika, & Brownson, 2007). This type of Targeted marketing is no longer limited to traditional media like radio and television. More and more food and beverage companies are targeting minority youth and parents online through advertisements. Montgomery, Grier, Chester, & Dorfman, in their 2011 study, discussed how digital marketing in food environments was a new and innovative way of targeting youth with messages about consuming high calorie foods. Youth in our study noted how they were seeing more online advertisements through advergames and online commercials. As this area of digital marketing grows, public health practitioners will need to better understand how these new forms of marketing are influencing behaviors related to eating and physical activity. A positive finding from the focus group discussions with youth and parents revealed they knew youth were being targeted in food marketing environments. When implementing obesity prevention programs, it is

sometimes difficult convincing youth they are being targeted in marketing efforts. Given that our focus group participants were already aware of such tactics, obesity prevention efforts would not need to focus as much on counteracting these media messages.

Distrust of the Media Industry

Targeted marketing creates feelings of distrust between food and beverage companies and minority youth and parents. Youth and parents in this study believed food and beverage companies were only interested in making money and not in improving health. Unfortunately, this type of "consumer skepticism" is not enough to resist the appeal of high-calorie foods and sugary beverages. Food and beverage companies are still able to create brand loyalty by marketing to youth, influencing their preferences and purchases (Bibeau et al., 2012). These companies count on youth to make emotionally-based and unconscious choices that reinforce unhealthy behaviors (Grier & Kumanyika, 2010).

Product design and messaging for unhealthy behaviors, such as consuming sugary cereals or beverages, often includes having catchy jingles, humor, or songs. However, youth and parents in this study remarked how those same techniques can be used to encourage youth to eat more fruits and vegetables or play sports. Youth and parents noted that by associating fun and engaging things with healthy behaviors it would be possible to encourage people to do more and be better.

Information Seeking versus Social Connections

Media is seen by many as primarily a source of pleasure and secondarily for changing behavior. Youth and parents both talked about how media, especially digital and social media, is primarily used to connect with friends and family. These findings

were similar to those found by O'Keefe and colleagues (2011) who indicated youth use

social media to connect with friends and family, share pictures, exchange ideas, or do

homework. Only recently have youth begun to see the benefits of social media for

accessing information about healthy behaviors (O'Keefe et al., 2011). Cell phones,

mobile applications, instant messaging, and text messaging are quickly becoming viable

mechanisms for counting calories, tracking activity, and finding recipes. However, threats

such as cyber bullying, online harassment, and Facebook depression exists in digital and

social media environments. Even youth and parents in this study noted how excessive

digital and social media use opens youth up to mental and emotional vulnerabilities.

Media Access

Recognition must be given to the limitations of media access when working with

low income minority populations. Parents in the study, particularly Hispanic and Latino

parents, talked a great deal about lack of access to the Internet. Their comments support

findings from studies by the Pew Research Center (2010, 2014) indicating African

Americans and Hispanics still trail whites in Internet use and access. Even when free

access to the Internet is available at public libraries, parents in this study talked about

how then the issue becomes one of access to transportation. Challenges associated with

getting online make it a less than appealing option for many minority youth and parents.

Relevance and Connection

Different aspects of people's lives must be considered when developing

communication strategies and social marketing campaigns. Making communications

culturally and contextually relevant makes them palatable to minority youth and parents.

In social marketing, campaign messages and images are often tested with their target

audience. However, just because the message is appealing does not mean the behavior is realistic. It is necessary to create messages that resonate with minority youth's circumstances and show them healthy eating and physical activity is possible within the contexts in which they live. As discussed during the focus groups, youth and parents need to feel engaged by and identify with images, messages, and other aspects of the communication process.

Youth and parent suggestions around digital and social media communication strategies were very much in line with tried and true communication practices such as having a celebrity encourage healthy behavior, having the person delivering the message be like them, making certain material is visually appealing, and using catchy slogans and songs. Therefore, the media channel did not seem to greatly change the expectation on source and content of messages.

Research shows people of all ages are actively engaging in media across race, ethnicity, and gender (Pew Research Center, 2010; 2014; Strasburger, 2011). Parents and youth in this study easily talked about media although variations in access and preference for different types of media existed. African Americans and Hispanics and Latinos talked quite a bit about relying on the radio as a source of information and as a means of relaxation and entertainment. American Indian youth and parents talked more about television and movies, although television was not always watched through local cable providers and may have been accessed online. Parents and youth across all racial and ethnic groups were active users of texting. Although use of social media has increased among minority populations, how social media is being used is critical to consider when adapting it to interventions related to healthy weight. Trends show the majority

population uses social media to research disease conditions, find treatment options, and socialize with others (Pew Research Center, 2013). However, participants in this study talked about digital and social media as a way to connect with friends and family. Although discussions eventually centered on how digital and social media could be used to improve healthy eating and physical activity, youth and parents did not intuitively see digital and social media as a source of this type of information. Therefore, low-income minority youth and parents may not look to these technologies as a means to improve their healthy eating or physical activity levels. The use of digital and social media should be tied to larger social marketing efforts and communication campaign strategies that provide opportunities to learn about and engage in healthy eating and physical activity.

Although the gap in the digital divide is not as large as it used to be when comparing minority populations to the white majority, marked differences still exist. These differences must be considered when selecting communication strategies and traditional radio, television, and print materials must continue to be used in addition to the newer more technologically oriented strategies.

Social marketing, or marketing of social good, in which many childhood obesity prevention campaigns fall, may not always consider the social and environmental factors that influence healthy decision making. Healthy messages have to directly compete with the large companies with expansive marketing budgets that promote their unhealthy product over the airways and through television at regular intervals (Grier & Kumanyika, 2010). Results on the effectiveness of social marketing efforts to change physical activity and eating habits have been mixed. Many efforts have been criticized as being ineffective

because they did not result in sustained behavior change and may have even created a negative effect by focusing on body size (Walls, Peeters, Proietto, & McNeil, 2011).

This study provided an opportunity to hear first-hand from minority youth and parents about how media influences their ability to achieve and maintain a healthy weight. Conversations provided insight to some of the social and environmental barriers minority youth and parents face in the media and messaging environment. By understanding communication preferences and recognizing and addressing societal and environmental constraints experienced by African American, Hispanic and Latino, and American Indian youth and parents, public health practitioners and researchers will be better equipped to develop effective social marketing campaigns and interventions that result in sustained healthy behavior change.

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Table 2. Distribution of Participants by Location and Racial and Ethnic

Composition

State (City/Town)	African American N (Ages)	Hispanic and Latino N (Ages)	American Indian N (Ages)
Arkansas (Texarkana)	10 (25-39) 11 (13-17)		
Florida (Ft. Lauderdale)	9 (22-38) 10 (10**-14)		
Maryland (Baltimore)	8 (18-26)		
Maryland (Gaithersburg)		10 (34-41)	
New Mexico (Zuni Pueblo)			11 (23-62) 12 (11-14)
North Carolina (Winston-Salem)	8 (ages 17-35)*		
Oklahoma (Ada)			10 (17**- 31) 6 (14-17)
South Carolina (Columbia)		12 (21-66) 12 (11-17)	
Texas (Brownsville)		10 (34-40) 10 (14-17)	
Total (149)	56	54	39

*Pilot focus group

**Participant met all other eligibility requirements and was having a birthday soon.

Table 3. Parent Focus Group Participant Demographics

	Parents (N = 80)	Percent
Sex		
Female	70	87.5%
Male	10	12.5%
Race/Ethnicity		
African American	32	40%
Hispanic/Latino	27	33.75%
American Indian	21	26.25%
Age		
17 and under	1	1.25%
18-24	16	20.00%
25-30	20	25.00%
31-35	19	23.75%
36-40	16	20.00%
41 and up	6	7.50%
Not reported	3	3.75%
Education		
No formal schooling	0	0.00%
Eight grade or less	7	8.75%
Some high school	16	20.00%
High school	21	26.25%
Some college	25	31.25%
College graduate or beyond	10	12.50%
Not reported	1	1.25%
Income		
Less than $10K	37	46.25%
$10,001-$19,999	12	15.00%
$20,000 - $29,999	4	5.00%
$30,000 - $39,999	8	10.00%
$40,000 - $49,999	6	7.50%
$50,000 and greater	2	2.50%
Declined response	11	13.75%

Table 4. Youth Focus Group Participant Demographics

	Youth	Percent
Sex		
Female	30	49.18%
Male	30	49.18%
Not reported	1	1.25%
Race/Ethnicity		
African American	22	36.07%
Hispanic/Latino	21	34.43%
American Indian	18	29.51%
Age		
10-12	20	32.79%
13-14	21	34.43%
15-17	20	32.79%
Education		
5th or lower	1	1.64%
6th	13	21.31%
7th	13	21.31%
8th	8	13.11%
9th, freshman	6	9.84%
10th, sophomore	10	16.39%
11th, junior	5	8.20%
12th , senior	5	8.20%
Born in the U.S.		
Yes	53	86.89%
No	7	11.48%
No response	1	1.64%
English as first language		
Yes	39	63.93%
No	21	34.43%
No response	1	1.64%
Education of mother		
No formal schooling	2	3.28%
Eight grade or less	7	11.48%
Some high school	6	9.84%
High school	10	16.39%
Some college	10	16.39%
College graduate or beyond	8	13.11%
Don't know	18	29.51%
Education of father		
No formal schooling	3	4.92%
Eight grade or less	5	8.20%
Some high school	5	8.20%
High school	13	21.31%
Some college	7	11.48%
College graduate or beyond	6	9.84%
Don't know	22	36.07%

Table 5. Media Related Focus Group Questions for Parents and Youth

Youth	Parents
• In what ways does television, movies, the Internet, or radio help you be healthy? In what ways does it keep you from being healthy? How might marketing of unhealthy food keep you from being healthy? • A recent study about children's breakfast cereals found that cereals with high sugar content were advertised more on kids' TV shows. Do you believe that? How does that make you feel? • What influence do you think things like texting, Facebook and other technologies have on your ideas about healthy food? Physical activity? • What are some ways that technology such as Internet websites and Facebook can be used to encourage you to eat healthier food or be physically active? How might that work?	• In what ways does television, movies, the Internet, or radio help you be healthy? In what ways does television, movies, the Internet, or radio keep you from being healthy? How might marketing of unhealthy food keep you from being healthy? • How could technology such as Internet websites and Facebook be used to encourage you to buy and prepare healthier meals for your family? How might that work? How could it be used to make certain that your child eats healthier snacks and foods? • How could Internet websites and Facebook be used to encourage you and your children to be more physically active? How might that work?

Chapter 5   Conclusion

Obesity is a complex issue influenced by genetics, biology, behavior, access to resources, such as healthy food and medical care, culture, opportunity for physical activity, and economics. Because the conditions for obesity are multi-faceted, solutions must also be multi-pronged. The studies that comprised this dissertation allowed for the examination of behaviors related to healthy weight across a range of social ecological levels with a focus on community and societal levels. Findings from the first study exhibited how African American, Hispanic and Latino, and American Indian youth and parents think about behaviors related to healthy weight. Analyses revealed youth and parents associate healthy weight with engaging in primary prevention, taking care of one's mental health, eating healthy foods, and being physically active. Many barriers (as opposed to facilitators) were identified that impact healthy eating and physical activity, particularly at the community level rather than the societal level. This finding suggests that youth and parents may not see barriers and facilitators from a systems perspective. They appear to focus more on immediate neighborhood or community level factors as opposed to thinking about larger social, cultural, and policy level influences. This is not surprising as many of us pay attention to what we can do at the more immediate individual level rather than the societal level, possibly due to a greater sense of control at the individual and proximal community level when compared to bringing out societal or policy level changes that require many skills (political, advocacy, organizational) (IOM, 2012).

The second study examined how media influenced behaviors related to healthy weight. Findings suggest youth and parents have mixed views related to media influence.

They both acknowledged how media could be used for information and encouragement. However, they also discussed how ubiquitous use of media today can be a source of unhealthy behaviors (e.g., snacking while on the computer or watching TV, sitting for long periods of time, wasting time on games and entertainment as opposed to engaging in more productive behaviors, and exposure to cyber-bullying). The role of marketing in media instilled distrust from advertisements but provided a potential means of disseminating messages that promote healthy eating and physical activity to children and families. The potential use of marketing strategies to promote positive behavior led to a discussion about what digital and social media communication strategies would be most effective in helping them engage in healthy eating and physical activities. Youth and parents discussed how sources, messages, channels, and receivers could be adapted to be useful in the digital and social media environment. It was not surprising to hear that many of the same communication strategies that are successful in traditional media would work for digital and social media. However, added benefits of these technologies would include peer-to-peer networking with sources, content creation of messages, ubiquitous connection to channels, and engagement with receivers, all of which are key features of interactive media (Montgomery & Chester, 2009).

These two studies demonstrate the need to address the issue of childhood obesity through multiple levels of influence. Because childhood obesity is caused by a composite of behavioral and social factors, interventions clearly need to address not only the individual, but the environment in which people live and interact.

Social Ecological Perspective

Ecological and social ecological models are unique in providing a framework, or set of theoretical principles, for understanding the interrelationships between personal and environmental factors (Richard, Gauvin, & Raine, 2011). The interaction between physical, social, and cultural surroundings has not been effectively studied in obesity prevention efforts until recently. Most research on childhood obesity has centered on manipulating behavior at the individual level (Frerichs, Perin, & Huang, 2012). These two studies indicate youth and parents need more than just skills and knowledge to make healthy choices related to eating and physical activity. They need changes to their social and built environments through programs, policies, and legislation. By using a social ecological perspective, we were able to understand how intentions and behaviors are shaped by social and environmental phenomena that either encouraged or hindered healthy eating and physical activity.

Race and Residency

Childhood obesity disproportionately affects racial and ethnic minority groups. Differences in cultural beliefs and practices, acculturation, body image acceptance, and media influence may contribute to the differences in obesity rates of minority populations compared to the white majority (Pena, Dixon, and Taveras, 2012). The studies in this dissertation showed fewer differences between racial and ethnic groups and more similarities. This is similar to what LaVeist and colleagues (2011) found in their study, which demonstrated that when whites and African Americans lived in comparable environments and shared similar socioeconomic status (SES), disparities in health

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outcomes became negligible. Since racial and ethnic minority populations tend to live in the same or similar areas, the barriers to healthy eating and physical activity were similar regardless of race. The similarities across groups may speak more to the role of SES in determining weight status as opposed to race and ethnicity.

Poverty and Income

Income and education are two of the most common proxies used for SES. Previous research has clearly demonstrated the association of low income and high rates of childhood obesity (Eagle et al., 2012). Although it was not a direct intention of these studies, family income for the majority of parents in the focus groups was less than $50,000. The 2014 poverty guidelines for the 48 contiguous states and the District of Columbia define poverty at an annual income of $23,850 for a family of 4 (U.S. Department of Health and Human Services, 2014). Many studies have demonstrated the relationship between obesity and poverty (Braverman et al, 2010; Christiansen et al., 2013; Greves Grow et al., 2010; Woolf, & Braverman, 2011).

These studies revealed that as income levels in a neighborhood decreased so did safety, quality resources for physical activity and access to fresh fruits and vegetables. Many low-income neighborhoods have large numbers of fast food restaurants and high crime levels, which often results in the consumption of high-calorie junk food and sedentary behaviors among residents, increasing their risk for obesity.

Media and messaging as a societal level issue

Previous research indicates youth spend more waking time in the media and messaging environment than in school (IOM, 2012; Powell, Schermbeck, Szczypka,

Chaloupka, and Braunschweig, 2011). The constant bombardment of messages promoting nutrient-poor food and sugary beverages increases the likelihood youth will make poor food and physical activity choices. Digital marketing, or product placement on digital media (e.g., Internet, mobile devices), is growing rapidly as Internet-based advergames, virtual environments, or stealth marketing (e.g., 8-minute interaction with a product in an advergame) on social networks is quickly becoming an inexpensive way for food and beverage companies to target minority youth (Montgomery, Grier, Chester, & Dorfman, 2011; White House Task Force on Childhood Obesity, 2011). Although much is known about marketing to minority youth through traditional media, little is known about the direct effects of social media on youth's eating and physical activity behavior (Cavallo et al., 2012; O'Keeffee & Clark-Pearson, 2011). More studies are needed to provide insight into how youth and parent receive and process messages related to healthy weight and physical activity through social networking sites, texting, and virtual environments. Additionally, these studies would provide a better understanding of effective messaging strategies and messages that would to engage youth in healthy eating and physical activity.

Implications for Future Research

Prevention and treatment of childhood obesity for minority youth is a complex issue that must be addressed at many different levels. As previously mentioned, policies and practices are being developed that help youth have access to healthy food and physical activity (IOM, 2012; Trust for America's Health, 2013; White House Task Force on Childhood Obesity, 2011). As a result, we are beginning to see some change. However, success with these programs and policies seem to be progressing at a slower

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rate in minority communities. Sociocultural, economic, and contextual variables must be better understood and addressed for programs and policies related to healthy weight in communities of color to be effective (Kumanyika, 2005). Understanding the social and environmental contexts for healthy weight among minority youth is necessary to encouraging youth to eat healthy and engage in physical activity. Failure of current interventions to address the social and environmental context for healthy weight may contribute to the lack of success in sustaining behavioral changes associated with healthy eating and physical activity for minority youth (Fleury and Lee, 2006).

Findings from this dissertation study can be used to enact programs and policies on a community level that increase the facilitation of healthy behaviors among minority youth and parents. More work needs to be done to support and expand those things that youth and parents see as facilitators to healthy weight. For example, childhood obesity interventions should include the family but be based on the voice and experience of the youth. These studies would provide more insight into how peer support, supportive social norms, and private and public sector collaboration can help create environments that will foster sustained behavior change.

Successful programs and social marketing campaigns designed to improve healthy eating and physical activity are ones in which community-wide policy and environmental changes occur to make unhealthy foods and sedentary activity less appealing (Walls, Peeters, Proietto, and McNeil, 2011). This study provided preliminary evidence for building social marketing efforts to prepare youth to be advocates for healthy weight in their communities. By understanding the social and environmental

context for health weight, social marketing approaches can be developed that take advantage of new digital and social media to help equip youth with the skills necessary to influence policymakers regarding healthy food options and opportunities for physical activity. Working together with families, schools, policy makers, and communities, African American, Hispanic and Latino, and American Indian youth can work towards creating an environment that promotes healthy eating and physical activity, thus changing the direction of the childhood obesity epidemic.

Limitations of each of the studies have previously been discussed. However, ideas about healthy eating and physical activity need to continue to be explored using qualitative methods. Future research should take into consideration the use of more focus groups to better provide saturation of themes. Additional focus groups may have revealed additional themes or provided insights beyond those examined in this study. Moreover, regional and urban versus rural diversity could elucidate differences in environment. Other variables that could be examined in future research include examining a narrower age range for youth and incorporating more income variation to compare perceptions across SES. Additionally, strategies must be implored that allow for more alternative findings through better engaging communities through member checks.

Given obesity is strongly associated with poverty, income, and neighborhood environments, more studies need to rely on the social ecological model as a theoretical framework for designing childhood obesity prevention interventions. By focusing on societal and community determinants of childhood obesity among racial and ethnic minority populations, programs and interventions are more likely to see sustainable changes in behavior healthy eating and physical. Although innovative technology such as

digital and social media exists to help facilitate these interventions, low-income minority

populations may not be ready to fully embrace this technology. Through understanding

how youth and parents think and what works for them, public health practitioners,

researchers, and community advocates will be able to develop interventions and

implement policies that result in long-term behavior change to improve healthy weight in

minority populations.

Appendix A: Methods

A.1 Study Overview

This study, a secondary analysis of qualitative data, sought to: 1) understand what behaviors African American, Hispanic and Latino, and American Indian youth between the ages of 11-17 and parent believe are related to healthy weight; 2) examine the societal and community level barriers and facilitators for engaging in behaviors related to healthy weight; 3) understand media influences on African American, Hispanic and Latino, and American Indian youth and parents behaviors related to healthy weight; and 4) explore effective communication strategies for engaging youth and parents in behaviors to achieve and maintain a healthy weight.

The focus group data examined in this dissertation was drawn from a larger study conducted by Westat, an employee-owned research company located in Rockville, Maryland. Between October 1 – 30, 2013, 14 focus groups (eight with parents and six with youth—not family dyads) were conducted in Arkansas, Florida, Maryland, New Mexico, Oklahoma, South Carolina, and Texas. These states were selected for geographic diversity, as well as being the location of community partners who have worked with the Robert Wood Johnson Foundation, the funders of the larger study. The purpose of the larger study was to understand diet and physical activity patterns of racial and ethnic minority adults and children in the United States.

The Robert Wood Johnson Foundation (RWJF) funded the larger study as part of their efforts to develop a strategic plan to prevent childhood obesity in the United States. The aim of the larger study was to explore how community perspectives and issues related to healthy weight affect some of the nation's most vulnerable populations,

minority children. The goal was to gain first-hand knowledge and understanding of these issues from the viewpoint of the community.

Research Questions

Data from six focus groups with youth ages 11-17 and eight focus groups with parents were examined in this dissertation study. Using a social ecological framework, the objective was to gain an understanding of how personal beliefs, family and peer interactions, school and neighborhood environments, and culture/tradition, influence youths' abilities to achieve and maintain healthy weights. The study sought to answer the following research questions:

Research questions related to Aims 1 and 2 (Study #1)

1. What behaviors, beliefs, and attitudes do youth and parents think are necessary for healthy weight?

2. What are societal and community level barriers and facilitators to healthy eating and physical activity?

Research questions related to Aims 3 and 4 (Study #2)

3. How does media, such as television, movies, texting, social media, the Internet, or radio influence behaviors related to healthy weight for African American, Hispanic and Latino, and American Indian youth and parents?

4. What communications strategies would be most effective in helping African American, Hispanic and Latino, and American Indian youth and parents engage in healthy eating and physical activity?

A.2   Overall Strategy and Rationale

Qualitative Research Approach

Qualitative research facilitates an understanding of the way people interpret and make sense of their experiences and the world in which they live (Cohen & Crabtree, 2006). It helps to capture lived experiences through the meanings people give these experiences (Corti & Bishop, 2005). As Creswell (1998) explains, qualitative research "builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting" (p. 15). As Denzin and Lincoln (1994) argue, qualitative research is essential when "interpret[ing] phenomena in terms of the meanings people bring to them" (p. 10). The heart of qualitative research lies in its ability to offer a deep and rich comprehension of personal experiences that provides insight into how and why people think, behave, and make meaning. Since this study sought to understand how youth and parents make meaning of various social and environmental contexts that surround them, qualitative research helped to provide valuable insight.

Using Focus Groups

Focus groups were selected as the method of inquiry because the use of focus groups can help capture the lived experiences of minority youth and the meanings these youth give their experiences (Krueger & Casey, 2009). Focus groups are most effective when conducted in community spaces known and familiar to participants (Marshall & Rossman, 2006). Familiarity with the setting allowed youth the opportunity to discuss salient factors that influence their dietary or physical activity practices from their own perspective, with as few limitations as possible imposed by the researcher (as would be

found in a more clinical setting). The social aspect of focus groups was also an asset to this study—it was a conversation among peers with a facilitator. In every instance the facilitator was someone from the same racial background as the participants, and in a few cases this person was also from the local community. Using facilitators from the same racial background provided a sense of familiarity and comfort that may not have been found with facilitators of different racial backgrounds (Warren & Karner, 2010). Having someone from the community facilitate the focus group added to the level of trust and authenticity of the focus group because participants may limit their ideas and contributions in the presence of a moderator who differs greatly from them in power, status, income, education, or other personal characteristics (Warrant & Karner, 2010).

Conversations about healthy weight are occurring at community levels, framed and shaped by issues as diverse as access to healthy food, access to medical care, body image constructions, and cultural constructions of the role and purpose of food, among many other dimensions (Leviton, 2008). Therefore, focus groups were chosen as the preferred method of data collection because they can provide a picture of collective local perspectives while providing for many points of view (Kidd & Parshall, 2000). Because of the social, semi-public nature of the methodology, focus groups offered rich possibilities in terms of understanding the social norms, and social, political, and cultural dimensions of healthy weight (Krueger & Casey, 2009). In contrast to other methods of qualitative research such as individual interviews, which provide in-depth information from the perspective of a single individual, focus groups provided an opportunity for dynamic discussion in which participants responded and reacted to one another and

generated ideas, issues, and topics that may not have evolved from direct questioning in individual interviews (Berg, 2007).

Personal Reflection

It is important for a qualitative researcher to have a strong sense of self and to understand how his or her values may influence how data is collected and interpreted (Maxwell, 1998). Recognizing any possible biases that a researcher may bring to the study and how these biases will be handled adds to the strength and validity of any research study (Berg, 2007). The following section describes my own personal background and life experiences in order to be transparent about any biases my identity and social position (i.e., factors such as race, class, gender, language, education, and culture) may have brought to the study.

As a researcher, I brought the perspective of an African American female in my mid-thirties from rural Arkansas who had a strong Christian upbringing and who has personally dealt with the issue of obesity all my life. In my research, I am interested in the factors associated with obesity in children and adults, particularly among African American populations. Just as so many other African American women, I struggled with my weight; for many years growing up, I did not truly understand the value of eating right and exercising. As I got older, I really began to read up on proper nutrition and tried to be physically active. This provided much of my personal motivation to investigate issues related to childhood obesity. Realizing that many interventions focus on changing food and exercise related behaviors resulting in short-term weight loss, I began to question what beyond individual behaviors was contributing to over-eating and sedentary activity. Thus, I decided to employ a social ecological framework to this research study to

look beyond those individual level factors and to examine social and environment contexts for behavior change.

Despite being from the South and an African American, participants in the focus groups may have had a hard time identifying with me because of a perceived position of power as a researcher and because I was not a member of their local community. For the youth, the issues related to power dynamics may have been compounded by the difference in age between me and the participants. Although I did not moderate the non-African American focus groups, these same issues could have been present and compounded by being an observer and note-taker that is not of the same race and ethnicity as participants. In all instances, every attempt was made to build rapport with participants. However, in many instances my differences from participants were noted. For example, one of the American Indian youth asked if I was from the Zuni tribe, and one of the Hispanic youth asked if I spoke Spanish.

As the project manager for the original study, I had intimate knowledge of the circumstances surrounding data collection. I was a key member of the research team and contributed to the study design, development of the moderator guides, recruitment of participants, moderation of African American focus groups, and note-taking in the majority of the youth groups. Although every effort was made to limit assumptions and presumptions before analysis, it was very likely I brought certain biases to the table. For example, I believe I know first-hand the issues minority youth, particularly African American youth from the South, face regarding achieving and maintaining a healthy weight. However, I was not sure how these issues translated for other racial and ethnic youth. I imagined there were similarities, with most differences imposed by culture and

location. Additionally, I presumed the data would be an accurate reflection of most minority youth, especially if found to be consistent with the literature and other research studies. However, in my analysis, I was open to emergent themes and ideas and was careful not to impose my own beliefs and interpretations onto the findings.

A.3   Sampling, Recruitment, and Consent

Sampling

Because perceptions and experiences relating to healthy weight vary by race, ethnicity, age, gender, and community, focus groups were organized by race and ethnicity and populated with the support of community-based partner organizations. These organizations allowed for recruitment of participants to occur by and from the communities in which they live as a way to collaborate with the community in an effective and ethical manner. Each of the national partner organizations (Salud America!, African American Collaborative Obesity Research Network, and Notah Begay III Foundation) was responsible for making connections with community organizations that then recruited participants from their local communities. Thus, a non-random, convenience sample was used. A description of the community organizations and the populations they serve can be found in Table 15. Geographic areas (Arkansas, Florida, Oklahoma, Maryland, New Mexico, South Carolina, and Texas) with high concentrations of African American, Hispanic and Latino, and American Indian populations were represented in the sample.

Table 6. Community Partners

Name of Organization	Population Served	Location	# of Focus Groups
Zuni Youth Empowerment Project (ZYEP)	ZYEP envisions a Zuni community where every child is able to reach his or her full potential, to grow up healthy and prepared to lead future generations of Zunis. ZYEP strives to be a model organization setting the standard for engaging programming for Native Youth.	Zuni, New Mexico	1 adult 1 youth
Chickasaw Nation Department of Health	The wellness centers provide education, mentoring, monitoring, incentives and access to activities to promote exercise, nutrition and overall improved health.	Ada, Oklahoma	1 adult 1 youth
Consortium for Latino Immigration Studies Arnold School of Public Health, University of South Carolina	The Consortium for Latino Immigration Studies promotes and coordinates interdisciplinary and transnational research on the experiences of Latino/as in South Carolina and the Southeast. Through its various activities the Consortium fulfills the University's mission to promote the wellbeing and improve the quality of life for all state residents.	Columbia, South Carolina	1 adult 1 youth
Identity, Inc.	Identity's mission is to provide opportunities for Latino youth to believe in themselves and realize their full potential. Identity aims to facilitate the successful transition of Latino youth into adulthood by providing skills, guidance, positive role models, and a strong sense of community.	Gaithersburg, Maryland	1 adult
Bon Secours Community Works	The Bon Secours Community Works (BSCW) works to enrich West Baltimore communities with programs and services that contribute to the long-term economic and social viability of neighborhoods.	Baltimore, Maryland	1 adult
New Hope World Outreach	New Hope World Outreach serves as an advocate for change by addressing issues of concern that are barriers to strong and healthy individuals, families, and communities. Our purpose is to connect people to programs, services and resources to help them succeed.	Ft. Lauderdale, Florida	1 adult 1 youth
Smith-Keys Computer Learning Center	The mission of Smith-Keys Computer Learning Center is to create vibrant communities that foster economic opportunity, encourage life-long learning, increase employment opportunities and improve the education performance of children.	Texarkana, Arkansas	1 adult 1 youth
Proyecto Juan Diego	The mission of Proyecto Juan Diego is to care for and improve the education and formation, social and health services for the families within a targeted area in Brownsville, Texas. (Cameron Park and surrounding colonies). We are called to provide the above services to all in need always respecting the dignity and culture of the person	Brownsville, Texas	1 adult 1 youth
			8 adult 6 youth 14 total

Recruitment

Recruitment for the focus groups occurred over a 30-day period from September 25 to October 25, 2013. Because of the short period for implementing the focus groups, some locations were recruiting participants while other locations were conducting their focus groups. Announcements for participation in the focus groups (Appendix B) were posted in the organizations' local offices and shared in electronic format with potential participants. Individuals interested in participating in the focus group could call the organization for additional information and were provided with the date, time, and location of the focus group if they met eligibility requirements. Because of possible attrition issues, 10-12 participants per focus group were recruited (expecting to have 7-10 participants in each group). Youth and parents who agreed to participate in the focus groups received a $50 Wal-Mart gift card.

Participant Eligibility

The eligibility criteria for the youth focus groups were as follows:

- Male or female,

- Between the ages of 11-17,

- Self-identified as Black/African-American, Hispanic and Latino, or Native American/American Indian

Youth focus groups varied by age depending on the preference of the community organization staff (Table 16). For example, some community organizations predominantly worked with youth between the ages of 11-13. Therefore, they chose to recruit participants in this age range while other community organizations served youth

Table 7. Distribution of Youth and Parent Participants by Location and Racial and Ethnic Composition

	African American (N = 48)	Hispanic and Latino (N = 54)	American Indian (N = 39)
Arkansas (Texarkana)	11(ages 13-17) 10 (ages 25-39)		
Florida (Ft. Lauderdale)	10 (ages 10*-14) 9 (ages 22- 38)		
Maryland (Baltimore)	8 (ages 18-26)		
Maryland (Gaithersburg)		10 (ages 34-40)	
New Mexico (Zuni Pueblo)			12 (ages 11-14) 11 (ages 23- 62)
Oklahoma (Ada)			6 (ages 14-17*) 10 (ages 17- 31)
South Carolina (Columbia)		12 (ages 11-17) 12 (ages 21- 66)	
Texas (Brownsville)		10 (ages 14-17) 10 (ages 34-40)	

*Participant met all other eligibility requirements and was having a birthday soon.

across a wider age range. These organizations used broad recruitment efforts and consequently had a wide range of youth participants in their focus groups. Although the goal was to have focus groups consisting of two age groups, 11-14 year olds and 15-17 year olds, there was a wide range of age variability within focus groups. For example, one focus group had a 10 year old participant who met all other eligibility requirements and was having a birthday soon. Each focus group was limited to one racial and ethnic group.

The eligibility criteria for the parent focus groups were as follows:

- Male or female,

- A parent/caregiver under the age of 40

- Has a child/children under the age of 18

- Self-identified as Black/African-American, Hispanic and Latino, or Native American/American Indian.

Only one person per household was eligible to participate in the focus group. Again, each focus group was limited to one racial and ethnic group.

Informed Consent

To protect the privacy, confidentiality, and rights of focus group participants, informed consent was obtained. Prior to the start of the groups, informed consent to proceed and audio-record the discussion was obtained using a parental consent and youth assent form (Appendix C) and parental consent form (Appendix D). Since focus groups were audio-recorded, if a participant did not consent to being recorded, s/he was not permitted to participate in the group but did receive the gift card. However, everyone consented to be audio recorded. The consent forms included information about the purpose of the study, study procedures, confidentiality, risks, benefits, voluntary participation, and who to contact for questions. The consent forms were stored separately from the focus group notes and recordings, so that participants' full names were not identified during reporting. When summarizing focus group notes, participants were not identified by name. When comments were used to illustrate findings participants were only identified as either a youth or parent and by race or ethnicity with no other identifying information such as age, gender, or location. Youth and adult audiotapes, notes, and transcripts were analyzed in this study. All focus group materials, including the moderator focus group guides (Appendix E and Appendix F), and the consent and assent forms for youth and adults underwent review by Westat's Institutional Review

Board (IRB) (Appendix G) and the University of Maryland Institutional Review Board (Appendix H). The Chickasaw Nation Institutional Review Board also reviewed focus group materials. The University of Maryland Institutional Review Board approved the secondary analysis of the data.

A.4 Procedures

Primary Data Collection Strategy

To obtain age and racial and ethnic diversity, focus groups were divided as follows: two youth groups and three adult groups with African-Americans, two youth and three adult groups with Hispanics and Latinos, and two youth groups and two adult groups with American Indians. Each focus group was two hours long and led by a team of two people, a moderator and a note taker. Moderators were selected based on their moderation skills, language proficiency, experience, and matched to the racial and ethnic composition of focus group participants. Seven moderators and three note takers participated in a two-hour training conducted by the Project Manager at Westat (this researcher), on implementing study procedures, data collection, and human subjects' protection. Each moderator was also trained to serve as note taker for the focus groups. Two moderators were African American, three moderators were Hispanic and Latino (all of whom facilitated the Spanish only adult focus groups or bilingual youth groups), and two moderators were American Indian (one from the Zuni Pueblo and one from the Chickasaw Nation). This author moderated the two African American youth focus groups and served as note taker for three of the other youth groups. Each focus group was audio-taped using digital audio recorders. At the end of the focus group, participants completed

a brief survey that included basic sociodemographic information (Appendix I and Appendix J). Table 15 shows the location, number, and race and ethnicity of each focus group.

Focus Group Protocol

A team of researchers at Westat and RWJF, in collaboration with community partners, developed the focus group guides. A core set of 7-10 topic areas was identified through literature searches and a pilot focus group. The pilot focus group (N = 8 participants) was conducted in Winston-Salem, NC, with a sample of African American parents. Based on feedback from this focus group, the content and direction for the final protocol was developed. The final protocol was designed to cover topics such as awareness and usefulness of the built environment, availability of specific paths and community parks, diet, physical activity, access to food stores, food preparation, targeted food marketing to minority youth, digital and social media use, and motivation for community advocacy. Table 17 provides a sample of questions organized by social ecological model level. The youth focus group moderator guide can be found in Appendix B, and the parent focus group moderator guide can be found in Appendix C.

Probes used with the questions were adapted to be age appropriate and culturally sensitive for each racial and ethnic group. For example, discussions of "who are the people who influence your health" included probes for preachers, teachers, doctors, neighbors, and family members in the African American community but also included Imans and shamans for American Indian communities.
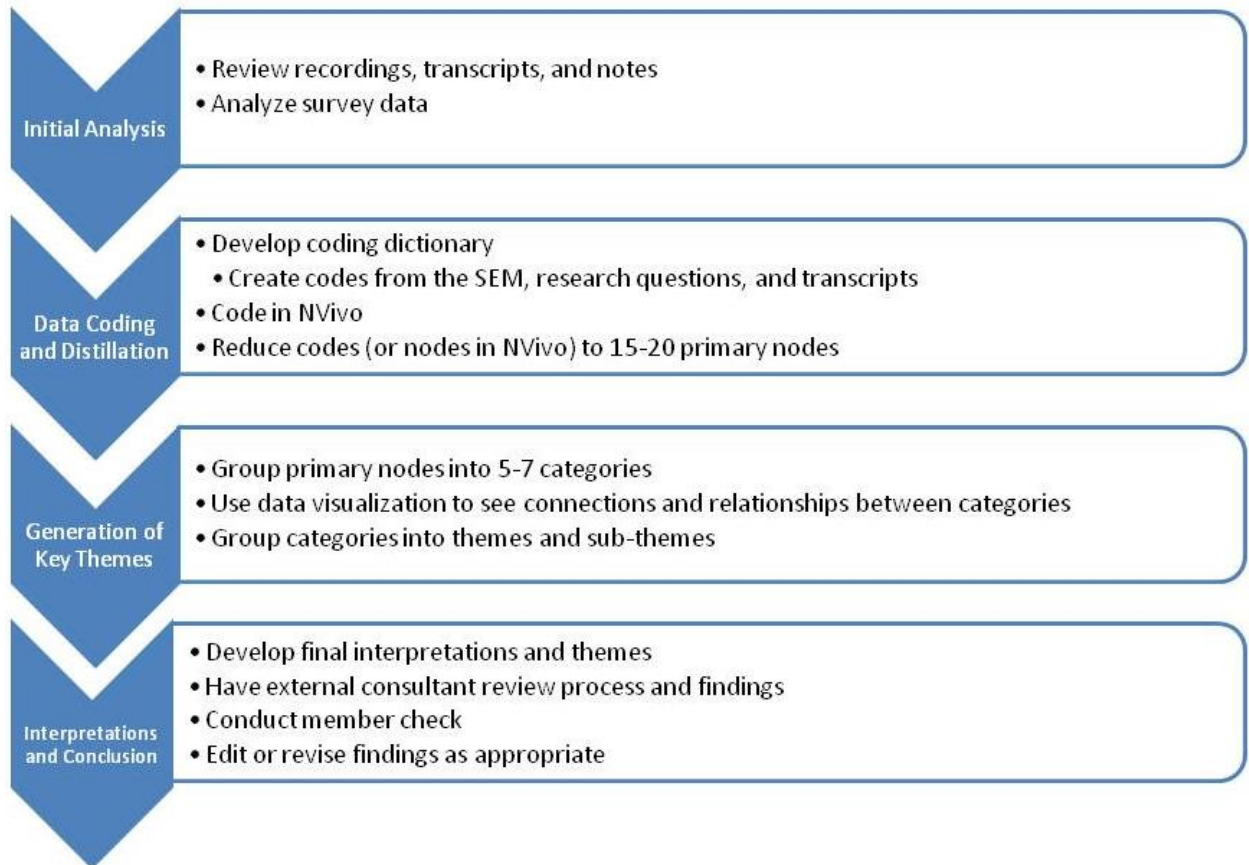
Table 8. Relevant Focus Group Questions for Youth and Parents

Youth	
SEM Level	Sampling of Focus Group Questions
Individual	What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use? *[Probe: what kinds of things does a person do that make him or her healthy or unhealthy?]*?
	Tell us what helps you to be healthy. [Probe on the role of knowledge, what is and isn't healthy; need for exercise; neighborhood factors: whether there are sidewalks, playgrounds, community based activities, programs, rules/or policies; access to healthy food options in schools, at work, camps, in the community; support from friends, teachers, and family]
Relationship	How can friends, family, and/or teachers help you be healthier?
Community	Now let's talk about health and your experiences in your community. How do you define your community? When you think of your community, what comes to your mind? Who or what is included in your community? [*Probe local neighborhood, racial and ethnic group, city/town/reservation, etc.*]
	What are some things about your community that help you be healthy? Are there things about your community that make it hard for you to be healthy? *[Probe on the value that the community places on health; Probe on cultural beliefs, social norms and practices; Probe on availability of sidewalks and playgrounds]*
Societal	What are some ways that technology such as Internet websites and Facebook can be used to encourage you to eat healthier food or be physically active? How might that work? *[Probe equally on healthy food and physical activity]*
	What do you think would motivate people to make changes in their community to get healthier foods and places for physical activity?
Parents	
SEM Level	Sampling of Focus Group Questions
Individual	What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use? *[Probe: what kinds of things does a person do that make him or herself healthy or unhealthy?]*
Relationship	Whose responsibility is it to help us eat healthier? What should they do to help us eat healthier? How could we get them to do this?
Community	What kinds of things, if anything, prevent your children from playing outside or being physically active as much as you'd like them to? Do you worry about your children when they play outside? Why is that? *[Probe on safety, whether there are sidewalks, places to play whether neighborhoods are unsafe; playing video games]*
	What do you believe can be done to make schools provide healthier foods and drinks?
Societal	How could technology such as Internet websites and Facebook be used to encourage you to buy and prepare healthier meals for your family? How might that work? How could it be used to make certain that your child eats healthier snacks and foods?

A.5   Data Analysis Procedures

Figure 4 provides a graphic representation of the data analysis procedure.

Figure 4. Data Analysis Procedure

Initial Analysis
- Review recordings, transcripts, and notes
- Analyze survey data

Data Coding and Distillation
- Develop coding dictionary
  - Create codes from the SEM, research questions, and transcripts
- Code in NVivo
- Reduce codes (or nodes in NVivo) to 15-20 primary nodes

Generation of Key Themes
- Group primary nodes into 5-7 categories
- Use data visualization to see connections and relationships between categories
- Group categories into themes and sub-themes

Interpretations and Conclusion
- Develop final interpretations and themes
- Have external consultant review process and findings
- Conduct member check
- Edit or revise findings as appropriate

Stage 1: Initial Analysis

Review of Data Collected

According to Maxwell (1996, p.78), the first step in qualitative data analysis is reading the transcripts and notes. As the initial step in the data analysis, the researcher reviewed recordings, transcripts, and notes to gain a sense of the overall data. Since data for this study had not yet been analyzed, this initial review had two purposes: 1) to ensure completeness and accuracy in the transcription and note-taking process and 2) to begin to

look for participant comments that would be helpful in answering the research questions. For the focus groups in which the researcher did not moderate or take notes (N = 4), the audio files were reviewed in order to ascertain a sense of the participants' reactions to questions, level of engagement, and opportunity for dialogue. During the review of the transcripts, notes, and audio files, the researcher made personal notes, or memos, to document any tentative ideas that developed about categories that highlighted the context for healthy weight and relationships that may occur between participant comments. The use of memos throughout the qualitative data analysis helped capture the analytic thinking toward the data while facilitating original thoughts and stimulating insight (Maxwell, 1996).

Quantitative demographic surveys were also collected as part of the larger study. This data provided background demographics on focus group participants. Simple statistical analyses using Excel were conducted to calculate averages, sums, and ranges calculating participants' age, race and ethnicity, geographic location, educational background, gender, and parental or adult income.

Stage 2: Data Coding and Distillation

During the data analysis process, the researcher employed two categorizing strategies, coding and thematic analysis. Maxwell (1996, p.78) defines coding as the process of "fracture[ing] the data and rearrange[ing] it into categories that facilitate the comparison of data within and between these categories and that aid in the development of theoretical concepts." Coding facilitated the process of sorting the data into broader themes.

Development of Coding Dictionary

As the first step in the data analysis, the researcher developed a codebook (Appendix K), or dictionary of concepts, based on the social ecological model (Centers for Disease Control and Prevention, 2009; Dalhberg and Krug, 2002). Using the social ecological model as a first step in coding provides a framework for conceptualizing the interrelationships between the social and environmental contexts for healthy weight and helped to guide the analysis. For example, some codes based on the social ecological model included cultural norms and values, barriers to physical activity, peer influences, and access to healthy food. Moreover, codes, such as influence of family members, descriptions of healthy weight, and role of culture, which are based on the research questions, were added to the coding dictionary. Finally, additional codes were added to the coding dictionary based upon a review of the focus group transcripts. This allowed for the emergence of new and relevant codes based upon recurrence across transcripts. Each code was accompanied by an operational definition that allowed for clarity and consistency in the coding process.

Coding in NVivo

Immersion in the data through reading and rereading helped the researcher become intimately familiar with the data (Marshall & Rossman, 2006, p. 158). To aid in this process, each transcript was entered into NVivo 10, a qualitative-data management software package that allows coding, retrieval, and data management (Richards, 1999). Additionally, NVivo 10 was useful for breaking down, examining, comparing and conceptualizing, and categorizing data. To code a portion of narrative from the transcription, passages from the focus groups associated with particular terms from the

codebook were highlighted. The highlighted passages were assigned to an appropriate node, or collection of references about a specific theme. Thus, each node became a representation of the code in the codebook. This process of assigning passages to a particular node continued until all transcripts had been coded.

Data Reduction

Data reduction is necessary to make the information readily accessible and understandable for analysis and to determine themes and patterns (Berg, 2007). Data reduction and transformation occurred throughout the analysis process. At this point in the process, the goal was to reduce the number of coded segments represented by nodes to the range of 15-20 primary nodes. The nodes for "concept of health", "community level", and "societal level" were selected for further examination after determining the focus on the manuscripts to be written.

Stage 3: Generation of Key Themes

Marshall & Rossman (2006, p. 158) describe the process of generating key themes as "identifying salient themes, recurring ideas or language, and patterns of belief that link people and settings together." Using a classification system that grouped statements together into meaningful units, the researcher arranged the primary nodes into 5-7 different categories. Different visual representations of the data, such as comparison tables and word clouds, were used to examine the interrelationship between different categories.

Creating Major and Minor Themes

Coded narrative segments were extracted from NVivo 10 and placed into Excel by the researcher and examined for meaning. Categories were grouped together to create major themes. The identification of connections between categories or codes was important in developing broader themes. Each of the major themes was accompanied by sub-themes that help clarify context and meaning. Data was analyzed in relation to individual research questions. The output of content from the transcripts related to these codes was examined to determine how social interactions and neighborhood factors affect food choices and physical activity. The goal of data analysis was to organize individual statements into themes that produce new insights into the social and environmental context for healthy weight. For example, to answer the first research questions about how youth conceptualize health, codes such as "eating right," "exercise," and "skinny" were extracted. The comments from the transcripts associated with these codes were examined to determine how youth discussed health. A similar methodology was used to examine the remaining research questions. The development of the themes and sub-themes was an iterative back and forth process of comparison and reflection.

Validity and Reliability

Within the field of qualitative research, disagreement exists in regards to how the concepts of researcher bias, validity, and reliability should be applied (Cohen & Crabtree, 2008). This researcher engaged in auditing as described by Cohen and Crabtree (2008) as a process for monitoring the validity of the study. An audit trail was used to examine the process the researcher engaged in to conduct the analysis and the resulting findings. Audit trail materials included materials used by the researcher, such as raw data, data

reduction and analysis products in the form of Excel files, reconstruction and synthesis products, and notes (Carcary, 2009). One of the qualitative researchers at Westat, Dr. Nanmathi Manian, who was part of the original research team, served as an external consultant and assisted in the auditing process. The external consultant reviewed a sampling of the audit trail materials to evaluate the strength of the analysis. For example, coded transcripts and themes were reviewed to advise on the "fit" of the analysis (Warrant & Karner, 2010, p.244). Any alternative meaning were discussed with the external consultant and taken under advisement. Moreover, another method for ensuring validity that was used is member checks. Member checks are the "systematic soliciting of feedback about data and conclusions from the people being studied" (Maxwell, 1998, p. 94). The researcher shared findings with 16 representatives from the various community organizations (Appendix L) to ensure findings were accurate and consistent and that no other plausible alternative explanations exist (Maxwell, 1998; Warren & Karner, 2010). No alternative findings resulted from the member check resulted.

An internal reliability check was performed on each transcript. The researcher listened to the audio files and compared them to the written transcripts to make sure they were transcribed verbatim. Any errors were corrected before analysis began. A second person, Mary Crimmins – a former Senior Study Director at Westat and qualitative researcher, assisted the researcher in conducting inter-rater reliability checks. The researcher served as the primary coder and established the starts and stops for the coded segments. The second coder independently coded all the indicated segments of text using the coding dictionary. Using NVivo 10, inter-rater reliability percentages and Kappa coefficients were calculated at selected nodes for each source transcript. Kappa scores

were between zero and one depending on the level of agreement or disagreement. Low Kappa scores were the result of differences in the unit of measurement, which was the text character length and not in inter-rate agreement, which ranged between 92-100%. Coding stripes filtered by user allowed the researcher to identify discordant codes and confirm level of agreement. Discordant coding was discussed until consensus between the researcher and the second coder was reached. No second round of coding occurred because the initial benchmark of 80% agreement was achieved. The goal was to evaluate the accuracy of the analysis and to determine whether the findings, interpretations, and conclusions were supported by the data.

Stage 4: Interpretations and Conclusions

Presenting the findings from qualitative analysis has often been described as telling a story (Marshall & Rossman, 2006). According to Marshall and Rossman (2006, p. 1616-162) "interpretation brings meaning and coherence to the themes, patterns, categories, developing linkages and a story line that makes sense and is engaging to read." Interpreting findings from the qualitative analysis required attaching meaning and significance to the comments made by the youth and parents regarding the social and environmental context for healthy weight. Findings from this study were developed into two manuscripts for publication in peer-reviewed journals.

A.6   Strengths and Limitations

There are several strengths to this study. First, using qualitative data provided a rich and diverse stock of information that garnered detailed knowledge about how youth and parents perceive their social and physical environments and how these influence their

perceptions of healthy weight. Second, the data analysis followed a rigorous methodological approach with attention to issues of validity and reliability. Third, this study provided youth and parents with the opportunity to express their thoughts and opinions about healthy weight and to discuss some of the social and environmental challenges they experience on a daily basis. Fourth, the study helped to answer the explanatory "why" questions related to healthy weight for minority youth. Specifically examining social and environmental factors related to healthy weight is novel given that most literature focuses on individual factors. Fifth, obesity prevention is an area where new approaches using the social ecological model are needed. Finally, as part of the original research team, this researcher was a primary data collector and also has access to the original data sources (recordings, transcripts, and notes), but more importantly, had an intimate understanding of the context in which data was collected.

Although there are strengths, there are also limitations. First, qualitative data collection and analysis is often under scrutiny because of a lack of consensus on standards of excellence in qualitative research (Devers, 1999). The subjective and reflective nature of this type of analysis may be viewed as a negative by some researchers in the field, while others see it as a positive aspect of qualitative research. Second, analyzing data from a larger study offers many possibilities but also limits the scope of the research questions to the data collected and does not allow for an original line of questioning. Third, there was a large range in the ages of youth who participated in the focus groups. Although many of the groups contained youth who were within 1-2 years of each other, three of the groups contained youth with age difference of 4 or more years (e.g., ages of 11-17 or 13-17). In these instances, the wide range of ages may have

affected group dynamics. Younger participants may have been passive and self-censoring due to the dominant influence of older youth. Fourth, data saturation may not have occurred in this sample. Data saturation is often contingent upon concurrent data analysis and data collection. Since data collection and analysis did not occur concurrently in this study, it is difficult to determine if new categories or themes would have emerged with additional focus groups (Tuckett, 2004). Finally, because of the number of participants, issues of generalizability are present. Again, a convenience sample recruited through partner organizations using word of mouth and fliers was used. Thus, participants in the study constitute a very select subset of youth who may already be knowledgeable about healthy eating and physical activity or who may be more willing to discuss these topics. However, these limitations in many ways also reveal the strengths of this study—data reflecting the voices, ideas, and understandings of African American, Hispanic and Latino, and American Indian youth.

A.7 Human Subjects Procedures

This study was a secondary analysis of qualitative data that was collected as part of a larger study. No original data was collected. IRB approval was already obtained from Westat (Appendix G), and IRB approval was obtained from the University of Maryland Institutional Review Board (Appendix H). The researcher ensured that participant information and responses were protected and that privacy and confidentiality were maintained. Confidentiality was maintained by keeping all the electronic data on a secure system and password protected. Computer data files were kept on a secure computer only accessible by the research team. Individual names were not used when reporting results.

The research questions for this study were generated during the analysis of the data collected from the larger study and were directly related to the intention of the primary research. Thus, the consent gained from the larger study was sufficient to carry out the secondary analysis according to Long-Sutehall, Sque, & Addington-Hall (2010). Furthermore, participants in the study gave consent for their data to be used for future research and for the recordings to be used for secondary analysis.

Appendix B: Sample Recruitment Flyer

Volunteers Needed for Focus Groups

"Voices from the Community: Using Focus Groups to Identify Factors Affecting Healthy Weight"

What is the study about? Take part in a two (2) hour focus group discussion about ways to help children maintain a healthy weight.

Who is eligible?
- Male or female who self-identifies as African American
- Is a youth between the ages of 13-17
- Only one person per household is eligible
  Participants must meet all of the criteria listed to participate.

When: (TBA)

Where: (TBA)

Compensation: $50 gift card

Contact for more information: To see if you qualify, contact [insert name] at [insert phone number] or [insert email].

Refreshments will be provided!

This research is conducted under the direction of Westat and the Robert Wood Johnson Research Foundation.

Appendix C – Parent Consent and Youth Assent Form

Parent Permission and Youth Agreement Form to Participate in a Focus Group to Identify Factors Affecting Health
Robert Wood Johnson Foundation and Westat

Purpose of this Study

You are invited to be part of a group discussion, called a focus group. This focus group will deal with issues that you face in the community about health. We want to learn about ways to help children and youth stay healthy.

The focus group will include other children and youth from your community. During the focus group, you will be asked questions about a few topics. Questions may be about diet, physical activity, Internet use, and problems in being healthy. It is important for you to know that your participation is voluntary. You may decide to not take part in the group. You may also decide to leave the group at any time.

Procedures

The focus group will last about 2 hours. We will begin by asking you a few questions about health. During the group discussion:
1. Only first names will be used to protect people's privacy.
2. The session will be voice recorded to capture all the thoughts and ideas raised.
3. We will cover topics such as food, physical activity, and Internet use. We will also talk about what is needed to help children and youth keep a healthy weight.
4. There is no right or wrong answer. All your comments and thoughts are important to us. You don't have to answer any questions you don't like or that make you feel uncomfortable.
5. We will ask you to complete a brief questionnaire that will include basic information.

Risks and/or Discomforts

There is a small risk that you may feel uneasy talking about sensitive issues. If you feel uneasy with a question, you do not have to answer. If you have any problems during the focus group, project staff will be here to help you.

Benefits

You will not receive any direct benefit from being in the focus group. But, your input will provide us with first-hand views about healthy weight. A final report will present the key themes from across all focus groups. This will help with the Robert Wood Johnson Foundation's planning process for 2015.

Cost and Compensation

There are no costs to you for being in the focus groups. You will receive a $50 gift card as payment for your time.

Privacy and Confidentiality

To protect your privacy, the moderator will only use your first name during the focus group. We will be taping the session – only audio; NO video. These tapes will be heard by the project staff at the Foundation. But, only after we remove the first few minutes of introduction to ensure that there are no last names said. Nothing will be reported in a way that would let anyone be identified. Information collected may be used in secondary analysis. This signed consent form and any forms and audio records from the focus group will be kept in a secure place. That place will be restricted to project staff only (e.g., locked files). Statements made by other group

members should not be shared outside of this group. Every effort will be made to protect your privacy.

Voluntary Nature of Participation

Your participation in this focus group is voluntary. If you decide to participate, you can change your mind at any time. You may also refuse to answer any questions during the group session.

Contact Information and Questions

If you have questions now, feel free to ask us. For questions about the project, please contact Dr. Debra J. Rog at 301-251-1500. For questions about your rights as a research subject, please contact the IRB at 1-888-920-7631.

Youth Consent Signature Section

If you agree to participate in this study, please sign below. You will be given a signed copy of this form to keep.

SIGN THIS FORM **ONLY** IF THE STATEMENTS LISTED BELOW ARE TRUE
- You have voluntarily decided to take part in this study.
- You have read the above information.
- Your questions have been answered to your liking.
- You believe you understand all of the information given about this study.
- You understand the actions that will be taken to ensure your privacy.
- You understand that information will not be shared with your parents or others.

Printed Name of Participant	Signature of Participant	Date	Time

Parent Permission Signature Section

If you agree to have your youth participate in this study, please sign below.

SIGN THIS FORM **ONLY** IF THE STATEMENTS LISTED BELOW ARE TRUE
- Your youth has voluntarily decided to take part in this study.
- You have read the above information.
- Your questions have been answered to your liking.
- You believe you understand all of the information given about this study.
- You understand the actions that will be taken to ensure your youth's privacy.
- Information from the study will not be share with parents or others.

Youth's Name

Printed Name of Participant's Parent/Legal Guardian	Signature of Participant's Parent/Legal Guardian	Date	Time

Appendix D – Parent Consent Form

Purpose of this Study

You are invited to be part of a group discussion, called a focus group. This focus group will deal with issues that you face in the community about health. We want to learn about ways to help children and youth be healthy.

The focus group will include other adults with children from your community. During the focus group, you will be asked questions about a few topics. Questions may be about diet, physical activity, Internet use, and problems in being healthy. It is important for you to know that your participation is voluntary. You may decide to not take part in the group. You may also decide to leave the group at any time.

Procedures

The focus group will last about 2 hours. We will begin by asking you a few questions about health. During the group discussion:

1. Only first names will be used to protect people's privacy.
2. The session will be voice recorded to capture all the thoughts and ideas raised.
3. We will cover topics such as food, physical activity, and Internet use. We will also talk what is needed to help children and youth keep a healthy weight.
4. There is no right or wrong answer. All your comments and thoughts are important to us. You don't have to answer any questions you don't like or that make you feel uncomfortable.
5. We will ask you to complete a brief questionnaire that will include basic information.

Risks and/or Discomforts

There is a small risk that you may feel uneasy talking about sensitive issues. If you feel uneasy with a question, you do not have to answer. If you have any problems during the focus group, project staff will be here to help you.

Benefits

You will not receive any direct benefit from being in the focus group. But, your input will provide us with first-hand views about healthy weight. A final report will present the key themes from across all focus groups. This will help with the Robert Wood Johnson Foundation's planning process for 2015.

Cost and Compensation

There are no costs to you for being in the focus groups. You will receive a $50 gift card as payment for your time.

Privacy and Confidentiality

To protect your privacy, the moderator will only use your first name during the focus group. We will be taping the session – only audio; NO video. These tapes will be heard by the project staff at the Foundation. But, only after we remove the first few minutes of introduction to ensure that there are no last names said. Nothing will be reported in a way

that would let anyone be identified. Information collected may be used in secondary analysis. This signed consent form and any forms and audio records from the focus group will be kept in a secure place. That place will be restricted to project staff only (e.g., locked files). Statements made by other group members should not be shared outside of this group. Every effort will be made to protect your privacy.

Voluntary Nature of Participation

Your participation in this focus group is voluntary. If you decide to participate, you can change your mind at any time. You may also refuse to answer any questions during the group session.

Contact Information and Questions

If you have questions now, feel free to ask us. For questions about the project, please contact Dr. Debra J. Rog at 301-251-1500. For questions about your rights as a research subject, please contact the IRB at 1-888-920-7631.

Consent Signature Section

If you agree to participate in this study, please sign below. You will be given a signed copy of this form to keep.

SIGN THIS FORM **ONLY** IF THE STATEMENTS LISTED BELOW ARE

TRUE

- You have voluntarily decided to take part in this study.
- You have read the above information.
- Your questions have been answered to your liking.
- You believe you understand all of the information given about this study.
- You understand the actions that will be taken to ensure your privacy.

Printed Name of Participant	Signature of Participant	Date	Time

Appendix E – Youth Focus Group Moderator Guide

Voices from the Community Focus Group with Youth

Introduction (10 minutes): Thank you very much for being here this evening. We are so pleased you were able to come. My name is [_], and I will be serving as moderator for this group, which means I will be asking questions and guiding the discussion. My colleague's name is [_]; he/she will be taking notes. As you know, this discussion is being held to help the Robert Wood Johnson Foundation better understand health related behaviors of adults and children around the country. The Robert Wood Johnson Foundation is the fourth largest private foundation in the country and funds projects related to health. The input from this group and 14 other being held across the country will help the Foundation.

As the consent form says, this session might last about two hours. We have some refreshments for you – please feel free to have them during the discussion.

[Read the Consent Form out loud]. To protect your privacy, my colleague and I will only use your first name during the discussion.

Before I begin, I want to be sure everyone is fine with the discussion being taped? [NOD OF HEADS AND BEGIN TAPING] Now, do you have any questions about the purpose of this focus group before we begin? Any objections?

How many of you have ever participated in a group discussion of this type—sometimes known as a focus group? There are a few ground rules we need to follow so we can keep the discussion flowing and everyone has a chance to express his or her views and opinions.

1. Please fill out your name card with only your first name, so we know what name to call you. Please don't include your last name.
2. Once I ask a question, please try to speak one at a time. We want to make sure that everyone's opinions are heard and your voices are clear in the audiotapes. I will give everyone a chance to speak and move the discussion along.
3. We would like you to please turn off your cell phones or put them on silent.
4. We ask that you not discuss any personal information that others have shared after the group. What gets said in this room stays in this room.
5. Any more questions? If not, let's get started!

Introductions (5 Minutes)

First, I'd like you to go around the room, give your first name, your age, and tell us something about yourself. For example, what do you like to do for fun?

Background (20 minutes)

We would first like to find out about what you think about when you think of health.

- What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use? *[Probe: what kinds of things does a person do that make him or herself healthy or unhealthy?]*?

- Tell us what helps you to be healthy? [*Probe on the role of knowledge what is and isn't healthy; need for exercise; neighborhood factors: whether there are sidewalks, playgrounds, community based activities, programs, rules/or policies*; *access to healthy food options in schools, at work, camps, in the community; support from friends, teachers, and family]*

- How can friends, family, and/or teachers help you be healthier?

- What stops you from being healthy? *[Probe on attitudes and beliefs about healthy behaviors; lack of knowledge; lack of access to healthy food options; the role of neighborhood: busy traffic, violence; competing priorities i.e. other things to do; influence of friends and families]*

- Now let's talk about health and your experiences in your community. How do you define your community? When you think of your community, what comes to your mind? Who or what is included in your community? [*Probe local neighborhood, racial/ethnic group, city/town/reservation, etc*.]

- What are some things about your community that help you be healthy? Are there things about your community that make it hard for you to be healthy? *[Probe on the value that the community places on health; Probe on cultural beliefs, social norms and practices; Probe on availability of sidewalks and playgrounds]*

Healthy Food (20 minutes)

One way youth can be healthy is through the food they eat. I would now like to ask you some questions about food and food related activities.

- What do you consider to be healthy foods? What would lead you to buy them more often?

- What do you consider to be unhealthy foods? If you buy unhealthy foods, what causes you to pick them over healthy foods? *[Probe on taste, cost, ease of preparation]*

- How important is it to you that all foods and beverages in schools be healthy? How important is it to you that your school provides healthy foods and beverages?

- What do you think can be done to limit the amount of unhealthy foods that you eat? *[Probe a limiting access and availability to unhealthy foods and beverages, marketing] in school and at home.* What about vending machines?

- Some communities have tried to limit the availability of junk food and sugary drinks by banning large size sodas' or taking vending machines out of schools. How do you feel about that? How would you feel about limiting the availability of junk food in other ways? As in have smaller quantities, or keeping them farther away at grocery stores, or having healthy alternatives next to junk food etc.

- When you eat out at restaurants, fast food places, or cafeterias, what kinds of foods do you find yourself choosing? What do you think about the choices that are available? What are some foods that are available but that you don't choose? Why?

- What can people who make the food or the places that make the food (e.g., food producers/companies, restaurants, and school cafeterias) do to make it easier to eat healthier?

- Are there things you have seen or heard about in your community where kids have taken some action that resulted in healthier food being made available? What about in other communities? What do you believe can be done

    o To make healthy food more available in your community?

    o To make schools provide healthier foods and drinks?

    o To help you eat healthy food when you are at home?

    o To help your children eat healthy food when they are away from home?

Physical Activity (20 minutes)

Now let's talk about the things you do that are physically active. I would like to ask a few questions about physical activity in schools and in the community.

- What does it mean to you to be physically active? How would you describe a physically active child/teen?

- What kinds of things, if anything, prevent you from being physically active as much as you'd like? Do your parents worry about you when you are outside? Why is that?

[Probe on safety, whether there are sidewalks, places to play whether neighborhoods are unsafe]

- What could be done to help you be more physically active in school? At home? *[Probe: on after school programs, organized sports, dance programs] W*hat would you like to see in your school that would help you be more active?

- What do you think can be done to make opportunities for physical activity more available in your community? [*Probe: Have you or your parent's thought of requesting from city government a safe, free playground in your community?]*

- Do you think kids from different neighborhoods have different access to opportunities for physical activity? Whether they are from low-, middle-, or high-income communities?

- What do you think you and your friends can do to increase opportunities for physical activity in your community?

Marketing for Healthy Behaviors (20 minutes)

Let's talk a bit about the different ways you use to get and share information with family and friends. We'd also like to know more about how some people, such as doctors or family members, and things such as the TV, or neighborhood parks, influence your decisions and behavior related to health.

- In what ways does television, movies, the Internet, or radio help you be healthy? In what ways does it keep you from being healthy? *[Probe on marketing of unhealthy foods and being sedentary]*

- A recent study about children's breakfast cereals found that cereals with high sugar content were advertised more on kids' TV shows. Do you believe that? How does that make you feel?

- What influence do you think things like texting, Facebook and the other technology have on your ideas about healthy food? Physical activity? *[Probe on marketing of unhealthy foods and being sedentary]*

- What are some ways that technology such as Internet websites and Facebook can be used to encourage you to eat healthier food or be physically active? How might that work? *[Probe equally on healthy food and physical activity]*

Community Advocacy (20 minutes)

Many times in our communities we see the opportunity to change things and take action to do so. We would like to know about what motivates you to make changes in your community.

- Are there times or situations that you can think of where you or someone you know took some action that resulted in changes in your community? Tell me more about that.
- What do you think would motivate people to make changes in their community to get healthier foods and places for physical activity?
- What would motivate you to take action to make healthy foods more available in your community? [*Probe: Have you thought of asking at the super market for healthier foods? Have you thought of asking for/demanding anything else?]*
- What would motivate you to take action to create safe, affordable places and opportunities for youth to be more active*?*

<u>Closing</u> (5 Minutes)

We've covered a lot of ground today/this evening. We want to thank you so much for your valuable ideas and discussion. Are there any additional comments/questions you have for us? Please don't forget to get your gift card [<u>name of note taker</u>].

Appendix F – Parent Focus Group Moderator Guide

Voices from the Community Focus Group with Parents

Introduction (**10 minutes**)**:** Thank you very much for being here this evening. We are so pleased you were able to come. My name is [_], and I will be serving as moderator for this group, which means I will be asking questions and guiding the discussion. My colleague's name is [_]; he/she will be taking notes. As you know, this discussion is being held to help The Robert Wood Johnson Foundation better understand health related behaviors of adults and children around the country. The Robert Wood Johnson Foundation is the fourth largest private foundation in the country, and it funds projects related to health. The input from this group and 14 other groups being held across the country will help the Foundation.

As the consent form says, this session will last about two hours. We have some refreshments for you – please feel free to have them during the discussion.

[Read the Consent Form out loud]. To protect your privacy, my colleague and I will only use your first name during the discussion.

Before I begin, I want to be sure everyone is fine with the discussion being taped? [NOD OF HEADS AND BEGIN TAPING] Now, do you have any questions about the purpose of this focus group before we begin?

How many of you have ever participated in a group discussion of this type—sometimes known as a focus group--? There are a few ground rules we need to follow so we can keep the discussion flowing and everyone has a chance to express his or her views and opinions.

- Please fill out your name card with only your first name, so we know what name to call you. Please don't include your last name.

- Once I ask a question, please try to speak one at a time. We want to make sure that everyone's opinions are heard and your voices are clear in the audiotapes. I will give everyone a chance to speak and will try to move the discussion along.

- We would like you to please turn off your cell phones or put them on silent.

- We ask that you not discuss any personal information that others have shared after the group. What gets said in this room stays in this room.

- Any more questions? If not, let's get started!

Introductions (5 Minutes)

First, I'd like you to go around the room, give your first name, your child or children's age, and tell us something about yourself. For example, what do you like to do for fun?

Background (20 minutes)

We would first like to find out about what you think about when you think of health.

- What does it mean to be healthy? If you had to describe someone as healthy, how would you do it? What words might you use? *[Probe: what kinds of things does a person do that make him or herself healthy or unhealthy?]*

- Tell us what helps you to be healthy? [*Probe on the role of knowledge about what is and isn't healthy; neighborhood factors: whether there are sidewalks, playgrounds, community based activities, programs, rules/or policies*; *access to healthy food options in schools, at work, in the community; support from friends and family]*

- What stops you from being healthy? *[Probe on attitudes and beliefs about healthy behaviors; lack of knowledge; lack of access to healthy food options; the role of neighborhood: busy traffic, violence; competing priorities i.e. other things to do; influence of friends and families]*

- Now let's talk about health and your experiences in your community. How do you define your community? When you think of your community, what comes to your mind? Who or what is included in your community? [*Probe local neighborhood, racial/ethnic group, city/town/reservation, etc.*]

- What are some things about your community that help you be healthy? Are there things about your community that make it hard for you to be healthy? *[Probe on the value that the community places on health; Probe on cultural beliefs, social norms and practices]*

Healthy Food (20 minutes)

One way adults and children can keep a healthy weight is through the food they eat. I would now like to ask you some questions about food and food related activities.

- What do you consider to be healthy foods? What would lead you to buy them more often?

- What do you consider to be unhealthy foods? If you purchase unhealthy foods, what makes you to pick them over healthy foods? *[Probe on taste, cost, ease of preparation]*

- What do you think can be done to limit the amount of unhealthy foods that your children eat? *[Probe a limiting access and availability to unhealthy foods and beverages]*

- I am interested in your views as to what can be done to make it easier to eat healthy.

    - What do you think can be done by the organizations that package and

      manufacture foods?

    - What about restaurants? Grocery stores?

- Some communities have tried to limit the availability of junk food and sugary drinks by banning large size sodas' or taking vending machines out of schools. How do you feel about that? How would you feel about limiting the availability of junk food in other ways? As in have smaller quantities, or keeping them farther away at grocery stores, or having healthy alternatives next to junk food etc.

- Whose responsibility is it to help us eat healthier? What should they do to help us eat healthier? How could we get them to do this?

- When you eat out at restaurants, fast food places, or cafeterias, what kinds of foods do you find yourself choosing? What do you think about the choices that are available? What are some foods that are available but that you don't choose? Why?

- Are there instances you have seen or heard in your community where parents or other community members have taken some action that resulted in more healthy food options? What do you believe can be done

    - To make healthy food more available in your community?

    - To make schools provide healthier foods and drinks?

    - To help you eat healthy food when you are at home?

To help your children eat healthy food when they are away from home?

Physical Activity (20 minutes)

Now, I would like to ask a few questions about physical activity in schools and in the community.

- What does it mean to you to be physically active? How would you describe a physically active adult? How about a physically active child?

- What kinds of things, if anything, prevent your children from playing outside or being physically active as much as you'd like them to? Do you worry about your children

when they play outside? Why is that? *[Probe on safety, whether there are sidewalks, places to play whether neighborhoods are unsafe; playing video games]*

- Do you think children from different neighborhoods have different access to opportunities for physical activity? Whether they are from low-, middle-, or high-income communities?

- What could be done to help your children be more physically active in schools and at home?

- What do you think can be done to make opportunities for physical activity for both adults and children more available in your community? *[Probe on the role of city government or local officials i.e. requesting for them to establish a safe, free playground in the community]*

Marketing for Healthy Weight **(20 minutes)**

We'd also like to know more about how some things such as the TV, or neighborhood parks, influence your decisions and behavior related to health.

- In what ways does television, movies, the Internet, or radio help you be healthy? In what ways does it keep you from being healthy? *[Probe on marketing of unhealthy foods and being sedentary]*

- How could technology such as Internet websites and Facebook be used to encourage you to buy and prepare healthier meals for your family? How might that work? How could it be used to make certain that your child eats healthier snacks and foods?

- How could Internet websites and Facebook be used to encourage you and your children to be more physically active? How might that work?

Community Advocacy **(20 minutes)**

Many times in our communities we see things that we want to change and take action to do so. We would like to know about what motivates you or others to make changes in your community, especially getting healthier foods and opportunities for physical activity.

- Are there times or situations that you can think of where you or someone you know took some action that resulted in changes in the community? Tell me more about that.

- What do you think would motivate people to make changes in their community to get healthier foods and places for physical activity?

- What would motivate you to take action to make healthy foods more available in your community? [*Probe: Have you thought of asking at the super market for healthier foods? Have you thought of asking for/demanding anything else?]*

- What would motivate you to take action to create safe, affordable places and opportunities for your children to be more active*?*

Closing (5 Minutes): We've covered a lot of ground today/this evening. We want to thank you so much for your valuable ideas and discussion. Are there any additional comments/questions you have for us? Please don't forget to get your gift card [name of note taker].

Appendix G – Westat IRB Documentation

Westat | An Employee-Owned Research Corporation

Memo

Date: May 10, 2013

To: Debra Rog, Project Director

From: Kerry Levin, Chair Westat IRB   *Kerry Levin*

Subject: Expedited Approval of Voices from the Community: Phase I, Project 8445.64
FINAL
FWA 00005551

As Chair of the Westat Institutional Review Board (IRB), I reviewed the materials submitted for the following: **Voices from the Community: Phase I, Project 8445.64.** The Westat IRB reviews all studies involving research on human subjects. This study is funded by the Robert Wood Johnson Foundation (RWJF).

The overall purpose of this study is to utilize focus groups to explore cultural and community perspectives and issues related to healthy weight in children. The study will be conducted in two phases, with a total of fifteen focus groups. Phase I will include two focus groups with parents and primary caregivers from low-income and racial/ethnic minority populations. The remaining thirteen focus groups, which include adults and children, will be carried out during Phase II of the study. The researchers will submit amended documents pertaining to Phase II of the study once the terms have been finalized by RWJF.

Westat will be responsible for the following activities:

- Conduct 15 focus groups to discuss views and experiences concerning healthy weight in children.
- Deliver unfiltered recordings from the focus group discussions to RWJF.
- Provide training for the moderators and note takers.

Per 45 CFR 46, IRB regulations permit expedited review of certain activities involving minimal risk [45 CFR pt. 46.110 (b) 1]. This study can be considered minimal risk and is approved under expedited authority.

As the Project Director you are responsible for the following:

- If you received a conditional approval, project activities (e.g., recruiting, enrolling) may not begin until your responses have been received by the IRB and final approval is granted.
- You are required to submit this study for a continuing review on or before May 8, 2014.

- In the interim, notify the IRB Office as soon as possible if there are any injuries to subjects as well as problems or changes with the study that relate to human subjects.

cc: Institutional Review Board
Mark Freedman
Crystal MacAllum

Westat

An Employee Owned
Research Corporation

AMENDMENT REVIEW FORM

(TO ADD OR CHANGE PREVIOUSLY APPROVED RESEARCH)

All changes or new activities for previously approved studies require submission, review, and approval of an Amendment Review Form. Please complete and submit this form to irb@westat.com and attach all necessary materials to be reviewed. Once the request has been reviewed, you will be contacted. If this change or new activity requires a full Board review, those meetings occur on the second Tuesday of every month. To check the date of meetings, please see the meeting schedule under IRB in WesInfo. Thank you for your cooperation.

1.	Today's Date:	09 / 24 / 2013	
	Date of Original Approval:	05 / 10 / 2013	
	Project Name:	Voices from the Community	
	Westat Project Number:	8445.64.00	
	Agency Grant or Contract Number:	70884	
	Project Director:	Debra Rog	Ext. 4594
	Unit Ops Number/Study Area:	1.21.41/Human Services/Social Services	
	Area IRB Representative:	Mark Freedman	Ext. 2857

2. Indicate the type of addition or change being requested to a previously approved study.
   (SELECT ALL THAT APPLY.)

   ☐ Name(s) of investigators

   ☐ Project number

   ☐ Introduction of a new IRB or request for Westat to serve as the IRB

   ☐ Study design, survey questionnaire, or procedure(s)

   ☒ Informed consent process, consent form(s), parent permission(s), or assent form(s)

   ☒ Recruitment materials or strategies

   ☐ Incentives

   ☐ Survey instruments

   ☐ Number or type of populations studied

   ☒ Review of final instrument such as interview questions or data collection sites for a previously approved study

   ☐ Mode of administration of instruments in your study (e.g., from mail or telephone to web or Internet access)

   ☐ Data access rights

   ☐ Any other change in protocol that affects treatment of human subjects:
   (PLEASE SPECIFY)

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Appendix H – University of Maryland IRB Exemption Letter

UNIVERSITY OF
MARYLAND

INSTITUTIONAL REVIEW BOARD

1204 Marie Mount Hall
College Park, MD 20742-5125
TEL 301.405.4212
FAX 301.314.1475
irb@umd.edu
www.umresearch.umd.edu/IRB

DATE: February 20, 2014

TO: Chandria Jones, MPH
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [489413-1] Listening for Change: Examining the Social and Environmental Context for Healthy Weight Among Minority Youth and Parents

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: February 20, 2014

REVIEW CATEGORY: Exemption category #4

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

- 1 -   Generated on IRBNet

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Appendix I – Youth Focus Group Survey

Date: _____

Location: _____

1. What is your age in years? _____

2. Gender: ☐ Male   ☐ Female

3. What is your racial or ethnic background?

Black or African American (non-Hispanic)	❑
White or Caucasian (Non-Hispanic)	❑
American Indian/Alaska Native	❑
More than one race/Other	❑

2. Are you Hispanic or Latino?   ☐ Yes   ☐ No

3. Were you born in the U.S.?   ☐ Yes   ☐ No

4. Is English your first language?

Yes	❑
No	❑

5. What grade are you currently in?

Third grade or lower	❑
Fourth (4th) grade	❑
Fifth (5th) grade	❑
Sixth (6th)grade	❑
Seventh (7th) grade	❑
Eighth (8th) grade	❑
Ninth (9th) grade, Freshman	❑
Tenth (10th) grade, Sophomore	❑
Eleventh (11th) grade, Junior	❑
Twelfth grade (12th), Senior	❑

6. What is the highest educational level of your mother?

No formal schooling	❑
Eight grade or less	❑
Some high school (9-11 years)	❑
High school graduate or GED	❑
Some college	❑
College graduate or beyond	❑
Don't know	❑

7. What is the highest educational level of your father?

No formal schooling	❑
Eight grade or less	❑
Some high school (9-11 years)	❑
High school graduate or GED	❑
Some college	❑
College graduate or beyond	❑
Don't know	❑

Appendix J – Parent Demographic Survey

Date: _____
Location: _____

1. What is your age in years? _____

2. Gender: ☐ Male ☐ Female

3. What is your racial or ethnic background?

Black or African American (non-Hispanic)	❑
White or Caucasian (Non-Hispanic)	❑
American Indian/Alaska Native	❑
More than one race/Other	❑

8. Are you Hispanic or Latino?

Yes	❑
No	❑

9. What is the highest grade or level of schooling you have completed?

No formal schooling	❑
Eight grade or less	❑
Some high school (9-11 years)	❑
High school graduate or GED	❑
Some college	❑
College graduate or beyond	❑

10. What is your occupation? _____

11. What is your family household income (from all sources):
   ❑ Less than $10,000
   ❑ $10,001 – $19,999
   ❑ $20,000 - $29,999
   ❑ $30,000 - $39,999
   ❑ $40,000 - $49,999
   ❑ $50,000 and greater
   ❑ Declined response

Appendix K – Healthy Weight Codebook

Healthy Weight Coding Dictionary

Health

The Health category takes into considerations concepts related to the protocol questions regarding the concept of health.

Cncpt_HlthyFood	Refers to ideas or concepts of healthy food, including what types of food are healthy
Cncpt_UnhlthyFood	Refers to ideas or concepts about what is unhealthy food
Cncpt_PA	Refers to ideas or concepts about what physical activity is (e.g., exercise, moving around, being active, sports.)
Cncpt_UnPA	Refers to ideas or concepts about what physical activity is not (e.g., being sedentary)
Cncpt_Eating	Refers to eating patterns or habits, whether positive or negative
Cncpt_MentalHlth	Refers to thoughts, perceptions, ideas about mental health (mind-body relationship), stress
Cncpt_Appearance	Refers to ideas about body shape or image
Cncpt_PhysFit	Refers to being fit or knowledge about fitness
Cncp_DiseasePrev	Refers to concepts about being disease free or disease prevention, visiting doctor

Healthy food choices and opportunities for physical activity are influenced on the following levels based on the social ecological model:

Individual Level

Individual level takes into consideration age, race/ethnicity and socioeconomic status.

InL_Race/ethnicity	reference to ethnic background or racial/ethnic dynamics
InL_Gender	specific reference to gender influences
InL_Maritalstatus	mention of influence of marriage, divorce, split household, separation, single
InL _PARNTmarital	mention of influence of parents divorce, split household, separation, single
InL_SES	Refers to class status, ie poor, working class, middle class, upper class/wealthy and/or associated occupation
InL_Religion	Reference to religious affiliation (e.g., Catholic, Baptist, Non-denomination), spirituality, God; or lack of religious affiliation i.e., atheism/agnostic
InL_Motivation	References to self-motivation positive or negative (being lazy or lacking motivation)
InL_Temptation	References to cravings, temptations, enticements, or appeals by objects (not people)
InL_Emotions	References to boredom or depression
InL_Knowledge	Refers to knowledge or education about health, eating right, physical activity
InL_Time	Refers to issues related to time, time management, conflicting priorities

Relationship Level

Relationship level examines interactions with friends and family members.

ReL_Family	Specific reference to one's family includes how family practices affect health (e.g., cooking, bringing food, family member illness)
ReL_ParentsALL	Specific reference to parents or caregivers; specific reference to mother, stepmother; specific reference to father, stepfather; includes references about parental knowledge
ReL_Spouse	specific reference to current or future husbands, wives, spouses, or partners
ReL_Siblings	specific reference to brother(s) and/or sister(s)
ReL_Children	Specific reference to children
ReL_Relatives	specific reference to aunts, uncles, grandparents or other relatives outside immediate family
ReL_Friends	specific reference to peers or friendship networks
ReL_School Staff	specific reference to teachers, other members of school staff, incl. coaches, administrators

Community Level

Community level explores the relationship between economic resources, geography, built environment, available grocery/food stores, community resources, transportation, worksite, and schools

CL_Home	Related to home environment (e.g., "in my house…")
CL_School	during school years, school context in general
CL_Neighborhood	Reference to a specific neighborhood, specific part of the city/state, includes the environment or state/condition of the neighborhood and reference to violence, drugs, and issues in the neighborhood such as kidnapping or lack of lights
CL_Geographic locale	region of U.S. i.e., Northeast, South; location such as a specific state, tribal area
CL_Monetary	Refer to issues of collective resources, economy, money; anything having to do with money, price, monetary benefits
CL_Stores	References about grocery stores, corner store
CL_Transportation	References about transportation, distance, problems with traffic
CL_Rest&FastFood	References about restaurants, fast food
CL_Parks	References about parks or community spaces
CL_People	References to people in the community
CL_Work	References to jobs or places people work
CL_Resource&Access	References to access, community based programs, community gardens, or health care

Societal Level

Societal level considers the effect of media and messaging, social and cultural norms, and policies.

SL_DSMInfluence	Refers to influence of digital and social media on health, healthy food, and physical activity; including negative influence such as unhealthy behaviors, unhealthy eating
SL_DSMUse	Refers to the use of digital and social media for improving health, healthy food consumption, or physical activity
SL_DSMRoleModels	Reference to having media based role models or someone you want to imitate (i.e. celebrities, friends, family, etc)
SL_Socialnorms	reference to what is considered appropriate or acceptable in certain contexts, behavioral expectations
SL_Media	includes all kinds of mass communication – Internet, TV, movies, music, cell phone, text messaging (not including social media like Facebook, Twitter)
SL_Culture	References to culture or cultural norms, traditions
SL_Marketing	Reference to commercials and advertising
SL_Govt	Refers to the role of government in people's lives, and references to healthy public policy
SL_Value	Refers to the value that the community places on health

Advocating

The category of Advocating relates to the protocol questions about advocating for changes in your community.

Ad_Food	Refers to activities that would help individuals advocated for healthier food options in their communities
Ad_PAOps	Refers to activities that would help individuals advocated for opportunities for physical activity in their communities
Ad_Importance	Refers to comments about the importance of an issue to individuals; Examples: how it helps you personally, whether you care, how special it is to you
Ad_Mentoring	Refers to comments about mentoring and helping others as a reason to advocate for change
Ad_Resources	Refers to comments about the resources needed to advocate for change
Ad_Power	Refers to comments about how much power individuals or communities feel they have to actually make a change. Example: make noise, complain
Ad_Motivations	Refers to motivations to advocate for change
Ad_Activities	Refers to the activities that are available or could be put in place to make a change. Examples: Classes, programs, competitions

Appendix L – Member Check Participants

Name	Organization	Position	Location
Shiriki Kumanyika	African American Collaborative Obesity Research Network (AACORN)	Founder	Philadelphia, PA
Vikki Lassiter	African American Collaborative Obesity Research Network (AACORN)	Executive Director	Philadelphia, PA
Erika McClammy	Bon Secours Community Works	Senior Director of Programs	Baltimore, MD
Ameka Smith	Bon Secours Community Works	Child Development Specialist	Baltimore, MD
Tonya Bierce	Chickasaw Nation Division of Youth Services	Activities Manager	Ada, OK
Myriam E. Torres	Consortium for Latino Immigration Studies, Arnold School of Public Health, University of South Carolina	Director	Columbia, SC
Melicia C. Whitt-Glover	Gramercy Research Group	President & CEO	Winston-Salem, NC
Henry Montes	Identity, Inc.	Board Member	Gaithersburg, MD
Carolyn Camacho	Identity, Inc.	Parent Coordinator and Middle School Program Manager	Gaithersburg, MD
Debra Allen	New Hope World Outreach	CEO	Ft. Lauderdale, FL
Stephanie Jones	New Hope World Outreach	Executive Administrator	Ft. Lauderdale, FL
Olivia Roanhorse	The Notah Begay III (NB3) Foundation	Director Native Strong: Healthy Kids, Healthy Futures	Santa Ana Pueblo, NM
Phylis Peters	Proyecto Juan Diego	Executive Director	Brownsville, TX
Lupita Sanchez Martinez	Proyecto Juan Diego	Coordinator of Community Action	Brownsville, TX
Tendra Washington	Smith-Keys Computer Learning Center	Director	Texarkana, AR
Valory Wangler, MD	Zuni Youth Enrichment Project (ZYEP)	Director of Development	Zuni Pueblo, NM

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