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Parents Perception of Safety in Pennsylvania and Children's Activity and Weight

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Walden University
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Abstract

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M.Ed, Strayer University, 2010
BS, Temple University, 2006

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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Abstract

Physical activity is associated with many health benefits to include weight management, lower risk for chronic diseases, and improved mental health and self esteem. The built environment has been linked to lower physical activity levels and overweight and obesity in children living in low income communities but the exact causes need further investigation. The purpose of this quantitative, cross sectional study was to examine the association between parents' perception of safety and body mass index (BMI) percentile and children's physical activity/ inactivity levels and children's BMI as measured by the National Survey of Children's Health (2011/12 NSCH). The sample consisted of low income African American and Hispanic parents and their children between the ages of 6 to 17 (n=109) who live in Pennsylvania. The study used social ecological theory as the theoretical framework. Data analysis included descriptive analysis and Chi square analysis of variables related to safety, physical activity and children's BMI percentile. The results indicated a strong negative correlation of Hispanic parent's perception of safety and their children's BMI percentile, and a moderately negative correlation of African American parents' perception of safety and their children. In addition, a strong negative correlation of Hispanic parent's perception of vandalism and their children's BMI percentile was found. The study contributes to social change by increasing awareness of public health policy makers and officials that parental concerns for safety and vandalism should be considered in the creation of policies geared at reducing unsafe aspects of the community, the design of educational programs for parents and children, and alterations within communities to improve health.

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Dedication

I would like to dedicate my dissertation to my son Jamal Ikai Ranson Jr. for his love and support, which enabled me to focus on my studies, while he take on new found challenges in life. I also dedicate my dissertation to my parents, Jerome F. Carr, and Nyoca E. Carr, for laying down a foundation which has taught me that education, hard work, and perseverance are important key factors to succeeding. I also dedicate my dissertation to my brother Dion F. Carr, for his constantly reminding me of my strength, and encouraging me throughout my dissertation; and my siblings Leon, Janice, Denise, and Neil Carr for enabling me to grow up in a family which prepared me for this moment. Thank you all!

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Chapter 1

Introduction

Physical activity is an essential part of good health as it provides significant health benefits that include controlling weight, combating health conditions and diseases, improving mood, promoting better sleep, and boosting energy (MayoClinic, 2013). Increased physical activity has also been associated with increased life expectancy and decreased risk of cardiovascular disease, breast and colon cancers and diabetes (American Heart Association [AHA], 2013; Lamarre & Pratt, 2013). In addition to the physical health benefits, physical activity can also have psychological and social benefits (AHA, 2013) that include positive relationships with family, friends, and peers, which can be beneficial to a child's mental, social, and environmental health (Lamarre & Pratt, 2013).

Physical inactivity is a major risk factor for developing coronary heart disease, and increases the risk of stroke, obesity, high blood pressure, low HDL (good) cholesterol, diabetes, and depression (AHA, 2013; Miles, 2007). Unfortunately, for many residents living in low income communities, the built environment does not promote or support the engagement in physical activity. Researchers have identified a relationship between the built environment and childhood obesity, showing that people who engage in high levels of physical activity are more likely to weigh less, and are in better health (Lee, Ewing, & Sesso, 2009; Rahman, Cushing, & Jackson, 2011). The built environment of many low income communities are often overwhelmed with elements such as crime, automobile dependent development and infrastructures, which often contributes to limited physical activity, and increased rates of sedentary behaviors for many low income residents (Transportation Research Board, 2005; Wen & Kowaleski-Jones, 2012). This reality has led many low income children living in those communities to not engage in the

proper amounts of physical activity (Moreno, Pigeot, & Ahrens, 2011). This lack of physical activity is strongly associated with increased amounts of sedentary activities such as TV watching and computer use, which is linked to an increase number of children who are overweight, and obese (Bukara- Radujkovic & Zdavkovic, 2009). Of interest to this researcher and needs further study is an understanding of parental perception of safety in these low income communities and its association to the incidence of childhood obesity. Therefore, this study will explore how parental perception of safety in Pennsylvania may impact children's physical activity/ inactivity and body mass index (BMI) percentile. This chapter discusses previously identified links between safety within the built environment and its association to children's physical activity/ inactivity and BMI, problem of limited physical activity within low income communities, the theoretical framework, the nature of the study, definitions of important terms used in this research, as well as assumptions, limitations, and delimitations that may be found within this research.

Background

Researchers identified safety as a significant factor within the built environment linked to childhood obesity and showed that characteristics of the built environment have the ability to influence the engagement of physical activity (Miranda, Edwards, Anthopolis, Dolinsky, & Kemper, 2012; Williams, 2007). Different features within a community such as streetlights, safety and availability of parks and recreational facilities, and a neighborhoods social and physical environment can influence and support physical activity (Williams, 2007; Zhang, Christoffel, Mason, & Lui, 2006). Understanding how community safety may influence engagement in physical activity in low income communities is important to addressing specific

factors linked to the reduction of physical activity. Conducting this research in a population where childhood obesity rates are high is an effective way to gain an in-depth understanding of what factors needs to be addressed to increase physical activity levels of children living in similar communities.

Of interest to this researcher is the state of Pennsylvania and its African American and Hispanic populations. Between 2000 and 2012 the African American populations increased by 19% and the Hispanic population by 82.6% (Pennsylvania Department of Health, 2015). In 2009, Pennsylvania youth obesity rates were highest for Hispanics at 16.6% followed by African Americans at 14.4% as compared to 10.6 for Whites. Also, youth who participate in 60 minutes of physical activity per day was lowest for African American at 35.7%, followed by Hispanics at 39.8% as compared to Whites at 48.7% (Centers for Disease Control and Prevention [CDC], 2009).

This research was used to close the gap in understanding the relationship between community safety and characteristics with physical activity/ inactivity and BMI of children living in Pennsylvania. It is very important to understand how different aspects of the built environment within communities can influence the engagement of physical activity, which may lead to the reduction of sedentary behaviors. A better understanding of how parental perception of neighborhood safety may influence the reduction of sedentary behaviors, leading to increased percentages of engagement in physical activities. Findings from this research study can be used by policy makers to create policies geared at reducing unsafe aspects of many communities, education for parents and children, and alterations within communities leading to social change. Conducting research about the perceptions of parents, who are usually the head of household,

and are responsible for decisions that dictate activities and behaviors adopted within households, can assist in gaining an in depth understanding of why many low income communities have adopted sedentary lifestyles. This research will also help with the identification of aspects within the built environment that parents classify as risk factors for their children's safety, prohibiting their children from engaging in physical activity within their community.

Problem Statement

Childhood obesity rates have drastically increased among all populations, but especially among low income and minority children (Kumanyika, 2008). Especially prevalent among low income children are environments that promote inactivity contributing to overweight and obesity. Many children living in low income areas engage in less physical activity, putting themselves at increased risk for many physical and mental health problems (Oluwole, 2011). The Centers for Disease Control and Prevention (CDC) reported that children who are overweight or obese are at higher risk for cardiovascular disease, such as high cholesterol and high blood pressure (2011c). Overweight and obese youth are more likely to be at risk for pre-diabetes, bone and joint problems, sleep apnea, and social and psychological problems. These children are more likely to grow up to be adults affected by health conditions such as coronary heart disease, Type 2 diabetes, cancers (endometrial, breast, and colon), hypertension, liver and gallbladder disease, sleep apnea and respiratory problems (CDC, 2013d).

Contributing factors to overweight and obesity include a positive energy imbalance, from eating too many calories and not getting enough physical exercise, as well as behaviors and environments that cause people to be overweight (CDC, 2012d). Having a full understanding of the factors in the built environment that contribute to overweight and obesity rates in individual

communities is essential to creating interventions that can improve the overall health of low income and minority children (Carlson, Aytur, Gardner, & Rogers, 2012). This research will assist in closing the gap in understanding how neighborhood and community characteristics may have impacted physical activity and body mass index (BMI) percentiles of children living in low income communities.

Purpose of Study

The purpose of this quantitative study was to examine the association between parents' perception of safety and children's physical activity levels and BMI percentile. The built environment has been identified a as a significant factor linked to the high rates of childhood obesity (Rahman et al., 2011). Variations in different built environments have made it extremely difficult to identify specific factors that are directly linked to childhood obesity rates in different communities. I have conducted a research study to understand how parental perception of safety impact the physical activity levels and BMI percentiles of children in low income communities, which is key to understanding the complex interactions between various entities of the built environment, as well as informing interventions that can be used to increase the physical activity levels of children living in low income communities (Prevention Institute, 2008).

Recognizing how parental perception of physical activity/ inactivity (independent variable) and safety (independent variable) impacted children's BMI percentile (dependent variable) within the built environment of low income communities can assist in the development of policies and programs geared at removing barriers limiting physical activity in children living in these communities, who are more likely to be overweight or obese (CDC, 2012d).

Research Questions

1. What is the association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

   HA1: There is an association between parental perceptions of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

   HO1: There is no association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

2. What is the association between parental perception of safety (community members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children?

   HA1: There is an association between parental perceptions of safety (community members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children?

   HO2: There is no association between parental perception of community safety (community members helping each other out, vandalism (broken windows), and graffiti) BMI percentile of low income Hispanic and African American children?

3: What is the association of parental perception of safety and BMI percentile of low income African Americans children compared with the association of parental perception of safety and BMI percentile for low income Hispanics children?

   HA3: There is an association of parental perception of safety and BMI percentile in low income African Americans children compared with the association of parental perception safety and BMI percentile for low income Hispanic children?

HO3: There is no association of parental perception of safety and BMI percentile for low income African American children compared with the association of parental perception of safety and BMI percentile for low income Hispanic children?

Theoretical Framework

The theoretical framework used for this study was social theory. Social theory is used to examine changes in society, how they develop, and the results obtained from these changes (Lindsay, 2011). Also, it is helpful to construct an explanation of what is happening in society, around (Lindsay, 2011).

The form of social theory used for this study is social environmental theory. Social and environmental theory were used in the attempt to understand individuals, and how they are linked to their social environment (Flamand, 2012). The components of this theory are useful to understanding how the environment may impact social connections, creating interest and action in behaviors (Flamond, 2012).

Nature of the Study

The nature of this research was quantitative. Quantitative research was used to test the objective theory and examine the relationship among variables, as well as enable the gathering of a large quantity of data in a short period of time (Creswell, 2008). This study used quantitative cross sectional data from a telephone research survey to assess similarities and differences between African American and Hispanic populations, and to compare parental perception on safety and its impact on children's physical activity/ inactivity and BMI percentile. The secondary data used is from the National Survey of Children's Health (2012) with information on neighborhood and community characteristics, and children's physical activity and inactivity

levels (National Survey of Children's Health, 2012). Using survey research design strengthens statistics precision to measure characteristics of the population (Sukamolson, 2012).

A descriptive approach was used to answer the research questions, to determine if parental perception of physical activity/ inactivity (independent variable) and safety (independent variable) are associated with children's BMI percentile (dependent variable) within low income populations.

This study included low income African American and Hispanic parents of children between the ages of 6 to 17 years living in the state of Pennsylvania. This population was selected because African-American and Hispanic minorities are more likely to live in urban environments which are more "obesogenic" (obesity promoting) than other communities, enabling a more precise comparison between the two groups (Black & Mackinko, 2007).

Definition of Terms

Built environment: The built environment consists of a wide range of physical and environmental factors within a community. The built environment includes the design and integrity of housing, land use, and physical infrastructures, manmade infrastructures (sidewalks, buildings, parks, recreation facilities, biking and walking trails, graffiti), as well as natural features produced by nature such as lakes, and tress (CDC, 2012b; Williams, 2007).

Low income: Less than 185% of the federal poverty income level (United States Department of Agriculture [USDA], 2013).

Overweight: Overweight refers to the body mass index (BMI) at or above the 85th percentile but below 95th percentile for children of the same age and sex (CDC, 2012a).

Obesity: Obesity is defined as BMI at or able the 95th percentile for children of the same age (CDC, 2012a).

Perception: Perception is the sensory experience of environmental stimuli and actions which influences the way we view the world around us (Cherry, 2013). Perception influences the activities humans find appealing and or unappealing (Robinson, 2011).

Physical activity: Physical activity is movement of the body which expends energy through use of skeletal muscles (World Health Organization [WHO], 2013b). Physical activity may include walking, cycling, sports, running, and other physical activities which causes the strengthening of muscles and the cardiovascular system (WHO, 2013b).

Safety: the state of being safe; freedom from danger, risk or injury (The American Heritage College Dictionary, 2012).

Sedentary lifestyles: Sedentary lifestyles are behaviors that promote physical inactivity. Sedentary behaviors include activities like watching television, video games, and other activities that deter the engagement of physical activity (Tessmer, Hagen, & Beechmer, 2006).

Assumptions

The following assumptions guided this research. It was assumed that this research will assist in understanding how safety within communities may directly impact the overweight and obese status of children living in low income communities. Researchers have identified neighborhood level characteristics within the physical environment as an environmental factor that is directly connected to childhood obesity, but the specific connection between the two has yet to be identified (Black & Macinko, 2007). It was assumed that conducting research to gain an

understanding of how parent's perceived safety within their community can produce an understanding of how safety may impact children's physical activity/ inactivity and BMI. It was also assumed that the children included in this survey have lived in their communities long enough that their overweight and obese status was affected by the safety within their communities.

Limitations

This study has several limitations. First, the data are cross sectional so it is difficult to make causal inference. Also, it provides only a snapshot within a single period in time such that the situation may provide differing results if another time frame is selected. The second limitation is the lack of study and analysis of other factors within these communities that may have a direct influence on children's physical activity/ inactivity and BMI. Approaching this research by assessing one variable may cause the probability of the relationship between the independent variables (safety) and (physical activity/ inactivity) and dependent variable (children's BMI percentile) to be over measured. A third limitation is the variation of response rates, which can vary widely as a result of assumptions used to estimate the number of eligible units among unknown eligible units (2011/12 National Survey of Children's Health, 2012). Another limitation may be the classification of telephone numbers of families that researcher was unable to contact as unresolved (2011/12 National Survey of Children's Health, 2012). This process affected the response rate of landline samples, cell phones samples, and combined tool frame sample ((2011/12 National Survey of Children's Health, 2012). Relying on the perception of parents is another possible limitation. The perception of an individual is created from previous life experiences, and may vary from person to person. This may cause the perception of safety of

the parents living within the assessed communities to differ from other populations. Another limitation was the use of secondary data. The use of secondary data does not allow the researcher to control the framing and wording of survey items, common cause, and the lack of inclusion of questions that may be important to the study (Vartanian, 2010). In this study, the use of secondary data only allowed me to investigate variables previously selected by the original investigator, in this case, [CDC]. Also, I applied several inclusive criteria to my sample, reducing the number of parents and children which qualified for the study, reducing the sample size.

Delimitations

Even though other populations are available for research, the state of Pennsylvania is the only population that was used in this research study. This population was selected because nearly one third of Pennsylvania children are overweight or obese, with rates tripling in the last thirty years (CDC, 2013c). Low income Hispanics and African Americans were selected because compared to their White peers, the prevalence of childhood obesity is much higher among African Americans and Hispanics communities (Maynard et al., 2009).

Significance

Childhood obesity rates have increased in all lifestyles, but compared to their White peers, the prevalence of childhood obesity is much higher among African Americans and Hispanics communities (Maynard et al., 2009). By using data from African American and Hispanic low income research participants, I assisted in gaining an understanding that parent's perception of safety does influence a child's engagement in physical activity/ inactivity and affect BMI percentile of low income children living in the state of Pennsylvania. Current levels of physical inactivity and sedentary lifestyle in many low income minority communities have led

to the drastic increases in childhood obesity rates. With a focus on the effects of safety and parents' perception of these effects, the results of this study may help address the gap in understanding the relationship between safety and childhood obesity rates.

Summary

Physical activity is a very important aspect of a human's health. Engaging in regular physical activity is a key component in good health, and assists in the reduction of childhood obesity. Unfortunately for many low income communities, the built environment does not support regular engagement in physical activity, leading to sedentary activity, and high rates of overweight and obesity among children (Williams, 2007; Wen & Kowaleski-Jones, 2012). When compared to White children, the rates of childhood obesity among African Americans and Hispanics are significantly higher (Children's Defense Fund, 2012). These current realities have caused African American and Hispanic children to more likely be diagnosed with Type 2 diabetes, a disease strongly associated with being overweight and or obese (Children's Defense Fund, 2012). This study used a quantitative cross sectional telephone research survey to assess similarities and differences between two groups to assist in understanding how safety may directly impact children's physical activity/ inactivity and BMI. In Chapter 1, I discussed the importance of children's engagement in physical activity, factors within many low income communities that contribute to the limitations of physical activity within low income communities, and the purpose of the study. In Chapter 2 I review literature on the childhood obesity epidemic, the built environment, the theoretical framework of the research, and literature used to identify how one's socio ecological environments can contribute to limitations in physical activity.

Chapter 2: Literature Review

Introduction

The purpose of this study was to examine parental perception of safety and children's physical activity/ inactivity levels and BMI percentile. Childhood obesity is a growing epidemic that is affecting many children in the United States and other countries around the world. This problem is so severe that the World Health Organization has identified childhood obesity as the most serious public health challenge of the 21st century (2013a). Today, childhood obesity affects 12.5 million children and adolescents across the United States (CDC, 2011c). The rate of childhood obesity between the years 1998- 2003 increased from 13.05% to 15.21%, with the prevalence of extreme obesity increasing from 1.75% to 2.22% (CDC, 2014a). Rates of childhood obesity have increased for many populations, especially for low income and minority populations (Kumanyika, 2008).

Childhood obesity can have numerous negative effects on a child's life. Childhood obesity is known to affect a child's physical, social, and psychological development. Some of the physical health problems linked to childhood obesity include Type 2 diabetes, high blood pressure, stroke, heart attack, heart failure, cancer, gallstone, gout and gouty arthritis, and sleep apnea (CDC, 2013d). Other physical elements associated with childhood obesity include hyperlipidemia, hypertension, insulin resistance, diabetes mellitus, and arteriosclerosis (Nemet, Barkan, Epstein, Friedland, Kowen, & Eliakim, 2005). Along with these physical concerns, obese children are more likely to be at risk for psychological problems. These children are often teased, ridiculed, excluded from peer groups, and often lead to depression and suicidal ideation,

and other behaviors associated with low self-esteem (Kalra, DeSousa, Sonavane, & Shah, 2012; CDC, 2013c).

The built environment has been identified as a prominent factor connected to the increasing rates of childhood obesity, with many studies identifying a combination of factors linked to this increase (Rahman, Cushing, & Jackson, 2011; Wakefield, 2004). Many low income and minority communities are bombarded with characteristics that are less conducive to the promotion of healthy lifestyles (Moreno, Pigeot, & Ahrens, 2011). Factors within various low income communities directly connected to childhood obesity vary from neighborhood to neighborhood. Identifying specific factors within communities is prevalent to tackling the high childhood obesity rates within different populations.

The purpose of this literature review was to examine past and current literature used to examine the relationship between physical activity and health, the impact the built environment may have on physical activity levels, and how parental perception of safety can influence the engagement in physical activity. This section also includes the theoretical framework used in the development of this research and how this theory can impact different levels of a person's environment. Childhood obesity, physical activity, and the built environment were reviewed in an effort to understand the current state of children's health. Perception and the impact of parental perception of safety were examined to assist in the understanding of how the process of perception can affect the engagement in physical activity. This literature review helped with identifying the gap in understanding the relationship between neighborhood safety with physical activity and body mass index (BMI) percentiles of children in Pennsylvania, by specifically focusing on parental perception and safety.

Literature Search Strategy

A search of several databases from the years 2002- 2015 was conducted to identify research articles included in this literature review. The Walden University library was used to identify several databases that contained articles related to childhood obesity, childhood obesity and the built environment, as well as articles on parental perception of the built environment and childhood obesity. The databases used in the Walden library included Science Direct, Pro Quest, and Ebsco Host. In addition to these databases, a Google search was conducted to locate articles related to childhood obesity. I searched on "childhood obesity" to identify studies which assessed the current trends associated with the disease. A search of the two key words *childhood obesity* and *built environment* resulted in articles directly linking the built environment and childhood obesity. Common terms within articles were structure (location of recreation facilities, abandoned buildings, walking and or biking paths), assessment of quality of community life (nuisance, vandalism, graffiti, safety, etc.), food facilities (convenient stores, corner stores, fast food restaurants, etc.), and other less popular factors used to identify the physical makeup of the built environment.

A separate search was conducted to identify studies on parental perception of the built environment and its link to childhood obesity. I used the keywords *built environment, childhood obesity*, and *parental perception* as the main strategy to identify articles related to how parental

perception of the built environment impacts childhood obesity. The abstract of each article was read to determine if the articles were suitable for inclusion in the literature review.

A search for the secondary data was conducted using federal and state websites such as the Centers for Disease Control and Prevention (CDC) and the Pennsylvania Department of Health. Also, Walden's Inter-University Consortium for Political and Social Research was explored and both the Robert Wood Johnson Foundation and the CDC were contacted to locate data pertinent to this research.

Theoretical Framework

The theoretical framework used for this study is social theory. Social theory is geared at examining changes in society, how these changes develop, and the results obtained from these changes (Lindsay, 2011). The social theory used for this research is socio-ecological theory. The socio-ecological model is a system based on the view that health is influenced by different levels of a person's environment including the individual (knowledge attitude, and skills), interpersonal (families, friends, and social networks), and public policy (local, city, state, and national) (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011; Siebecker, Kingsbury, & Bevins, 2013). The application of the social ecological model is useful to explain interpersonal relationships within the physical, social, and cultural rim influence a person's behaviors (Bartholomew et al., 2011). Also, its use by public health practitioners enables them to assess relationships between individuals and their environments and to describe the interactive characteristics of individuals and environments and underlying relationship to health outcomes (Bartholomew etl al., 2011; Golden, & Earp, 2012). The different levels of the social ecological model have specific characteristics which may persuade a person's decision-making, and

influence a person's cognitive evaluation of their environment influencing them to partake in physical activity.

For example, Greves et al (2007) utilized the social ecological model to show that the perception of immigration parent's on their children's safety walking to school can decrease student's participation in school breakfast programs. The researchers stated each ethnic groups (Vietnamese, Spanish, and Somalia) who participated in the research study held positive believes about the benefits of walking and eating breakfast (Greves et al., 2007). Understanding the benefit of partaking in physical activities, the barriers within community environments, such as stranger abduction, distrust of neighbors, and traffic were considered feasible barriers which caused parents to prohibit their children from walking school to participate in the school breakfast program (Greves et al., 2007). Ding, Sallis, Conway, Saelens, and Slymen (2012) identified the social ecological model as appropriate to assess the built environment, ability to walk and cycle, parks, recreation facilities, and transportation within the multiple levels of a person's environment that can influence physical activity (Ding et al., 2012). The researchers showed that there are multiple significant interacting effects of the built environment and psychosocial interactions as it relates to leisure walking (Ding et al., 2012). In a study on the interactive effects of built environment and psychosocial attributes on physical activity, Golden and Earp (2012) utilized the social ecological model as the theoretical framework for their research to show how interactive characteristics of individual's environments can affect underlining health outcomes. The researchers utilized one hundred fifty seven articles from the past 20 years of health education and behavior research, which showed that the social ecological

model is a sound theoretical model which can be utilized in research to understand the interaction between individuals and the environment (Golden & Earp, 2012).

Previous researchers have utilized the social ecological model to assess how perception of the environment can influence children's engagement in walking to and from school, adult's engagement in leisure activity within their communities, as well as gaining an overall understanding of the interaction of individuals and their environments. Golden and Earp (2012) showed that using social ecological model can be used to describe the interactive characteristics of individuals and environments, which may cause specific health outcomes (2012). Appling this theoretical framework can assist in identifying the association between parental perceptions of safety can impact children's physical activity/ inactivity and BMI percentiles. The social ecological model was selected for this research study because it provides a framework to study individual behaviors in a community setting and this can assist with improving knowledge of how safety (community members helping each other out, vandalism (broken windows), and graffiti) in Pennsylvania can influence children's physical activity, inactivity, and BMI.

Current Factors linked to Children's Health

Childhood Obesity

Childhood obesity is one of the most serious public health challenges of the 21st century (World Health Organization, 2013a). Childhood obesity is a condition caused by excess body fat that increases the risk for morbidity and or premature mortality (Lakshman, Elks, & Ong, 2012). This disease does not discriminate against age and is even known to affect young preschool children (Lakshman et al, 2012). Obese children are more likely to become obese adults (World

Health Organization, 2013a). These realities of childhood obesity are reasons why caring for children's health is extremely important to a child's current and future health (Williams, 2011).

Physical Activity

Physical activity is an important factor in the overall health of the human body. For children engaging in regular physical activity is a key component in keeping the body healthy, controlling BMI and reducing changes of childhood obesity (CDC, 2007). Other benefits include building and maintaining healthy bones, muscles, and joints, building lean muscles and reducing fat, improving sense of self image and autonomy, fostering healthy, social and emotional development. The current physical activity recommendation is for children to engage in at least 60 minutes of moderate to vigorous activity every day as a way to grow up at a healthy weight (U S Department of Health & Human Services, 2008).

Engaging in physical activity can enable the increase of energy output leading to the reduction of childhood obesity. According to Reilly (2005) an energy shift in adolescents of as little as 100 kilocalories (kcal) a day can prevent excess weight gain which often leads to obesity. Unfortunately, in the last two decades, physical activity in children has decreased while dietary intake as well as a sedentary lifestyle has increased, leading to an increase in the number of overweight children and childhood obesity (Bukara-Radujkovic & Zdravkovic, 2009). This shift has caused a major imbalance in energy, with low levels of physical activity being associated with body fatness (Roberts, 2011).

For many children the ability to engage in regular physical activity is needed to prevent and reduce childhood obesity. Roberts (2011) showed that low levels of physical activity is directly associated with body fatness and childhood obesity. Parents are role models to children

and parental choices are associated with the choices of children, so children who are physically active are often raised my active parents (Dehghan, Akhtar-Danesh, & Merchant, 2012). Unfortunately, many children who need to change energy intakes and expenditures as a way to control body weight do not have proper family support to enable lifestyle changes (Gruber, & Haldeman, 2009).

The Built Environment and Childhood Obesity

The built environment can play a pivotal role in the status of the health of community residents. Characteristics of the built environment have the ability to influence recreational as well as physical activity (Williams, 2007). Neighborhood features ranging from sidewalks, streetlights, safety and availability of parks and recreation facilities, biking and walking trails, and graffiti, and crime are factors that can influence the amounts of physical activity or inactivity in which community residents engage (Williams, 2007). Other built environment features that influence activity are land-use patterns, availability and types of transportation system, and other features that provide opportunity for traveling and physical activity (Transportation Research Board, 2005).

In the past decade researchers have identified a relationship between the built environment and childhood obesity, and a link between physical activity and better health, showing that individuals who engage in high levels of physical activity are more likely to weigh less (Lee, Ewing, & Sesso, 2009; Rahman, Cushing, & Jackson, 2011; Wakefield, 2004).). Sallis and Glanz (2006) suggested that people's greater dependence on easily accessed foods raises dependence on fast food; and food environments which lack fruits and vegetables. These results encouraged the need to conduct specific research simultaneously assessing large groups of

individuals to identify how physical attributes of the built environment can be modified to improve the health of community residents, through the increase of physical activity (Lee et al., 2009).

Sedentary Lifestyles

Sedentary lifestyles are more likely to deter physical activity. Activities such as watching too much television, and an abundance of video games, as well as the inability to play outside, are directly linked to higher rates of childhood obesity (Tessmer, Hagen, & Beechmer, 2006). These and similar behaviors keep children stagnant, reducing their ability to burn off excess calories and fat. In addition, sedentary activities are known for encouraging the increased consumption of fattening foods (Johnson, van Jaarsveld, & Wardle, 2011).

Unfortunately, for many low income communities the built environment does not encourage physical activity. Communities with high rates of crime are more likely to be filled with residents who participate in indoor activities or limited physical activity (Wen & Kowaleski-Jones, 2012). The lack of environmental resources such as safe parks, recreational facilities, and walking and biking trails, discourage people from engaging in physical activity outside of their homes. These realities lead to lifestyles which are directly linked to childhood obesity.

Television

Watching large amounts of television can impact a child's physical activity. Today, many children spend more time watching television than any other activity (Jordan, 2010). During the 21st century the amounts of television watching has significantly increased. Jordan (2010) showed that the average family household has at least four working televisions, with access to

cable and satellite services that enable the watching of hundreds of channels; leading to children watching an average of 3-4 hours of television per day (2010). The expansion of television viewing has even taken up time in the bedroom, dining room, and the kitchen, causing many families to watch television during dinnertime (Jordan, 2010).

An additional study conducted by Denninson and Edmunds (2008) supports the idea that the amount of television watched by a child is directly associated with the prevalence of childhood obesity. Television watching is a sedentary activity which replaces the involvement of more rigorous physical activities known for exerting greater amounts of energy (Denninson & Edmonds, 2008). While conducting their cross-sectional study, these authors noted that each additional hour spent watching television was associated with a 6% increase in the prevalence of obesity (Denninson & Edmunds, 2008). The increased viewing of television is impacted by the in-home location of family's televisions. Denninson and Edmunds recommend that television should not be placed in a child's bedroom, because children with a television set in their bedroom watch more hours of television than the average child (2008).

Television can also impact a child's dietary quality. When children watch television they may be exposed to high calorie foods through TV advertisements. Being exposed to these foods through media is liable to shape children's food choices; as well as increase the amount of snacks a child may eat (Jordan, 2010). Jordan stated large amounts of television viewing is closely associated with frequent snacking, the consumption of sugary beverages, and more frequent visits to fast food chains, adding to the decreased dietary quality of children (2010). Foods advertised on television are usually high calorie foods. Children have become the primary target for food advertising (Denninson & Edmunds, 2008). Denninson and Edmunds (2008) stated that

television advertisement directed to children and adolescents have been shown to influence a child's food preference, and the types of foods and beverage products a child consumes. Understanding that they will make a profit by targeting children, food and beverage companies attempt to sell as many products as possible through appealing to young children influencing them to purchase these products (Henry, 2010). A very small percentage of these commercials promote physical active lifestyles, making it almost impossible to influence children to engage in physical activity (Dennison & Edmunds, 2008).

Video Games

Playing inactive video games is another activity that encourages sedentary lifestyles. In America and many other countries around the world, the use of video games has become extremely popular. The popularity and excitement of video games has led to many children spending numerous hours playing various forms of games. Playing excess amounts of videogames has been noted as a contributing factor to childhood obesity (Kelly, 2012). Stewart reported that many children would rather play video games then go outside (2010). Authors of a study conducted on Canadian children reported the children played more than four hours of video games per week, leading to the increase of passive leisure (the time people spend in activities that are relaxing and require little effort) (Human Resources and Skills Development Canada, 2013; Temblay & Willms, 2003). As a result Health Canada now recommends that inactive children replace 30 minutes of sedentary activities like internet use and video games with 30 minutes of physical activity with a goal of 60 minutes daily (2008). These and other recommendations are needed to increase physical activity amongst children, leading to the overall reduction of childhood obesity.

Community Food Environment

Another aspect of the built environment believed to be directly linked to childhood obesity is the neighborhood food environment. Communities that lack quality food sources, and have greater proximity between food establishments often suffer from higher rates of obesity (Sheir & Strum, 2012). These realities have caused actions to improve food environments, in particular food deserts (where access to healthy and affordable food is limited, especially in disadvantage neighborhood) to become a governmental priority, prompting studies to be conducted to assess the association between food environments and childhood obesity (Sheir & Sturm, 2012). Sheir and Strum (2012) suggest that increasing the number of supermarkets that sell a variety of fresh produce, and increasing farmers markets in these communities could lead to healthier eating habits (Sheir & Sturm, 2012). In addition to making fresh fruits and vegetables accessible, providing accessible transportation for families who do not own cars can increase the consumptions of healthier foods (Sheir & Strum, 2012).

Individuals living in communities with better access to supermarkets have healthier foods in the home as well as healthier diets (Hartley, Anderson, Fox, & Lebardson, 2011). On the other hand people with lack of access to healthy food, seen often is the case in inner cities, low income or poor areas of the United States have higher rates of obesity, at 28.6% compared to urban communities at 26.9 % (Hartley et al., 2011). Being unable to have quick, affordable access to healthy foods can influence the consumption of more unhealthy and high caloric food.

Schafft, Jensen, and Hinrichs (2009) used the Geographical Information System (GIS) to determine the link between food deserts (defined as populated areas with limited access to full service food service food retail outlets) and high rates of childhood obesity. Using geographical

buffer zones of 10 miles around each population weighted centroid of zip code with one or more large grocery stores, the researchers were able to validate an association between residents living in food deserts and higher rates of childhood obesity (Schafft et al., 2009). The authors showed that there were differences in childhood obesity rates within food deserts areas and non-food desert areas; in addition food deserts residents had lower socioeconomic status, with income nearly $2000 lower than those living in non-food deserts (Schafft et al., 2009).

Access to restaurants like bakeries, donut, cookie, and ice cream stores, fast food restaurant, convenience stores, fish and meat stores (influencing dietary choices which do not include fruits and vegetables) makes it extremely difficult and nearly impossible for children to make healthy diet choices (Kipke et al., 2007). The density (number of fast food outlets and full service in fast food restaurants) of restaurant per person per square mile is statistically significant to higher rates of childhood obesity within low income communities (Kipke et al., 2007). As a result, racial minorities living in low income communities may be at a disadvantage when attempting to achieve a healthy diet (Morland, Wing, Roux, & Poole, 2002).

Physical Features of the Built Environment

The physical environment of many urban communities influences an individual's physical activity as people living in neighborhoods with undesirable physical features are less likely to engage in physical activities (Sandy, Tchernis, Wilson, Liu, & Zhou, 2012). Miranda, Edwards, Anthopolis, Dolinsk, and Kemper (2012) evaluated the association between undesirable features of the built environment such as housing damage, public space nuisances (outgrown weeds, rubbish), property disorder, territoriality, and vacancy, and engagement in physical activity found a link between these physical features and decreased percentages of

physical activity (Miranda et al., 2012). In this study children living in Durham, South Carolina communities with several undesirable features, were compared to children living in communities with lower levels of property disorder. The authors found that the unadjusted odds of being in a higher weight category was 40% (95% CI = 6% to 86%) greater among children living in primary adjacency communities (PAC) with medium to high levels of property disorder, compared to children living in communities with low levels of property disorder (Miranda et al., 2012).

Krisberg (2006) showed that other physical features of the built environment, such as man-made structures like housing development, recreational parks, transportation systems, and location of fast food restaurants can all influence the engagement in physical activity. Understanding the direct impact undesirable physical features are having on the engagement in physical activity Krisberg suggests that future planning in urban communities should include a health impact assessment before development (2006). This assessment should be conducted in an effort to reduce conditions within low socioeconomic communities, where the neighborhood environments have a significant impact on the engagement in physical activity (Singh, Siapush, & Kogan, 2010).

Routes that enable activity such as walking and biking are significant features that may directly impact the engagement of physical activity and or inactivity. Children living in environments that enable incidental activity or access to recreational activities have increased rates of physical activity (Razani, 2010). Recent research has increased awareness that having access to spaces that encourage physical activity is extremely important in reducing childhood obesity (Razani, 2010). According to Wolch et al. (2011) structures in the urban built

environment, including parks, green space, and recreation programs with structured exercise settings, all assist in opportunities for physical activity, affecting the development of obesity. This reality often leads to higher rates of childhood obesity in low income communities, because low income communities are often designed in a manner that enable limited access to environments that promote physical activity (Rahman et al., 2011).

In addition to walk ability of a community, other physical attributes that enable children to engage in other fun physical activities plays a significant role in reducing childhood obesity. Physical features include riding bikes, playing street hockey, jumping rope, and even walking to school (Laumann, 2007). Communities with low density development patterns, poor street connectivity, and the lack of destinations within safe walking distance drastically impacts healthy behavior (Rahman et al., 2011). Kipke et al., (2007) showed that easy access to fast food and limited access to parks and which encourages the engagement in physical activities can assist in the reduction of childhood obesity.

Availability of Safe Recreational Facilities and Parks

The distance, number, and safety of available facilities that encourage physical exercise are associated with childhood obesity rates. While assessing the built environment for its relationship to childhood obesity, researchers have taken notice that accesses spaces that encourage physical exercise are key factors in reducing childhood obesity (Razani & Tester, 2010). Dunton, Kaplan, Wolch, Jerrett, and Reynolds (2009) used a semi quantitative procedure offered by Sallis and colleagues to conduct a systematic review, using neighborhood characteristics (road safety, crossing lights and walks, available public transportation, bicycle

and walking trails, houses, schools shops, etc.), measurement strategies (perceived or objective, parent or child report), and other variables (covariates, mediators and moderators). The researchers showed that communities with greater access to physical activity (playgrounds, walking and biking trails, parks, and play areas) and recreation facilities nearby were associated with lower rates of obesity, compared to communities with urban sprawl (spreading of urban developments) (Dunton et al., 2009). Singh, Siahpus, and Kogan (2010) showed an association between safety of parks and childhood obesity, with a higher risk of overweight and obesity in children living in communities with unsafe playgrounds, parks, and recreational facilities than for children living in safer communities (adjusted odds ratio for obesity, 4.43; 95% confidence interval, 2.03-9.65) (Singh et al., 2010).

Sandy, Tchernis, Wilson, Lui, and Zhon (2013) validated the importance of safe facilities and environment encouraging physical exercise in a study to assess the impact of urban environment on childhood obesity, concentrating on the effects of walking trails and crime (Sandy et al., 2013). They found a positive correlation between recreational trails and lower obesity rates, with those rates reversing when safety concerns increased in nearby recreational trails. Children living in areas of average levels of crime (20 crimes) had BMI of 2 %, while children living in areas with crime (>20 crimes) had BMIs of 4 %, and a slight increase of 2 % percent (Sandy et al., 2013). Unfortunately for many urban communities, the small amounts of spaces within their environment that encourage physical exercise are often overwhelmed with high rates of crime, discouraging the engagement in physical activity.

Burdette and Whitaker (2004) looked at 7,020 low income children living in Cincinnati, OH and their findings did not support the importance of availability of safe recreation facilities

and parks. The researchers hypothesized that the lack of accessibility to public playgrounds by children as well as close proximity to fast food restaurants in local communities would be strongly associated with high rates of childhood obesity (Burdette & Whitaker, 2003). The mean (± SD) distances from a child's home to the nearest playground and fast food restaurants were 0.31 (± 0.22) and 0.70 (± 0.38) miles respectively; but showed no association between a child's overweight status and proximity to playgrounds, proximity to fast food restaurants, or level of neighborhood crime (Burdette & Whitaker, 2003).

Neighborhood Safety

Within communities, safety has been identified as a factor linked to the amounts of physical activity and inactivity of community residents. Exposure to breaches in safety is identified as a major cause of paranoid anxiety, which may cause parents to restrict their children's outdoor activities (Santos, Pizarro, Mota, & Marques, 2013). Exposure to criminal activity, interpersonal violence, violence against intimate partners, child abuse and neglect by parents or caregivers, sexual violence, and other criminal activities are linked to high rates of childhood obesity in low income communities (WHO, 2014a). Other safety issues such as criminal activity, such as murder, forcible rape, robbery, and aggravated assault is strongly linked to low income environments which are atmospheres suffering from the highest rates of childhood obesity (Singh, Kogan, & Dyck, 2008). Unlawful behavior, such as danger imposed by strangers, and bullying by gangs are believed to be associated with inactivity (Kerr et al., 2005). In addition to direct exposure, indirect exposures to violence such as media violence have been shown to produce a short-term increase in aggression (WHO, 2002).The rates of these crimes being committed within communities may trigger safety concerns for community

residents, deterring the engagement in physical activity (Kerr et al., 2005). Safety concerns within a community may influence the perception of parents and other residents, prohibiting the engagement in physical activity.

Perception

Perception is the process in which a person translates sensory impressions into a comprehensible view of the world around them (BusinessDictionary.com, 2013). Perception often motivates the functions in which a human engages in. Perception also influences what activities a person may find appealing, and unappealing (Robinson, 2011). A person's perception of things can encourage their behaviors as well as their relationship with the physical world around them (Robinson, 2011). For many low income community residents, safety and other related factors have caused parents and children to create negative views of their physical environment. These negative views have raised safety concerns leading to limited engagement in physical activity within many low income communities. The engagement in physical activity within environments can be influenced by both real and perceived barriers (Greves et al., 2007).

Impact of Parental Perception on Engagement in Physical Activity

Recent realization of the impact parental perception may have on children's engagement in physical activity has led to research focusing on how the perception of parents impact children's engagement in physical activity. Researchers assessing parental perception of community environments, and percentages of physical activity documented high levels of

concern and anxiety from inner-city parents, compared to suburban parents (Weir, Etelson, & Brand, 2006; Prezza, Alparone, Cristallo, & Luigi, 2006). Weir et al (2006) noted that parents were concerned about poor neighborhood conditions such as gangs, high-traffic, as well as the possibility of other children hurting their child. Other parents were worried about their child's safety due to drug pushers and addicts, robberies (bag snatching), strangely dressed and behaved individuals, and neglected areas, causing the environment to be dirty and covered with large abandoned objects (Prezza et al., 2006).

These concerns have deterred many parents from allowing their children to engage in physical activities within their own communities. Kerr et al (2006) reported that community residents who once allowed their children to walk or ride their bikes to school, have prohibited their children from engaging in these same activities. Recent safety concerns within local communities have led parents to become concerned of travel distances, traffic and crime, leading to higher rates of inactivity (Kerr et al., 2006).

Immigrant families living in low income communities have also noticed the dangers within their neighborhood (Greve et al., 2007). These concerns have caused parents to disallow their children from walking to school to take part in neighborhood schools breakfast programs, a program parents believe are beneficial to their child's health (Greves et al., 2007). Instead, children are prohibited from taking part in the breakfast program, because parents are more fearful of their children's safety due to stranger abduction, distrust of neighbors, heavy traffic, and distances to schools, parent work constraints, and large families with multiple children (Greves et al., 2007). Unfortunately, poorer neighborhoods that are often populated with African Americans and Hispanics are overwhelmed with these and other factors that are discouraging

physical activity. Poorer communities are often lined with poorly maintained homes, crime, poverty, crowding, elevated noises, and other safety concerns that are overwhelmingly linked to childhood obesity (Hagen, 2009).

Barriers Preventing the Engagement in Physical Activity

Crime

Recent studies have been conducted in an effort to identify how crime impacts children's physical activity and inactivity. Weir, Elston, and Brand (2006) conducted a study to identify how parental perception of neighborhood safety may affect a child's weight status. The researchers investigated the perception of parents of 5 to 10 year old children living in an inner city poor community, and compared them to parents of 5 to 10 year olds living in a middle class suburban community, assessing how the safety of environments may inhibit parents from allowing their children to engage in physical activity (Weir et al., 2006). Questionnaires were used to assess parent's anxiety concerning gangs, child aggression, crime, traffic, and personal safety in local communities, and how these factors impact children's physical activity (Weir, Elston, & Brand, 2006). The authors showed that the perception of parents about dangers within their communities was the cause of inner-city children engaging in less physical activity, compared to their suburban peers (Weir, Elston, & Brand, 2006).

Neighborhood Safety

Carver, Timperio, Hesketh, and Crawford (2012) conducted a study to assess how perceived risk mediate associations between perceived safety and parental restriction of

adolescents physical activity in their neighborhood. The authors found a lower physical activity rate of 42.2% among adolescents in unsafe communities, compared to adolescents living in safer communities with physical activity rates of 78.8% (Carver et al., 2012). The authors reported that the decline in physical activity may be associated to parental concerns of neighborhood safety (road safety, incivilities, personal safety, victimization, and defensive behaviors), causing parents to restrict children from engaging in physical activity within their neighborhoods (Carver et al., 2012). Carver et al (2012) showed conflicting results for boys and girls, with road safety risk being a deterring factor for parents allowing their girls to engage in physical activity. The Mackinnon's product of coefficients test of mediation was used to assess the data, with results showing that parents perceived that girls were at higher risk for incivilities, the multivariate analysis was able to show that perceived personal safety, victimization and defensive behaviors; with the mediated range of concern for girls being 21.6% to 59.8%, and boys mediated at 17% (Carver et al., 2012).

Kalish, Banco, Bucke, and Lapidus (2012) conducted a study to assess the impact of parental perception of safety on the engagement of children in physical activity. Kalish et al (2012) determined that parental concerns of traffic, rundown parks, crime, witnessing or being a victim of violence, drugs, gangs, and weapons were all linked to the decrease in engagement of physical activity for children. Though parents noted concern with factors linked to their children's safety, some parents still allowed their children to engage in limited amounts of outdoor physical activity (Kalish et al., 2012). The differences in parental perception showed perception of safety may influence some parents to prevent their children from engaging in physical activity, but is not the decision factor for other parents.

Though parents' perception of safety is strongly associated with their children engaging less physical activity, other factors within the community environment also influence children's physical activity levels. Santos, Pizarro, Mota, and Marques (2013) show that parental perception of neighborhood safety plays a key role in the amounts of physical activity engaged in by children and parents. The authors assessed the impact of crime, fear of strangers, and sidewalk and street safety on parent's physical activity, and children's mobility (Santos et al., 2013). After conducting multi-linear regression, adjusting for age and gender, the environment was the strongest influence on the amounts of physical activity children's engage in with children's independent mobility at 13.0 % (Santos et al., 2013).

Threat of Skin Cancer

Sun exposure is a major risk for skin cancer, but has been recently identified as a deterrent factor for parents allowing children to engage in outdoor physical activity (Tran et al., 2012). Skin cancer is the most common form of cancer in the United States, and has caused many parents to worry that too much exposure to the sun may cause their child to get skin cancer (Tran et al., 2012). This reality prompted Tran et al (2012) to conduct research to show how parent's perceived view of the danger of nonmelanoma skin cancer may affect children's engagement in outdoor activity. Tran et al (2012) showed that level of outdoor physical activity were not related to perceived severity of melanoma, or perceived susceptibility to skin cancer.

Environmental Influence

Other aspects of the community environment may influence the engagement of physical activity for children. Understanding that there are multiple factors that may be linked to the decrease percentages of physical activity for many children (Moore, Jilcott, Shores, Evenson, Brownson, & Novick, 2010) conducted research to examine how socio-ecological barriers and

facilitators of physical activities in rural and urban middle schools can impact the percentages of physical activity in children. The researchers used focus groups of 41 youth, and 50 of the youth's parents to gather data for their qualitative study, with data producing conflicting results of perceived barriers for youth and adults (Moore et al., 2010). Among parents, factors like distance, lack of culturally appropriate facilities and programs, cost, crime/danger, and television were viewed as primary barriers causing their prohibiting of their children from engaging in outdoor physical activities (Moore et aal., 2010). Different from their parents, children mentioned that in school policies related to physical activity, and crime were the main deterrent factors of their engagement in physical activity (Moore et al., 2010). The conflicting results from this research study influenced the researcher's recommendation for additional research focusing on geographic settings, and their link to physical activity (Moore et al., 2010).

Parental Modeling

Being a part of a child's interpersonal environment, parents are one of the primary teachers of children. The behaviors parents' models are often adapted by their children, with the importance of engaging in physical activity being modeled by parents (Madsen, McCulloch, & Crawford, 2009). Understanding that family is a child's most proximal environment, behaviors viewed within the family environment can have a great influence of the behavior children adapt early on in life (Madsen, McCulloch, & Crawford, 2009). Madsen, McCulloch, and Crawford (2009) noted that girls who reported that their parents exercised three or more times a week were 50% more active, compared to girls whose parents modeled sedentary lifestyles.

Recent researchers assessing parental perception of various aspects within the socio-ecological environments show how these perceptions impact children's engagement in physical activity. In addition to crime, several researchers have identified different factors ranging from

parental modeling, threat of skin cancer, as well as neighborhood safety (Carver et al., 2012; Madsen, McCulloch, & Crawford, 2009; & Tran et al., 2012). Findings from researchers while informative have produced some conflicting results about the primary cause of lower engagement in physical activity, especially in inner city neighborhoods. Therefore, there remains a need to conduct additional research to identify specific factors linked to lower rates of physical activity (Weir, Etelson, & Brand, 2006). Prezza et al (2005) also noted the importance to conduct future research in this field, assessing the environment for barriers to engagement in physical activity. Understanding needs within individual communities may be the most effective way to address the childhood obesity disease affecting millions of children around the world.

Conclusion

Physical activity is an important factor in reducing childhood obesity. Unfortunately, the way parents perceive the environments where they live with their children may significantly reduce the amounts of physical activity in which their children engage. Authors of recent and current studies have identified crime, traffic, neighborhood safety, rundown parks, victimization, drugs, and gangs as barriers limiting the engagement in physical activity for many children (Carver et al., 2012; Kalish et al., 2012; Weir, Elston, & Brand, 2006). Authors conducted studies on how perception of crime affected child's physical activity and BMI looking at different environmental and neighborhood safety factors. Some found that physical aspects of a community such as poorly maintained or unsafe parks, recreation facilities and playgrounds were significantly associated with low rates of physical activity, and others identified community factors such as unsafe neighborhoods and crime (such as murder, gangs, drugs, gangs, etc.) as the reasons children were prohibited from engaging in physical activities within their communities (Kerr et al., 2005; Kalish et al., 2012; Singh, Siahpus,& Kogan, 2010).

These environmental factors are linked to higher sedentary activity like watching too much television and playing video games (Jordan, 2010; Temblay & Willms, 2003). This reality has put many children at risk for future health problems and disease that may cause numerous illnesses, as well as lower the quality of life for many children. The conflicting results obtained from previous research looking at the association of parental perception of environment and children's physical activity and BMI is cause for additional research geared at identifying how parental perception of specific factors within their communities may influence children's engagement of physical activity, leading to higher BMI in children living in low income communities. Identifying these factors within targeted communities is an important way to reduce childhood obesity rates by removing barriers that are prohibiting the engagement of physical activity within affected communities, possibly leading to less adults being affected by obesity related diseases.

The use of the socio-ecological model is a great way to develop interventions geared at addressing various factors limiting physical activity within the individual, interpersonal, organizational, and community levels, as well as addressing public policies linked to the lack of physical activity within affected communities. In order to tailor these interventions to meet the needs of targeted populations, research must be conducted within local communities to gain a better understanding of diverse factors within these communities limiting children's engagement in physical activity. This study identified how parent's perception of safety impacted children's physical activity, inactivity, and weight, and identified factors that may be decrease physical inactivity among children living in Pennsylvania communities.

Chapter 3: Methodology

Introduction

The purpose of this study is to examine the association between parents' perception of safety and children's physical activity levels and body mass index (BMI) percentile. The study was conducted using data obtained from the National Survey of Children's Health (NCHS), 2011/12 (CDC, 2012e) and include both African Americans and Hispanics children and their parents. This study is important in understanding how parental perception of safety within a community can impact the physical activity/ inactivity levels and BMI of children living in communities with high rates of safety concerns. In this chapter I discuss the population, sampling and recruitment procedure, research design and rationale, and process used for data collection and analysis.

Methodology

Research Design and Rationale

This study used a quantitative research design. Quantitative research is a form of research used to test objective theories (Creswell, 2008). It uses close-ended questions, which enables researchers to measure variables within the study, and analyze the data through statistical measures (Creswell, 2008). This form of research is conducted in large groups, and uses structured and validated data collection instruments to assess specific variables within the study (Xavier University, 2012).

Cross sectional data were used to examine the relationship between parental perception of the built environment and children's physical activity levels in Pennsylvania for children of African American and Hispanic descent. The use of a cross sectional data has several benefits. It provides a snapshot of the targeted populations and was used in this study to identify the

similarities and differences of parental perception of safety and physical activity/ inactivity (independent variables) and children's body mass index (BMI) percentile (dependent variable) between the two groups (Carlson & Morrison, 2009). Also, it allows the researcher to carry out the study in a natural real life settings, and does not require random assignment of individual cases to compare groups, increasing the external validity of the study (Frankfort - Nachmias & Nachmias, 2008). The data used in this study are relevant to the two groups of interest in terms of parental perception of safety and children's physical activity/ inactivity and resultant BMI percentile values.

Population and Setting

The populations used in this research are low income African American and Hispanic children between the ages of six to 17 years, and their parents or guardians living in the state of Pennsylvania. The interviewers from the original survey began by identifying children under the age of 18 living in the home with their parent or guardian. These children were selected because they are at an age that is more likely to adapt and change behaviors, and students in this age group are usually involved in group learning, which may also influence larger adaptation among the targeted population. The state of Pennsylvania was selected because according to a study conducted by the CDC despite interventions to reduce childhood obesity rates in many states, Pennsylvania childhood obesity rates have increased (CDC, 2014b).

Sampling and Recruitment Procedures

The study sample of interest includes minorities, low income populations and children, groups that have been identified in scientific research as vulnerable (Creswell, 2008). Conducting research with vulnerable populations increases the chances of unique and difficult challenges, such as a decreased participation rate (Weaver, 2001).

The children used in this study were selected by age, ethnicity, race, and living in households with income level as below 300 percent of the poverty level. In addition to these criteria, family households qualified by having one or more children under the age of 18 years old (CDC, 2012e) and were Pennsylvania residents. Children between the ages of 6 to 17 from those families totaled 1,248, however when adjusted to include only low-income African American and Hispanic parents and their children, the total sample was 186.

The study was conducted by CDC's National Center for Health Statistics (NCHS), State and Local Area Integrated Telephone Survey program (National Survey of Children's Health, 2012). Random sampling was used to select telephone numbers geared at identifying parents or guardians of children between the ages of six to 17 with knowledge of the health of the sampled child in the household (National Survey of Children's Health, 2012). To initiate consent of inclusion and explain the process of consent to potential participants for the original survey, randomized sampled telephone numbers were called to find households with children between the ages of zero to 17. If a cell phone number was contacted research participants were asked if they have a landline. Individuals who participated in the first calendar quarter in 2011 were eligible if they did not have a landline, or stated they were less likely to be reached on their landline (2011/12 National Survey of Children's Health, 2012). After eligible households were identified, a child was randomly selected from the household, and an attempt was made to conduct a full interview in reference to the selected child (National Survey of Children's Health, 2012). For research participants contacted April 2011 and beyond they were not screened for cell phone only/ mostly status (2011/12 National Survey of Children's Health, 2012). If children between the ages of six to 17 resided in the home interviewers asked the ages of qualified

children living in the home. If more than one child qualified for the survey one child was randomly selected by the subject of the interview.

I conducted a power analysis to determine sample size needed for this quantitative study. For correlation analysis, 0.80 power (the probability that a true relationship exists between study variables is 80%), a moderate effect size of 0.50 (or, how strongly the independent variable is related to the dependent variable), and an alpha of 0.05 (5% chance of a Type I error occurring (i.e. rejecting the null hypothesis when it is in fact, true) required at least 128 participants in the sample to detect a significant model (Cohen, Cohen, West, & Aiken, 2003). If the p-value was less than 0.05, then the null hypothesis was rejected. Cohen (2003) explained the following effect size conventions: small $\rho = 0.1$, medium $\rho = 0.3$ and large $\rho = 0.5$.

Power is mainly a function of α, sample size, and effect size. To calculate the number of participants required, a sample size that gives 80% power at the 0.05 level of significance is usually applied. A priori, post hoc, and compromise power analysis are available for determining the correct sample size needed for a study (Frankfort-Nachmias, & Nachmias, 2008). A priori analysis is done before a study has been carried out; post-hoc analysis is done after a study has been carried out to help to rationalize the outcome of a study (Lomax, & Hahs-Vaughn, 2012).

Data Collection

The data collected for this study were obtained from the National Survey of Children's Health, 2012. This survey was conducted by CDC's National Center for Health Statistics (NCHS), State and Local Area Integrated Telephone Survey Program (National Survey of Children's Health, 2012). Random sampling was used to select telephone numbers to identify parents or guardians of children between the ages of six to 17 years with knowledge of the health of the sampled child in the household (National Survey of Children's Health, 2012). After

eligible households were identified, a child was randomly selected from the household, and an attempt was made to conduct 95,677 full interviews nationwide in reference to the selected child (National Survey of Children's Health, 2012). Data collected from the National Survey of Children's Health were used in this research.

This type of survey includes a form of scaling used by researchers to measure attitudes (Frankfort-Nachmias & Nachmias, 2008). The instrument used to measure attitudes of parental perception is the National Survey of Children's Health (NSCH), 2011/12 created by the Data Resource Center for Children's and Adolescent Health, which is a project of the Child and Adolescent Measurement Initiative (CDC, 2012e). This validated instrument used an ordinal ranking scale that enabled the collection of information from large numbers of people in a short period of time, enabling a rapid turnaround in data collection (Creswell, 2008; Frankfort-Nachmias & Nachmias, 2008). Questionnaires also enabled the gathering of large amounts of data using limited resources, which is an economic advantage (Creswell, 2008). The data for this research were collected from February 28, 2011 through June 25, 2012 (2011/12 National Survey of Children's Health, 2012).

Children's BMI data were obtained from parents during the survey. A survey using children's BMI percentile was selected because children's height and weight data can be used to appropriately identify children's weight status, and can be used to identify the prevalence of trends of overweight and obese children living in the state of Pennsylvania (Robbins, Mallya, Polanski, & Schwarz, 2012). BMI percentile classification was based on CDC classification: underweight with less than the 5^{th} percentile, healthy weight at the 5^{th} percentile to less than the 85^{th} percentile, overweight at the 85^{th} to less than 95^{th} percentile, and obese equal or greater than the 95^{th} percentile (CDC 2011a).

The data sets used are public sets and provided through the CDC. A request for the original data was made through the resource center of the Centers for Disease Control and Prevention. The format preference selected for presentation of data results was the statistical package for the social sciences (SPSS).

Only sections from the National Survey of Children's Health (NSCH), 2011/ 12 pertaining to the research were used in the survey. Sections 1, Section 2, Section 7, Section 10, and Section 11 were selected because the questions within these sections were related to parental perception of safety, children's physical activity and inactivity; and useful for research analysis.

Data Analysis Plan

Research Questions

1. What is the association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

   HA1: There is an association between parental perceptions of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

   HO1: There is no association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

2. What is the association between parental perception of safety (community members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children?

   HA1: There is an association between parental perceptions of safety (community

members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children?

HO2: There is no association between parental perception of community safety (community members helping each other out, vandalism (broken windows), and graffiti) BMI percentile of low income Hispanic and African American children?

3: What is the association of parental perception of safety and BMI percentile of low income African Americans children compared with the association of parental perception of safety and BMI percentile for low income Hispanics children?

HA3: There is an association of parental perception of safety and BMI percentile in low income African Americans children compared with the association of parental perception safety and BMI percentile for low income Hispanic children?

HO3: There is no association of parental perception of safety and BMI percentile for low income African American children compared with the association of parental perception of safety and BMI percentile for low income Hispanic children?

Parents' perception of safety and its influence on the amount of physical activity/ inactivity affecting children's BMI was examined using response to selected questions from the survey data. Descriptive statistics, including poverty level, BMI percentile, and race were used to describe trending features of data. These data are easy to summarize and information can be displayed graphically or in frequencies tables (Green & Sanlkind, 2008).

Data analysis was conducted using Chi square testing (using Fisher's exact test as approximate) to determine the extent relationship between parents' perception of safety and physical activity/inactivity (independent variables) and children's BMI percentile (dependent variables) of children living in various communities throughout the state of Pennsylvania (Green

& Salkind, 2008). Descriptive statistics included poverty level, BMI percentile, and races were used to describe trending features of data (Green & Salkind, 2008). Chi square analysis allowed me to identify the differences between African American and Hispanic parents' perception of safety and children's BMI percentile and their perception of their children's physical activity/ inactivity level and BMI percentile.

Instrumentation and Operationalization of Constructs

The instrument used to select and analyze data in this research study is the National Survey of Children's Health (NSCH), 2011/12. The National Survey of Children's Health survey was created to provide a more succinct and empirically derived measure of a variety of aspects of the built environment, as well as family health status, and economic status. A copy of this instrument can be found in appendix A. The instrument allows the researcher to gather information on neighborhood and community characteristics, as well as the ability to access services within their communities. There are five sections in the National Survey of Children's Health that were used to assess the availability of equipment in the home, as well as access to places that can be used for physical activity (walking, running, swimming, bike riding), neighborhood surroundings, and neighborhood safety. The data collected from the survey were used to assess parental perception of neighborhood surroundings, neighborhood safety and vandalism. Permission from the developer to use the instrument has been obtained through a request for data through the resource center at the CDC.

The variables that were measured in this study were related to physical activity, and BMI percentile as the dependent variable. According to the US Department of Health and Human Services [HHS], physical activity is defined as body movement that works your muscle requiring more energy to resting (2011). Different forms of physical activity include walking, running,

dancing, swimming, and exercise (HHS, 2011). The amount of time spent doing physical activity were obtained from the ordinal scale used by parents to document the amount of time children played on sports teams, participated in clubs or organizations, exercised, or participated in other forms of physical activities. Physical inactivity is considered limited participation in physical activity often during leisure time, which increases sedentary behaviors (World Health Organization, 2014b). Physical inactivity was determined from information reported by parent of their child's physical inactivity. BMI percentile of children who participated in the survey was determined by information provided by parents in Section 2 of the survey which is titled children's health and functional status.

The independent variable used in this research study is safety (community members helping each other out, vandalism (broken windows). Various Likert scales were used to determine neighborhood and community characteristics. These scales were determine neighborhood amenities and conditions, social capital used to determine if parents definitely agree, somewhat agree, somewhat disagree, definitely disagree, don't know, or refused with community members helping out, and or watch over each other's children within Pennsylvania communities.

Reliability and Validity

The CDC has conducted numerous tests to assess the reliability of surveys it conducts including the National Survey of Children's Health. These tests were conducted to assess the validity and reliability of national estimates, and focused on health risk behaviors within various states across the United States (CDC, 2013a). These studies showed that overall findings indicate the prevalence rates of behavioral risk factor surveillance system were comparable to other national surveys which rely on self reports (CDC2013a). In recent years response rates on

telephone surveys have declined, causing rates of behavioral risk factor surveillance system to decline, leading to the use of new methods of weighting and the illusion of cell phone sampling frames (Pierannunzi, Hu, & Balluz, 2013). Research on behavior risk factor surveillance systems conducted by scholars and researchers indicates prevalence rates were comparable to other national surveys, which rely on self reports, with some differences noted for some categories of response (Pierannunzi, Hu, & Balluz, 2013).

In other reliability testing on the National Survey of Children's Health, 2003 the authors showed the sampling design which uses large number of telephone screening conducted through randomly generated telephone number selection was beneficial (CDC, 2005). They also indicted the overall number of participants in this survey is sufficient for most statistical inference purposes, but in rare responses and analysis of subclasses can lead to estimators that are unreliable, with small sample sizes also producing unstable estimates of variances (CDC, 2005).

Threats to Validity

There are several threats to the internal and external validity of this research study. The internal validity threats include prior experiences, including habits of participants previously engaged in prior to living in their current communities, as well as parent's perception of how their answers were perceived by the researcher. These factors may affect the researcher's ability to draw correct inferences from the data gathered from the population (Creswell, 2008).

There is very little research on validity for some health topics, but a great deal of information supporting the validity of others (Pierannunzi et al., 2013). These differences in questions among surveys, and the mode of data collection differences also caused some limitations when behavioral health surveillance systems were examined (Pierannunzi et al.,

2013). Validity testing conducted on the national survey of children's health showed some limitation of cultural validity among Spanish speaking Latino parents (CDC, 2005).

There are some disadvantages of using secondary data. One of the limitations of using secondary data is that the data often only approximate the kind of information the investigator would like to employ for testing hypotheses. This limitation creates a gap between primary data collected by researchers with specific purpose and the purpose the data as used for secondary research (Frankfort-Nachmias & Nachmias, 2008). Having insufficient information about how the data were collected may be a potential source for bias, areas, or problems with internal or external validity (Frankfort-Nachmias & Nachmias, 2008).

Ethical Procedures

Research participants were notified that they have the right to refuse to participate in the survey (2011/12 National Survey of Children's Health, 2012). If research participants took part in the survey they were informed what the results of the research would be used for data gathered by the CDC, and were given a contact number for the researcher's supervisor if they may have questions regarding the survey (2011/12 National Survey of Children's Health, 2012). Research participants were also given the contact number for the chairperson of the research ethics review board if they have any questions regarding their rights as a survey participant (2011/12 National Survey of Children's Health, 2012). In addition, Walden University IRB application was completed to ensure researchers comply with ethical standards as well as U.S federal regulations (Walden University, 2015). The IRB approval number given for this research is 11-13-14-0279892. Ethical and compliance process must be followed in order for researcher using archival or any other data to receive approval to conduct their research (Walden University, 2015).

Summary

A quantitative cross-sectional study was used to describe similarities and differences between data results gathered from African Americans and Hispanic populations, and are geared at understanding the connection between children's physical activity/ inactivity and BMI, and safety (independent variable) and children's BMI. Chi square testing was used to identify the relationship between safety, physical activity and children's BMI percentile. A power analysis was conducted to determine sample size needed. Correlation analysis, of 0.80, a moderate effect size of 0.50, and an alpha of 0.05 was used. If the p-value is less than 0.05, then the null hypothesis is rejected. The data represented 1,248 children under the age of 18 years old, from family households with income levels as below 300 percent of the poverty level (CDC, 2012e). Race and ethnicity were used to select only low-income African American and Hispanic parents and their children. Chapter 4 includes data results from Chi square testing, and data results.

Chapter 4: Results

Introduction

The purpose of this study was to examine the association between parents' perception of safety and children's BMI percentile and children's physical activity levels and BMI percentile. The built environment has been identified as a significant factor linked to the high rates of childhood obesity (Rahman et al., 2011). Variations in different built environments have made it extremely difficult to identify specific factors that are directly linked to childhood obesity rates in different communities. Conducting a research study to understand how parental perception of safety may impact the physical activity levels and BMI percentiles of children in low income communities is key to understanding the complex interactions between various entities of the built environment, as well as informing interventions that can be used to increase the physical activity levels of children living in low income communities (Moreno, Piget, & Ahrens, 2011).

Included in this research study were the following research questions

Research Questions

1. What is the association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

   HA1: There is an association between parental perceptions of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

   HO1: There is no association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children?

2. What is the association between parental perception of safety (community members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children?

   HA1: There is an association between parental perceptions of safety (community members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children?

   HO2: There is no association between parental perception of community safety (community members helping each other out, vandalism (broken windows), and graffiti) BMI percentile of low income Hispanic and African American children?

3: What is the association of parental perception of safety and BMI percentile of low income African Americans children compared with the association of parental perception of safety and BMI percentile for low income Hispanics children?

   HA3: There is an association of parental perception of safety and BMI percentile in low income African Americans children compared with the association of parental perception safety and BMI percentile for low income Hispanic children?

   HO3: There is no association of parental perception of safety and BMI percentile for low income African American children compared with the association of parental perception of safety and BMI percentile for low income Hispanic children?

In this chapter, I present results of statistical tests based upon the research questions and hypotheses. First, I discuss the data collection process, sample size, and response rates for the entire study and for the sample size used in this research. Following, I display abbreviations for independent variables. Lastly, I present the results of the data analysis related to research questions and hypotheses.

Data Collection

The data collected for this study were obtained from the National Survey of Children's Health, 2012. This survey was conducted by CDC's National Center for Health Statistics (NCHS), State and Local Area Integrated Telephone Survey Program (National Survey of Children's Health, 2012). Random sampling was used to select telephone numbers to identify parents or guardians of children between the ages of six to 17 years with knowledge of the health of the sampled child in the household (National Survey of Children's Health, 2012). After eligible households were identified, a child was randomly selected from the household, and an attempt was made to conduct 95,677 full interviews nationwide in reference to the selected child (National Survey of Children's Health, 2012).

The study sample for this research was selected by the availability of data gathered from parents living in the state of Pennsylvania who participated in the National Survey of Children's Health (NSCH), 2011/ 12. Selected for this study were parents of low income Hispanics and African American children between the ages of six to 17 years, with an income 0 to 299% of the poverty level. This population was selected because African-American and Hispanic minorities are more likely to live in urban environments which are identified as environments that promote obesity (Black & Mackinko, 2007). The state of Pennsylvania was selected because nearly one third of children living in the state of Pennsylvania are overweight or obese, with rates tripling within the last thirty years (CDC, 2013c).

Sample Size

The total Pennsylvania sample was 1,886 parents. Of this sample, 3.2% of the population was Hispanic and 7.2% was African American. Living with the 1,886 parents, there are 1,289 children between the ages of 6 to 17 years. When the criteria used for this study to include

parents with Hispanic or African American children between the ages of 6 and 17, and households with incomes of less than 300% of the poverty level were applied to the Pennsylvania sample, the actual sample size was 109 participants.

Race, age, and poverty level demographics that are more likely to be correlated with overweight and obesity were assessed within the sample population (World Health Organization, 2009). These characteristics were used to examine the association between parents' perception of safety and children's body mass index (BMI) percentile.

The data used for this study represented the study population selected, but did have some limitations. One of the limitations was a significant decrease in the number of research participants available once the data were separated by using the core components of the independent variables, age, race, and poverty level. Another discrepancy was the inability of the researcher to obtain all of the data related to each research participant, resulting in some missing data for some of the outcome measures. From the population meeting inclusion criteria, cases with missing outcome measures were removed, lowering the total number of research participants. Additional, exploration of the data using age groups 6 to 11 years and 12 to 17 years was conducted, but the sample was so small for each of the two age groups that the age groups of 6 to 17 years was selected for study.

All of the surveys participants were identified with an anonymous code, which protected their identities. In order to protect the confidential data, the data will be stored on a laptop which is only used by the researcher, and is protected by a pass code.

Descriptive Statistics

Table 1 presents descriptive statistics of Hispanic and African American children between the ages of 6 to 17, living in the state of Pennsylvania, reported by 34 parents of Hispanic children, and 75 parents of African American children. Obesity was higher among the Hispanic children, with over half (55.6%) being obese, compared to about one third (32.3%) of the African American children within poverty level 0-199%. This trend was also seen for poverty level 200-299%, with the percentage of Hispanic children (14.2%) twice as high as that for African American children (7.7%). However, for both Hispanic and African American children at this poverty level, the majority were at normal weight.

Table 1

Sample Characteristics of Children age 6 to 17 years of Age by Race/Ethnicity

Characteristics	*Poverty Level*	*BMI percentile*	*Race Hispanics*	*Race African American*
	0-199%	Less than 5th	0 (0)	4 (6.50)
		5th to less than 85th	9 (33.30)	23 (37.10
		85th to less than 95th	3 (11.10)	15 (24.20)
		Equal to or above 95th	15 (55.60)	20 (32.20)
		Total	27 (100)	62 (100)
	200-299%	Less than 5th	0 (0)	0 (0)
		5th to less than 85th	5 (71.4)	10 (77.0)
		85th to less than 95th	1 (14.2)	2 (15.3)
		Equal to or above 95th	1 (14.2)	1 (7.7)
		Total	7 (100)	13 (100)
		Total	34	75

Data Analysis

Additional Data Procedures

In addition to the planned analysis described in Chapter 3, the recoding of independent variables responses was necessary to categorize data that had multiple response options, such as a number of minutes or hours per or where response categories were similar enough in meaning to add together to improve sample size of respondents. SPSS recode function was used for this procedure, and the recoded variables were run using Chi Square analysis. For questions with responses of "yes" or "no", no recoding was done. Original and recoded variables are listed in table 17 (Recoded Independent Variables) in the APPENDIX B.

Results

Research Question 1

Research Question 1 was used to examine the association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children. Results for assessing factors used to answer research question one can be found in tables 2,3,4 and 5. Chi square testing (using Fisher's exact test as approximate) was used to determine the extent the factors identified affect a child's BMI percentile. Survey questions were included to assess the parents' perception of environmental safety and included parental involvement as well as their feedback on the physical environment. Questions of interest to physical activity/ inactivity assessment included information on how often a child participated in events or activities, community service or volunteer work at school; how many nights a child got enough sleep; the amount of time a child spent in front of a TV watching TV programs, playing video games, or using computers, cell phones, handheld video games, and other electronic devices; how often child did things other than homework; if a parent monitor content of what a

child watched on TV, or games played on computer, or electronic devices; and child having a TV, computer, or access to electronic devices in their bedroom.

Tables 2 through 8 shows the physical activity items (independent variables) reported by parents of Hispanics and African American children who took part in the survey. Physical activity items correlations by race, poverty level, age, and BMI percentile categories to include Chi Square statistics (χ^2) and *p* values are presented. The sample sizes (*n)* differ from table to table because parents did not respond to every item included in the survey.

Table 2 shows Chi Square analysis for parents' responses to *"How often did you attend events or activities that child participated in?".* For this question, 23 Hispanic parents and 57 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of "attendevents" for Hispanics, (χ^2 = 1.862, *p* = .394); or for African American (χ^2 = 1.414, *p* = .702) at poverty level 0-199%. Results were not computed for Hispanic and African Americans at poverty level 200-299% because 'attendevents" is a constant at this poverty level.

Table 2

Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of During the past 12 months, how often did you attend events or activities that child participated in?

Poverty Levels	Race		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		χ^2	*p*
	Hispanic (n)	African American (n)	1	2	1	2	1	2	1	2		
0-199%	17		0	0	1	4	1	1	1	9	1.862	.394
200-299%	6		0	0	0	4	0	1	0	1		
0-199%		48	0	4	2	17	0	9	2	14	1.413	.702
200-		9	0	0	0	8	0	0	0	1		

299%

Note: 1=never + sometimes, 2 = Sometimes + Usually + Always

Table 3 shows Chi Square analysis for parents' responses to "*During the past 12 months, how often has child been involved in any type of community service or volunteer work at school, church, or in the community?".* For this question, 19 Hispanic parents and 53 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of "communityservice" for Hispanics ($\chi 2$ = .933, p = .627) at poverty level of 0-199% and (p =.400) at poverty level of 200-299%; or for African American ($\chi 2$ = .510, p = .917) at poverty level of 0-199% and ($\chi 2$ = 1.200, p .549) at poverty level 200-299%.

Table 3

Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of During the past 12 months, how often has child been involved in any type of community service or volunteer work at school, church, or in the community?

Poverty Levels	Race		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		χ^2	p
	Hispanic (n)	African American (n)	1	2	1	2	1	2	1	2		
0-199%	14		0	0	4	2	2	0	4	2	.933	.627
200-299%	5		0	0	3	1	0	1	0	0		[.400]
0-199%		41	2	1	12	6	7	4	7	2	.510	.917
200-299%		12	0	0	6	4	1	0	1	0	1.200	.549

1= never + don't know, 2=once a week + a few times a week + a few times a month + a few times a year; [ ] Fisher's Exact test results

Table 4 shows Chi Square analysis for parents' responses to *"During the past week, on how many nights did child get enough sleep for a child his or her age"?* For this question, 35

Hispanic parents and 75 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to Hispanic parents' perception of "sleep" ($\chi 2$ = 2.832, p = .586) or that of African Americans parents ($\chi 2$ =5.36, p = .511) at poverty level 0-199%, or ($\chi 2$ = .325, p = .850) at poverty level 200-299%. No statistics were computed for Hispanics at poverty level 200-299% because "sleep" is a constant

Table 4
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of During the past week, on how many nights did child get enough sleep for a child his or her age?

Poverty Levels	Race		≤ 5th			$5^{th} \leq 85^{th}$			$85^{th} \leq 95^{th}$			≥ 95th			χ^2	*p*
	Hispanic (n)	African American (n)	0	1	2	0	1	2	0	1	2	0	1	2		
0-199%	27		0	0	0	0	1	8	0	0	3	1	0	14	2.832	.586
200-299%	7		0	0	0	0	0	5	0	0	1	0	0	1		
0-199%		62	0	1	3	1	0	22	0	2	13	1	3	16	5.36	.511
200-299%		13	0	0	0	0	1	9	0	0	2	0	0	1	.325	.850

Note: 0=0 nights, 1= 1 thru 3 nights, 2=4 thru 7 nights

Table 5 shows Chi Square analysis for parents responses to *"On an average weekday, about how much time does child usually spend in front of the TV watching TV programs, videos, or playing video games?.* For this question, 34 Hispanic parents and 75 African American parents responded. There was a weak negative correlation for children's BMI percentile category as related to African American parents' perception of "TVwatching" at poverty level 0 – 199%

($\chi 2$ = 16.432, p=0.012, r = -.167), but not at poverty level of 200-299% ($\chi 2$=.325, p=.850). There was no association for children's BMI percentile category as related to Hispanic parents' perception of "TVwatching" ($\chi 2$=2.832, p=.586) at poverty level of 0-199%. No results were computed for Hispanics within poverty level 200-299%.

Table 5
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of one an average weekday, about how much time does child usually spend in front of a TV watching TV program, videos, or playing video games ?

Poverty Levels	Race		≤ 5th			5th ≤ 85th			85th ≤ 95th			≥ 95th			$\chi 2$	p
	Hispanic (n)	African American (n)	0	1	2	0	1	2	0	1	2	0	1	2		
0-199%	27		0	0	0	0	8	1	0	3	0	1	14	0	2.832	.586
200-299%	7		0	0	0	0	5	0	0	1	0	0	1	0		
0-199%		62	0	3	1	1	22	0	0	15	0	0	20	0	16.432	.012*
200-299%		13	0	0	0	1	9	0	0	2	0	0	1	0	.325	.850

Note: 0 = don't know + don't own a TV, 1= 1to 59 minutes, 2=60 plus minutes

Table 6 shows Chi Square analysis for parents' responses to *"On an average weekday, about how much time this child usually spend with computers, cell phones, handheld video games, and other electronic devices, doing things other than schoolwork"?* All parents responded to question 6. There was no statistical significance for children's BMI percentile

category by race level as related to parents' perception of "Computerplus" for Hispanics ($\chi 2$ = .735, p = .692); or African American ($\chi 2$ = 7.241, p = .065). No results were computed for Hispanics or African Americans within poverty level 200-299%, because "Computerplus" was a constant.

Table 6

Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception On an average weekday, about how much time does child usually spend with computers, cell phones, handheld video games, and other electronic devices, doing things other than schoolwork?

Poverty Levels	Race		≤ 5th			5th ≤ 85th			85th ≤ 95th			≥ 95th			$\chi 2$	p
	Hispanic (n)	African American (n)	0	1	2	0	1	2	0	1	2	0	1	2		
0-199%	26		0	0	0	1	8	0	2	0	0	3	12	0	.735	.692
200-299%	7		0	0	0	0	5	0	0	1	0	0	1	0		
0-199%		60	1	3	0	0	21	0	0	15	0	1	19	0	7.241	.065
200-299%		13	0	0	0	0	10	0	0	2	0	0	1	0		

0= no, don't know 1=1-59 minutes and 2 = 60+ minutes

Table 7 shows Chi Square analysis for parents responses to "*Do you monitor the content of what child watches on TV, plays on the computer, or does on electronic devices?"*. For this question 34 Hispanic parents and 72 African American parents responded. There was no

statistical significance for children's BMI percentile category by race as related to parents monitoring of electronic devices for Hispanics ($\chi 2$ = 450, p = .799), or ($\chi 2$ = 719, p = .126) at poverty level at 0-199% or 200-299% respectively; or for African Americans ($\chi 2$ = 467, p = .792), or ($\chi 2$ = .709, p = .701) at poverty levels at 0-199% or 200-299% respectively.

Table 7
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of Do you monitor the content of what child watches on TV, plays on the computer, or does on electronic devices ?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		$\chi 2$	p
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	27		0	0	1	8	0	3	2	13	.450	.799
200-299%	7		0	0	1	4	0	1	0	1	.719	.126
0-199%		60	2	2	6	17	3	12	1	19	.467	.792
200-299%		12	0	0	2	8	1	0	0	1	.709	.701

Note: * = p <.05

Table 8 shows Chi Square analysis for parents' responses to "*Does child have a TV, computer, or access to electronic devices in his/ her bedroom?".* For this question, 34 Hispanic parents and 75 African American parents responded. There was no statistical significance for

children's BMI percentile category by race as related to parents' perception of child having a TV, computer, or access to electronic devices in his or her room for Hispanics ($\chi 2$ = 1.634, p= .442)or ($\chi 2$ =1.120, p = .571) at poverty level at 0-199% or 200-299% respectively, or for African Americans ($\chi 2$ = 2.113, p = .549) or ($\chi 2$ = 1.170, p = .557) at poverty level at 0-199% or 200-299% respectively.

Table 8
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of Does child have a TV, computer, or access to electronic devices in his/ her bedroom?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		$\chi 2$	p
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	27		0	0	4	5	1	2	3	12	1.634	.442
200-299%	7		0	0	2	3	0	1	0	1	1.120	.571
0-199%		62	0	4	6	17	4	11	7	13	2.113	.549
200-299%		13	0	0	2	8	1	1	0	1	1.170	.557

Note: * = p <.05

Research Question 2

Research question 2 was used to examine the association between parental perception of safety (community members helping each other out, vandalism (broken windows), and graffiti and BMI percentile of low income Hispanic and African-American children. Results for assessing factors used to answer research question two can be found in tables 9, 10, 11, 12, 13, 14 and 15. Chi square testing (using Fisher's exact test as appropriate) was used to determine the extent the factors identified affect a child's BMI percentile. Survey questions were included to assess the parents' perception of environmental safety. Of interest was information on sidewalks or walking paths; park and playgrounds; recreation center, community center, or boys' or girls' club; library or bookmobile; litter or garbage on the street or sidewalk; vandalism such as broken windows or graffiti; how people in the community help each other out, overall safety of community and neighborhood, and safety of schools.

Tables 9 through 15 summarize neighborhood and community variables reported by parents of Hispanics and African American children who took part in the survey. Neighborhood and community item correlations by race, poverty level, age, and BMI percentile categories to include Chi Square statistics ($\chi 2$) and *p* values are presented. The sample sizes (*n*) differ from table to table because parents did not respond to every item included in the survey.

Table 9 shows Chi Square analysis for parents' responses to *"Sidewalks or walking paths?".* For this question, 34 Hispanic parents and 75 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of the availability of sidewalks or walking paths within the communities for Hispanics ($\chi 2 = .257$, $p = .879$) or ($\chi 2 = 3.080$, $p = .214$) at poverty levels of 0-199% and 200 –

299% respectively; and for African Americans ($\chi 2$ = 1.462, p = .691) or ($\chi 2$ = .325, p = .850) at poverty levels of 0-199% and 200-299% respectively.

Table 9
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of Sidewalks or Walking Paths?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		$\chi 2$	*P*
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	27		0	0	2	7	1	2	3	12	.257	.879
200-299%	7		0	0	1	4	0	1	1	0	3.080	.214
0-199%		62	0	4	1	22	1	14	0	20	1.462	.691
200-299%		13	0	0	1	9	0	2	0	1	.325	.850

Note: * = p <.05

Table 10 shows Chi Square analysis for parents' responses to "*A recreation center, community center, or boys' and girls' club?"* For this question, 33 Hispanic parents and 75 African American parents responded. There was statistical significance, and a strong negative correlation (r = -.881) for children's BMI percentile category as related to Hispanic parents' perception ($\chi 2$ = 7.000, p = 0.030) of the availability of a recreation center, community center, or boys' or girls' club in the neighborhood and statistical significance and a moderate negative correlation (r = -.467) as related to African American parents' perception ($\chi 2$ = 6.086, p = .048) of the availability in the services and children's BMI percentile at poverty level of 200 – 299%. There was no statistical significance for children's BMI percentile category as related to Hispanic parents' perception ($\chi 2$ = 1.723, p = .423) of the availability of a recreation center, community

center, or boys' or girls' club in the neighborhood or for that of African American parents ($\chi 2$ = 6.459, p = .098) at poverty level of 0-199%.

Table 10
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of available recreation center, community center, or boys' and girls' club?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		*X2*	*P*
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	26		0	0	4	5	2	1	10	4	1.723	.423
200-299%	7		0	0	0	5	0	1	1	0	7.000	.030*
0-199%		62	0	4	3	20	5	10	1	19	6.459	.098
200-299%		13	0	0	1	9	0	2	1	0	6.086	.048*

Note: * = p <.05

Table 11 shows Chi Square analysis for parents' responses to "*In your neighborhood, is there litter or garbage on the street or sidewalk?".* For this question 34 Hispanic parents and 75 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of litter or garbage on the street or sidewalks within the communities or neighborhoods for Hispanics ($\chi 2$ = 3.611, p = .164) or ($\chi 2$ = 1.131, p = .568) at poverty level of 0-199% and 200-299% respectively; and for African Americans ($\chi 2$ = 4.227, p = .238) or ($\chi 2$ = 4.543, p = .208) at poverty levels of 0-199% and 200-299% respectively.

Table 11
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of In your neighborhood, is there litter or garbage on the street or sidewalk?

Poverty Levels	*Race*		≤ 5th		5th ≤ 85th		85th ≤ 95th		≥ 95th		*X2*	*P*
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	27		0	0	6	3	1	2	12	3	3.611	.164
200-299%	7		0	0	5	0	1	0	1	0	1.131	.568
0-199%		62	2	2	17	6	10	5	9	11	4.227	.238
200-299%		13	0	0	7	3	1	1	1	0	4.543	.208

Note: * = p <.05

Table 12 shows Chi Square analysis for parents' responses to "*How about poorly dilapidated/ poorly kept or rundown housing?".* For this question 34 Hispanic parents and 75 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of availability of poorly dilapidated/ poorly or rundown housing being in their neighborhood and community for Hispanics ($\chi 2$ = 1.227, p = .541) or ($\chi 2$ = .467, p = .792) at poverty levels of 0-199% and 200 – 299% respectively; and for African Americans ($\chi 2$ = 3.890, p = .274) or ($\chi 2$ = .709, p = .701) at poverty levels of 0-199% and 200 – 299% respectively.

Table 12
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of How about poorly dilapidated/ poorly kept or rundown housing?

Poverty Levels	*Race*		≤ 5th		5th ≤ 85th		85th ≤ 95th		≥ 95th		*X2*	*P*
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	27		0	0	5	4	1	2	10	5	1.227	.541
200-299%	7		0	0	4	1	1	0	1	0	.467	.792

0-199%		62	3	1	20	3	9	6	16	4	3.890	.274
200-299%		13	0	0	8	2	2	0	1	0	.709	.701

Note: * = p <.05

Table 13 shows Chi Square analysis for parents' responses to *"How about vandalism, such as broken windows or grafitti?".* For this question 34 Hispanic parents and 75 African American parents responded. There was statistical significance, and a strong relationship (p=.0.030, r = -.881) showing a very strong negative correlation for children's BMI percentile category and Hispanic parent's perception ($\chi 2$= 7.000 p = 0.030) of availability of vandalism, such as broken windows or graffiti in the neighborhood for those households with incomes of 200-299%. There was no statistical significance for children's BMI percentile category as related to Hispanic parents' perception ($\chi 2$ = 2.931, p = 0.231) of the availability of vandalism, such as broken windows or for that of African American parents ($\chi 2$ = 2.931, p = 0.231) at poverty level of 0-199%, or for that of African American parents ($\chi 2$ = 0.325, p = 0.850) at poverty level of 200-299%.

Table 13

Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of How about vandalism, such as broken windows or grafitti?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		χ^2	p
	Hispanic (n)	African American (n)	No	Yes	No	Yes	No	Yes	No	Yes		
0-199%	27		0	0	5	4	2	1	13	2	2.931	.231
200-299%	7		0	0	5	0	1	0	0	1	7.000	.030*
0-		62	3	1	21	2	9	6	14	6	5.425	.143

199%												
200-299%		13	0	0	9	1	2	0	1	0	.325	.850

Note: * = p <.05

Table 14 shows Chi Square analysis for parents' responses to "*How often do you feel child is safe in your community or neighborhood?".* For this question 33 Hispanic parents and 75 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of availability of safety in community or neighborhood for Hispanics ($\chi 2$ = 2.077, p = .354) or African Americans ($\chi 2$ = .320, p = .227) at poverty level of 0-199%. Results were not computed for Hispanic and African Americans parents at poverty level 200-299% because safety in community or neighborhood is a constant at this poverty level.

Table 14
Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of How often do you feel child is safe in your community or neighborhood?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		$\chi 2$	p
	Hispanic (n)	African American (n)	1	2	1	2	1	2	1	2		
0-199%	26		0	0	1	8	0	3	0	15	2.077	.354
200-299%	7		0	0	0	5	0	1	0	1		

0-199%		62	0	4	0	23	0	15	2	18	.320	.227
200-299%		13	0	0	0	10	0	1	0	1		

Note: 1= never, don't know, 2= sometimes, usually, and always

Table 15 shows Chi Square analysis for parents' responses to "*How often do you feel child is safe at school?".* For this question 34 Hispanic parents and 70 African American parents responded. There was no statistical significance for children's BMI percentile category by race as related to parents' perception of "Safety at school" for Hispanics, ($\chi 2$ = .831, p = .660); or for African American, ($\chi 2$ = 3.522, p = .318) at poverty level of 0-199%. Results were not computed for Hispanic and African Americans at poverty level 200-299% because Safety at school" is a constant at this poverty level.

Table 15

Chi Square Analysis: Race, Poverty Level, and BMI percentile category as related to parental perception of How often do you feel child is safe at school?

Poverty Levels	*Race*		$\leq 5^{th}$		$5^{th} \leq 85^{th}$		$85^{th} \leq 95^{th}$		$\geq 95^{th}$		*X2*	*P*
	Hispanic (n)	African American (n)	1	2	1	2	1	2	1	2		
0-199%	27		0	0	0	9	0	3	1	14	.831	.660

200-299%	7		0	0	0	5	0	1	0	1		
0-199%		58	0	4	0	23	1	12	0	18	3.522	.318
200-299%		12	0	0	0	10	0	1	0	1		

Note: 1= never, don't know, 2= sometimes, usually, and always

Hypothesis Testing

Based on the Chi square analysis displayed in Table 5 (p = .012, r = -.167) there is a weak negative correlation of child's BMI category and African American parent's perception of time child watched TV or played video games ("TVwatching") at poverty level 0 – 199. As used in this study "TVwatching" is relevant to low income African American parent's perception of physical activity and there is an association between this perception and child's BMI category and time child watched TV or played video games, both sedentary activities. Therefore the null hypothesis *HO1*assessing for physical activity items was rejected. For the Chi square analysis displayed in Table 10 (p = 0.030, r = -.881) there is a strong negative correlation of child's BMI category and Hispanic parent's' perception of availability of recreation center, community center, or boys' and girls' club at poverty level 200-299% and a moderate negative correlation (p = .048, r = -.467) of BMI category and African American parents' perception of availability of recreation center, community center, or boys' and girls' club at poverty level 200-299%. As used in this study the availability of recreation center, community center, or boys' and girls' club is relevant to low income Hispanic and African American parent's perception of neighborhood safety and there is an association between this perception and child's BMI category and availability of recreation centers, community centers, or boys' and girls' club which enable the engagement of physical activity of low income children living in these communities. Based on Chi square analysis displayed in Table 13 (p = 0.030, r = -.881) there is a strong negative

correlation of child's BMI category and Hispanic parent's perception of availability of vandalism, such as broken windows or graffiti at poverty level 200-299%. As used in this study, availability of vandalism, such as broken windows or graffiti is relevant to low income Hispanic parent's perception of neighborhood safety and there is a negative association between the perception of vandalism and child's BMI category. The results in tables 10 and 13 assessing for parental perception of safety items support the alternative hypothesis and support the rejection of the null hypothesis *HO2*.

Research Question Three

Research Question 3 was used to examine the association of parental perception of safety and BMI percentile of low income African Americans children compared with the association for parental perception of safety and BMI percentile for low income Hispanic children. Neighborhood and community variables can be found in tables 9 through 15, and were used to assess how parent's perceive these items and their relevance to BMI percentile for low income Hispanic and African American children. Observation of the data was conducted to assess similarities and differences amongst the Hispanic and African American populations. This discussion compares only those results with statistical significance. Based on the Chi square analysis displayed in Table 10 ($p = 0.030$, $r = -.881$) there is a strong negative correlation of child's BMI category and Hispanic parent's perception of safety, ($p = 0.048$, $r = -.467$) as compared to a moderate negative correlation of child's physical activity and BMI category and for African American parents' perception of safety at poverty level 200-299%. The Pearson's *r* measures the linear relationship between the availability of recreation centers, community center, or boys' and girls' club in the neighborhood and community and BMI percentile. As used in this study, availability of recreation centers, community center, or boys' and girls' club in the

neighborhood and community is relevant to both low income Hispanic and African American parent's perception of neighborhood safety.

Chi square analysis displayed in Table 13 ($p = 0.030$, $r = -.881$) shows a strong negative relationship between child's BMI category and Hispanic parent's perception of vandalism, such as broken windows or graffiti within the community or neighborhood at poverty level 200-299% compared to no statistical relationship between child's BMI category and African American parents' perception of vandalism. Pearson's *r* measures the linear relationship between the dependent and independent variables. As used in this study vandalism, such as broken windows or graffiti is relevant to low income Hispanic parent's perception of neighborhood safety and there is an association between this perception and child's BMI category. When comparing the data results for the Hispanic and African American populations the data results suggests parental perception of vandalism is associated with higher BMI percentile among both low income Hispanic and African American children.

Hypothesis Testing of Question 3

The comparison of the association of parental perception of safety and their children's weight status and physical activity for Hispanics and African American parent showed the need to reject the null hypothesis which suggests there is no association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children. This rejection is based on the Chi square test statistical results of $p<0.05$ which supports the rejection. These results support the alternative hypothesis that there is an association of parental perception of safety and BMI percentile in low income African Americans children compared with the association of parental perception of safety and BMI percentile for low income Hispanic children.

Summary

A quantitative cross sectional study was used to describe similarities and differences between data results gathered from African Americans and Hispanics populations with the goal of understanding the connection between parent's perception of children's BMI percentile, and parent's perception of safety and of, physical activity and their children's BMI percentile. The data represented 1,248 children under the ages of 18 years old, from family households with income levels as below 300 percent of the poverty level (CDC, 2012e). Race and ethnicity were used to select only low income African American and Hispanic parents and their children. Chapter 5 includes data results from Chi square testing, and data results.

Chapter 5: Discussion

Introduction

This study examined the association between parents' perception of safety and BMI and parents' perception of children's physical activity levels and BMI percentile. The study used data from the National Survey of Children's Health (NSCH), 2011/12 to identify how parental perception of safety (community members helping each other out, vandalism (broken windows), and graffiti) may impact the physical activity/inactivity and BMI percentile of low income Hispanic and African American children living in the state of Pennsylvania. In Chapter 5, I interpret results as relates to previous studies listed in literature review, and discuss limitations of the study, implications for future research, and social change.

Summary of Findings

Parental perception of physical activity/ inactivity was not associated with BMI percentile of low income Hispanic children living in Pennsylvania. However, there was significant association of parental perception of physical activity/ inactivity and BMI percentile of low income of African American children living in Pennsylvania specific to parental perception of "TVwatching" and BMI percentile ($p = 0.012$, $r = -0.167$). Also, there was a significant association between parental perception of safety and BMI specific to parental perception of the availability of a recreation center, community center, or boys' or girls' club in the neighborhood for low income Hispanic ($p = 0.030$, $r = -.881$); and African American children ($p = .048$; $r = .467$). Results are relevant to the relationship between parent's perception of the availability of safe places for physical activity or play, such as recreation center, community center, or boys' or girls' club within the communities and children's lower BMI percentile.

Interpretation of the Findings

Research Question 1

What is the association between parental perception of physical activity/ inactivity and BMI percentile of low income Hispanic and African American children? The findings from this study suggests that parental perception of physical activity/ inactivity may affect BMI percentiles of low income African American children living in Pennsylvania, but had no significance amongst the Hispanic population. Analysis of parent responses from the National Survey of Children's Health (NSCH), 2011/12, showed there was a negative correlation (p = 0.012, r = 0 -0.167) for the amount of time African American children spend in front of a TV watching TV program, videos, or playing video games and BMI percentile at poverty level of 0-199%. The majority of the children who spend between one to 59 minutes using these devices had BMI percentiles between the 5^{th} to 95^{th} percentiles, with 35% having BMI percentiles between the 5^{th} to 85^{th} percentiles, 24% with BMI percentiles between the 85^{th} to 95^{th} percentiles, and 32% with BMI percentile above the 95^{th} percentile. Based on BMI percentile, 56% of children using these devices were overweight or obese. These results are consistent with previous research conducted by Butte et al., (2014) and Herman, Sabiston, Mathieu, Tremblay, and Paradis, (2014). Butte et al. (2014) conducted a longitudinal study assessing parental, child, and neighborhood factors and their influence on BMI and activity patterns among Latino children living in the United States. They indicate that across time, total daily accelerometer counts (p = 0.04) and decreased steps (p = 0.0001), were linked to BMI percentile; and should be considered when designing interventions to promote moderate vigorous physical activity (MVPA) and reduce time spent during sedentary activity among Latino children (Butte et al., 2014). Herman

et al., (2014) identified sedentary behavior such as television watching, playing video games, or using the computer to be a risk factor for higher BMI percentile, elevating children's risk for obesity and assessed sedentary behavior in children, and their risk of obesity (Herman et al., 2014). The authors assessed 534 children from Quebec, Canada between the ages of 8 to 10 years with ≥ obese parents, sedentary behavior, and BMI percentile of normal, overweight, and obese children (Herman et al., 2014). They indicated overweight/ obese children were significantly more sedentary, with 19% of boys and 46% of girls meeting screen time but not PA guidelines, engaging in higher screen time than normal weight children; concluding overweight/ obese children are more sedentary overall (Herman et al., 2014). In a study of youth living in the United States, Rosenberg et al. (2010) used scales to conduct a study assessing physical activity and sedentary equipment in the home. Rosenberg et al. included covariates (TV viewing (hours/week), sedentary composite (hours/ week), physical activity (days/ week), and BMI) to examine neighborhood environment in relation to a variety of outcomes including eating behaviors, physical activity, and sedentary behaviors (2010). The participants were a subset of adolescents (*n* = 189; mean age = 14.6), parents of adolescents (*n*=171; mean age = 45.0), and parents of younger children (*n*= 116; parents mean age 39.6; children's mean age = 8.3) (Rosenberg et al., 2010). The authors reported home environment attributes were related to behaviors linked to obesity, and children's weight status (Rosenberg et al., 2010).

Preventing sedentary behavior from childhood to adolescence may reduce the number of obese children (Mitchell, Pate, Beets, & Nader, 2013). Mitchell et al (2013) conducted a study on children between the ages of 9 to 15 years to determine if time spent in sedentary behavior is associated with a change in BMI. Children in the study were enrolled in the National Institute of Child Health and Human Development (NICHD), and included boys and girls (*n* = 789). The

authors included covariates such as gender, and race differences in regards to BMI percentile (Mitchell et al., 2013). Maternal education was uses as a marker for socioeconomic status of education (Mitchell et al., 2013). The authors assessed the relationship between sedentary behavior, time spent in objectively measured behaviors, and maternal education used to assess socioeconomic status and its association with BMI percentile, as it relates to gender (Mitchell et al., 2013). The authors reported that spending more time in sedentary behavior was associated with additional increases in BMI at the 90th, 75th and 50th BMI percentiles, independent of MVPA and the other covariates (90th percentile=0.59, 95% confidence interval (95% CI): 0.19-0.98 kg m(-2); 75th percentile=0.48, 95% CI: 0.25-0.72 kg m(-2); and 50th percentile=0.19, 95% CI: 0.05-0.33 kg m(-2) (Mitchell et al., 2013). Mitchell et al reported that sedentary behaviors such as the use of TV, computers and other hand held devices are linked to high BMI levels, and are associated with childhood obesity (2013). This finding is consistent with the results from my study, in that I found an association between sedentary behaviors such as time spent in front of a TV watching TV programs, videos, or playing video games and higher BMI percentiles in children, 6-17 years of age.

Research Question 2

What is the association between parental perception of safety (community members helping each other out, vandalism (broken windows), and graffiti) and BMI percentile of low income Hispanic and African American children? Based on literature in Chapter 2, factors within the built environment such as sidewalks or walking paths, community center, or boys' and girls' club, litter or garbage on the street or sidewalk, poorly dilapidated/ poorly kept or rundown housing, etc. are linked to higher rates of childhood obesity (Krisberg, 2006; Williams, 2007). The current study supports these findings. A significant correlation was found for parents reporting there is a

recreation center, community center, or boys' and girls' club within their community, and BMI for Hispanic children (p = 0.030, r = -.881) and BMI for African American children (p = .048, r = .467) at poverty levels of 200-299%. Among the Hispanic population 71.4% of these children had normal BMI percentiles, demonstrating the strong negative relationship (r = -.881) between availability of recreation center, community center, or boys' and girls' club within their communities and lower BMI percentiles. Among the African American population 69.2% of these children had normal percentiles demonstrating the medium negative relationship (r = -.467) between availability of recreation centers, community center, or boys' and girls' club, and BMI percentile. Another significant relationship (p = 0.030) was found between vandalism, such as broken windows are graffiti and BMI percentiles among the Hispanic population within poverty level of 200 – 299%. These findings were consistent with previous literature. For example, Williams (2007) conducted a cross sectional study which identified characteristics within the built environment as influences and deterrents to physical activity levels. In addition, Zhang, Christoffel, Mason, & Lu (2006) indicated that factors within the neighborhood like land use (population density, land use (commercial, residential, and industrial) traffic, and crime, social and built environment were linked to obesity. Data from eight school neighborhoods were used to assess the impact of land use and safety, and BMI percentile, and their relation to childhood obesity, and physical activity. The authors indicated that lower obesity rates were found in school environments that supported physical activity (Zhang, Christoffel, Mason, & Lu., 2006). Additional findings obtained by a study conducted by Santos, Pizarro, Mota, & Marques (2013) are consistent with results from previous research identifying breaches in safety may cause parents to restrict their child's outdoor activities, leading to higher BMI percentiles. The cross sectional study used 354 pupils and their parents, independent mobility, perceptions of

neighborhood safety and physical activity to determine its effect on children's mobility. Parental perception of sidewalk and street safety was the strongest predictor (β = 0.132) in indicating independent mobility of the children (Zhang et al., 2006).

In the current study many of the variables believed to be associated with BMI percentile based on literature reviewed in Chapter 2 did not produce any significant association among the research populations studied. Factors such as parents providing social support by attending events or activities their child participated in previously identified as a factor linked to better health were not significant with higher BMI percentile (Halliday et al., 2014). Other physical activity items such as children's involvement in community service or volunteer work at school, church, or in the community, getting enough sleep, and time spent with computers, cell phones, handheld video games, and other electronic devices found to be significantly associated with BMI percentiles of low income Hispanic and African American in previous research (Bukara-Raduikovic & Zdavkovic, 2009; MayoClinic, 2013) were not significantly associated with BMI percentile in this study. Previous researchers identified lower amounts of sleep to be directly linked to higher BMI percentile (Bonuck, Chervin, & Howe, 2014). Other inconsistencies were found amongst community and neighborhood characteristics like perception of safety in community and school environment which were identified in previous research as factors linked to BMI percentile within low income children (Gilstad- Hayden et al., 2014 & Greves et al., 2007).

These differences can be used by policy makers as they review and create policies geared at reducing unsafe aspects of many communities, to further understand how parental perception of safety in neighborhoods and communities within low income communities are associated with BMI percentiles of Hispanic and African American children. This research did not indicate the

specific cause of these correlations, but suggest the need for more assessment among additional variables within the Hispanic and African American children live.

Limitations of the Study

Several limitations should be considered when assessing the results of this research study. First, secondary data was used for this survey. The use of secondary data produces an inevitable gap between the primary data collected for specific research purposes, and the data collected by others for different purposes (Frankfort –Nachmias & Nachmias, 2008). Second, modification of the National Survey of Children's Health (NSCH), 2011/ 12 were made, causing the removal of some of the questions used for primary survey purposes. This alteration may have affected the outcome data produced in this research. Third, there were several missing cells in the responses of some of the parents who took part in the National Survey of Children's Health (NSCH), 2011/ 12. These missing cells reduced the reliability of some of the data included in the data results. Forth, the use of specific poverty levels, race, and age groups from the National Survey of Children's Health (NSCH), 2011/ 12 significantly reduced the number of research participants included in the study. This reduction caused the use of a small sample size which may affect how the data represents the population, and may have produced skewed results. Fifth, the research collected from the National Survey of Children's Health (NSCH), 2011/12 relied on the recollection of parents to produce their child's BMI percentiles, and weight. This study also relied on the memory of parents to give specific details about their children's sleeping patterns, hours of watching TV, and other precise details of children's physical activity/ inactivity which are difficult to keep track of. This information may have been inaccurate and may have caused incorrect assessments to be produced. Sixth, parents' perception was used to answer questions. It is very difficult to measure perception because experiences, knowledge, and other factors lead

to these assumptions, and may vary for each individual. Seventh, response bias may have occurred. Often, research participants answer questions according to what they believe the researcher want to hear. An example which may support response bias is parents stated they were able to monitor the content of what they child watches on TV, plays on the computer, or does on electronic devices, and many of these parents reported their children had access to TV, computer, or other electronic devices in their bedrooms, which may significantly affect parent's ability to monitor their child's access to these devices. Eighth, the results of this study were taken at a period of time, which does not enable observation before and after this period of time, and has no control over extrinsic and intrinsic factors (Frankfort –Nachmias & Nachmias, 2008).

Recommendations for Action

The first recommendation is to conduct future research needed to address the gap of measuring parents' perception of physical activity/ inactivity, and safety. Future research is needed to assess the association between parental perception of safety and BMI percentile of low income Hispanic and African American children. In particular, researchers should focus on how parents of low income Hispanic and African American children interpret the amount of time children engage in physical activity/ activity and if this interpretation affects their children's BMI percentiles. Also, additional research is needed to understand the relationship of neighborhood and community characteristics as it relates to physical activity/ inactivity and BMI percentile; and clarify evidence of previous research related to parental perception of the safety of their child's environment and impact on physical activity/ inactivity and BMI percentiles for these populations. To accomplish such studies primary data obtained from larger sample groups of low income Hispanic and African American populations than that used in the current study are needed to better determine the results obtained are accurate, and can be generalized to similar

populations. Such research should also consider longitudinal studies that observe physical activity levels, factors within built environment, food intake, and BMI percentile of Hispanic and African American children over a period of time, observing the same factors to get a better understanding of what internal, or external environmental factors and determine changes in these characteristics.

The use of the social ecological theory can assist in further investigation of how the built environment may impact physical activity in low income communities as it by assessing the link between specific factors within the social environment, and BMI percentiles among Hispanic and African American children living in low income communities. A study assessing the direct impact of the built environment, sedentary behaviors, physical activity/ inactivity and BMI percentile can assist in better awareness of the direct link between the built environment and BMI percentile of low income African American and Hispanic children.

Implications of Social Change

This research can contribute to better understanding the complexities of specific factors which may affect physical activity/ inactivity and BMI percentiles of low income Hispanic and African American children. Such knowledge when used by public health educators can be used to inform low income Hispanic and African American parents of how their environments may affect children's health and influence BMI percentiles. Recognizing the specifics of how parents perceive their children physical activity/ inactivity levels is also important in understanding identifying the environment’s true influence on the BMI percentiles of low income Hispanic and African American children. This has implications to understanding the significant increased obesity rate in Pennsylvania youth, particularly Hispanic and African American youth when compared to Whites youth (YRBS, CDC, 2009). The results of the research study can inform

policy makers as they review and create policies geared at reducing unsafe aspects of many communities, and making alterations within communities leading to social change. This information can be used to increase the availability of recreation centers, community centers, or boys' and girls' clubs' which are associated with lower BMI percentiles among Hispanic and African American children living in Pennsylvania. In addition, the results of this study can be used to create policies used to improve community and neighborhood conditions, such as vandalism, broken windows or graffiti which are linked to BMI percentiles within the low income Hispanic population living in Pennsylvania. The results from this study can also be used to educate low income Hispanic and African American parents and children of direct factors linked to their health.

Conclusion

The purpose of this study was to examine the association between parents' perception of safety and children's physical activity levels and BMI percentile. Factors within the built environment contribute to the BMI percentile of low income Hispanic and African American children living in the state of Pennsylvania, but its effects may be limited when compared to other factors involved. As seen in this study the association of parents' perception of physical activity/ inactivity items and neighborhood and community characteristics ("TVwatching", availability of recreation centers, community centers, or boys' and girls' club, and vandalism such as broken windows or graffiti) on BMI percentiles show the need for educating families, as well as restructuring neighborhood and community characteristics to reduce sedentary behaviors among low income Hispanic and African American children in Pennsylvania. This may lead to higher physical activity levels, lowering BMI percentile amongst this population. The more time a child spend in front of a TV watching TV programs, videos, and playing video games the less

time they are physically active, and this is negatively correlated to higher BMI percentile (Butte et al., 2014 & Herman et al., 2014). In addition, actual access to facilities in neighborhoods and communities, may lead to higher physical activity levels, lessening the amounts of sedentary behaviors within low income Hispanic and African American children. Further research is needed to encourage access and availability of recreation centers, community centers, boys' or girls' club, and other places within the built environment enabling an increase in physical activity levels, lessening the prevalence of disease linked to childhood obesity, increasing the quality of life and lessening disparities within low income Hispanic and African American populations.

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Appendix A

National Survey of Children's Health (NSCH), 2011/12

Questions

Section 1: Initial Demographics

1 Child's sex **(K1Q01)**

2 Respondent's relationship to the child **(K1Q02)**

3 What is the primary language spoken in your home? **(K1Q03)**

Section 2: Child's Health and Function Status

1 In general, how would you describe [CHILD'S NAME] health? **(K2Q01)**

2 How would you describe the condition of [CHILD'S NAME] teeth? (K2Q01_D)

3 How tall is [CHILD'S NAME] now? **(K2Q02)**

4 How much does [CHILD'S NAME] weigh now? **(K2Q03)**

5 What was [CHILD'S NALE] birth weight? **(K2Q04)**

6 Was [CHILD'S NAME] born premature? **(K2Q05)** +

7 Does [CHILD'S NAME] currently need or use medicine prescribed by a doctor, or other vitamins? **(K2Q10 – K2Q12)**

8 Does [CHILD'S NAME] need or use more medical care, mental health, or educational services than is usual for most children of the same age? **(K2Q13- K2Q15)**

9 Is [CHILD'S NAME], limited or prevented in any way in (his/her) ability to do things most children of the same age can do? **(K2Q 16 – K2Q18)**

10 Does [CHILD'S NAME] need or get special therapy, such as physical, occupational, or speech therapy? **(K2Q19 – K2Q21)**

11 Does [CHILD'S NAME] have any kind of emotional, developmental, or behavioral problems for which (he/she) needs treatment or counseling? **(K2Q22 – K2Q23)**

If yes to any of the above items seven – 11, above, to follow up questions are asked:

- Is this because of medical, behavioral, or other health condition?
- Has this condition lasted, or is it expected to last for 12 months or longer?

12 Has a doctor, healthcare provider, teacher, or school official ever told you [CHILD'S NAME] has a learning disability? **(K2Q30A)** (Ages 3- 17 years)

- Does [CHILD'S NAME] currently have a learning disability? **(K2Q30B)**

- Would you describe (his/her) learning disability as mild, moderate, or severe? **(K2Q30C)**

13 For each condition, please tell me if a doctor or other health care provider ever told you that [CHILD'S NAME] has the condition, even if (he/she) does not have the condition now. Has a doctor or health professional ever told you that [CHILD'S NAME] has any of the following conditions?

Ages 2 – 17

- Attention Deficit Disorder or Attention Deficit Hyperactive Disorder **(K2Q31A)**
- Is [CHILD'S NAME] currently taking medication for ADD or ADHD? **(K2Q31D)**
- Depression **(K2Q32A)**
- Anxiety problems **(K2Q33A)**
- Behavioral or conduct problems **(K2Q34A)**
- Autism, Asperger's Disorder, pervasive development disorder, or other autism spectrum disorder **(K2Q35A)**
- Any developmental delay **(K2Q36A)**
- Intellectual disability or mental retardation**, K2Q60A)** +
- Cerebral palsy **(K2Q61A) +**
    - How would you describe (his/her) ability to walk? **(K2Q61C)**
- Speech or of the language problems **(K2Q37A)**
- Tourette syndrome**, K2Q38A)**

Ages 0 – 17

- Asthma **(K2Q40A)**

- Diabetes **(K2Q41A)**
- Epilepsy or seizure disorder **(K2Q42A)**
- Hearing problems **(K2Q43A)**
- Vision problems that cannot be corrected with standard glasses or contact?

  (K2Q44A)
- Bone, joint, or muscle problems **(K2Q45A)**
- A brain injury or concussion **(K2Q46A)**
-

If yes, any of the conditions above **(K2Q31A – K2Q46A)**, to follow-up questions are asked:

- Does [CHILD'S NAME] currently have condition? **(K2Q31B – K2Q46B)**
- Would you describe (his/her) condition as mild, moderate, or severe? **(K2 Q31C – K2 Q46C)**

If yes to any of the following conditions: ADD/ADHD, Depression, Anxiety Problems, Behavior/Conduct Problems, Autism or ASD, Developmental Delay, Intellectual Disability or Mental Retardation, Cerebral Palsy, Speech Problems, or Tourette Syndrome, **(K2Q31A, K2 Q34A- K2Q43A, K2 Q45A – K2 Q61A), one follow-up question is asked:**

- How old was [CHILD'S NAME] when you were first told by a doctor or other health care provider that (he/she) had [CONDITION]? **(NEW4 Q31,NEW4Q34, NEW4Q45 – NEW4Q61**)+ If yes to item **K2Q35A**, above, for follow-up questions are asked:
- What type of doctor or other health care provider first told you that [CHILD'S NAME] autism or ASD? **(K2 Q35D)** +
- To the best of your knowledge, did [CHILD'S NAME] ever had autism or ASD?

  (K2Q358E)
- Reasons why a doctor, healthcare provider, or school professional may have told

you that [CHILD'S NAME] had a condition that (he/she) never had ASD **(K2 Q35F)** +

- Do any of the following apply? Response Option:
  - Treatment health condition go away
  - Condition seem to go away on its own
  - Behaviors are symptoms changed
  - A doctor or healthcare provider changed the diagnosis

– Other reason (s)? (Verbatim response recorded) **(K2 Q35G)** +

Section 3: Health Insurance Coverage

1 Does [CHILD'S NAME] have any kind of health care coverage, including health insurance, prepare a plan, such as HMOS, or government plan, such as Medicaid? **(K3Q01)**

- If yes, [Is that coverage/Is (he/she) insured by] Medicaid or the Children's Health Insurance Program, CHIP? **(K3Q02)**
- If yes, during the past 12 months, was there any time when (he/she) was not covered by any health insurance? **(K3Q03)**
- If NO, During the past 12 months, was there any time when (he/she) had healthcare coverage? **(K3Q04)**

2 The next four questions are asked for insured children only.

- Does [CHILD'S NAME] health insurance offer benefits or cover services that meet (his/her) needs? **(K3Q20)**
- Does [CHILD'S NAME] health insurance allow (his/her) to see the healthcare providers (he/she) needs? **(K3Q22)**

- Not including health insurance premiums or cost that are covered by insurance, do you pay any money for [CHILD'S NAME] health insurance? **(K3Q21A)**
  - How often are these costs are reasonable? **(K3Q21B)**

3 In the past 12 months, did your family have problems paying or were unable to pay any of [CHILD'S NAME]'s medical bills? **(K3Q25)** +

4 During the past 12 months, how often have you been frustrated in your efforts to obtain health insurance services for [CHILD'S NAME]? **(C4Q04)** +

Section 4: Health Access and Utilization

1 Is there a place that [CHILD'S NAME] USUALLY goes when (he/she) is sick or you need advice about (his/her) health? **(K4Q01)**

- Is it a doctor's office, emergency room, hospital outpatient department, clinic, or some other place? **(K4Q02)**

2 A personal doctor or nurse is a health professional who knows your child well and is familiar with your child's health history. This can be a general doctor, a pediatrician, a specialist doctor, a nurse practitioner, or a physician's assistant. Do you have one or more persons you think of as [CHILD'S NAME] personal doctor or nurse? **(K4Q04)**

3 During the past 12 months, did [CHILD'S NAME] see a doctor, nurse, or other healthcare professional for any kind of medical care, including sick – child care, well – child checkups, physical exams, and hospitalizations? **(S4Q01)**+

4 During the past 12 months, how many times did [CHILD'S NAME] see a doctor,

nurse, or other healthcare provider for preventive medical care, such as a physical exam, or well child checkup? **(K4Q20)**

5 During the past 12 months, did [CHILD'S NAME] see a dentist for any kind of dental care, including checkups, dental cleanings, x-rays, or filling cavities? **(K4Q30)**

6 During the past 12 months, how many times did [CHILD'S NAME] see a dentist for preventive dental care, such as checkups and dental cleanings? **(K4Q21)**

7 During the past 12 months, did [CHILD'S NAME] have a tooth ache, decayed teeth, or unfilled cavities (**K4Q39)** (ages 1-17 years)

8 Mental health professionals includes psychiatrists, psychologists, psychiatric nurses, and clinical social workers. During the past 12 months has [CHILD'S NAME] received any treatment or counseling from a mental health professional? **(K4Q22)** (ages 2-17 years)

9 During the past 12 months, has [CHILD'S NAME] taken any medication because of difficulties with (his/her) emotions, concentration, or behavior? **(K4Q23)**

**asked only for children who are not taking medication for ADD/ADHD*

10 Specialists are doctors like surgeons, are doctors, allergy doctors, skin doctors, any other who specialize in one area of healthcare. During the past 12 months, did [CHILD'S NAME] see a specialist (other than a mental health professional)? **(K4Q24)**

– If NO, During the past 12 months, did you are a doctor think that (he/she) needed to see a specialist? **(K4Q25)**

– If YES, During the past 12 months, how much of a problem, if any, was it

to get the care from the specialist that [CHILD'S NAME] needed? **(K4Q26)**

11 Has [CHILD'S NAME] [ever (0-5 years)/ in the past two years (6-17)] had (his/her) vision tested with pictures, shapes, or letters? **(K4Q31)**+

- If YES, What kind of place did [CHILD'S NAME] have (his/her) vision tested? **(K4Q31)**

12 Sometimes people have difficulty getting health care when they need it. By healthcare, I mean medical care as well as other kinds of care like dental care, vision care and mental health services. During the past 12 months, was there any time when [CHILD'S NAME] needed healthcare, but it was delayed or not received? **(K4Q27)**

- If YES, What type of care was delayed or not received? **(K4Q28)**

13 Some new parents are held by programs that send nurses, health care workers, social workers, or other professionals to their home to help prepare for the new baby or take care of the baby or mother. Between the time [you were (his/her) mother was] pregnant with [CHILD'S NAME] and up until the present day, did someone from such a program, visit your home?

+ **asked only for children 0 to 3 years old*

- If YES, How many different professionals came to your home? **(K4Q35A)**
- If YES, Please tell me if the [the professional/any of the professionals] who visited your home talk about prenatal concerns about their children and families **(K4Q35B)** + Response Options: (one) the caregivers of

emotional well-being; (2) smoking or alcohol use in the home; (three) building a close relationship with child; (4) the use of toys are activities for learning, growth and development; (5) how to make sure [CHILD'S NAME] is safe; (6) how to get needed healthcare; (7). Other services that may help your family, such as public assistance or job training

14 Earlier, you told me that you had been told by a doctor or other health care provider that [CHILD'S NAME] ever receive therapy services to meet (his/her). Developmental needs, such as early intervention, occupational therapy, or behavioral therapy? **(K4Q36)** + *asked only for children who have been diagnosed with autism/ASD etc. or Developmental Delay

- If YES, How old was [CHILD'S NAME] when (he/she) began receiving services? **(K4Q37)**+
- If YES, Is [CHILD'S NAME] currently receiving therapy services? **(K4Q38)**

Section 5: Medical Home

1 During the past 12 months, did [CHILD'S NAME] need a referral to see any doctors or receive any services? **(K5Q10)**

- Was getting referrals a big problem, small problem, or not a problem? **(K5Q11)**

2 Does anyone help you arrange or coordinate [CHILD'S NAME]'s care among the different doctors or services that (he/she) uses? **(K5Q20)** *asked for children who use more than two services

3 During the last 12 months, have you felt that you could have used extra help

arranging or coordinating [CHILD'S NAME]'s care among the different healthcare providers or services? **(K5Q21)** *asked for children who use more than two services

4 Overall, are you very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with the communication among [CHILD'S NAME]'s doctors and other healthcare providers? **(K5Q30)** *asked for children who use more than two services

5 Do [CHILD'S NAME]'s doctor or other health care providers need to communicate with (his/her). Child care providers, school, or other programs? **(K5Q31)**

– Overall, are you very satisfied, somewhat satisfied, or very dissatisfied with their communication? **(K5Q31)**

6 During the past 12 months, how often did [CHILD'S NAME]'s doctors and other healthcare providers spend enough time with (him/her)? **(K5Q40)**

7 During the past 12 months, how often did [CHILD'S NAME]'s doctor and other healthcare providers. Listen carefully to you? **(K5Q41)**

8 When [CHILD'S NAME] is seen by doctors and other healthcare providers, how often are they sensitive to your family's values and customs? **(K5Q42)**

9 Information about a child health or healthcare can include things such as the causes of any health problems, how to care for a child now, and what to expect in the future. During the past 12 months, how often did you get the specific information you needed from [CHILD'S NAME]'s doctors and other healthcare providers? **(K5Q43)**

10 During the past 12 months, how often did [CHILD'S NAME]'s doctors or other healthcare providers help you feel like a partner in (his/her) care? **(K5Q44)**

Section 6: Early Childhood (0 - 5 years *questions ask for children ages 0-5 years only

1 Do you have any concerns about [CHILD'S NAME] learning, development, or behavior? (**K6Q01)**

2 Are you concerned about how (he/she):

– Talks and makes speech sounds? **(K6Q02)** (ages 4 months – 5 years)

– Understands what you say? **(K6Q03**) (ages 4 months – 5 years)

– Uses (his/her) hands and fingers to do things? **(K6Q04)** (ages 4 months – 5 years)

– Uses (his/her) arms and legs? **(K6Q05)** (ages 4 months – 5 years)

– Behaves? **(K6Q06)** (ages 4 months – 5 years)

– Gets along with others? **(K6Q07)** (ages 4 months – 5 years)

– Is learning to do things for (himself/herself) **(K6Q08)** (ages 10 months to 5 years)

- Is learning preschool or school skills? **(K6Q09)** (ages 18 months – 5 years)

3 During the past 12 months did [CHILD'S NAME]'s doctors or other health care providers ask if you have concerns about (his/ her) learning, developing, or behavior? **(K6Q10)*** asked for children who used at least one service in the past year

4 Sometimes a child's doctor or other health care providers will ask a parent fill out a questionnaire at home or during their child's visit. During the past 12 months, did a doctor or other health care provider have you fill out a questionnaire about

specific concerns or observations you may have about [CHILD'S NAME]'s development, communication, or social behaviors? **(K6Q12)** (ages 10 months to 5 years)

- Did this questionnaire asked you about your concerns or observations about how [CHILD'S NAME] talks or makes speech sounds? **(K6Q13A)** (ages 10 - 23 months)
- Did this questionnaire ask you about your concerns or observations about how [CHILD'S NAME] interacts with you and others? **(K6Q13B)** (ages 10 – 23 months only)
- Did this questionnaire ask you about your concerns or observations about words and phrases [CHILD'S NAME] uses and understands? **(K6Q14A)** (ages 24 – 71 months only)
- Did this questionnaire ask you about your concerns or observations about how [CHILD'S NAME] behaves or gets along with you and others **(K6Q 14B)** (ages 24-71 months only)

5 Does [CHILD'S NAME] have any developmental problems for which (he/she) has a written intervention plan called and Individual Family Service Plan (IFSP) or Individualized Educational Program (IEP) **(K6Q15)**

6 Does [CHILD'S NAME] receive care for at least 10 hours per week from someone not related to (him/her)? This could be a day care center, preschool, head start program, nanny, au pair, or other non-relatives. **(K6Q20)**

7 During the past 12 month, it you or anyone in your family have to quit a job, not take a job, or greatly change your job because of problems with childcare for [CHILD'S NAME]? **(K6Q27)**

8 Was [CHILD'S NAME] ever breast fed or fed breast milk? **(K6Q40)**

- If YES, how old was [CHILD'S NAME] when [he/she] was first fed breast milk? **(K6Q41)**
- If YES, how old was [CHILD'S NAME] when [he/she] was first fed formula? **(K6Q42)**
- This next question is about the first thing [CHILD'S NAME] was given other than breast milk or formula. Please include juice, cow's milk, sugar water, baby food, or anything else that [CHILD'S NAME] was first fed anything other than breast milk or formula? **(K6Q43)**

9 I'm going to read a list of items that sometimes described children. For each item, please tell me how often this was true for [CHILD'S NAME] during the past month:

- (He/She) is affectionate and tender with you. **(K6Q70)** + (ages 6 months – 5 years)
- (He/She) bounces back quickly when things don't go (his/her) way. **(K6Q73)** + (ages 6 months -5 years)
- (He/She) shows interests and curiosity in learning new things **(K6Q71)** + (ages 6 months -5 years)
- (He/She) smiles and laughs a lot. **(K6Q72)** + (ages 6 months -5 years)

10 On an average weekday, about how much time does [CHILD'S NAME] usually spend in front of a TV watching TV programs, video games, or other electronic devices? **(K6Q65A)**

11 On an average weekday, about how much time does [CHILD'S NAME] usually spend with computers, cell phones, handheld video games, and other electronic devices? **(K6Q65B)**

12 During the past week, how many days did you or other family members read to [CHILD'S NAME]? **(K6Q60)**

13 During the past week, how many days did you or other family members tell stories or sing songs to [CHILD'S NAME]? **(K6Q61)**

14 During the past week, how many days did [CHILD'S NAME] play with other children. [his/her] age? **(K6Q63)**

15 During the past week, how many days did you or any family member take [CHILD'S NAME] on any kind of outing, such as to the park, library, zoo, shopping, church, restaurants, or family gatherings? **(K6Q64)**

Section 7: Middle Childhood and Adolescence (6 – 17 years) * questions asked for children ages 6-17 only

1 What kind of school is [CHILD'S NAME] currently enrolled in?

– If NOT ENROLLED, at any time during the past 12 months, was [CHILD'S NAME] enrolled in a public school, a private school, or home school? **(K7Q01)**

2 During the past 12 months, about how many days did [CHILD'S NAME] missed school because of illness or injury? **(K7Q01F)**

3 During the past 12 months, how many times has [CHILD'S NAME] school contacted you, or another adult in your household about any problems. [He/she] is having with school? **(K7Q04)**

4 Since starting kindergarten, has [he/she] repeated any grades? **(K7Q05)**

– If YES, which grade our grades did (he/she) repeat? **(K7Q05_A)** +

5 Does [CHILD'S NAME] have a health problem, condition, or disability for which [he/she] has a written intervention plan called and Individualized Educational Program or IEP? **(K7Q11)**

6 During the past 12 months, was [CHILD'S NAME] on the sports team or it did [he/she] takes sports lessons after school, or on weekends? **(K7Q30)**

7 During the past 12 months, did [CHILD'S NAME] participate in any clubs or organizations after school or on weekends? **(K7Q31)**

8 During the past 12 months, did [CHILD'S NAME] participate in any other organized activities or lessons, such as music, dance, language, or other arts? **(K7 Q32)**

9 During the past 12 months, how often did you attend events or activities that [CHILD'S NAME] participate in? **(K7Q33)***asked for children who participated in one or more extra curriculum activities (K7Q30 – K7Q32)

10 Regarding [CHILD'S NAME]'s friends, would you say that you have met all, most, some or none of [his/her] friends? **(K7Q34)**

11 During the past 12 months, how often has [CHILD'S NAME] been involved in any type of community service, or volunteer work at school, church, or in the

community? Would you say once a week are more, a few times a month, a few times a year, or never? **(K7Q37)** (ages 12-17 years only)

12 During the past week, did [CHILD'S NAME] earn money from any work, including regular jobs as well as babysitting, cut grass or other occasional work? **(K7Q38)** (ages 12-17 years only)

– If YES, during the past week, how many hours did [CHILD'S NAME] work for pay? **(K7Q39)**

13 During the past week, on how many nights did [CHILD'S NAME] get enough sleep for a child. [his/her] age? **(K7Q40)**

14 During the past week, on how many days did [CHILD'S NAME] exercise, play a sport, or participate in physical activity for at least 20 minutes that need [him/her], sweat, or breathe hard? **(K7Q41)**

15 On an average weekday, about how much time does [CHILD'S NAME] usually spend reading for pleasure? **(K7Q50)**

16 On an average weekday, about how much time does [CHILD'S NAME] usually spend in front of a TV watching TV programs, videos, or playing video games? **(K7Q60A)**

17 On an average weekday, about how much time does [CHILD'S NAME] usually spend with computers, cell phones, handheld videogames, and other electronic devices, doing things other than schoolwork? **(K7Q60B)**

18 Do you monitor the content of what [CHILD'S NAME] watches on TV, plays on the computer, or does on electronic devices? **(K7Q61)**

19 Do you limit the amount of time [CHILD'S NAME] spends watching TV, playing on the computer, or use an electronic devices? **(K7Q61A)**

20 Does [CHILD'S NAME] have a TV, computer, or access to electronic devices in [his/her] bedroom? **(K7Q62)**

I am going to read a list of items that sometimes described children. For each item? Please tell me how often this was true for [CHILD'S NAME] during the past month:

- [He/ She] argues too much **(K7Q70)**
- [He/ She] bullies or risk rule are mean to others **(K7Q701)**
- [He/ She] is unhappy, sad, or depressed **(K7Q79)**
- [He/ She] cares about doing well in school **(K7Q82)**
- [He/ She] does all required homework **(K7Q83)**
- [He/ She] finishes the tasks [he/she] starts and follows through with what [he'll/ she'll] do **(K7Q84)**+
- [He/ She] stays calm and in control when faced with a challenge **(K7Q85)**+
- [He/ She] shows interest and curiosity in learning new things **(K7Q86)** +

Section 8: Family Functioning

1 About how often does [CHILD'S NAME] attend a religious service? **(K8Q12)**

2 During the past week, how many days did all the family members who live in the household eat a meal together? **(K8Q11)**

3 How well can you and [CHILD'S NAME] share ideas or talk about things that really matter? **(K8Q21)** (ages 6-17 years)

4 In general, how well do you feel you are coping with the day to day demands of (parenthood/ raising children)? **(K8Q30)**

5 During the past month, how often have you felt [CHILD'S NAME] is much harder to care for than most children (his/ her) age? **(K8Q31)**

6 During the past month, how often have you felt (he/she) does things that really bother you a lot? **(K8Q32)**

7 During the past month, how often have you felt angry with (him/ her)? **(K8Q34)**

8 Is there someone that you can turn to for day-to-day emotional help with [parenthood/ raising children]? **(K8Q35)**

Section 9: Parental Health

1 Including the adults and all the children, how many people live in this household? **(K-9 Q00)****

2 How old are you [MOTHER TYPE]? **(K-9 Q16)****+

3 What is the age of the oldest adult living in the household? **(See 10Q14)****+

4 Earlier you told me you are [CHILD'S NAME] (Mother/ Father). Are you [CHILD'S NAME] biological, adoptive, step, or foster (mother/ father)? **(K-9 Q10)****+

5 Does [CHILD'S NAME] have any (other) parents, or people who act as (his/ her) parents, living here? **(K9Q11)****+

6 Are you [CHILD'S NAME] [FATHER TYPE] or [MOTHER TYPE] currently married or living together as partners? **(C10Q10)**** *asked for children who live in household with both mother and father type

– If NOT MARRIED, Are you [MOTHER TYPE] currently married or

living together as partners? **(C10Q10A)**

7 Would you say that your relationship is completely happy, very happy, fairly happy, or not too happy? **(K9 Q18)**

8 Would you say that, in general, ([CHILD'S NAME] [MOTHER TYPE]/ your) health is excellent, very good, good, fair, or poor? **(K9Q20)**

9 Would you say that, in general, ([CHILD'S NAME] [FATHER TYPE]/your) health is excellent, very good, good, fear, or poor? **(K9Q21)**

10 Would you say that, in general, ([CHILD'S NAME] [MOTHER TYPE]/your) mental and emotional health is excellent, very good, good, fear, or poor? **(K9Q23)**

11 Would you say that, in general, ([CHILD'S NAME] [FATHER TYPE]/your) mental and emotional health is excellent, very good, good, fear, or poor? **(K9Q24)**

12 Does anyone live in your household use cigarettes, cigars, or pipe tobacco? **(K9Q40)**

– Does anyone smoke inside [CHILD'S NAME]? **(K9Q41)**

13 Since [CHILD'S NAME] was born, how often has it been very hard to get by on your family's income – hard to cover the basics like food or housing? Would you say very often, somewhat often, often, rarely, or never? **(ACE1)**+

14 Did [CHILD'S NAME] after live with a parent or guardian who got divorced or separated after [CHILD'S NAME] was born? **(ACE3)**+

15 Did [CHILD'S NAME] ever live with the parent or guardian who died? **(ACE4)**+

16 Did [CHILD'S NAME] ever live with the parent or guardian who served time in jail or prison after [CHILD'S NAME] was born? **(ACE5)**+

17 Did [CHILD'S NAME] ever see or hear any parent or adult and (his/her) home slap, hit, kick, punch, or beat each other up? **(ACE6)**+

18 Was [CHILD'S NAME] ever the victim of violence or witnessed any violence in (his/her) neighborhood? **(ACE7)**+

19 Did [CHILD'S NAME] ever live with anyone who was mentally ill or suicidal, or severely depressed, but more than a couple of weeks? **(ACE8)**+

20 Did [CHILD'S NAME] ever live with anyone who had a problem with alcohol or drugs? **(ACE9)** +

21 Was [CHILD'S NAME] ever treated or judged unfairly because of (his/her), race or ethnic group? **(ACE10)**+

22 Other than adults in your home or [CHILD'S NAME]'s parents, is very least, one other adult in [CHILD'S NAME]'s school, neighborhood, or community who knows [CHILD'S NAME] well, in who (he/she) can rely on for advice or guidance? **(K9Q96)** + (ages 0-6 years)

Section 10: Neighborhood and Community Characteristics

1 Please tell me if the following places if things are available to children in your neighborhood, even if [CHILD'S NAME] does not actually use them:

- Sidewalks, or walking paths? **(K10Q11)**
- A park or playground area? **(K10Q12)**
- A recreation center, community center, or boys' or girls' club? **(K10Q13)**
- A library or bookmobile? **(K10Q14)**

2 In your neighborhood, is there litter or garbage on the street or sidewalk? **(K10Q20)**

3 How about poorly kept or rundown housing? **(K10Q22)**

4 How about, vandalism, such as broken windows or graffiti? **(K10Q23)**

5 Now, for the next four questions, I am going to ask you how much you agree or disagree with each of the statement about your neighborhood or community:

- "People in the neighborhood, help each other out." **(K10Q30)**
- "We watch out for each other's children in this neighborhood." **(K10Q31)**
- "There are people I can count on in this neighborhood." **(K10 Q32)**
- If my child were outside playing and got hurt or scared, there are adult nearby who I trust to help my child". **(K10Q34)**

6 How often do you feel[CHILD'S NAME] is safe in your community or neighborhood? **(K10Q40)**

7 How often do you feel (he/she) is safe at school? **(K10Q41)**

Section 11: Additional Demographics

1 Is [CHILD'S NAME] of Hispanic, Latina or Spanish origin? **(K11Q01)**

2 Is [CHILD'S NAME] White, Black or African American, American Indian, Alaska Native, Asian, or Native Hawaiian or other Pacific Islander? **(K11Q02)****

3 At any time in the past 12 months, did [CHILD'S NAME] receive services from any Indian health service hospital or clinic? **(K11Q03)** *asked only for American Indian or Alaska native children

4 What is the highest grade or year of school ([MOTHER TYPE/ FATHER TYPE/

OTHER]) has completed? **(K11Q20 – K11Q21)****

5 Thinking back with what you were about 13 years old, what was the highest grade or year of school, completed by your mother, father, or guardian? Qf you live with more than one parent or guardian, please tell me about the one who had the most education? **(K11Q22A)****+

6 Was [CHILD/ CHILD'S MOTHER/ CHILD'S FATHER] born in United States? – How long has [CHILD/ CHILD'S MOTHER/ CHILD'S FATHER] been in the United States? **(K11Q34 A – K11Q37A)**

7 How many times has [CHILD'S NAME] ever moved to a new address? **(K11Q43)**

8 Was anyone in the household employed at least 50 weeks out of the 52 weeks? **(K11Q50)**

9 Do you own or rent your home? **(C10Q41)**

10 At any time during the past 12 months, even for one month, did anyone in this household, receive any cash assistance from the state or a county welfare program? **(K11Q60)**

11 During the past 12 months, did [CHILD'S NAME] /any child in the household) receive food stamps are supplemental nutrition assistance program benefits? **(K11Q61)**

12 During the past 12 months, did [CHILD'S NAME] /any child in the household) receive free or reduced cost. Breakfast or lunch is at school? **(K11Q62)**

13 Does anyone live in a house full currently receive benefits from the Women's, Infants, and Children (WIC) program? **(S9Q34)**+

Section 12: Additional Health Insurance Questions + *questions ask for children 0 to 17 who

are currently uninsured and family income is less than 400% of the federal poverty level.

1 What is the main reason [CHILD'S NAME] does not have health insurance now? **(K12Q01)**

2 About how long has it been since [CHILD'S NAME] last had any kind of health insurance? **(K12Q02)**

<u>If child has been insured in the past or respondent answered , DK/RDF, to follow-up questions are asked</u>

– Has [CHILD'S NAME] ever been covered by health insurance that was provided through:

An employer/union? **(K12Q03)**

An insurance company? **(K12Q04)**

3 Before today, had you ever heard of Medicaid/CHIP? **(K12Q11/K12Q21)**

<u>If NO to (K12Q11 or K12 Q 21, skip to #7 (K12Q30)</u>

<u>If NO to (K12Q11 AND K12Q21 (skip to #12 (K 12 Q 40)</u>

4 Has [CHILD'S NAME] ever been enrolled in Medicaid/CHIP? **(K12Q12/K12Q22)**

<u>If YES TO (K12Q21/K12Q22), two follow-up questions are asked</u>

– When was the last time [CHILD'S NAME] was enrolled in Medicaid/Chip? **(K12Q13/K12Q23)**

– What is the main reason that [CHILD'S NAME] enrolled ended?

- If NO or DK/RDF, have you ever applied for Medicaid/CHIP?

  (K12Q15/K12Q 25)

  If YES to (K12Q15/K12Q 25), two follow-up questions are asked:

  - When was the last time that you applied?

    (K12Q16/K12Q26)

  - What is the reason that you were unable to enroll [CHILD'S NAME] in Medicaid/CHIP?

    (K12Q17/K12Q27)

5 <u>K12Q21 – K12Q24 ONLY IF respondent's state uses different names for their Medicaid and CHIP programs:</u> Before today, had you ever heard of [STATE CHIP NAME]? (K12Q21)

<u>IF NO to (K 12 Q 21), but respondent has heard of Medicaid (YES to K12Q11), skip to #7 (K12Q30)</u>

<u>IF respondent has not heard of CHIP or Medicaid (NO to K12Q11), and K12Q21) skip to #12 (skip to #12 (K12Q40)</u>

6 <u>If YES to (K12Q21),</u> has [CHILD'S NAME] ever been enrolled in [STATE CHIP NAME]? (K12Q23)

- <u>IF YES to (K 12 Q 22), two follow-up questions are asked:</u>
  - <u>When was the last time [CHILD'S NAME] was enrolled in [STATE CHIP NAME]? K12Q23)</u>
  - <u>What is the main reason that [CHILD'S NAME] enrollment ended? (K12Q24)</u>
- If NO or DK to (K12Q22), have you ever applied for [STATE CHIP

NAME]? **(K12Q25)**

IF YES to (K12Q25), two follow-up questions are asked:

– When was the last time that you apply? (**K12Q26)**

– What is the reason that you were unable to roll [CHILD'S NAME] in [STATE CHIP NAME]? **(K12Q27)**

K12Q30 – K12Q37 ONLY IF respondent has heard of either Medicaid or CHIP (YES to K12Q11 or K12Q21):

7 If you wanted to get more information about [either Medicaid or STATE CHIP NAME], do you know how to do that? **(K12Q30)**

8 If you wanted to roll [CHILD'S NAME] in [either Medicaid or STATE CHIP NAME], the know-how to do that? **(K12Q31)**

9 based on what you know about Medicaid/ CHIP, how easy or difficult. Do you think it is to… (**K12Q32/K12Q33)**

10 Based on what you know about [either Medicaid or STATE CHIP NAME], do you think [CHILD'S NAME] is eligible now? **(K12Q34)**

11 If you were told that [CHILD'S NAME] was eligible for [either Medicaid or STATE CHIP NAME], would you want to roll him/her? (K12Q35)

– IF NO to K12Q35, what is the reason you would NOT want to roll [CHILD'S NAME]? **(K12Q36)**

12 At this time, does [MOTHER TYPE/ FATHER TYPE/ OTHER] have any kind of health care coverage, including health insurance, preplanned, such as HMOs, or government plan, such as Medicaid or Medicare? **(K12Q40/K12Q50/K12Q60)**

If YES to (K 12 Q 40/50/60), is that health insurance provided through

[her/his/your] current employer, former employer, union, or some other source? **(K12Q41/K12Q51/K12Q61)**

If NO to (K 12 Q 40/50/60), skip to number 13 (K12Q42/52/62)

13 At this time is [MOTHER TYPE/ FATHER TYPE/ OTHER] eligible for health insurance through [her/his/your] current employer or union? **(K12Q42/ K12Q52/ K12Q62)**

If NO OR RF, SKIP TO next section

K12Q43/63 – K12Q47/57/67 ONLY IF respondent's health insurance is provided by (or available through) their employer and/ or union:

14 Does this [employer/ union] offer health insurance that could help pay for doctor visits and hospital stay for [CHILD'S NAME]? **(K12Q43/ K12Q53/ K12Q63)**

IF NO or DK, SKIP TO #17 (K12Q46/ 56/ 66)

K12Q44/ 54/ 64 – K12Q45/55/65 ONLY IF employer/ union health insurance covers child (k12Q43):

15 If [CHILD'S NAME] was covered by insurance provided through this [employer/union], would this [employer/union] pay for all, some, or none of (his/her) health insurance premium?

16 what is the main reason that [CHILD'S NAME] is not covered by insurance provided through this [employer/union? **(K12Q45/K12Q55/K12Q65)**

K 12 Q 46/56/66 – K 12 Q 47/57/67 ONLY IF respondent uses insurance offered through his/her employer:

17 Does this [employer/ union] offer health insurance that could help pay for doctor visits and hospital stay for [CHILD'S NAME]? (K12Q43/ K12Q53/ K12Q43)

IF NO or DK, skip to #17 **(K12Q46/56/66)**

– If respondent is under 100, is the total number of persons who work for [your/her] employer above or below 50? (K 12 Q 47/K 12 Q 57/K 12 Q67)

Appendix B

Recoded Independent Variables

Survey questions	Independent variable	Recorded variable	Responses Recoded
During the past 12	Events or activities	attendevents	1 = never

months, how often did you attend events or activities that child participated in			2 = sometimes, usually, and always
During the past 12 months, how often has child been involved in any type of community service or volunteer work at school, church, or in the community?	Community Service	communityservice	1= never + don't know 2=once a week + a few times a week + a few times a month + a few times a year
During the past week, on how many nights did child get enough sleep for a child his/her age?	Amount of sleep	sleep	0=0 1= 1 thru 3 2=4 thru 4
On an average weekday, about how much time does child usually spend in front of the TV watching TV programs, videos, or playing video games?	Amount of time spent watching TV, etc.	TVwatching	0 = don't know + don't own a TV 1 = 1to 59 minutes 2 = 60 plus minutes
On an average weekday, about how much time does child usually spend with computers, cell phones, handheld video games, and other electronic devices, doing things other than schoolwork?	Amount of time child spends with computers, etc.	Computerplus	0 = no or don't know 1= 1-59 minutes 2 = 60+ minutes
Do you monitor the content of what child watches on TV, plays on the computer, or does on electronic devices ?	Monitor content of TV, computers, etc.	Monitor	0= no or refused 1 = yes
How often do you feel	Safety in Community	Communitysafe	1 = never, and don't

child is safe in your community or neighborhood?			know 2 = sometimes, usually, and always
How often do you feel child is safe at school?	Safety at school	Schoolsafe	1 = never, and don't know 2 = sometimes, usually, and always