

2016

# Understanding a School's Response to Childhood Obesity

April Dawn Goins-Jones  
*Walden University*

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April Dawn Goins-Jones

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Walden University  
2016

Abstract

Understanding a School's Response to Childhood Obesity

by

April Goins-Jones

MA, Concordia, 2008

BS, UNC-Pembroke, 2004

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

December 2016

## Abstract

Childhood obesity has become a national epidemic. Although many of the consequences of childhood obesity are known, such as physical, social, emotional, and academic effects on a student's development, there is a lack of literature on the topic of childhood obesity in Native American tribes. The purpose of this case study was to explore how school personnel address the effects of obesity on students' social, emotional, academic, and physical development in an elementary school in the southwest United States where 90% of the students are Native Americans. Bronfenbrenner's socioecological model served as the theoretical foundation. The research questions explored strategies for how school personnel addressed childhood obesity. Interviews with 7 teachers, 1 administrator, 1 school nurse, 1 school psychologist, and 1 cafeteria manager were conducted. Open, axial, and selective coding strategies were employed to analyze the data. Findings revealed that the local school personnel lack professional development on working with Native American obese students and desire to implement a prevention and intervention obesity program targeted for Native American students. Recommendations include creating professional development related to childhood obesity, providing alternatives to food rewards, allotting time for healthful living practices, writing grants for healthy snacks, and collaborating with families and tribal affiliations. Implications for social change include greater understanding among school personnel at the study site of practices to address childhood obesity in Native American students, which may lead to effective interventions for enriching the academic success of obese students.

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## Dedication

First and foremost, I would like to thank my lord and savior Jesus Christ, for without him this journey would not have been possible. Second, this dissertation is dedicated to everyone who prayed for me, but especially to my immediate and extended family. I love you all; Specifically, thank you to my father Champ Watis Goins II who believed in me and encouraged me to never give up on my dreams and never doubt even when people said it would be impossible. You encouraged me to try harder. I love and miss you, Daddy, but I know you are looking down from heaven cheering me on. To my mother, Janice Chavis Goins, it is only because of your love and support that I am where I am today. I will forever be grateful for the sacrifices you both made that I could reach this milestone in my education. It has always been an honor to call you both my parents. To my second mother and prayer warrior, Jeanette Allen, thank you for all your prayers. I love you and miss you dearly. I know you are looking down from heaven rejoicing over the answer to your prayer. To my husband, Ron Jones, thank you for your prayers, encouragement, love, and taking care of everything around the house while I focused on completing this dissertation. To my brother, Champ W. Goins III, thanks for always adding humor, when my days were dreary. I am so blessed to have you as a brother. Last but not least, I dedicate this dissertation to my best friend, Johannah Allen. As Proverbs 27:17 states Iron sharpens Iron, your prayers, guidance, encouragement and friendship have sharpened me. Thank you for being a listening ear and always reminding me who I am, in Christ Jesus and never allowing me to quit, when I wanted to throw in the towel. Your friendship is a priceless gift I will forever cherish.

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## Section 1: Introduction to the Study

The prevalent nutritional disease in those younger than the age of 18 is childhood obesity. The National Center for Health Statistics (NCHS; 2010) declared obesity is a national epidemic with which all American Indian tribes throughout the United States are dealing (Malhotra et al., 2011). American Indian children experience an early onset of obesity that leads to health problems in adulthood. Health issues such as Type 2 diabetes, liver disease, heart disease, arthritis, stroke, and lung disease have been associated with the rise of obesity in American Indian tribes (Malhotra et al., 2011).

During the State of the Union address on February 9, 2010, President Obama announced First Lady Michelle Obama planned to create a program to battle the childhood obesity epidemic (Sweet, 2010). This program, *Let's Move*, highlights American Indian children, whose childhood obesity rate is approaching 50% (Teehee, 2010). President Obama signed a Presidential Memorandum launching a task force to provide federal resources to guarantee that American Indian tribal authorities are taking action to prevent childhood obesity (Flegal, Carroll, Ogden, & Curtin, 2010; Koplan, Liverman, & Kraak, 2005; Teehee, 2010). Schools have been characterized as obesogenic environments due to the high demands of improving academic success (Buck et al., 2013; Snelling, Ernst, & Belson, 2013). Childhood obesity has increased due to the lengthy time students sit in desks, low-nutrition meals, and reduced physical activity time in classrooms (Buck et al., 2008; Dalton, 2004; Elliott, Combs, & Boyce, 2011; True, 2005). Although school personnel are advised to address the obesity problem, they are provided with minimal resources and professional development that focuses on childhood



obesity and cultural-sensitive obesity prevention programs (Lounsberry & McKenzie, 2009; Vail, 2006).

Educating children on the significance of a balanced diet and physical activity is essential for a healthy lifestyle (Anderson & Buther, 2006; Buck et al., 2008; Dalton, 2004; Elliott et al., 2011; Finkelstein, Hill, & Whitaker, 2008; Green, Riley, & Hargrove, 2012). The Southeastern American Indian tribe is one of the state-recognized American Indian tribes. Childhood obesity in the tribe has shown an increase from 15.8% in 2005 to 19.7% in 2009 and the number of overweight children increased 20%. According to the state director of American Indian affairs, childhood obesity is a problem that needs to be addressed not only in the tribe but also in the school setting, where children spend most of the day (G. Richardson, Personal Communication April 15, 2015).

### **Problem Statement**

At the local setting, Tiger Elementary (pseudonym), there is limited knowledge of how school personnel (teachers, administrators, physical education teachers, nurse, social worker, psychologist, and cafeteria manager) address the effects of childhood obesity on the social, emotional, academic, and physical development of the students in their case (K. Emmanuel, personal communication, March 11, 2015). A persistent increase in childhood obesity rates and decrease of academic achievement of students has existed for the past 10 years. The school has not passed the state health and academic report for the past 10 years. The Associate Superintendent of the local school board explained schools receive a grade based on pre and posttest academic scores and physical fitness assessments given to each student annually (K. Emmanuel, personal communication,

March 11, 2015). The scores are reported by subgroups, including race. According to the state public school review data report, 90% of the students enrolled at Tiger Elementary School are American Indian. Because childhood obesity affects all areas of children's development (Davis & Cooper, 2011) it is important to understand what school personnel are doing to address these effects, so that school personnel can identify and address where greater intervention is needed.

Better understanding of what Tiger Elementary School personnel do to address the effects of obesity on students' overall development could help inform the creation of future programs to address the effects of obesity on social, emotional, academic and physical development of students at the school. Through this study, I plan to contribute to the body of knowledge on how adults in school settings can address the adverse effects of childhood obesity on a student's development. The findings of the proposed study may provide professional educators and administrators' useful information by providing insight into how school personnel address the effects of obesity on a student's overall development. There is a need to better understand what school personnel can do to minimize the effects of obesity on students' development because of the high obesity rate at the school over the past 10 years (K. Emmanuel, personal communication, March 11, 2015).

### **Research Questions**

The research questions guiding this study were created to gather insight on what practices school personnel use to address the effects of obesity on students' social,

emotional, academic and physical development. The research questions that will lead this study are:

1. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' social development?
2. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' emotional development?
3. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' academic development?
4. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' physical development?

### **Purpose of the Study**

The purpose of this case study was to explore how school personnel address the effects of obesity on students' social, emotional, academic and physical development.

The study was focused on ways school personnel address the effects of childhood obesity on a students' overall development, such as being socially withdrawn in the classroom, students being ashamed or embarrassed to participate in the classroom, low self-esteem, anxiety, depression, poor academic success, and dealing with health problems such as diabetes, heart conditions, and asthma. Findings from this study may provide insight into

what the school is doing to assist with the academic, social, emotional, and physical problems student face because of obesity.

Participants in the study were school personnel who had daily contact with the students and were able to provide information about what adults do to address the effects of obesity on students' social, emotional, academic and physical development. Each participant in the study added his or her perspective according to the role he or she is assigned in the school. The administrator shared information that pertains to how the entire school is addressing the effects of childhood obesity. The teachers and the physical education teacher brought insight into how the effects of childhood obesity are addressed in the classroom and during physical education classes. The nurse gave insight to how the school addresses the effects of childhood obesity from a medical perspective, focusing on physical effects. The social worker and school psychologist brought insight to how the school addresses the effects of childhood obesity, particularly focusing on the social and emotional development of a student. The cafeteria manager brought insight into how the school chooses and prepares meals to address the physical effects associated with obesity.

The findings of this case study could provide policy makers and school districts with information about how school personnel address the effects of obesity and identify areas in which more could be done to address the effects of childhood obesity on students' overall development. Results of this study may help policy makers and school districts create or enhance a childhood obesity programming. Current literature on the adverse effects of childhood obesity, contributing factors of childhood obesity, and the schools' role in childhood obesity will be presented in Section 2.

## Conceptual Framework

The conceptual framework is the outline used in a research study to explain an issue and presume why it has taken place (Ostrom, 2009; Schluter, Hinkel, Bots, & Arlinghaus, 2014). In this study, the socioecological model (SEM; McGinnis & Ostrom, 2014; Schmolke, Thorbek, DeAngelis, & Grimm, 2010) and Bronfenbrenner's ecological theory (1979) were used. The SEM model proposes an individual's behavior is influenced by the influences in the environment (Hinkel, Bots, & Arlinghaus, 2014). In this qualitative case study, I examined what school personnel report they do to address the effects of childhood obesity, as it is connected with one or more systems in Bronfenbrenner's (1979) ecological theory. The ecological systems theory defines the environments an individual is in and describes how each system will create a relationship between the individual and the setting defines the environments an individual is in and describes how each system will create a relationship between the individual and the setting. As a result of the relationships in each system, change occurs as a direct consequence of the alignment of the individual and the environment.

I focused on the microsystem, mesosystem, exosystem, and macrosystem of Bronfenbrenner's ecological model. The microsystem is the direct interaction between a person and the environment such as a parent, sibling or teacher. The mesosystem consists of more than one system in the ecological model such as peer pressure in a school. The exosystem occurs when the person is not directly involved in the environment such as the work environments of one's parents. The macrosystem is the outer level of the system and involves political laws and values such as school, politics and religious beliefs.

Bronfenbrenner assumed that an individual's actions exist as a product of a person's environment (Bronfenbrenner, 1979). Learned behaviors and habits are created by an individual's perceptions of themselves and their environment (Bronfenbrenner, 1979).

Federally regulated nutrition policies are examples of attempts to influence the society level of the SEM. The Child Nutrition Act, which was established in 2004, obligates all schools partaking in the National School Lunch Program to generate a school wellness plan (CDC, 2014; Farris et al., 2014). The school wellness policies promote a healthy school environment where physical activity and nutrition are taught and modeled throughout the school, cafeteria, and classroom (CDC, 2014). Ecological systems theory addresses human development from a collaborative perspective (Bronfenbrenner, 1998). According to the ecological systems model, individuals cannot be described without the consideration of the context in which they are surrounded (McGinnis & Ostrom, 2014). The ecological model compares the indirect different levels of influence and considers how factors at one level influence the factors of another level (Hinkel, Bots, & Schluter, 2014). The model includes the immediate setting in which the person is surrounded and the contexts in which that environment is situated (McGinnis & Ostrom, 2014). In this study, the ecological position of the child includes the school, which in turn is influenced by the mandates of testing and superior social environments including the community and society.

The challenge of incorporating the SEM in this case study was in creating research questions that were operational, particularly in the selection of environmental influences that were relevant, to explain observed dynamics. When selecting the

associations of interest for this specific analysis, I had to determine which influences will change over time (e.g. student changing teachers each year) and influences that will remain constant (such as parental, tribal, and media influences) within the system. Using the SEM to frame this study was helpful because it provided a framework for exploring school personnel's direct or indirect effects on the promotion or prevention of childhood obesity by considering what they do to address childhood obesity's effects. SEM, in this study, provided useful information for building operative interventions for mitigating the effects of childhood obesity.

The research questions in this study were developed using the SEM concepts that schools have an effect on childhood obesity and how it affects students. The research questions were developed to gain insight into school personnel's efforts to address childhood obesity. Teachers and schools have been given the mandate to educate the whole child (Story, Nanney, & Schwartz, 2009). Schools have been pressured to implement childhood obesity prevention curriculums though physical education opportunities have been decreased. School lunches have not met the adequate nutritional requirements provided by the Food and Drug Administration (FDA & Wu, 2011). The results of the data analysis may help school personnel provide meaningful information to create or update school and district health policies to improve the overall wellbeing of children in schools.

## Definition of Terms

The following definitions are terms that were used throughout the study. They are listed here for clarification and to define the meaning of the terms. The terms are defined to give a thorough explanation of the terms as they relate to the study.

*Academic success:* Academic success is the term used by national, state and local school districts when a student has met the expectations for being in good standing and making satisfactory progress in all subject areas (Hattie & Anderman, 2013).

*Body mass index (BMI):* BMI is used to measure childhood obesity by comparing weight to height. BMI is generally a predictor but is not a thorough measurement of body fat (Malhotra, et al., 2011).

*Obesity:* Children with a BMI in the 95th percentile and higher are considered obese (CDC, 2009).

*Obesity intervention plans:* Obesity intervention plans are strategies that are created to help obese people decrease weight and increase activity levels by obtaining a healthy diet and a physically active lifestyle (Jain & Langwith, 2013).

*Obesity prevention plan:* Obesity prevention plans are strategies that are created to help avert obesity from occurring (Johnston, O'Malley, Terry-McElrath, Colabianci & Wood, 2012).

*Overweight:* Children with a BMI at or higher than the 85th percentile and lower than the 95th percentiles are considered overweight (Biro & Wien, 2010).

*Perceptions:* Perception is the way a person regards, understands or interprets something (Odum, McKyer, Tisone, & Outley, 2013).



## **Assumptions, Limitations, Scope, and Delimitation**

### **Assumptions**

According to Leedy and Ormrod (2010), assumptions in a case study must be considered likely to be true or the study cannot continue. There are several assumptions to this study. I assume the participants gave accurate, honest responses. To validate this assumption, I reminded participants that confidentiality will be maintained in the study, their participation in the study is entirely voluntary, and participants may leave the study at any time. I assumed that teachers and schools are not aware of how influential childhood obesity is on the overall development of students. I assumed the perceptions would differ among school personnel since the participants have various roles in the school. It was assumed that school personnel would feel their focus should be on the academic development of students and not focus on the adverse effects of childhood obesity has on a student stem from literature stating educators are no longer focusing on the physical but academic development of students (Basch, 2010; Clarke, Fletcher, Lancashire, Pallan, & Adab, 2013; Crosnoe, 2006; Kann, Telljohann, & Wooley, 2007).

### **Limitations**

A limitation in research is defined as occurrences that arise in a study that are out of the researcher's control (Glesne, 2011; Yin, 2013). They limit the extensiveness with which a study can develop and at times may affect the results. In this case study, qualitative methodology was used. According to Simon and Goes (2013), a limitation to using qualitative studies has been related to issues with validity and reliability because qualitative research often takes place in the natural environment, and it is not easy to

replicate the study. In this case study, the study was limited to one school, which is made up of 90% of American Indian students. This study was confined to the southeastern part of the United States with a small number of target participants. The anticipated participants were from various positions in the school such as teachers, administrators, physical education teachers, nurse, social worker, psychologist, and cafeteria manager. The study used the school personnel's self-reported data. The research design used in this study may also be considered a limitation because I used only one methodology, the qualitative case study. Another limitation of the study was the data analysis as it pertained to the socioecological model and was not analyzed with any other framework.

### **Scope**

The research scope is defined as informative details that describe exactly what will occur in the study and where the information was derived (Simon & Goes, 2013). The study took place in a rural elementary school that serves grades prekindergarten through fifth grade. Ninety percent of the students are American Indian. The majority of the students at the selected elementary school are registered members of the tribe. Individual interviews were conducted with participants who included (a) 1 school administrator, (b) seven classroom teachers (c) one physical education teacher (d) one school nurse, (e) one cafeteria manager, (f) one school social worker, and (g) one school psychologist. The interviews provided information about what the teachers and school staff are doing to address the effects of childhood obesity on students' development. I encouraged the participants to express their feelings about any events that pertain to

addressing the effects of childhood obesity. The scope of the study includes the school and how the school personnel address childhood obesity.

### **Delimitations**

The delimitations are factors that are in a researcher's control that set the bound of the study (Simon, 2011). This case study was focused only on the perceptions of school personnel and did not include the perspectives of students, parents, or policy makers. The study is further delimited by the setting. The present study was focused on a rural school district in which the majority of the students are American Indian.

### **Significance of the Study**

#### **Application to the Local Problem**

Any discoveries may affect the target school's overall climate and provide elementary teachers, physical education teachers, administrators, nurses, psychologists, social workers, and cafeteria managers with vital data concerning best practices for addressing the effects of childhood obesity on students' development. Teachers, physical education teachers, and counselors may address the effects of obesity in the daily lesson plans. Social workers, psychologists, and nurses may find ways to address the effects of obesity in their interactions with students and families. Administrators may take a more proactive part in addressing the effects of obesity by creating schoolwide programs. Cafeteria managers may use the findings as impetus to provide healthier, balanced meals that are enticing to students at Tiger Elementary School.

**Professional Application**

Insights of school personnel may affect the success of school health and physical education programs and policies. Understanding what is being done by school personnel to address the effect of childhood obesity and where intervention may be lacking could allow school personnel to give relevant input in developing childhood obesity intervention programs. I explored research on childhood obesity at Tiger Elementary and could not find relevant information regarding how the school personnel are addressing this problem. As children spend the greater part of their day in a school and classroom, understanding what school personnel believe they are doing to address the effects of childhood obesity may lead to a successful prevention and intervention programs.

**Social Change Implications**

This study may foster a better understanding of Tiger Elementary School personnel's views of how the various staff members address the effects of childhood obesity on students' social, emotional, academic and physical development. It also highlights those areas where school personnel are not addressing effects of childhood obesity. Information derived from the study may aid in the creation of future programs to address the effects of obesity on students' social, emotional, and academic development.

**Summary**

Though there is a significant amount of research on the biological, environmental, and cultural aspects of obesity in children, the majority of researchers have focused on the experiences of children who are not American Indian. There is a need for research concentrated on the views and opinions of school personnel who work with children in

the tribe, particularly how faculty and staff perceive they have addressed adverse effects of childhood obesity on students' development. The results of the study provide school districts, school administrators, teachers, American Indian parents and American Indian tribes with an enlightened understanding of what is being done to address the adverse effects of childhood obesity among American Indian students in this school. They will also provide insight into areas where more could be done to address the effects of obesity on students' development.

This section included an overview of the problem and the lack of information about what school personnel are doing to address the effects of obesity on students at the study site. It also described the theoretical framework of the socioecological model as it related to Bronfenbrenner's (1979) ecological systems theory. Terms were defined as used in this study. I also presented limitations and assumptions made in this study. The purpose of the study, the research questions, delimitations, and the social significance of the study were presented. Section 2 is a review of literature relevant to childhood obesity, contributing factors to childhood obesity, and school personnel's role in childhood obesity. In Section 3, the methodology is defined and defended. In Section 4, I provide the findings. Finally, in Section 5, I present implementation for social change, discuss discrepant cases, and offer recommendation for further related research.

## Section 2: Literature Review

### Introduction

In this section, I present a review of literature relevant to childhood obesity, identify contributing factors of childhood obesity, and address perceptions teachers and school personnel have about childhood obesity. To find research related to the doctoral study, I accessed the following databases: ERIC, Science Direct, Academic Search Premier, High Wire, Health Source: Consumer Education, Health Source: Nursing/Academic Edition, Master FILE Premier, MEDLINE, Science Reference Center, and TOPIC search databases: List Databases. While conducting a search of published journals, periodicals, and books, I used the following search terms: *obesity, childhood obesity, American Indians and obesity, environmental factors of childhood obesity, socioeconomic influences on childhood obesity, teachers role in childhood obesity, schools role in childhood obesity, culture influences and obesity, genetics and obesity, physical effects of childhood obesity, social and emotional effects of childhood obesity, psychological effects of obesity and educational effects of childhood obesity*. The majority of the sources are from within the last 5 years; but, for research purposes, some sources are older than the last 5 years.

American Indian children, regardless of the tribe, have the highest rates of obesity and complications due to obesity among all ethnic groups in America (Styne, 2010). Since 2003, American Indian and Alaska Native children have shown the greatest increase in obesity rates (CDC, 2010). Forty to 50% of American Indian children are obese before their 10th birthday (Styne, 2010). American Indian children tend to have

central adiposity in a higher proportion than a comparable group of children who are not American Indian (Downs, Marshall, Ng, & Willows, 2008). Central adiposity is the metabolically active fat tissue that is connected to insulin resistance. Central adiposity is also linked to abdominal obesity and metabolic syndrome. Metabolic syndrome is a label for a group of medical issues that occur together and increase the risk of Type 2 diabetes, stroke, and heart disease (Downs et al., 2008). Central adiposity has been associated with consuming fewer than the recommended daily servings for fresh fruits and vegetables (Downs et al., 2008). Information on childhood obesity in American Indian tribes is underdeveloped.

Obesity is considered to be the most common metabolic disorder in the world (Popkin & Ng, 2012). According to the World Health Organization (2010), obesity is a global problem in the 21st century. The Robert Wood Foundation (2011) reported 52.6% of adults were overweight or obese. In developing and underdeveloped countries, the awareness and research on obesity still needs attention (Popkin & Ng, 2012). Research to prevent and treat obesity among adults and children will increase the quality of life for those who are obese, by raising awareness of the many dangers and possible morbidity obesity can produce (Popkin & Ng, 2012).

Childhood obesity is a medical condition that can be easily diagnosed but hard to treat (Callaway, Prins, Chang, & McIntyre, 2006). The national cost of obesity health care is \$113 billion annually (Callaway et al., 2006). The increasing problem of obesity is associated with multiple illnesses, hypertension, heart disease, sleep apnea, and cancer (Ogden et al., 2010). The increasing rate of obesity is also associated with the increased

risk of diabetes (Ogden et al., 2010). The urgency to put in place childhood obesity-prevention strategies is dire to allow teachers to become aware of the health threats linked with childhood obesity.

According to the CDC (2010), childhood obesity has evolved over time. The CDC reports on childhood obesity were first embarked on in 1963. Childhood obesity was reported to increase over the following years: 1976-1980, 1999-2000, and 2007-2008 until present-day (CDC, 2011; Ogden et al., 2010). One in three persons in the United States has been identified as obese (Pleis & Lucas, 2009). Ogden et al. (2010) noted that 31.7% of U.S. children are overweight. The Pediatric Nutrition Surveillance System indicated that one out of three children is obese or overweight before turning 5 years old (CDC, 2010.) The data display the trend of childhood obesity is increasing despite the numerous research studies on the risks of childhood obesity.

Approximately 110 million children globally are recognized as obese (Caprio, Daniels, Drewnowski, Kaufman, & Schwimmer, 2008). Hispanics/Latinos, African Americans and Native Americans are the minority populations that are at the highest risk of developing childhood obesity (Wieting, 2008). These ethnic groups present a greater risk of insulin resistance syndrome; cardiovascular problems; and physical, emotional, and social disorders (Wieting, 2008).

Wieting (2008) noted 13% of Caucasian youth, 24% of African American, 24% of Mexican American, 20% of Non-Hispanic African Americans are overweight, and an estimated 40-50% of Native American youth are at risk of being obese. Global projections for obesity are more than 1.12 billion obese people by 2030 (Kelly, Yang,



Chen, Reynolds, & He, 2008). According to Caprio et al. (2008), countries that previously encountered malnutrition as a main health problem are now facing childhood obesity as the prevalent health concern. As deprived nations change and shift from traditional foods to American food habits, obesity rates increase (Popkin, Adair, & Ng, 2012). One result of the transition is countries are facing a twofold problem: the infective illnesses that go along with undernourishment and progressively, the prolonged sicknesses associated with obesity and modern way of life (Popkin et al., 2012).

### **Teachers' Role in Childhood Obesity**

Teachers and school personnel are being researched as possible agents who are responsible for the promotion and prevention of childhood obesity (CDC, 2009; Davis, Davis, & Moll, 2011; Ganguli, 2011; McGinty & Daumit 2011; Michaelides, Thanos, Volkow, & Wang, 2011; Paxon, Donahue, Orleans, & Grisso, 2006). Researchers have shown certain groups feel teachers should have the responsibility of promoting healthy lifestyles by educating students on the danger of obesity and the prevention of obesity through physical activity and healthy nutrition (Brewer & Rieg, 2013; Derscheid, Kim, Zittel, Umoren, & Henry, 2014; Dolores, 2008; Green, Riley, & Hargrove, 2012; Loughrey, 2012). The researchers examined school personnel's views on the social, emotional, academic and physical effects of childhood obesity, obesity prevention, and the underlying factor of who is responsible for interventions and prevention programs. The burden of promoting childhood obesity in schools has been placed on teachers and school personnel. The role of teachers as models in the prevention of childhood obesity

has raised concerns of unhealthy eating promoted in classrooms and schools (Elliott, Combs, & Boyce, 2011; Green et al., 2012; Loughrey, 2012; Moore et al., 2010).

Rewards for student success, good behavior, classroom celebrations, and contest have traditionally centered on food (Brewer & Rieg, 2013; Derscheid et al., 2014). The food selections for a typical classroom party are pizza or ice cream and candy is often used for small rewards (Brewer & Rieg, 2013; Derscheid et al., 2014; Odum, McKyer, Tisone, & Corliss, 2013; Mazzeo, Arens, & Germeroth, 2012). End-of-the-year and holiday celebrations consists of chips, sugary drinks, cupcakes, cookies, and other high-sugar, high-processed foods. The consumption of sweets and high-fat foods in the classroom increase a student's preferences for unhealthy food items (Derscheid et al., 2014; Dolores, 2008; Loughrey, 2012; Mazzeo et al., 2012; Odum et al., 2013). Using food as rewards and incentives also encourages consuming food various times of the day even though a child is not hungry (Derscheid et al., 2014).

Teachers and school personnel play a role in childhood obesity prevention due to the fact children spend the majority of the day under the influence and supervision of a teacher (Derscheid et al., 2014; Dolores, 2008; Green et al., 2012; Loughrey, 2012). Teachers model dietary habits in the cafeteria and in class by what they consume in the students' eye sight (Elliott et al., 2011; Loughrey, 2012; Moore, Tapper, & Murphy, 2010). According to ecological systems theory, if teachers' eating habits are unhealthy, it will indirectly influence the children's eating patterns, as the students will tend to mimic the eating patterns of the teacher and school personnel (Odum et al., 2013; Mazzeo et al., 2012). Most students have the mentality that the food selections and limited physical

fitness that occur in the school setting ought to be healthy therefore dietary habits are influenced by teachers and school personnel (Derscheid et al., 2014). If a student observes a teacher or school personnel eating from the vending machine daily, the opinion of processed food may become positive in the students' view and influence the student to believe processed food is a good alternative (Adamick, 2012).

According to Brewer and Rieg (2013), out of 241 interview responses, only 12.9% of teachers and school staff members felt it was their responsibility to prevent childhood obesity and did not agree with supporting an increase in their role of childhood obesity prevention. Many teachers in the study agreed they have an influence on children's overall wellbeing but feel time restraints and demands of teaching core subjects do not allow time to focus on obesity prevention. Teachers in the study also expressed while they are the primary educators', parents and the community need to assist to help promote a healthy lifestyle. To design supportive services and effective training modules, further investigation of the perceptions of teachers and school staff members is necessary.

It is imperative that the teacher's and school's role be clearly guided on appropriate prevention and intervention methods and follow proper protocol for referrals for obese and at risk students (Bruss, Dannison, & Morris, 2010; Centis et al., 2012; Loughrey, 2012). Teachers and school staff who are likely to be involved in the prevention of obesity are expected to have knowledge of the causes and effects of childhood obesity, physical inactivity and poor nutrition (Green et al., 2012; Natale et al., 2013). On the contrary, teachers are given very little training in nutrition and strategies to

prevent childhood obesity (Brewer & Rieg, 2013; Derscheid et al., 2014; Loughrey, 2012; Moore et al., 2010).

Nutrition training in teacher preparation programs is usually limited and varies according to the university, major of study, and teachers' interest in the topic (Bruss, Centis et al., 2012; Dannison, & Morris, 2010; Loughrey, 2012; Steele, Wu, Jensen, Pankey, & Davis, 2011). The lack of knowledge and the clearly defined role of the teacher as it is associated with the consequences of childhood obesity are listed as a barrier to implementing successful prevention programs (Brewer & Rieg, 2013; Derscheid et al., 2014). The willingness, perception, and knowledge of teachers must be considered before society considers teachers and schools responsible for the prevention and intervention of childhood obesity programs (Derscheid et al., 2014).

According to Derscheid et al. (2014) and Yager and O'Dea (2006), if school personnel are held responsible for educating students on childhood obesity, certain areas need to be addressed. Teachers and school personnel must be sufficiently trained and prepared to take on a preventive role that will positively influence their perception as playing a role in childhood obesity prevention. Current researchers expressed that teachers and school principals have limited knowledge of the possible origins of obesity (Derscheid et al., 2014; Odum et al., 2013; Steele et al., 2011). The majority of information that teachers apply in the classroom is outdated and represents simplistic opinions about obesity, namely that it is solely related to excessive calorie consumption and lack of physical activity (Derscheid et al., 2014; Elliott et al., 2011; Green et al., 2012; Natale et al., 2013).

Biological and genetic factors associated with childhood obesity are often ignored by teachers and school personnel (Derscheid et al., 2014). Yager and O’Dea (2006) found teachers were giving strict and inappropriate dietary advice to obese students and recommending they go on risky 1200 calories diet. The teachers also had a mistaken belief about the dangers of childhood obesity as it relates to academic achievement. University teacher and school personnel training programs should equip the future teachers and school personnel with current information about the detection, prevention and treatment of childhood obesity (Derscheid et al., 2014). Misconceptions about obesity and prevention methods including negative biases toward obese children in the classroom are concerns that need to be addressed through teachers’ perception of obesity in the classroom (Derscheid et al., 2014). In an effort to create up-to-date prevention and intervention programs, the perception of the school personnel need to be studied.

Even though students may have genetic inclination for childhood obesity, the school may contribute to the efforts of addressing this problem in the classroom. Educating students on healthy living at an early age is crucial as habits are harder to break later in life. Daily routines that involve physical activity and a balanced diet are key factors in preventing childhood obesity (Osiki, 2010; Phillips, 2011). Teachers’ knowledge of the health risk associated with childhood obesity, possibly will allow teachers to become more aware of the urgency to put in place prevention strategies in the curriculum. According to the ecological systems model, the school is a key factor in the children’s behavior, such as the children’s food and activity choices. Children learn food

and physical activity patterns by influences in the school environment in which the child resides the majority of the day.

### **Schools' Role in Childhood Obesity**

The part schools play in obesity prevention has been highlighted in recent research (Green et al., 2012; Loughrey, 2012; Odum et al., 2013; Poppendieck, 2011; Schanzenbach, 2009; Wu, 2011). According to Odum et al. (2013) and Wu (2011) schools have a distinctive opportunity to influence the lifelong patterns of physical activity behaviors and healthy eating practices. Displaying healthy meal choices and physical activity opportunities in the school setting is essential for children to learn what is appropriate if they are not being educated on healthy lifestyles at home. Providing ample opportunities in schools to practice healthy eating and active physical fitness activities will equip students with strategies they need to implement a healthy lifestyle into adulthood. Researchers have studied the home environment, schools, communities, cultures, fast food restaurants, and media as possible influential factors of childhood obesity in American Indian students (Adamick, 2012; Oski, 2010; Phillips, 2011; Powell, Szczypka, & Chaloupka, 2010; Quelly, 2014). The role of schools in childhood obesity has been studied because schools are able to influence the dietary habits and physical activity habits of students by implementing a health and nutrition policies and practices (Brewer & Rieg, 2013; Ogden, 2014).

As school districts require teachers to be held accountable by using standardized tests scores, physical education classes and recess have been viewed as an option instead of a mandate (Gurley-Calvez & Higginbotham, 2010; Leviton, 2008; Lounsbury &

McKenzie, 2009). Forty percent of school districts in the United States have removed or reduced daily physical activities in the classroom to focus the extra time on reading, writing, and math instruction (Soto & White, 2010). Childhood obesity is primarily of concern for minority children, who are also a high risk for academic underachievement (Wood, 2006). The adversities associated with childhood obesity can have a negative impact on the healthy development of a child physically, psychologically, emotionally, and socially (Story, 2009; Viadero, 2008; Wood, 2006).

Schools have substantial potential for influencing children's behaviors. For the purpose of this study, I focused on the fact that students spend a majority of their time in school under the direct supervision of their teachers. Few researchers have addressed elementary school personnel's approaches for addressing the adverse effects of childhood obesity and prevention of childhood obesity in the tribe. According to Story, Nannery, and Schwartz (2009), out of 241 educators who participated in their study only 12% agreed teachers and schools should increase their role in childhood obesity prevention.

### **School Lunches and Childhood Obesity**

Research has shifted regarding environmental factors and now includes the influence of school meals on childhood obesity. Most children typically consume two out of three daily meals in the school cafeteria under the National School Lunch and Breakfast Program. The National School Lunch Program was established in 1946 by President Truman to offer lunches at school to children. The lunch program was initiated on the belief that maintaining children's health is essential to America's success (Adamick, 2012; Cooper & Holmes, 2007; Institute of Medicine, 2010; Kelly, 2005;

Popendieck, 2011; Wu, 2011). The National School Lunch Act (NSLA) in Section 9(a) (4), 42 U.S.C. 1758(a) (4), necessitates that all meals served at school meet the most recent American dietary guidelines (Adamick, 2012; Cooper & Holmes, 2007; Institute of Medicine, 2010; Popendieck, 2011; Wu, 2011). Section 201 of the Healthy, Hunger-Free Kids Act of 2010 (Pub. L. 111–296, HRFKA) amended Section 4(b) of the NSLA, 42 U.S.C. 1753(b), requires the USDA to issue regulations to update the meal patterns and nutrition criteria for school lunches and breakfasts (Institute of Medicine, 2010). In 2010 President Obama signed the Healthy, Hunger-Free Kids Act into law, which updated school nutrition guidelines for the first time in 15 years. This regulation mandated a requirement of the number of fruits and vegetables that must be served daily, and demands 50% of the starches to be whole grains (Institute of Medicine, 2010). Typical school lunches consist of unhealthy preservatives, sodium, sugar, and trans fat (Popendieck, 2011; Wu, 2011). According to the USDA, school lunches exceed the recommended 500 milligrams of sodium with most lunches equaling more than 1,000 milligrams of sodium and are above the recommended fat content per meal (Institute of Medicine, 2010).

More than 50% of food items are processed before they are sent to schools (Cooper & Holmes, 2007). The most popular school lunch item is chicken nuggets, which are processed with preservatives and additives and may have a list of more than 30 ingredients instead of the only ingredient listed as chicken (Adamick, 2012; Popendieck, 2011). Schwartz (2011) suggested that schools research the sugar content in chocolate milk as a contributing factor to childhood obesity. Chocolate milk does not have the same



nutritional value as unflavored milk. Artificial flavoring and an unhealthy amount of sugar, sodium, and calories are found in chocolate milk (Schwartz, 2011). Although the Healthy, Hunger-Free Kids act put into place minimum fruit and vegetable requirements there are no maximum calories limits or guidelines on how to prepare the food. For illustration French fries that are batter coated are considered fresh vegetables on some school cafeteria menus (Wu, 2011).

Whitmore-Schanzenbach (2005) stated that two-thirds of school children participate in the National School Lunch Program and one-third of their daily calories intake is consumed in this lunch. School-prepared meals are lacking in nutritional value and may be the only meal that children consume that day (Anderson, 2015; Finkenstein, Hill, & Whitaker, 2008; Whitmore-Schanzenbach, 2005). Public schools began offering snack foods and high calories foods as an option to purchase in the early 1990s (Popendieck, 2011). Vending machines were readily available to students and were filled with high processed sugars and low nutritional valued foods. A' la carte service is also offered in all schools to help with the food budget. The à la carte service consists of candy, chips, pizza, often ice cream, and other sugary processed items for purchase at the cafeteria cash register (Adamick, 2012; Popendieck, 2011).

Children who consume breakfast and lunch at school are 32% more likely to be overweight, are 6.2% more likely to eat two or more servings a day of fatty meats, and are 19% more likely to consume two or more sugary drinks a day (Anderson, 2015; Bergman, 2015; Gibson & Dempsey, 2015; Lederer, King, Sovinski, Seo, & Kim, 2015). Compared to students who bring bag lunch from home, 39% of students who eat school

lunch consume less than two servings of fresh fruits and vegetables a day and have higher levels of (LDL) bad cholesterol (Anderson, 2015; Liou, Yang, Wang, & Huang, 2015; Miller et al., 2015; Terry-McElrath, O'Malley & Johnston, 2015; Totura, Figueroa, Wharton, & Marsiglia, 2015). Students eating lunch in the cafeteria an extra 40-120 calories per day compared to students who bring prepared meals from home (Anderson & Butcher, 2006; Finkenstein, Hill, & Whitaker, 2008; Whitmore-Schanzenbach, 2005). The environmental influence of school lunches on childhood obesity were described to allow schools and teachers to have examples of how the environmental influence of school lunches have been researched as a possible cause of childhood obesity.

### **Physical Education in School and Childhood Obesity**

Ever since the No Child Left Behind mandate (NCLB) in 2002, schools have considerably increased the instructional time and decreased physical education and recess (Ogden et al., 2014; Story, Kaphingst, & French, 2006; Taras, 2005; Veugelers & Fitzgerald, 2005). The focus of mandated standardized tests, which are holding teachers, students and schools academically accountable, has led to a decrease or elimination of daily physical education and recess in schools (Kohl & Cook, 2013).

The rationale for schools to decrease physical activity time due to mandates for higher test scores has not been proven as successful in research. On the contrary, researchers have shown daily physical activity promotes increased classroom learning by allowing children to stay on task and improving concentration (Nelson & Gordon-Larsen, 2006; Tremarck, Robinson, & Graham, 2007; Trost, 2007). Students who had daily physical education classes during the instructional school day increased, maintained or

improved their current grades, increased or improved their scores on standardized tests, and had better attendance compared to students who were not allowed to participate in daily physical activities. The results of the studies showed physical fitness activities are linked to improved school performance and test scores (Ahamed et al., 2007; Buck, Hillman, & Castelli, 2008; Castelli, Hillman, Buck, & Erwin, 2007; Coe, Pivarnik, Womack, Reeves, & Malina, 2006). International studies performed in Australia, Iceland, Hong Kong, and the United Kingdom have described a positive correlation between academic performance and physical activity levels (Coe et al., 2006; Trost, 2007). The international researchers described findings of higher academic grades, increased standardized test scores in math and reading, increased perceptual skills, increased IQ scores on mathematics and reading tests and increased academic readiness skills in the students who had physical activities in their daily curriculum compared to students who did not have the opportunity to participate in daily physical activity and recess times (Castelli et al., 2007; Trost, 2007). Developing evidence advises that frequent movement activities fuels the development of brain cells, fuels growth of blood vessels found in the brain (Hillman, Erickson, & Kramer, 2008).

Teachers and school administrators need to appreciate that research shows it is difficult to justify the cuts in physical education and recess (Hillman et al., 2008; Trost, 2007). Eliminating or decreasing physical education and recess activities may decrease school achievement and the future economic health of society, as unhealthy children may grow into unhealthy adults. Teachers and schools have a responsibility to allow daily

recess time because many students will not be offered or participate in organized or leisure physical activities when school is dismissed (Trost, 2007).

According to researchers, school health services have the ability to address childhood obesity by giving information on the adverse effects of childhood obesity, giving referrals to students and obesity screenings especially to minority students who have increased risk of obesity (Ogden et al., 2014; Story, Kaphings, & French, 2006; Taras, 2005; Veugelers & Fitzgerald, 2005). Physical education and recess in daily school curriculums not only provide physical activity that assists children in the short-term, they teach students skills that will help them be physically active for a lifetime. Educators have the responsibility of educating the whole child and physical education should be a part of the daily curriculum to ensure the development of the whole child. With the rising childhood obesity rates for American Indian students' it is essential that teachers and school personnel are aware of the culture, physical, social, emotional and educational impact childhood obesity has on children particularly in this study, children in the tribe.

### **American Indians**

#### **Southeastern United States American Indians**

There are eight American Indian state-recognized tribes in Southeastern United States. The state recognized tribes are recognized in Chapter 71A of the Southeastern United States General Statues. The Southeastern tribe (HR 4656) act was passed in 1956 by the United States congress, which created measures toward providing federal recognition for the tribe but did not include health services for the tribe provided by the

United States of public health service (Pullen-Smith, 2010). Formal data collection to identify health concerns among the tribe has not currently transpired. The tribal staff often uses county-specific data accessible from the U.S. Census on American Indians in the rural county, the state health department's *American Indian Fact Sheet*, and affiliating articles are used for data for funding health-related proposals (Letourneau & Crump, 2009).

According to the U.S. Census (2010), the rural county is the largest county in the state of Southeastern United States. The county is recognized as the most racially and culturally diverse county in the United States (Jones, 2010). The Robert Wood Foundation (RWF, 2012) declared the rural county as the poorest and unhealthiest place to live in southeastern United States and the second poorest in the nation. This report was based on statistical factors that included income, medical services, access to fresh foods, life spans, exercise habits, and obesity. The tribe ranked fifth in the highest number of obesity cases for children and 17th in obesity cases for adults in the United States (RWF, 2012). The per capita income for the rural county was \$13,224 (RWF, 2012). In the rural county, 28.20% of people live below the poverty line (RWF, 2012). The majority of the state's tribes are unaware of the significance of the health problems within their tribe and do not have the structure to initiate the development of services.

American Indians in Southeastern United States struggle from a perilous number of health disparities (Office of Minority Health, 2009). Understanding the complex culture of each individual American Indian tribe and being sensitive to their respective identities can be a challenge. It is essential to understand the sources and circumstances,

and to cultivate models of care for eradicating these disparities. A focused effort is necessary to research the health concerns in Southeastern United States tribes, and a strategic plan to which the lack of programs can be identified.

The wellbeing of Indian tribes is frequently overlooked in developing health policies. The tribes in the Southeastern state are units of governments that are responsible for amenities to their citizens in a way similar to state and local governments (Office of Minority Health, 2009). Detailed data is limited for American-Indian state-recognized tribes. The majority of state-recognized tribes use county-specific data provided by the U.S. Census and health department reports. Tribal enrollment offices have considered creating a plan to collect health data at the tribal offices. There is only one American Indian tribe in the state that has an official data method to keep record of health indicators (Letourneau & Crump, 2009).

Bell (2009) stated the following about American Indians in the Southeastern state: American Indians in the state have serious health disparities for numerous chronic diseases. The American Indian diabetes causalities in the state are three times greater and the rate for heart disease and stroke are 25% higher than non-Hispanic whites. Unemployment rates and the poverty level for the American Indians in the state are 3 times higher compared to other races. About one-third of the state's American Indian students have a high school diploma compared to 56% of other races. The tribal community in the state is in critical need to develop a plan to create prevention programs to address health disparities.

## **History and Culture of the Southeastern American Indian Tribe**

The Southeastern American Indian tribe has more than 55,000 members and is the largest tribe in the Southeastern United States (Tribe of Southeastern United States, 2010). The Southeastern American Indians reside in urban cities along the east coast (Knick, 2000; Wolfram, Dannenberg, Knick, & Oxendine, 2002). The customary fundamentals of the Southeastern American Indian culture embrace family and religion. Family relationship is the dominant characteristic to the Southeastern American Indian culture. The extended family and close-knit community provide tribal members with a secure feeling of belonging to a community (Knick, 2000). Chavis (1998) described meaningful family relationships, pride in owning land, and spirituality as customary practices of the Southeastern American Indian culture. Attending cultural events such as powwows and owning a business were important to the future of modern Southeastern American Indians (Brooks, 2011).

A family relationship is perhaps the most important customary component describing and nourishing the Southeastern American Indian culture. The Southeastern American Indians have managed to preserve their family heritage and keep it a top priority, as the emphasis on extended family relationships continues to remain resilient (Knick, 2000). Family interactions occur on a daily basis. Most Southeastern American Indian families live in close physical proximity and have frequent contact and interaction with extended family (Glover, 2001).

Similar to family, religion has been a focus of the tribe. Religion is an essential component of the Southeastern American Indian culture. The church functions as the

focus for teaching of religion and social gatherings (Dial & Eliades, 1996). The church functions as a substantial strength in Southeastern American Indian families (Brooks, 2011; Dial & Eliades, 1996; Mattis, 2005). Frequent participation in church services and activities promotes the conservation of the tribe's religion. According to Knick (2000), Southeastern American Indians place an emphasis on the bond with God and people, rather than on conventional religion (Mattis, 2005). Research on the significance of religion in the tribe supports spirituality and religion function interdependently within the tribe (Brooks, 2011; Tribe of Southeastern United States, 2010 & Mattis, 2005). The Southeastern American Indian community supports the local churches and believes there is a connection among American Indians, God, and nature (Knick, 2000).

### **Health Complications in American Indians**

Health complications associated with obesity in the American Indians have escalated in the past 2 decades. Hypertension, Type 2 diabetes, cholesterol, and cardiovascular disease have increased at an alarming rate among American Indian youth. Among all ethnic groups Type 1 diabetes in youth is more common than Type 2 diabetes (Delva et al., 2007). In American Indian youth, Type 2 diabetes far outweighs Type 1 diabetes diagnoses. Type 2 diabetes cases reported from 1994 to 2004 increased by 68% among American Indian youth compared to 10.2 % for Non-Hispanic Whites (Delva et al., 2007). American Indian children have a high rate of Type 2 nonalcoholic steatohepatitis compared to other races. Type 2 nonalcoholic steatohepatitis occurs with periportal fibrosis. Periportal fibrosis is fat that is accumulated around the veins in the liver (Lerret & Skelton, 2008). Type 2 nonalcoholic steatohepatitis leads to a more severe



form of liver damage and cirrhosis. Obese American Indian children have a higher risk of dying before the age of 55 from disease such as diabetes, cancer, liver disease, infections, and cardiovascular disease (Franks et al., 2010).

### **Potential Origins of Childhood Obesity in American Indians**

Researchers have studied the origin of childhood obesity in American Indian children. Many feel it begins before birth due to the fact the weight at birth for American Indian children is higher than non-American-Indian children at birth, and these children continue weigh more than their peers in the preschool years (Brown, Nicholson, Broom, & Bittman, 2011; Hearst et al., 2011; Jollie-Trottier et al., 2009; Khalil et al., 2010; Zephier et al., 2006). Influences discovered in these studies were maternal obesity; lack of fresh, healthy foods; lack of physical activity; media influences; anxiety linked with cultural identity; and poverty. Obesity has been associated with poor health in American Indian communities and has led to high ratios of heart disease, diabetes, and early death (Brown et al., 2011; Compher, 2006; DeLong et al., 2008).

### **Socioeconomic Status in American Indian Population**

The unemployment rate in American Indian rural communities is increasing at a startling rate. According to the 2010 U.S. Census American Indian adults have less education than the national average and 50% live below the poverty level. The unemployment rate forces many American Indian families to purchase inexpensive foods that are unhealthy. Forty percent of low-income American Indian children between the ages of 2 and 5 are obese (Anderson, & Whitaker, 2009). Only 60.2% of American Indian students consume a green salad at least once a week compared to 70.1% for other

rates (Delva et al., 2007). Childhood obesity has been associated with socioeconomic status as a prominent element in the epidemic. James, Fowler-Brown, Raghuathan, and Van Hoewyk (2006) found lower socioeconomic levels in childhood to be strongly associated with adult obesity. The research was focused on the BMI of the mother and child and discovered that their diet was high in processed, canned, and fatty foods. The participants' described alternative options such as fresh fruits and vegetables and lean meat as less affordable. Children who reside in low-income homes have a higher obesity rate. As an illustration, in the years 1999 to 2004, 18% of low-income children qualified as obese (Gruber, 2009).

Current data provided by the USDA indicated 44.2 million Americans were beneficiaries of the Supplemental Nutrition Assistance Program (SNAP) in February 2011 including 1,551,054 from Southeastern United States (Bradford, 2011). Low-income families have to stretch their budget and purchase food that is cheaper and lower in nutritional value. The majority of low-income families are on fixed budgets where fresh fruits, vegetables, and lean cuts of meat are not affordable or easily accessible. Many would prefer to incorporate healthier food options in their diet although it is not economically accessible (Zenk et al., 2006). The Special Supplement Nutrition Program for women, infants, and children (WIC) provides individuals with an ideal setting for identifying infants who are likely to face the problem of obesity. WIC is a federal program that has taken the responsibility for providing supplemental food and nutrition to pregnant women and postpartum women who have a low-income level.

### **Physical Inactivity and Childhood Obesity in American Indian Children**

Active lifestyles in American Indian children are commonly being replaced with sedentary lifestyles (Styne, 2010). Students in the tribe historically were responsible for assisting in farming, fishing, and hunting to provide food for their families (Dial & Eliades, 2006). Modern American Indian children who farm have equipment to cut down on labor. Fast food restaurants are easily accessible and are usually located within walking distance. American Indian adults have attributed limited physical activities with their children to lack of funds for sporting or outdoor events, shortage of facilities to exercise, lack of sidewalks to feel secure in taking long walks and lack of time while taking care of sick family members (Styne, 2010).

The physical activity level in children has decreased drastically. Children once enjoyed spending most of the day outdoors. Children now rarely spend any time outdoors taking part in physical activities (Sallis & Glanz, 2006). Most of children's leisure time is spent using the internet, watching television shows and playing video games. According to Stellino and Sinclair (2008) only 36% of children partake in the recommended daily physical activity. The lack of environmental space for children to be involved in physical activity has raised concerns that "built environment" may be a leading environmental cause of childhood obesity. The built environment includes lack of safe outdoor space, sidewalks, and lack of proximity to fresh foods and physical activity opportunities. Singh, Siahpush, and Kogan (2010) researched communities and discovered that 60% of children who reside in environments without access to safe surroundings and lived in

low-income housing did not have access to parks, recreation centers, sidewalks, and were obese.

### **Culture and Ethnicity Influences on Childhood Obesity**

Although childhood obesity is on the rise in all ethnic groups, its occurrence is greater in nonwhite populations (Harris, Gordon-Larsen, Chantala, & Udry, 2006).

Customary American Indian daily life included farming and hunting. The food gathered from farming and hunting was thought to be a sacred gift from the creator (Halpern, 2007). Historically, American Indian foods consist of low-carbohydrates, low-fat content, and high protein (Halpern, 2007). Currently, American Indian diets as well as the diets of Americans in general consist of processed foods, high fat contents, high fructose corn syrup, and a lot of sugar and salt intake (Halpern, 2007).

A reason for prevalence of obesity in ethnic groups may possibly be that the majority of ethnic groups have the common practice of frying foods and using fats to season their food (Gittelsohn, 2006). The diets of ethnic groups usually have limited exposure of vegetables, whole grains, fresh fruits and low-fat food items (Gittelsohn, 2006). Data on American Indians revealed similar dietary and physical activity patterns (Gittelsohn, 2006). Dietary practices in the American Indian population that may possibly contribute to obesity have been recognized, including the extensive routine of adding whole milk, fry bread, fried meats, butter, fried vegetables and lard, as well as the substantial usage of fats to prepare beans (Gittelsohn, 2006). Foods used for celebration are often fried foods, several starches, and an abundant amount of desserts. Food is the main element used to celebrate (Slattery et al., 2010). The definition of obesity is not

defined equally among ethnic groups. Weight perception in ethnic groups differs from the nonwhite population (Adams, Quinn, & Prince, 2005; Killion, Hughes, Wendt, Pease, & Nicklas, 2008). An overweight baby is perceived as a healthy baby, and a baby of a normal BMI is considered unhealthy (Killion et al., 2008). Thin adults in many ethnic cultures are considered unhealthy (Laraway, Birch, Shaffin, & Paul, 2010; Thompson, Cook, Clark, Bardia, & Levine, 2011). Many American Indians and ethnic groups perceive themselves and their children as not having a weight problem but instead being “*big-boned*” - a term used to define a person of a large built frame (Neumark-Sztainer, Wall, Story, & Van Den, 2008). When children are distressed they are often comforted with food to calm them and persuaded to consume all of their comfort foods. Changing cultural and ethnic eating patterns will be a process and must include changing perceptions of children’s health (Birch, 2006; Cook, 2011).

### **Effect of Genetics on Childhood Obesity**

Genetics have been theorized as a contributing component of childhood obesity (Baldwin et al., 2009; Deschambault, Bakovic, & Mutch, 2010; Franceschini et al., 2008; Mutch & Clement, 2006). An obese child with obese parents has a 62% chance of remaining obese as an adult compared to 24% if neither parent is obese (Svensson et al., 2011). Theorists suspect the gene related to obesity in American Indians is derived from food shortages that occurred during the initial settlement (Malhotra et al., 2011). Fat storage in the human body was a survival method during periods of famine (Herrera, Keildson, & Lindgren, 2011). The fat storage gene has been passed down from generation to generation (Sabin, Werther, & Kiess, 2011). According to Sabin et al.

(2011), the theory of the fat storage in American Indians is labeled the *thrifty phenotype hypothesis*. Theorists believe the gene that allowed storage of fat in periods of famine leads to obesity when food is abundant (Sabin et al., 2011). Transformation in food supply, coupled with a sedentary lifestyle, puts American Indians at a higher risk for obesity due to the fat storage gene (Lynch, Heil, Wagner, & Havens, 2007).

Researchers have investigated a region in Chromosomes 1 and 7 in American Indians that is a possible obesity-related gene and genetic component to body composition (Jalba, Rhoads, & Demissie, 2008; Melen et al., 2010). Wardle, Carnell, Haworth, and Plomin (2008) conducted a study with 5,000 twins comparing genetic and environmental factors to investigate the influence genetics has on obesity. The results presented evidence that diet and lifestyle have less influence on obesity than genetic factors. The variances in the children's BMI were 77% attributable to genes and 23% due to environmental factors (Wardle et al., 2008).

Leptin is a hormone that allows the brain to control energy and the feeling of fullness upon consuming food. According to O'Rahilly and Farooqi (2008), childhood obesity has been researched for the genetic hormone of leptin. In a leptin-deficient person a genetic mutation allows the individual to have a greater sense of hunger, and consume more food without the immediate feeling of being full (O'Rahilly & Farooqi, 2008).

Monda, Chen, Taylor, Palmer, and Edwards (2013) conducted a study with children in the United Kingdom and found four genes that contributed to childhood obesity. Monda et al. (2013) proposed that childhood obesity may be a result of various genetic factors and an irregular gene in one of the newly identified genes, leptin receptor,

which appears more often in younger obese children. Monda et al. described how the four genes interact with behaviors such as a sedentary lifestyle and high-processed foods and, when combined with the environmental behaviors, may be the leading contributing factor to weight gain in children.

### **Media Influences on Childhood Obesity**

Environmental influences, such as the media have been studied as possible contributing factors to childhood obesity (Calvert, 2008; McGinnis, Gootman, & Kraak, 2006). Children spend on average 5 1/2 hours a day using a computer, watching television sitcoms, cartoons, movies, playing video games, and using cell phones (Brown et al., 2011). Children are typically exposed to one food commercial every 5 minutes daily, which is 24,000 food commercials annually (Wieting, 2008). Most of the commercials are advertising candy, high-sugar cereals, and fast foods. Rarely are there commercials about fruits, vegetables, and dairy products. The commercials are usually aired during television shows geared toward children (Wieting, 2008). Commercials entice children to try merchandise (Brown et al., 2011). Fast food outlets invest \$3 billion per year in advertisements directed toward children (Wieting, 2008). According to McGinnis, Gootman, and Kraak (2006), advertisement is directed toward children to convince their parents that they need to consume these fast and high-processed foods. Mothers' knowledge of how the media affects childhood obesity may decrease the influence the media has on food selections (Brown et al., 2011).

### **Fast Food and Childhood Obesity**

Fast food restaurants have been studied as a factor in the obesity epidemic. Individuals who consume supersize portions and frequent fast food restaurants have a greater risk of becoming obese (Gostin, 2005). In 1958, 600 fast food establishments in the United States were established, by 1970, 30,000 fast food restaurants were estimated to be in operation (Gostin, 2005). The number had to 140,000 fast food establishments in 1980 (Gostin, 2005). In 2004, 222,000 fast food restaurants were operating in the United States (Gostin, 2005). Not only are fast foods restaurants abundant in the United States, but many of them are international corporations (MacFarlane, Cleland, Crawford, Campbell, & Imperia, 2009). In fewer than 55 years, the number of restaurants has grown substantially, and so has the wide-spread obesity problem (MacFarlane et al., 2009).

Many people in the United States consume fast food. Fast foods restaurants serve more than 50 million people in the United States everyday (Chang & Nayga, 2010). Forty-two percent of fast food consumers' s eat at restaurants 12 times or more per month (Chang & Nayga, 2010). U.S. consumers spent more than \$215 billion on fast food in 2009 (Chang & Nayga, 2010). According to Wood (2009), despite the economic recession, people in the United States spend 48% of their personal food budget on restaurant food. Only 12 popular fast food restaurants meet the nutritional standards of the USDA (Wood, 2009). Children are unaware that one of the greatest contributors of childhood obesity is the consumption of fast food products that offer poor nutritional benefits.



Increased consumption of fast food does not offer any of the healthy nutrition children need (Pearson et al., 2010). Adolescents in their growing stages need to consume a diet that is high in vitamins and iron (Poti & Popkin, 2011). Without proper vitamins and iron children become more prone to illnesses. There are many consequences of childhood obesity and overweight (Pearson et al., 2010). Fast food in large proportions contains high amounts of carbohydrates, fats, starch, sugar, and salts (Benjamin et al., 2008). As a result, children tend to eat more and gain more weight (Benjamin et al., 2008). Consumption of fast food products also makes healthy foods less appealing to children (Benjamin et al., 2008). Children may favor fast food products over healthy foods, which further results in other illnesses such as calcium deficiencies that affect the health of nails, teeth, and bones. In 2010, 33% of American children consumed fast food on a daily basis (Poti & Popkin, 2011).

Education increases awareness of parents, health professionals, and the general public regarding the disadvantages of consuming unhealthy diet, especially fast food products (Benjamin et al., 2008). “Kids see 5,000 to 10,000 food ads per year, most of them junk food and fast food, this only increase a child desire for these foods” (Hubbard, 2012, p. 2). However, some are required to provide a health risk advisory on tobacco sold. They should provide the number of calories in all of the food items served (Hubbard, 2012).

The trends in the childhood obesity rate mirror the trends in the increase of fast food establishment. Three million school children have available a fast food establishment within a quarter mile of their homes or schools (Edwards et al., 2007).

Media is also responsible for the issue of obesity in children and adolescents, as they show numerous commercials in which fast food is shown in a positive light. Fast food commercials do not mention the hazards of high consumption of processed foods as is required of the tobacco commercials (Edwards et al., 2007). Children are lured by advertisements to encourage their parents to purchase these foods that contain high amounts of fat and sugar. Children are also drawn by the media offering prizes and packaging foods that display children's favorite characters on boxes (Powell, Szczypka, & Chaloupka, 2010).

Piernas and Popkin (2011) compared portion sizes offered in child-size meals more than 30 years ago to portion sizes in 2010. The findings were that many fast food restaurants are offering 20% more food compared to 2 decades prior. The larger portion size adds minimally to the cost and many parents believe they are getting more for their money by ordering the larger sizes, which add hundreds of extra calories (Piernas & Popkin, 2011). Thirty years ago *supersize* was not available on menus and children typically ate their appropriate portions (Piernas & Popkin, 2011). Understanding the health risk of consuming large amounts of fast food and increasing the size may reduce the number of fast food meals children consume.

### **Adverse Physical Health Risk of Obesity in Children**

Diseases that were once mainly in adults are being diagnosed early in obese children (Roth & Reinehr, 2010; Siegrist et al., 2011). Nonalcoholic fatty liver syndrome, skin disorders, joint complications, and early onset of puberty have all been studied as having adverse physical effects on obese children (Ahmed, Ong, & Dunger, 2009; Arens

& Muzumdar, 2010; Augustin et al., 2010; Lerret & Skelton, 2008; Libby, Ridker, & Hansson, 2011; Rasmussen, Lambrechtsen, Siersted, Hansen, & Hansen, 2006; Roth & Reinehr, 2010; Siegrist, Hanssen, Lammel, Haller, & Halle, 2011; Stovitz, Pardee, Vazquez, Duval, & Schwimmer, 2008; Wysocki, Lochrie, Antal, & Buckloh, 2011). Medical professionals were mainly concerned with cardiovascular disease, hypertension and diabetes in children who were born with heart birth defects and Type 1 diabetes (Wysocki, Lochrie, Antal, & Buckloh, 2011). New technology that allows testing to assess children's cardiovascular health has revealed hardening of the arteries, a disease process thought primarily for adults is now manifesting in childhood (Daniels, 2006). Viridis et al. (2009) reported that blood pressure levels are drastically elevated for children whose BMI is above the 90th percentile compared to those children with a BMI at or below the 10th percentile.

The increase in the numbers of childhood obesity cases have led to a rise in Type 2 diabetes diagnosis. Children with Type 2 diabetes are experiencing at younger ages conditions such as cardiovascular disease, stroke, renal failure, loss of limbs, retinopathy causing blindness, and even sudden death. According to the CDC (2012), health care providers have experienced an escalation of Type 2 diabetes in children in the United States with the American Indian population having the most significant increase.

One of the most common breathing diseases in children is asthma (Peroni, Pietrobelli, & Boner, 2010). Investigations by these researchers have determined that the number of children diagnosed with asthma has risen 75% in the last 2 decades, a rise that parallels the increasing rates of obesity. Asthma ranks third for reasons children under the

age of 15 are hospitalized (Garro, Asnis, Merchant, & McQuaid, 2011). Twelve million school absences occur annually due to asthma (Peroni et al., 2010).

### **Student's Social and Emotional Health Risk of Childhood Obesity**

Students with social and emotional difficulties have lower grade-point averages and lower assessment scores (Masten et al., 2005). Obese students are often withdrawn in the classroom (Breslau et al., 2009; Duncan et al., 2007; Flook, Repetti, & Ullman, 2005; Lundy, Silva, Kaemingk, Goodwin, & Quan, 2010). Many obese students are ashamed or embarrassed to participate in class, and it is a risk for academic underachievement (Breslau et al., 2009; Flook et al., 200; Lundy et al., 2010). Teachers used the child behavior checklist in a study and reported the obese students displayed low self-esteem, anxiety, depressed moods and a lack of desire to interact with other peers or teachers frequently (Lundy et al., 2010). The students rarely engaged in social activities before and after school and had limited class participation (Lundy et al. 2010; Masten et al., 2005; Schwartz, Gorman, Nakamoto, & Toblin, 2005).

Obese children have diverse health risks, including psychological and social problems. One of the common problems associated with childhood obesity is low self-esteem (Brion, 2008; Franklin, Denyer, Steinbeck, Caterson, & Hill, 2006; Wang & Veugelers, 2008). Obese children are at risk for diverse emotional problems that extend through adulthood (Brion, 2008; Franklin et al., 2006; Wang & Veugelers, 2008). Peer rejection is a common problem associated with childhood obesity (Brion, 2008). Low self-esteem of children affects several aspects of a child's health and behavior, such as loss of interests; unwillingness to attend social activities; feeling withdrawn, sad, lonely,

and angry; having few friends; being self-destructive; being obsessed with food; and taking frequent naps (Brion, 2008; Franklin et al., 2006; Wang & Veugelers, 2008).

Depression has typically been thought of as an adult issue but is now typical among youth (Dockray, Susman, Lorah, & Dorn, 2009). Obese children often have an adverse self-image and low self-confidence. Depression coupled with childhood obesity is common and is associated with an overwhelming emotional state of despair (Dockray et al., 2009). During depression many children feel their life will never improve and lose interest in daily activities. Diagnoses of obesity and depression are different in children (Dockray et al., 2009). Obesity and depression share similar warning signs. Obese children often experience atypical depression and present various symptoms such as weight gain, heavy feeling in the arms and legs, extreme sleepiness, depressed mood, rejection sensitivity, inability to experience pleasure from activities they once enjoyed, withdrawal from family and friends, frequent crying, feelings of guilt and unimportance, thoughts of dying, extreme fatigue, and changes in sleep and appetite (Dockray et al., 2009).

Childhood obesity and depression have been researched for chemical and hormonal imbalances. Hyperphagia, which is an abnormally increased desire and consumption of food, is found in obese depressed children (Dockray et al., 2009). Leptin is the hormone that is produced by fat cells. Leptin regulates energy intake and energy expenditure. It also regulates a person's body weight and metabolism. Obese children have abnormal levels of Leptin. Ghrelin is the hormone created by epsilon cells in the pancreas that stimulates hunger (Dockray et al., 2009). In obese children the ghrelin

hormone is produced excessively. Ghrelin has been associated with unhealthy food cravings. In most depressed obese children excessive periods of bingeing are linked with the ghrelin hormone.

Serotonin is a hormone in the pineal gland that controls mood states, appetite, and sleep patterns (Young, 2007). Serotonin has been researched as the stress hormone used to fight carbohydrate overloads. Consuming large amounts of carbohydrates increases serotonin levels (Healy, 2015 & Young, 2007). Investigations by these researchers have determined when serotonin levels are low depression levels are elevated and carbohydrate cravings are increased (Crunkhorn, 2015; Healy, 2015 & Young, 2007). Obesity and depression have been associated with a negative self-image, an abnormally increased appetite, and a strong desire for junk food. Obese children feel shame, guilt, failure, and self-blame for their figure. The negative self-image is more dominant in obese girls than obese boys.

### **Behavior and Learning Problems**

Poor social skills and anxiety are common in obese children (Evans, Renaud, Finkelstein, Kamerow, & Brown, 2006). Overweight children are often bullied about their weight. Obese children cope with bullying and anxiety in various ways. A common reaction to bullying by obese children leads some to cause behavior problems and disruptive behavior in the classroom. Others become withdrawn and shy making it extremely difficult to interact with students and teachers in the classroom (Evans et al., 2006). Reeves, Postolache, and Snitker (2008) found that depression, anxiety, and obesity coexist in children. The participants in the study were children within the age range of 9-

16 years old and obesity was associated with having oppositional defiant and depressive disorder in the boys and girls. The anxiety of being obese in a classroom led several children to declining academic performance. According to Hongyun (2009), obese elementary school children scored lower in reading and math on standardized test compared to non-obese children. Depression, anxiety, low self-esteem, and sadness were the contributing behavioral factors that lead to the explanation of overweight children's low academic performance.

### **Childhood Obesity and Academic Achievement**

Childhood obesity is linked to poor academic success (Evenson, Ballard, Lee, & Ammerman, 2009; Florin, Shults, & Stettler, 2011; Krukowski et al., 2009; Roberts et al., 2010; Shore et al., 2008). Likewise, when children increase their physical activity levels, test scores in reading and math increase even when the physical activity takes away from classroom instructional time (Bartholomew & Jowers, 2011; Carlson et al., 2008; Davis & Cooper, 2011; Donnelly et al., 2009; Edwards, Mauch, & Winkelman, 2011; Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2010; Gable, Krull, & Chang, 2012; Hillman et al., 2009; Reed et al., 2010; Riggs, Huh, Chou, Spruijt-Metz, & Pentz, 2012). Lees and Hopkins (2013) studied the effects of physical activity levels and concentration. Students were observed on several occasions before a 30-minute physical activity lesson and after a 30-minute physical activity lesson. The researchers measured the students' time on task during instructional time. The children ages 5-14 who participated in 30 minutes of physical activity a day increased their focus and alertness in the classroom and decreased fidgeting, noncompliance, and gazing off during instructional time. Due to the demands

of accountability on educators, a study facilitated by health care personnel was performed to allow teachers to incorporate obesity prevention methods across all subject areas in their daily curriculum and in the cafeteria without adding extra curriculum time. Johnston et al. (2013) conducted the study in several elementary schools by health care professionals teaching educators how to implement healthy messages in the daily curriculum. For illustration, teachers would have children do jumping jacks to count or do math problems. Healthy foods verses processed foods were used to conduct a science project and teachers and cafeteria staff discussed the healthy food options at breakfast and lunch. The results of the study showed that over the 2-year period, the obese students significantly reduced BMI and children had a greater knowledge of healthy living practices without adding any extra pressure on teachers to add more time to their daily schedules. The review of the studies supports the need for daily physical activity and healthy living practices in classroom instructional time without the apprehension of decreasing academic success.

### **Bronfenbrenner's Ecological Model**

Bronfenbrenner's (1989) ecological model was chosen as a conceptual framework and will be used to evaluate teacher' perception of health risk of their obese children. According to this conceptual framework, teacher and child relations happen inside an ecological situation encompassed of a hierarchy of structures, referred to as the microsystem, mesosystem, exosystem, and macrosystem (Bronfenbrenner, 1979). Within this ecological framework, the environment is viewed as a collection of related settings and the social and cultural contexts of these different settings. Examining teacher-child



interactions from an ecological method highlights the study of relationships between the physical and social surroundings in which obese children and their teachers are reciprocally involved (Rogoff, 2003).

Because this tribe is positioned in a geologically defined region, the ecological framework permits for the study of individual factors affecting teacher and child relations that transpire within the teacher and child environment. Over a third (35.3%) of Southeastern American Indian students have a high school diploma. 12.5% have a bachelor's or advanced degree. According to information from the U.S. Census Bureau's annual American Community Survey in 2012 the rural county where the study took place was named the poorest county in the U.S. with a median income of \$28,293 and a population of 135,517 (Ogunwole, 2006). These disparities are noteworthy, as less education, lower income, and higher rates of unemployment among Southeastern American Indian families may lead to poorer health in students (Ogunwole, 2006).

### **Interactions Between Teachers and Their Students Using the Ecological Systems**

Teacher and child relations take place within an ecological setting that Bronfenbrenner (1979) first identified as a hierarchy of configurations symbolized as the microsystem, mesosystem, exosystem, and macrosystem. These systems involve the child's environment. Bronfenbrenner's interpretation of the environment as a group of connected settings contains the social and cultural frameworks originated within the diverse settings. Ecological systems theory has been used as a conceptual scheme for studying the association between teachers and child development (Reifsnider, Gallagher, & Forgione, 2005). Bronfenbrenner's ecological viewpoint is that a child's development

is predisposed by the systems that establish the social and physical environment surrounding the child (Bronfenbrenner, 1979).

Interactions between teachers and children are affected by characteristics of the teacher (e.g., philosophies, learned behaviors, and teacher/student relationships), characteristics of the children (e.g., obese and health risk), and influences in the grander corporal environment (e.g., socioeconomic status and culture). The ecological model is fitting for evaluating the effects of the teacher and school environment and obese child collaborations and teacher and student experiences, as the notion of student and teacher relationships has been used regularly and applicably within this outline. Sited within the ecological system, culture preserves its borders when incorporated with other notions theoretically happening within the model, such as social status and culture. Observing teaching practices from an ecological methodology highlights the study of relations among the physical and social settings in which children and their school communities are commonly involved (Rogoff, 2003), including the culturally constructed environment of the child.

Though the ecological model seems applicable for reviewing effects on teacher and child connections, apprehensions have been raised, that individual and cultural practices can be separate entities (Rogoff, 2003). This assumption eliminates the capability to distinguish the density of individual beliefs and values in their relation to the culture they belong. Regardless of this constraint, the ecological approach to reviewing the effects of the school environment on teacher and child interactions may be an important phase in advancing the expansion of education in childhood obesity because it

offers some understanding on the role that teachers' and schools play in teacher and child interactions in various cultures. Presenting philosophies of culture to clarify dissimilarities in teacher and child relations across ethnic groups can feasibly improve knowledge in this area. Development in the understanding of school environmental influences and its role in childhood obesity may result in our ability to provide more educationally based childhood obesity prevention programs.

### **Factors Affecting Interactions Between Teachers and Their Obese Students**

#### **Microsystem**

The innermost level of the environment affecting teachers' and students' interactions is the microsystem (Bronfenbrenner, 1989). This system includes the associations and collaborations the student has with the family, child care providers, communities and school (Berk, 2000). A student's strongest influences will occur at the microsystem level. The majority of a student's knowledge will be influenced by the microsystem. The children learn how to live, trust, and develop rituals and habits in this system. This system contains configurations with which the child has continuing interaction, for instance the teacher and the school environment. Influences within the microsystem, including the behaviors of the teacher's and the student, have the most direct effect on the child's experiences (Bronfenbrenner, 1989).

#### **Mesosystem**

The second level of the environment affecting teachers' and students' interactions is the mesosystem. The mesosystem can be considered as a method of microsystems in which the teacher and student are positioned (Bronfenbrenner, 1989). Mesosystem factors

contain affiliates of the extended family and environmental influences (e.g., grandparents and poverty, interaction between child's parent and child's teacher, and the child's church and his community). This system is designed by the complexity of exosystem stimuli in which it is rooted (Bronfenbrenner, 1989).

### **Macrosystem**

The macrosystem is the outermost level of the ecological model affecting teachers' and student interactions. This system includes the beliefs, risks, life styles and opportunities of social exchange that are implanted in the connected outlines of systems (microsystem, mesosystem, and exosystem) characteristic of a culture (Bronfenbrenner, 1989). In the macrosystem cultural values may influence the student and regulate behavior in the other systems. In this study the tribe will be the focus of the macrosystem.

### **Exosystem**

Bronfenbrenner (1979) described the exosystem as one or more conditions that do not include an individual as an active participant, though the events and activities will influence the person. Examples of this system that may affect the school personnel's perception for the purposes of this study may be the decisions by lawmakers to reduce physical education classes and the national school lunch programs.

Schools and teachers have been highlighted as prevention models in the epidemic of childhood obesity. The literature discussed in this section references the physical, social, emotional, and educational dangers of childhood obesity. The literature presented was to permit teachers and schools to recognize the importance of a childhood obesity prevention and intervention program in the school and classrooms.

### **Differing Methodologies**

The literature review showed that numerous studies had been done in the United States as well as other countries on the effects of childhood obesity. The cited researchers emphasized the effects childhood obesity has on different areas of a child's life, such as physical effects (Lindsay et al., 2006; Singh, Siahpush, & Kogan, 2010; Stellino, & Sinclair, 2008), social/emotional development (Brion, 2008; Franklin, Denyer, Steinbeck, Caterson, & Hill, 2006; Wang & Veugelers, 2008), cultural influences (Slattery et al., 2010), and academic influences (Hongyun 2009). Yet, few pragmatic data were obtainable on childhood obesity in the tribe based on the perspectives held by teachers and school personnel.

The international researchers found through the literature search was a mixed method. The most recent study found was on cultural prevention programs in Canadian Indian school children from the Ojibway-Cree tribe was performed from 1993-1996 and followed the students for 3 years. The study was performed using a culturally appropriate intervention for students in Grades 3-5. The study found that the Canadian Indian children in the study had not been exposed at school or home to obesity prevention methods. The students were unaware of the negative effects of unhealthy eating habits and the effects of being inactive. Upon completion of the childhood obesity prevention program students had improved knowledge of dietary habits (Saksvig, Gittelsohn, Harris, Hanley, & Valente, 2005).

The literature search produced few qualitative studies; most of the studies reviewed were quantitative in nature and mainly used students' body mass index for data

(Crawford, Story, Wang, Ritchie, & Sabry, 2001; Going et al., 2003 & Krebs et al., 2007). A quantitative study was completed to assess a school based intervention program to reduce the body mass index of American Indian students from Arizona, New Mexico, and South Dakota. The study was conducted over 3 years using 1704 American Indian students from 3rd to 5th grade. The study included implementing a classroom curriculum focused on consuming healthier food options and providing physical activity opportunities. The results did not show a decrease in body mass index though students' knowledge of a healthy lifestyle increased (Caballero et al., 2003).

Another quantitative study was conducted to evaluate the school nurse perception on childhood obesity. The study sought to illuminate the influence of nurse perceptions by understanding the barriers and benefits nurses perceived of incorporating childhood obesity prevention programs in the school setting. The results of the study presented evidence that school nurses' perceived barriers of family involvement. Lack of a health curriculum to encourage school nurse participation in preventing childhood obesity was also noted (Quelly, 2014). These quantitative studies all had large sample sizes but, had little evidence of teachers' perception of what can be done to address effect of childhood obesity on children's development in American Indian tribes.

### **Summary**

Rates for childhood obesity have steadily increased over the past 30 years. American Indian youth have been influenced by this increase more than any other ethnic group (Anderson & Whitaker, 2009). Among American Indian youth, 40%-50% are already identified as obese (Anderson & Whitaker, 2009). This chapter was a reflection

on theorists' views on American Indians and childhood obesity, the possible origins of childhood obesity, and the health risk of childhood obesity. Obese American Indian youth are expected to have a shorter life span due to obesity complications (Marquez et al., 2009). According to Styne (2010), American Indian obese youth have a life expectancy under age 55. Cardiovascular disease, Type 2 diabetes, fatty liver disease, hypertension, and depression are leading health concerns for American Indian obese children.

Childhood obesity intervention and prevention programs are in urgent need in schools and in the American Indian communities. The research that was conducted in this study is necessary to create childhood intervention programs. Childhood obesity in the American Indian population is decreasing the quality of life for children's future. Prevention programs are positive factors in fighting against childhood obesity.

The methodology of the study will be addressed in depth in Section 3. Section 3 is focused on the methodology projected for the study that is intended to understand the teachers' knowledge of childhood obesity health risks. Section 3 is also a description of the data analysis, data sources and data collection methods to be used. I will discuss the projected research methods, and approaches that will provide information ultimately leading to the discoveries and assumptions of this study.

### Section 3: Research Method

#### **Introduction**

This qualitative case study was conducted to gain insight of how school personnel have addressed childhood obesity as it pertains to the social, emotional, academic and physical development of students at Tiger Elementary School. Teachers and schools are perceived as key prevention and intervention stakeholders in childhood obesity. According to Adamick (2012) and Brewer and Rieg (2013), teachers have not received up-to-date training on how to implement teaching of a healthy lifestyle in classrooms and schools. Many teachers feel it is difficult to add another mandate on their tight schedules and healthy living practices should begin at home. The role of teachers and schools in childhood obesity has been researched in the education field, yet literature on the appropriate presentation, necessary teacher and staff training, and implementation is lacking (Brewer & Rieg, 2013). Healthy living practice models differ from classrooms and schools across the United States. States and local school boards have the authority to mandate or not implement daily physical education and healthful living curriculums (Wu, 2011).

I attempted to understand what practices school personnel implemented at Tiger Elementary to address the effects of childhood obesity on students' social, emotional, and academic development, what additional practices school personnel perceive would be beneficial for school personnel to implement at the school to address childhood obesity, and how the school personnel perceive these practices would benefit students' social, emotional, and academic development. This study was conducted due to the increase in



obesity rates and the decrease of academic success in American Indian students at Tiger Elementary (Wu, 2011).

The case in this study was the Tiger Elementary School where over 90% of students are American Indian. The case study was focused on the perceptions of the teachers and school personnel at Tiger Elementary School. The case was bound by types of participants (teachers and school personnel who work with American Indian students) and place (a specific elementary school with the highest ratio of American Indian students in the county) and time (2015-2016 school years). The case study was focused on addressing how school personnel have perceived childhood obesity at Tiger Elementary School.

### **Case Study Qualitative Design**

The study of a single occurrence, a person, or a small group is defined as a case study (Baxter & Jack, 2008; Dul & Hak, 2008; Thomas, 2011). The main subject of the study is the case in a case study (Yin, 2014). The case of this case study is the institution of Tiger Elementary school, which is the bounded system in which the study was conducted. I sought to gain an in-depth understanding of the way key players in a school address the effects of obesity on students. For this reason, a case study methodology is appropriate (Yin, 2014). The case study was the methodology chosen to provide a clearer understanding of how the participants address the effects of childhood obesity on social, emotional, academic, and physical development of students. Tiger Elementary is representative of other sites where student populations have high obesity levels and is what Yin (2014) referred to as a common case. By involving participants who have

different roles in the school, the ways in which the effects of obesity are addressed at the school can be viewed from different perspectives. The research questions serve to answer the issues of how school personnel address the effects of obesity on the students' development in the four areas of social, emotional, academic, and physical development.

In this qualitative case study, I explored the bounded system of Tiger Elementary School (Creswell, 2012). I highlighted issues and relationships within the environment to compare this individual case to a larger group (Baaikarada, 2014; Yin, 2014). Data were analyzed by typological coding using themes that derived from participants' perceptions and experiences by finding patterns for how school personnel address effects of obesity on students' development.

According to Yin (2009), a case study should be considered when: (a) the researcher is desiring to answer a question of why a phenomenon has occurred, (b) the researcher would like to know how a phenomenon has occurred, (c) there is no explanation of a phenomenon, and (d) it is not clear why a phenomenon is occurring in a context. Case studies have been used to create theories, to serve as interventions, and to evaluate programs (Yin, 2014). In this case study there is a desire to understand how the effects of obesity on the development of elementary school children are being addressed. With data from a school where the majority of the students are from an American Indian tribe, the additional data may provide more insight into the phenomenon of addressing the effects of obesity with that population.

There is presently little information available about obesity in regards to American Indian children. Because a well-written case involves extensive planning to

analyze the circumstances and suggest possible solutions (Thomas, 2011), I asked questions of a variety of personnel in the school to note patterns for how obesity is addressed. This case study was aimed at capturing the insights and views of the participants. Case studies are often used as a research strategy to explore a phenomenon in a situation (Thomas, 2011). Extensive planning is required to produce a well-written case to accurately analyze the circumstance and suggest possible solutions (Baxter & Jack, 2008; Dul & Hak, 2008; & Thomas, 2011). This case study should provide more information to better understand the complexities of obesity in the lives of the students.

### **Rationale for Using Qualitative Research Design**

Punch (2013) described the differences between quantitative and qualitative research methods by stating that quantitative data are represented by numbers and qualitative data are not represented by numbers. Quantitative methods are beneficial for testing hypotheses and assessing intervention and treatment results in investigational studies (Edmonds & Kennedy, 2012; Gravetter & Forzano, 2015; Salazar, Crosby, & Diclemente, 2015). Quantitative studies are also fitting in studies where variables are identified and can be categorized as independent and dependent, using numerical assessments to confirm outcomes and authenticate current philosophies. Quantitative research helps to validate previous research or expand on existing work (Babbie, 2015; Edmonds & Kennedy, 2012; Hartas, 2015; Gravetter & Forzano, 2015). Specifically, quantitative research could not be used as a research method because the research questions ask about the school personnel's perceptions. Perceptions can only be measured by interviews, which are qualitative data. Mixed methods could not be used unless I

incorporated quantitative research. For the reasons mentioned above, qualitative case study approach was chosen for this research.

The case in this study was restricted to the school setting of Tiger Elementary. Participants included classroom teachers, physical education teacher, administrators, nurse, social worker, psychologist and cafeteria manager. Qualitative research was appropriate to this study based on several definitions by Yin (2009). Yin stated that qualitative research occurs in a natural setting, makes use of emerging data as interviews progress, uses collaborating methods, and provides informative analysis. In defense for the use of the qualitative research design, Willig (2008) described case studies as a researcher exploring a program, a process, or an activity with one or more individuals. Qualitative studies allow a researcher to obtain feedback from the participants and plan strategies to address the concerns that were discovered during data analysis (Yin, 2009).

Qualitative case study is used to support a theory, assess programs, and cultivate interventions using observations and interviews (Creswell, 2009; Edmonds & Kennedy, 2012; Yin, 2003). The methodology chosen permits observation of boundaries to be analyzed that are not clear between the phenomenon and the context being studied (Edmonds & Kennedy, 2012). There are limited data on the topic of obesity by selected school personnel of students at Tiger Elementary School. This research design supports the problem of the study because limited analysis has been conducted on the perception of teachers and school personnel on childhood obesity specifically in an American Indian tribe. According to Denzin and Lincoln (2005) and Manning and Kunkei (2014), qualitative case study research allows a researcher to focus on a particular problem. In

this study, the case was teachers and school personnel of Southeastern American Indian students in a rural school where the majority of the students are American Indian. The interviews explored school personnel's perception of childhood obesity and identified ways childhood obesity has been addressed in the classrooms and school.

The expected result of a case study is to obtain knowledge from the case that can be generalized to other occurrences, people or groups (Hancke, 2009; Mills, Durepos, & Wiebe, 2010; Yin 2014). The following case studies were reviewed to understand whether a case study would be appropriate because each case studied researched a school personnel's perception of childhood obesity. Odum, McKyer, Tisone, and Outley (2013) and Veugelers and Gerald (2005) studied school faculty and staff that implemented a recommended healthy eating and activity program during school hours resulting in significantly lower obesity rates and healthier diets than schools without a formal nutrition program. Jackson, Eagle, Leidal, Gurm, and Smolarski (2009) described students who had school-based intervention programs had a healthier diet and physical activity level compared to students whose school did not promote healthy nutrition in the curriculum. The studies that were previously discussed were reviewed to support a rationale of why the case study would be the most appropriate methodology to interview school personnel about childhood obesity.

### **Rationale for Choosing the Case Tiger Elementary**

According to Creswell (2009) and Kime (2008), qualitative research is used to investigate a topic when there is minimal exposure to the theme or the population being measured. The topic of childhood obesity has been researched in-depth (Edmonds & Kennedy, 2012; Gravetter & Forzano, 2015; & Salazar, Crosby & Diclemente, 2015); however, literature does not exist on how school personnel's perceptions have addressed the effects of obesity on students' development at Tiger Elementary School. The case in this study was confined by the school site, Tiger Elementary school. Interviews were performed in an effort to determine what the school personnel believe about childhood obesity. It also allowed the school personnel an opportunity to explain the rationale of their beliefs by providing detailed responses to the interview questions.

Qualitative methodology is favorable in discovering the behaviors and opinions that result in particular health concerns as well as how health behaviors evolve (Silverman, 2000). It is also essential to know that a qualitative study highlights responses to research questions that are part of routine behavior and occur in a person's everyday social life (Denzin & Lincoln, 2005). By using a case study, I had the opportunity to gain insight of the perception of teachers and school personnel and determine the most useful ways to offer support to them in their implementation of a childhood obesity prevention program specifically for Tiger Elementary School. I used data from the interviews to gain a broader sense of the teachers' experiences of childhood obesity within their classroom and school.

I chose the qualitative research method because, according to Brinkmann and Kyle (2015) and McMillian and Schumacher (2014), qualitative research is the best fit for case studies with small populations. Cairney and St. Denny (2015) and Nordstrom (2015) cited interviews as being appropriate for case study research. Researchers have used case studies and interviews with teachers on their perception of childhood obesity (Brown & Wimpenny, 2011; Kime, 2008; Southwell & Fox, 2011) and conveyed that interviews are applicable for researching teachers' perception of health risk associated with childhood obesity.

### **Methods of Qualitative Study**

Creswell (2009) listed five methods for qualitative study presented below: biography, phenomenology, grounded theory, ethnography, and case study.

#### **Biography Qualitative Tradition**

The qualitative method of biography is the gathering and exploration of a thorough account of a person, typically by an in-depth, unstructured interview (Janesick, 2015; Koster & Berg, 2014; Lenzen, 2014; Winston, 2012). The description of the person's history may perhaps be documented by semi-structured interviewing or personal documents. Instead of focused on certain areas of a person's current state, the biographical approach stresses the location of the individual within an interconnection of past events and lifetime experiences (Koster & Berg, 2014; Williams & Pollock, 2012). An important method of biographical data collection is the participant's narrative of his or her life story at the time of the interview (Nilsen & Brannen, 2014; Saldana, 2011;

Williams & Pollock, 2012). Biography qualitative tradition was not appropriate for this study because it did not focus on one particular person.

### **Phenomenological Qualitative Tradition**

Phenomenological traditional research endeavors to comprehend the principle of a phenomenon by discovering the views people have of a personal experience (Anderson & Ward, 2015; Dowling & Cooney, 2012; Glenn & Frohlich, 2014; McMillian & Schumacher, 2014). The researcher's goal is to find the individual significant experiences of people and provide a detailed description of a person's experience (Overgard & Michael, 2015; Stienstra, 2015). Data collection usually involves long in-depth interviews. The results emerge from the data that the researcher has discovered from a verbatim transcript (Stienstra, 2015). The same person may be interviewed several times to understand the occurrence of the problem being studied (Denscombe, 2010). Phenomenological research is not appropriate for this study because the personal experience of the school personnel will not be researched.

### **Grounded Theory Qualitative Tradition**

Grounded theory often begins with a question or a collection of qualitative data (Morse, Stern, Corbin, Bowers, & Clark, 2009; Oktay, 2009; Thornberg, 2012). In grounded theory there is a lack of substantial research on a topic and typically the preliminary literature review does not exist (Thronberg & Kathy, 201; Fletcher-Watson, 2013). Data are usually compiled through in-depth interviews and participant observation. Researchers label common ideas and concepts with codes that are grouped into categories. The categories often become the basis for the new theory (Aldiabat &



Navenec, 2011; Oktay, 2012; Ralph, Birks, & Champman, 2014). Grounded theory was not appropriate for this study because a new theory was not the goal in the study.

### **Ethnography Qualitative Design**

Ethnography is the study of people and cultures (Gould, 2014; Leslie, Paradis, Gropper, Reeves, & Kitto, 2014; Van Maanen, 2015). The study was conducted by a researcher in the natural environment where the people live. The data collection is often through two or more techniques. The study requires a long term commitment for an extended period of time. The results are used to build explanatory theories rather than test existing theories (France, Ring, Thomas, Noyes, & Jepson, 2014 & Spencer, 2014). The expected outcome of the ethnography tradition is to present a thorough picture of a group or culture (Longhofer & Suskewicz, 2014; Van Maanen, 2015). Ethnography designs were not used in the study because the study will not be conducted over a long period of time or seek to build an explanatory theory of school personnel.

### **Research Questions**

All interviews provided information for analysis, which I used to answer the research questions:

1. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' social development?
2. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' emotional development?

3. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' academic development?
4. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' physical development?

### **Context of the Study**

This qualitative case study was focused on the viewpoints of teachers and school personnel in a rural elementary school. The school is located in a residential area of the county. According to the school's website, the school was founded in 1910 when an American Indian couple donated the land to build the school. They were the first American Indians to own property in the community. The school remained an American-Indian-only school until 1960 when it was integrated. The school remains a predominately American Indian school. Currently the school has an enrollment of approximately 375 students. The racial composition is 90% American Indian, 4% Caucasian, 4% African American and 2% multiple races. The faculty consists of two administrators, one secretary, one data manager, 19 full-time classroom teachers, two special education teachers, one media coordinator, seven full-time teacher assistants, one guidance counselor, one physical education teacher, one music teacher, one part-time nurse, two social workers, two custodians, and five cafeteria staff.

## **Participants**

### **Criteria for Selecting Participants**

Merriam (2009) stated to obtain a deep understating in a specific case it is necessary to use a small sample size. Manning and Kunkei (2014) pointed out that selecting effective participants should begin by searching for those who are able to convey their personal experience on the research topic being explored. Personnel serving in a variety of positions were chosen as participants in this study. Each person serves a different role in the school and is able to provide data from a unique vantage point. The following criteria were used to select participants for the study:

### **Criteria for Selecting Participants**

1. The principal must have experience working with students from the American Indian tribe. The principal also needs to have had experience working with parents and understands the many issues this Indian population faces on a daily basis.
2. The physical education teacher must have experience working with students from the American Indian tribe. The physical education teacher also needs to have had experience working with students who are obese and understands the negative outcome of an inactive lifestyle in this Indian population.
3. The Teachers must have experience working with students from the American Indian Tribe. The teachers also need to have had experience

working with students who are obese and understand the families and understand the adverse effects

4. The Social Worker must have experience working with students from the American Indian tribe. The social worker also needs to have had experience working with families and understand the many aspects families in this Indian population face on a daily basis.
5. The School Psychologist must have experience working with students from the American Indian Tribe. The school psychologist also needs to have had experience working with the psychological issues of students in the tribe who are obese.
6. The School Nurse must have experience working with students from the American Indian Tribe. The school nurse also needs to have had experience working with the health issues related to childhood obesity in this Indian population.
7. The Cafeteria Manager must have experience selecting food items to serve meal choices to students in the American Indian Tribe on a daily basis. The cafeteria manager also needs to have had experience on the types of foods that are typically selected on a daily basis by students in the American Indian Tribe.

### **Justification for Number of Participants**

Qualitative researchers aim to reveal detailed reports about the population; therefore, a small number of participants are preferred (Maxwell, 2005). This study had

12 school personnel who agreed to be participants in the case study. According to Babbie (2015), Gravetter and Forzano (2015), and Manning and Kunkei (2014) qualitative research is the best fit for case studies with small populations. The study contained school personnel who are members of an American Indian tribe and those who are not members of an American Indian tribe to analyze if the perception varies among tribal members and non-tribal members. Elementary school personnel are of most interest because they are with children the majority of the day and, as the literature review revealed, modeling of healthy eating behaviors such as those implemented in elementary grades are the most critical in supporting a healthy lifestyle (Adamick, 2012).

### **Procedures for Gaining Access**

To study this topic, a qualitative case study was conducted with school personnel who have interactions with students who are obese. School personnel were interviewed through Instant messenger for the purpose of obtaining their perspectives on the adverse effects of childhood obesity. Data were collected by conducting individual interviews and reviewing the Hunger Free Kids Act 2010 that includes the Community Eligibility Provisions program that is located on the school website. Yin (2009) stated that interviews in qualitative case studies are often used to create a detailed picture of the case. The interview process followed a research guide and probing questions were asked to deliver thorough data (see Appendices A, B, and C). The data collection process began by receiving the Walden IRB approval number (04-08-16-0135222) and approval from the school district. Upon receiving permission from the school board to conduct the study, the principal of the school sent an email to all staff. The e-mail was sent to inform

the school personnel that I was authorized to conduct research at the school and would be sending invitations. I was given a roster to contact school personnel by their school email accounts. All school personnel were given an invitation to participate in the study. The invitation e-mail included the consent form, which pertained an overview of the study, prerequisites to become a participant, benefits and risk of the study, and the procedures to assure confidentiality was always maintained. Seven out of the 30 teachers, one out of the two administrators, one out of the two social workers, one school nurse, one school psychologist and one cafeteria manager agreed to be participants in the study. The participants that agreed to participate in the study were asked to reply to my email with the words "I consent." Interviews were scheduled after I received emails with the words "I consent." All interviews were conducted after school hours. One week after all consent forms were received, data collection began. Reminders of the interview were emailed to all participants the day before the scheduled interview.

Creswell (2009) suggested that a researcher should always maintain confidentiality. In order to maintain confidentiality, each participant was given a pseudonym. I am the only one who is able to connect the pseudonyms to the data sources. Participants were reminded participation is voluntary and all information and identities will be kept confidential. Each pseudonym was randomly created and assigned to each participant. The pseudonym for each participant and the participant's position and tribal affiliation within in the school are listed in

Table 1

*Participant Information*

Participant Pseudonym Position	Participant Pseudonym	Tribal Affiliation
Kindergarten Teacher	Molly	Yes
First Grade Teacher	Sandra	No
Second Grade Teacher	Emily	Yes
Third Grade Teacher	Kimberly	No
Fourth Grade Teacher	Roland	Yes
Fifth Grade Special Education Teacher	Paul	Yes
Physical Education Teacher	Morris	Yes
Administrator	George	No
School Nurse	Tabitha	No
School Social Worker	Barbara	No
School Psychologist	Bentley	Yes
Cafeteria Manager	Suzanne	No

**Ethical Protection of Participants**

Throughout gathering, analyzing and reporting of data, qualitative researchers may experience various ethical concerns that arise (Manning & Kunkei, 2014). A researcher is accountable for assuring participants are not in any way harmed by agreeing to be a participant involved in the study. Specific research approval procedures must be followed before performing research (Manning & Kunkei, 2014). This study did not include any prisoners, pregnant women, children under the age of 18, elderly over the age of 65 years, mentally disabled or any other vulnerable population. There are no expected risks foreseen in this research study. All participants were given information for the Walden IRB and instructed to contact the Walden IRB if concerns arise about any part of the research being conducted.

During the entire collection of data and interaction with the participants, respect and appreciation for the information was given. Participants were informed that their participation is voluntary and that they may withdraw at any time from the study. They were told that all data collected would be confidential and kept secure at all times. All information collected would be for the exclusive purpose of this study and would remain confidentially in the custody of the researcher. During the data collection, I was nonjudgmental and friendly with the participants to avoid any emotional upset of the participants.

### **Role of the Researcher**

During qualitative research, a researcher cultivates part of the study while accepting biases, values, and interests (Creswell, 2003). During the data collection, I was the interviewer, the interpreter, and the analyst. As the interviewer, I took an active role communicating with the participants in the study and avoided any inclusion of my opinions or views in regards to their answers.

Individual interviews were conducted through Instant messenger at an agreed upon date and time. I greeted each participant upon logging into Instant messenger and provided the participant with an explanation of specifics of the study. I began each interview by explaining that their participation in this study is entirely voluntary. I stayed on task and interacted professionally with each participant. Clarification and explanations were given to participants who did not understand a question.

Manning and Kunkei (2014) specified that in a qualitative case study research the researcher should explain personal bias in validation from the beginning of the study. The



validity of a case study could possibly be subject to vulnerability due to bias. In an effort to address this possibility, I used school personnel who held various positions in the school, taught various grades in the school, members of an American Indian tribe and non-members of an American Indian tribe to assure the data was triangulated from multiple sources of data during data collection. I kept a journal to write down my personal thoughts and feelings to clarify any bias that I may bring to the study. Since Yin (2009) has noted that a way to improve validity of a study is to employ multiple sources of data, I have chosen to address the problem of obesity by interviewing a number of personnel participants who serve a wide variety of roles in the school and who can provide what they have done to address the topic and have included documentary data.

I am a member of an American Indian tribe and as an elementary-education teacher; I have worked with southeastern American Indian families in childcare settings. During the interview, my personal experiences with the topic were not communicated with participants. To address my concern of bias in the study, I read the questions as they were worded. I used the interview guide to interview each participant so as to avoid any subjective reflection. Bias due to potential relationships with participants is minimized as I am not a member of the school faculty used for research in this case study. All interviews and data analyses were conducted without preconceived judgment of the results.

### **Procedures for Creating a Researcher-Participant Relationship**

An e-mail was sent to selected participants reiterating the purpose of the study and their part in the study. The letter is included in the Appendix A. On the day of the

interview, I explained my role as the researcher and the participants' role. I reviewed with the participants by email the description of confidentiality and the importance of honesty and reliability during the interview. According to Brinkmann and Kvale (2015) and Corbin and Strauss (2014) participants should be confident the information shared will be confidential and only used for the purpose of the study. According to Thomas (2011) the best ways for participants to answer open and honestly is to assure participants that all information shared is confidential. Before the data collection and throughout the process of the study, all participants were assured that any data collected will only be used for the purpose of the research case study.

## **Data Collection**

### **In-Depth Interview**

In qualitative research, the objective of an interview is to define an individual's perception, which was needed in this study to comprehend the perceptions of various school personnel regarding childhood obesity. Yin (2009) expressed in qualitative case studies interviews are a personal method of data collection since they involve direct communication and create a detailed picture of the case. An interview guide was created that included probing questions to deliver thorough data (see Appendices A and B). During in-depth interviews the participant answers the questions asked by the researcher in an attempt for the researcher to understand the participants' experience and the importance attached to the experience (Granot & Greene, 2015). Baaikarada (2014) stated that interviews permit participants to express how they perceive a topic in detail. The individual interviews give insight into the participants' perspectives on the adverse

effects of childhood obesity. There is little data on cafeteria managers' perceptions of childhood obesity. The selection of meals and snacks and interactions cafeteria managers have with obese students has been unstudied. Cafeteria managers have a unique opportunity to encourage students to choose healthier options (Adamick, 2012). For these reasons a cafeteria manager had a different interview study guide than the other school personnel. Baaikarada (2014) further stated that interviews are used to capture the participants' perspectives by allowing the participants to explain their experiences and anticipated experiences.

Before each interview began, I clarified the purpose of the study, assured the participants that participation was voluntary and any communications between the participant and myself were strictly confidential. The four overarching research questions were used to cultivate the interview questions. Appendices A and B were used to guide the interviews. I emphasized that participation was voluntary and discontinuing the study at any time was possible. I informed the participants there was no compensation for the study and explained all identities and information throughout the process will be presented in aggregated form and will remain confidential. I am the only person who has access to raw data at all times and can identify the participants. I provided my personal contact in case participants needed to ask questions about the study upon completing the interview. Participants were asked to keep a copy of the consent form for their records. The interviews took place using Instant Messenger. Each interview lasted approximately 45-60 minutes. Before the interview started, participants were able to review the interview questions, if desired. The interviews were guided by open-ended questions

from the interview guide. I took notes during the interview to help guide the research questions that pertained to understanding of the data, my thoughts, reflections and reminders for further understanding of the data.

Key words and nonverbal expressions were noted for cross-analysis. Each participant was thanked for his or her participation in the study. I transcribed the data after each interview. Promptly upon completion of the interview, data were recorded, and a summary was written. All participants were emailed a copy of the summary of their interviews to review for accuracy. Participants were invited to highlight anything they felt was not accurate and return it to me through email within five days. One participant replied specifying an adjustment in the wording of their interview was necessary. All other participants specified the summary of their interviews were correct, and did not require changes.

The results of the study are expected to benefit school districts locally and nationally in areas where obesity is a rising problem. An empirical study of school personnel perspectives could bring positive social change by understanding the school personnel's perspectives in an effort to create relevant professional development on childhood obesity and ultimately prevention and intervention programs, when the empirical data is presented to administrators and those who create policies and regulations.

### **Document-Based Data**

School systems in the state where the tribe resides are required to report the school's academic and physical fitness assessment data. The assessments provide data on

the school's overall performance on standardized testing and pre and post health screenings that include data to represent student's BMI, fitness assessment and cardiovascular monitoring as a whole school and is also broken down into subgroups (DPI, 2015). The school's data are reported by using a grading scale from A-F. A grade of an A means the school is excelling in academics by the majority of the students passing the pre and end of grading testing and the students are passing the physical fitness assessments with low body mass index and cardiovascular monitoring (each student's heart beat is checked after physical activity). When a school receives a grade of an F, the school has not met adequate yearly progress. The school report grade is released to the public once a year and can be received upon request or located on the school district and department of public instruction website under the Accountability and Testing results report (DPI, 2015). The physical assessments are found under the Healthful Living Standards Report (DPI, 2015). I reviewed the data taken from the Accountability and Testing results report from 2004-2014 focusing on the subgroup American Indian students. According to the school website, the case school participated this year, for the second year in a row, in the Community Eligibility Provisions (CEP) Healthy Hunger Free Kids Act 2010. The CEP provides all students in the county with free breakfast and lunch. I also used documents published on the school website related to the Healthy Hunger Free Kids Act, monthly cafeteria menus and school newsletters which display health education and wellness plans for the school to understand the school's response to childhood obesity.

## **Instrumentation**

In instrumentation, a plan is created that will address the decisions that need to be made before the study, to answer the research questions (Das & Long, 2010; Van de Ven, 2011). The plan focused on how the researcher will gather data, the time frame to gather data, and the location. The instrumentation plan asked how the data will be analyzed (Das & Long, 2010; Van de Ven, 2011). Instrumentation is essential in a study to help the researcher keep all data organized (Das & Long, 2010). A detailed plan permits the researcher to remain focused on the various phases of the study. In the instrumentation plan, I created an interview guide to use when I conducted the interviews (Appendix E).

## **Data Analysis**

Data analysis is a process of making the data meaningful and relevant (Gravetter & Forzano, 2015; Hartas, 2015; Rubin & Rubin, 2005 & Yin, 2009). Code-based analysis by means of interviews is typically a phrase or word that represents a recurring common concept or idea (Hartas, 2015). The word is coded under a category. During data analysis the categories are created into themes which are used to address the research question. During each interview I took notes and organized the data using a process of code-based analysis to identify evolving themes.

## **Transcription**

The data analysis originates with the first interview and is created by studying each line of the interview transcripts (Fassinger, 2005). According to Hatch (2002) data analysis should begin immediately after data collection. Upon completion of each interview, I began to transcribe the data within 3 days of the interview. The data analysis

process began by reading the Instant messenger transcripts and rereading the interview guide field notes to pinpoint themes and create a general interpretation of the data.

Patterns of words, themes, differences, similarities and variations that are often expressed in interviews and seem common in the comparison process were transcribed in the initial open coding stage. Upon completing the data collection process I read all data for a comprehensive outline looking for common perceptions and experience from the collected data. Previous themes were reviewed in literature journals and notes taken on the interview guide were recorded.

### **Sorting, Classification and Thematic Development**

I transcribed the data and uploaded the files into Nvivo, a qualitative analysis software tool that can aid in identifying themes within data and for organizing coded data. Upon completing each interview transcript, I searched for similar words or comments and labeled them according to categories that reflect the central questions of the study. According to Hatch (2002) the data should be placed in categories by themes, happenings, ideas, and discrepant data. The identified themes were recorded into notes. I used open coding to assign the notes and insert notes as needed. After reviewing the notes, I coded the data and created themes. The themes will be presented in Section 4. A summary of the data was written after the completion of all data and analysis and shared with the participants, individually at an agreed upon time through Instant Messenger. According to Creswell (2007) the data interpretations are used to recognize the significance of the case, which will offer the lesson learned in the case. A revised

summary of the data analysis includes excerpts from participants' interviews to support the interpretation of the data.

I evaluated the themes after the initial coding period and revised as necessary. This process was guided by my research questions and conceptual framework. The first step in the coding process was to organize and write up all data analyzed from field notes and transcribed interviews. I analyzed the data by using coding, categorizing and labeling the data to create themes. Data from individual interviews were sorted using the microsystem, mesosystem, exosystem, and macrosystem of Bronfenbrenner's ecological model. The data were classified in the ecological model categories to discover if a component of the system had influenced the school personnel's response to childhood obesity in one system or affected all components of the ecological system. Yin (2009) defined typological analysis as the methodical organization of data that has features or qualities in common, so related themes and connections can be discovered. I used typological analysis and the software NVivo to interpret the data and discover mutual themes.

### **Procedures for Handling Discrepant Cases**

Hartas (2015) stated in qualitative studies when searching for patterns and themes it is possible for a certain response to vary from other responses and themes. This occurrence may lead to a discrepancy. In this study, a discrepancy showed up between individual perspectives. Data from the interview transcriptions were coded, and all discrepant cases are discussed in Section 4. The discrepancies that arose pertained to genetics and obesity and how school personnel interact with obese students. I explored



data that did not support the patterns that appeared in the data analysis. The discrepancies that arose after coding the interview responses will be discussed in Section 5.

### **Methods to Ensure Validity and Trustworthiness**

According to Granot and Greene (2015) reliability is defined as the extent to which results are the same over time and can accurately represent the population being studied by delivering reliable results. Reliability is vital when the same results are derived from a similar methodology and the results yield constant and consistent findings (Edmonds & Kennedy, 2012). Glesne (2011) stated reliability is essential, though it alone is not adequate. For a result to be reliable, it also needs to be valid. Validity refers to the accuracy of a test that yields the result it was intended to deliver (Glesne, 2011). Establishing reliability and validity is critical to case study analysis. Lincoln and Guba (1985) suggested that specific strategies be used to attain validity and trustworthiness. In this study, the specific strategies I used to attain validity and trustworthiness were triangulation, peer debriefing, and thick description. Each strategy is described in detail below.

#### **Triangulation**

Triangulation of data sources relies on multiple perceptions about a single reality (Forzano, 2015; Hartas, 2014; Kunkei, 2014; Yin, 1994). Teachers' views, staff views, administration views, views from school personnel who are members of the tribe, and views from school personnel who are not members of the tribe were used to corroborate viewpoints and triangulate data. I searched for consistency in overall patterns of data from the different data sources to contribute to the overall credibility. Using participants

from various positions in the school and those affiliated and not affiliated with the tribe gave validity of the data because it provided various perspectives of school personnel. Data from the Accountability and Testing report and Healthful living report was used to triangulate the data with subgroups (race, gender and grade) focusing on the race subgroup (publicshcool.org); The race subgroup American Indian was used to compare the physical fitness assessment test and the standardized academic test to other race subgroups. The test displayed American Indian students have lower scores on the physical assessment test and this data was used to enhance and confirm interview data.

### **Peer Debriefing**

Peer debriefing occurs when a person who is not affiliated with the study and holds impartial views of the study examines a researcher's transcripts, final report and general methodology (Spall, 1998). In peer debriefing I used two colleagues who are not participants in the study to detect if they found any under- or over-emphasized points, vague descriptions, errors in the data, and assumptions or biases I have made. A confidentiality agreement was signed by the two colleagues to ensure confidentiality remained throughout the study. Upon completion of the peer debriefing, feedback was provided upon request by those involved in the study to enhance credibility and ensure validity.

### **Thick Description**

Thick description is defined as the comprehensive interpretation of experiences in which the researcher informs the audience of patterns of relationships and puts them in context (Holloway, 1997). A researcher observes in depth a behavior and gives a detailed

explanation of the behavior and what occurs frequently before, during and after the behavior being observed

(Ryan, 2015). A researcher observes the behavior ordinarily in the participants' natural environment. The goal of thick description is to make the phenomenon meaningful to an outsider (Ryan, 2015). During the data collection, I paid attention to details in the data and interpreted the social meaning of the school personnel's perspectives on adverse effects of childhood obesity. My goal was to discover what methods, if any, are being used to address the high rate of obesity in the school. I used the participants' multifaceted perceptions for a better understanding of their perspectives on the adverse effects of childhood obesity. The participants all responded there is an urgent need for an obesity prevention and intervention program particularly among the American Indian students.

### **Systems for Keeping Track of Data**

The confidentiality and privacy of participants are protected. All information pertaining to the study are on my personal laptop in a password-protected file and all written data are stored in a locked file cabinet that I will retain for 5 years. All hardcopies are placed in a fire proof safe under lock and key. All documentation after 5 years will be shredded and properly disposed. Participants did not have access to hardcopies of the study until the study was completed and the results were presented in summative form by me. The templates of all forms and interview notes were all paper copies. Originals of all forms, typed notes of the interviews and my notes are stored electronically on a password-protected computer. Site administrator e-mails and all correspondence are saved electronically on my home office computer.

### **Summary**

This section was a description of the research questions created for the study and the research method chosen to answer the questions. The case study plan was described and contrasted with other methods that were considered but assumed less suitable for this study. This section also established the context of the study and the criteria for the selection of twelve participants. Data collection methods and data analysis procedures were described. Also described were the role of the researcher, and validation of the information acquired. This qualitative case study was centered on interviews to substantiate the school personnel's perspectives. The results of the study are presented in Section 4.

## Section 4: Results

### **Introduction**

The purpose of this case study was to explore and better understand a school's response to childhood obesity. In the spring of 2016, school personnel's perceptions of childhood obesity in one elementary school were documented through a case study. One-on-one interviews using Instant messenger with regular education classroom teachers from grades kindergarten through 5th, a special education 5th grade teacher, a physical education teacher, a school nurse, a school psychologist, a social worker, a cafeteria manager, and an administrator were conducted. Four overarching research questions guided the study.

This section defines the process used for gathering the data and evaluating the outcomes of the interviews. The first section is a description of the method by which the data were generated, gathered, and reported. I then present the findings and evolving themes. I will provide indication of confirming the quality of results and conclude with a summary of the outcomes.

### **Data Collection**

#### **Generating Data**

The data collection process began by receiving the Walden IRB approval number (04-08-16-0135222) and approval from the school district. Upon receiving permission from the school board to conduct the study, the principal of the school sent an e-mail to all staff. The e-mail was sent to inform the school personnel that I was authorized to conduct research at the school and would be sending invitations. I was given a roster to

contact school personnel by their school email accounts. All school personnel were given an invitation to participate in the study.

The invitation e-mail included the consent form, an overview of the study, prerequisites to become a participant, benefits and risk of the study, and the procedures to assure confidentiality was always maintained. The participants that agreed to participate in the study were asked to reply to my e-mail with the words “I consent.” Interviews were scheduled after I received emails with the words “I consent.” All interviews were conducted after school hours. One week after all consent forms were received data collection began. Reminders of the interview were e-mailed to all participants the day before the scheduled interview.

### **Gathering Data**

Once interviews were transcribed for accuracy, I searched for and grouped key words and phrases in the data (Hartas, 2015). The software NVivo 10 was used for accuracy to code the data. I used the manual coding Analyze tab of the NVivo10 ribbon to select and code the data from each transcribed interview. Afterwards, codes and categories were created. For this preliminary phase of coding, I reviewed the key words and phrases I identified earlier and generated color codes. The following codes were created and given a distinctive color (Table 2): school personnel who are American Indian (AI), school personnel who are not American Indian(NA), physical effects of childhood obesity(PE), social effects of childhood obesity(SE), emotional effects of childhood obesity (EE), academic effects of childhood obesity (AE), barriers for

implementing or creating intervention and prevention programs(BIP), and training and professional development for school personnel (PD)

Table 2

*Codes*

Categories	Code	Color
Members of a tribe	AI	Brown
Nonmembers of a tribe	NA	Blue
Physical Effects of obesity	PE	Pink
Social Effects of obesity	SE	Green
Emotional Effects of obesity	EE	Purple
Academic Effects of obesity	AE	Orange
Barriers in obesity programs	BIP	Red
Professional Development	PD	Yellow

**Recording the Data**

Data related to each code were marked and color coded. This system of color coding data presented a visual on how to relate the data to each code. After pertinent data were coded, selections from each code were grouped (Hartas, 2015). Frequency of codes was then formulated to define the codes that arose regularly (Table 3).

Table 3

*How Data Were Coded*

Code	Code	Frequency
SPP	Well-being concern	38
LT	Lack of personnel training	35
SPE	School Personnel's Expectations	25
IS	Interactions with students	20
CD	Cultural differences	20
SI	Social/Emotional perceptions	22
OP	Lack of Obesity Programs	18

I began axial coding after I completed the open coding stage. In axial coding, I looked for codes that coincided, read selections from each group of codes, and created groups from the data gathered (Manning & Kunkei, 2014). Upon completing the axial coding, I used selective coding to search for associations that occurred between the categories. Seven themes derived from this process: (a) school professional's perceptions overall concerns for obese students, (b) lack of personnel training on childhood obesity, (c) school personnel's expectations of obese students, (d) school personnel's interactions with obese students, (e) perceptions of cultural differences among obese students, (f) social and emotional perceptions of obese students, and (g) lack of prevention and intervention programs for obese students.

### **Data Tracking Systems**

Saldana (2011) indicated that researchers should keep records of interviews, journals, and all data collections for analysis successively. In a journal, I documented during the data collection, the real names of the school personnel along with their assigned pseudonyms. The date and time of each interview, impressions of each school personnel during the interview, and emergent thoughts were documented in the journal. Each page of the journal listed the school personnel's pseudonym, position in the school, grade level taught and if they were affiliated with an American Indian tribe. NVivo10 software was used to code and categorized the data to discover relationships and patterns. I collected 12 interviews from school personnel. The interview responses covered the perspectives of school personnel regarding childhood obesity. It became evident that one theme ruled in the entire interview, specifically, the overall well-being of obese students.



To discover the themes, I systematized the participants' replies and evaluated them using the qualitative software, NVivo10. As I interviewed the participants, I noted the teachers, administrator, social worker, school psychologist, and cafeteria manager's words, ideas, and statements that I later used to link to sentences and statements in each interview. Creswell (2009) specified that coding should create themes. Based on the meaning of the themes identified, each theme was assigned to answer one of the research questions. Associations were formed from the interviews and then cross-analyzed with each participant's interview. Yin (2009) indicated that case studies should provide additional information to collaborate with or expand the sources of the study. The narratives also highlight differences across the cases.

### **Discrepant Cases**

I attempted to understand the perceptions of school personnel on childhood obesity. Open-ended interviews using Instant messenger with individual participant's perceptions of obese students were conducted. Two discrepant cases were identified in the case study. First, Paul conveyed apprehensions with exactly how other teachers perceive obese students. Paul indicated "obesity is not always a consequence of being inactive and making poor food choices." He would like educators to be cognizant that "genetics, illnesses, and other effects can become the main reason a student is obese. Second, Sandra stated "I treat all my students equally. I do not expect any difference between obese students and any other student in my classroom." The first discrepant case was considered discrepant because all other participants conveyed a perception that obese students were responsible of his or her obesity due to a lack of exercise and poor eating

habits. Paul was the only participants that believed obesity may be a medical or genetic condition. The second discrepancy arose when a participant expressed she does not expect any differences between obese and non-obese students. All other participants listed complications throughout the school day he or she perceived to be associated with obese students.

### **Findings**

The results of this study revealed similarities in the opinions of the school personnel regarding childhood obesity. Interpretation of the findings can highlight the significance of the information collected (Edmonds & Kennedy, 2012). The findings are presented in the four research questions and the seven themes that commenced from the interviews. Each research question includes a brief summary of the findings followed by a summary of the seven themes. The research questions used for this case study were:

1. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' social development?

Shyness and poor social skills were a common theme among the participants when questioned about social development of obese students. Molly, a kindergarten teacher described obese students in her classroom as often delayed in their social skills. Molly stated, "Each year social skills are always an area I have to work on with my obese students. The obese students are often very shy and do not have many friends in the classroom." This may have lasting effects in adulthood. According to Brewer and Rieg (2013), when social skills are not properly developed in early childhood, the result is an

adult who has low self-esteem and problems communicating and maintaining relationships with others.

Another such example was identified in the responses of Paul, a special education teacher, who shared that obese students in his classroom have a difficult time obtaining and maintaining a constant friendship. Paul shared “in my special needs classroom most students are bullied and have a tendency to be withdrawn.” Paul went on to say he often creates opportunities for his students to interact and maintain a friendship in the classroom. He felt that this is an area where he struggles as an educator to provide what the students need and it saddens him that in addition to a disability the “obese students have limited social interactions with peers.”

Sandra expressed that social skills are the negative effects she immediately thinks of when she reflects on how obesity has an impact on a student. She said she often works “with obese students who will not communicate with me even when he or she needs assistance on an assignment due to extreme bashfulness.” Emily, a second grade teacher believed “social skills are imperative when working in groups. Obese students often refuse to participate in group assignments or will ask me can the group project be completed individually.” Roland shared that he pairs students to increase social skills. “I frequently pair obese students with a student that I believe has a high self-esteem to increase the obese child’s social skills.” Kimberly explained that social skills have an adverse effect on obese students. She remembered having a social story that had a picture of an obese child and children with disabilities. When she read this story to increase socialization of students who may look different or have a disability she got an

unexpected result. She found that she had a student who shared with her after she read the social story “that it made them sad that an obese child in my classroom did not have friends like the child in the story.” Morris the physical education teacher stated that he observed obese students in his classroom “walking around or sitting on the playground alone. It seems as if they want to play with the other students though they do not know how to socially interact with others.” The school psychologist explained, “I often get request from teachers and parents on ways to help obese students make friends. I observe in the hallways and playgrounds obese students are often walking alone.”

Suzanne conveyed as the cafeteria manager that she often observes “obese students in the cafeteria eating breakfast and lunch alone without communicating to anyone. I try to talk to them and at least get a smile on their face.” Aware of the need to assist student with their social skills, school’s website reflects the effort each month by the school to hold a social (a school dance, fun fitness activity or a community field day) to incorporate collaboration amongst the staff, students and the community. George, an administrator, explained the school socials are beneficial in increasing the students’ social skills while making and obtaining lifelong friendships. “It is imperative that obese students attend social situations to develop or enhance social skills outside the classroom and learn how to socially function in society.”

2. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity’s effects on students’ emotional development?

According to Aparicio, Canals, Arija, De Henauw, and Michels (2016), negative situations in a child's life such as loneliness, depression, stress, low self-worth, problems in school and home can lead to an increase of food consumption and weight gain. The responses by the school psychologist and social worker address these issues. Bentley, the school psychologist, described most of his sessions with obese students as being repetitive in implementing strategies to increase the students' motivation, self-esteem, and self-worth. He stated that most obese students who are referred to his office have no zeal for life. He found that many obese elementary students with whom he has worked "have shared they have thoughts of suicide and feel that taking his or her life will be the only way to relieve the emotional pain of obesity."

Tabitha, the social worker, specified that obese students typically have numerous absences from school due to being bullied. Tabitha described the fact that many families call her office and share with her horror stories of children being taken to the hospital or doctor and diagnosed with childhood depression. She explained that it upsets her "that an elementary student deals with depression due to negative self-esteem and lack of motivation to be successful in school." George, the administrator, mentioned that he receives "numerous complaints from obese students that are often crying and accuse other students of implying things about them that were taken out of context." George perceives obese students as extremely sensitive. Barbara stated:

Obese students are often bullied and made to believe that there is something wrong with them when they are overweight and are not able to take the weight off. This often results in children disconnecting socially from their peers and

even family and their self-esteem diminishes. Of course when children are not happy with themselves and the weight that they have difficulty maintaining, children will not always be motivated to succeed in class and the weight may even cause them to be sleepier than those students who are not overweight.

The monthly school newsletter lists strategies parents can use to address emotional health with students. A program is implemented in the weekly guidance lessons by Bentley, the school psychologist, that focuses on a student's emotional health. Bentley referred to his lessons as "calming strategies that I provide to assist students in becoming emotionally stable and allowing them techniques to use when they become emotionally distressed."

3. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' academic development?

The effects childhood obesity has on a student's academic development were a concern from teachers, administrator, school psychologist and the social worker.

Kimberly shared how academic performance can go two ways in obese students:

A withdrawn child could actually soar in academics because that is one thing he can actually control. I have seen obese students who read books all the time and made extra efforts to be successful in the classroom. Contrary to the overarching type of student I have seen obese students prone to misbehaving and clowning around because they do not want other students to associate them with weight issues. These are the students who do not apply themselves in the area of

academics for the fear of bringing more negative attention to themselves.

Emily shared that she had read academic journals that stated obesity may have an impact on the academic success of students and would like to learn more about this phenomenon.

Emily explained that she remembered in a workshop reading a statistic that stated obese students have “lower test scores and lower grades than average weight students.” She believed that the topic of childhood obesity and the influence of academic success should be thoroughly investigated. “If a correlation is discovered between childhood obesity and academic success, I believe school districts should invest in creating programs to decrease obesity and increase academic success.”

Paul shared his concerns of obese students and lack of motivation by stating that he has “a few obese students that I feel do not give his or her full ability to school work. Motivation to be academically successful is lacking in many obese students.” Students’ lack of participation in the classroom was a concern that was identified as a factor in the adverse effects of obesity on academic success. Roland shared that participation is graded in the classroom and he often has to give a low score to obese students. “Many obese students refuse to participate in the class and often sleep during lessons. The low participation grade lowers the students’ grade point average.” Emily expressed a desire to understand how childhood obesity can impact academic success.

As I reflect on childhood obesity and academic success I am thinking of how the obese students in my class do not actively engage themselves in the class or participate unless I call on them. I feel that many obese students would like to be successful but for fear of being embarrassed they refuse to ask for help or

participate in the class. I believe this may lead to academic failure.

Morris shared that in physical education students receive a grade for participation and passing certain physical fitness tests. He said that the majority of his obese students “make excuses to why they are unable to perform the physical fitness test.” He felt that they do not put forth the effort to even attempt the task. Because of this he stated, “I am bound to give the students a failing grade which reflects on the students overall academic success.”

Health complications that lead to excessive absences were also reported as a reason for academic failure among obese students. Barbara explained “if a student is not healthy or is depressed an accumulation of absences may result. An excess of absences has a negative result as the student is unable to make up the required assignments.” She stated that even though the teacher may give make up work for work that was missed, student understanding of the material is adversely affected when students miss the information presented in class. Barbara felt that every minute counts in an educational school day and that Learning is always taking place. When a student is absent, a skill that is taught may not be acquired or it may take many lessons to catch up and the student is delayed in grasping the concepts. These students do more poorly than those “who have good attendance. Missing school due to excessive absence can affect academic performance.”

Obese students often are retained a grade level, typically do not go to a higher education facility, and have lower test scores compared to average weight students (Clarke, Fletcher, Lancashire, Pallan, & Adab, 2013). Tiger Elementary School appears



aware of the adverse effects that can occur when a child is obese. On the school website and in the school newsletter, Barbara stressed the importance of school attendance and provides data on how a student missing thirty minutes of school a day can have a negative impact on a child's academic success. Tutoring is offered free of charge after school for students who need extra help in his or her academics. The school website has information for parents to help his or her child become successful in the classroom.

4. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' physical development?

Health concerns for students were a common theme among participants. Emily fears for obese students after physical activity. Emily stated "I have a great concern for my obese students after recess. I often observe them hassling for breathe and I fear they may go into a full blown asthma attack." Roland described observing the painful experience of watching his obese students be given shots at school for Type 2 diabetes. Roland explained "If a child is born with diabetes, this is sad but when a young child develops diabetes due to poor health choices it is disturbing, knowing it could be avoided or reversed with proper diet and exercise is senseless." Morris described the fear for his obese students' life expectancy. Morris shared that he often hears his obese students complaining about being extremely tired and suffering with chest pains. Morris said that "few years ago I had a student with heart problems that were associated with being morbid obese.

“This is alarming for an Elementary student to have severe health issues related to obesity at such an early age.” Molly described obese kindergarten students as physically unable to fit in the small size desk and carpet squares on the floor. Molly shared that in kindergarten there is a mandate to provide chairs that allow each child’s feet to touch the floor when seated. The chairs are very small and low and built to fit an average size five-year old. She has many obese students in her classroom who are unable to fit in the standard chair. She also has carpet squares and the students are requested to sit with their legs crisscrossed to avoid touching other students. She finds that her obese students “are too large to fit in the carpet square and are physically unable to sit in this position. Most of the obese students express it is painful to sit in this position and are unable to sit on the carpet like the other students.”

Tabitha, the school nurse described health complications that were once only prevalent in adults such as Type 2 diabetes, metabolic syndrome, high blood pressure, and heart issues are now more common in obese students. Tabitha was alarmed at the number of obese students that she works with on a daily basis that are living with severe health complications that are associated with obesity. The majority of her day is spent administering medications for high blood pressure, high cholesterol, cardiovascular disease, diabetes and medication to slow down the rate of puberty. She stated that she has “many obese students who have begun puberty during elementary and this early onset has been attributed to obesity.” The school psychologist shared how he works with families who have obese students dealing with emotional problems that have led to physical ailments. Bentley described “depression can lead to physical ailments such as extreme

fatigue, body aches and confusion.” He has worked with several obese students who have “constant physical pain, although the physicians are unable to give a diagnosis. Frequently the medical professionals diagnose obese students with unexplainable health complaints as clinically depressed.” Suzanne, the cafeteria manager, explained

I can be in my office and hear the sound of some obese students breathing several feet away. I watch most of the obese students struggle to walk in the cafeteria and catch their breath in order to select their meal choice for the day.

According to Haynes and Browne (2016), childhood obesity can lead to delays in physical development and premature death associated with severe health complications such as high blood pressure, high cholesterol, uncontrolled diabetes, heart complications, liver disease and sleep apnea.

The school participates in the Community Eligibility Provisions program also known as the Hunger Free Kids Act, 2010. The program provides free meals for all students regardless of income. The program’s goal is to implement healthy food choices in an attempt to reduce childhood obesity. George, the principal shared a grant that is associated with the Hunger Free Kids Act, 2010 will be written in the near future to provide healthy snacks such as fresh fruits and vegetables from a local farmer during the school day. The goal of the grant is to introduce students to healthy foods in an attempt to teach students how to select healthy food choices.

### **Thematic Development**

Themes were identified from the participants’ responses. Generally, participants shared similar opinions during the interviews. Seven themes developed from the

interviews. The themes were consistent with all but two of the themes discussed in the literature review of Section 2. The themes noted in the literature, but absent from most participants in the interviews in this study, were the various adverse health complications associated with childhood obesity and the impact childhood obesity may have on a student's academic success. Six classroom teachers, a physical education teacher, an administrator, a school nurse, a school social worker, a school psychologist and a cafeteria manager were interviewed. The seven themes that emerged during data analysis are presented below.

### **Theme 1: Concerns for Well-Being of Obese Students**

The first theme analyzed was the concern for the well-being of obese students.

**Teacher responses.** When asked about working with obese students, the physical education teacher shared the most concerns. Morris explained “in every class I teach there are typically at least three obese students in my class. The obese students are carefully monitored in fear of them having a medical emergency related to exercising and being obese.” According to Morris, the majority of the students who are obese in the physical education class have asthma and become short of breath very soon after class begins. Morris shared concerns of continual weight gain in his current students that will lead to severe health complications as adults.

Molly shared that she fears for the physical development of her obese kindergarten students. She watches her students develop before her eyes at a rapid rate and most of the obese students continue to gain weight. She wondered “what the pressure of the rapid weight gain will do to the child's developing bones.” Emily shared the

concern for her students not being able to keep up with the other students. Emily shared that during recess her obese students “attempt to run and play with the other students though they become short of breath very quickly”. She believed this is also an “embarrassment to the obese student who may desire to participate in physical activities with his or her peers, although due to obesity he or she is physically incapable of fully participating during the entire recess without taking a break to catch his breath.”

Kimberly expressed her concern for obese students and the effects of taking strong medications at an early age. Kimberly stated:

I am concerned about the effects prescription drugs will have on a developing child. I have several students who take strong medication that doctors have warned maybe taken as long as they are alive. I have a concern of the harmful side effects associated with the medicine especially when the child will take a medication over a life span.

Roland shared his concern of the short life expectancy due to obesity. Roland stated that he had read articles, with an emphasis on American Indian children, that the obese student will have a shorter life expectancy than average weight students. He said,

It saddens me to think my students may not have a productive healthy life all because of obesity. The majority of my students are American Indian and many are obese. I often look at my obese students and wonder if he or she will live to be an adult and a productive citizen in society.

There are instances where obese students have lost weight and found the benefits in their lives. Sandra described the improvement of a child’s health by losing weight. She

shared “I have witnessed a morbid obese student lose weight and observed the severe health complications diminish. I believe if a student is placed on a proper diet, the health complications that are plaguing the student will disappear or greatly improve.”

**Administrator response.** The administrator shared that he had a serious concern for the overall well-being of obese students. George indicated “the majority of major medical emergencies during school hours have involved obese students. The health and safety of obese students and the struggle that has been observed during physical education class and recess are one of my greatest concerns.”

**School nurse response.** The school nurse reported that health problems that once were mainly identified in adults are being diagnosed in obese students at Tiger Elementary. According to Tabitha “the onset of puberty and metabolic syndrome has increased since I have been employed at Tiger Elementary at an alarming rate over the last 10 years.” The perception of the school nurse is that a majority of the health complications observed at an alarming rate are the result of preventable diseases that can be prevented and often times reversed with proper diet and exercise.

**Social worker response.** The social worker shared numerous health referrals from health practitioners concerning students who are obese are received frequently. Barbara stated “few parents are aware of the adverse effects childhood obesity has on a child’s overall development.” Each week she receives health care referrals and it is her responsibility to contact parents to assure they are following up with the doctor’s orders. She stated, “It is amazing how many parents explain to me they do not have time to

follow up with the child's pediatrician just because the child is overweight." Barbara would like to have a parent education class on the adverse effects of childhood obesity.

**School psychologist response.** According to the school psychologist if a child is taught a behavior at an early age it typically becomes a habit. As a psychologist in the school, many students have reported a minimal exposure to an active lifestyle and healthy food choices. Bentley described a typical lesson as "students in our school need exposure to tasteful healthy foods and fun physical activity opportunities. If a child enjoys consuming healthy food and staying active these habits most likely will be continued into adulthood and produce a healthy lifestyle."

**Cafeteria manager.** According to the cafeteria manager most students do not consume the vegetables in the cafeteria unless they are served with dressing. Suzanne shared that the majority of students who bring lunch from home have lunches that consist of high fat and high sugar processed foods." She stated, "having observed the content of the lunches prepared at a student's home, I believe students are not consuming the appropriate vitamins and minerals that they need to properly develop."

**Summary.** During the interview the participants shared a concern about the overall well-being of obese students. The main topic of the overall well-being theme was health related concerns. Concerns for a student's development, diet and exercise practices, prolonged medication use and a short life expectancy were the focused areas derived from the overall concern of obese students.

**Theme 2: Lack of Personnel Training on Childhood Obesity**

The second theme that emerged pointed to the lack of professional development in working with obese students and lack of exposure to the Community Eligibility Provisions (CEP) program.

**Teacher responses.** Emily stated she has only received a brief training on how obesity affects the physical development of a student. Emily shared that each year the teachers are required to take a workshop on working with students who have diabetes. “Obesity is briefly discussed in the workshop though I would like to have a more detailed training on the effects of childhood obesity.” Molly described the lack of knowledge on childhood obesity and explained that childhood obesity is not an area that she is familiar with. She expressed a desire “to have a greater understanding of how I can effectively work with my obese students”. Sandra shared the uncertainty of talking to obese students about an intervention program and expressed a concern about how to approach students without being offensive. She said, “I would like obesity intervention training and be given strategies on how to communicate my concern for my obese students without offending anyone.”

Others also expressed a desire to know how to communicate with obese students without causing offense. Roland said the he has “read literature on the effects of obesity and academic performance” and aspires “to obtain knowledge on the correlation between obesity and academic performance.” Kimberly shared that she would like to know “specific strategies to help students who are obese be successful in my classroom by focusing on the helping my obese student lose weight and increase his or her self-



esteem.” Paul conveyed apprehensions with exactly how other teachers perceive obese students and explained that

as a special education teacher, I am aware that there are medical reasons some students are obese. Teachers and school staff need to be mindful that obesity is not always a consequence of being inactive and making poor food choices. I would like educators to be cognizant that genetics, illnesses, and other effects can become the main reason a student is obese.

When presented with the interview questions about the Community Eligibility Provision (CEP), Paul, Molly, and Emily could not explain the CEP program and how it has been effective in their school. Roland, Sandra, and Kimberly identified the CEP program as a program that paid for students to eat breakfast and lunch at school. Roland, Sandra, and Kimberly were unable to elaborate on the goal of the program and how it benefited their school.

**Administrator response.** The administrator shared he participated in a brief training on childhood obesity in his undergraduate degree. He does not recall any additional or recent childhood obesity training. George stated “I believe there is a great need for professional development as the number of childhood obesity cases in Tiger Elementary continues to rise each year.”

**School nurse.** Childhood obesity training was highlighted in the school nurses’ recent professional development course. Tabitha shared, “I consider childhood obesity a serious health complication and feel there is a great need for an in-depth professional development course that specifically is geared toward childhood obesity for school

personnel. “She noticed that obesity is not considered a severe problem among students, families, and some school personnel. Tabitha said that “awareness of the negative consequences of childhood obesity can assist in creating prevention and intervention programs at this school.”

**Social worker response.** The social worker shared that during an internship at the local university, she had to shadow a social worker who started a program for obese students. The adverse effects of childhood obesity were discussed in depth and enlightened the social worker on how obesity affects all areas of a student’s life. Barbara explained “limited training on the topic of childhood obesity was presented during my social work courses at the university. My mentor during my internship prepared me to work with students and families in the area of childhood obesity.”

**School psychologist response.** During the doctoral program the school psychologist researched childhood obesity and the affects it has on a child’s self-esteem and self-worth. The school psychologist shared he feels there is an urgent need for a professional development for all school personnel that focus on increasing an obese self-worth. Bentley believes that childhood obesity most often leads to adult obesity and lifelong struggles with depression and low self-esteem. He shared that during his doctoral program there was training literature that was presented in class that displayed evidence that “many obese adults who were also obese children do not feel satisfied with their adult life.”

**Cafeteria manager.** The cafeteria manager explained she has participated in workshops that have included ways to decrease childhood obesity by offering more fresh

fruits and vegetables and limiting processed foods. Suzanne identified the fact that the food selections that the school could afford were often processed or canned due to the price of fresh fruits and vegetables and that the budget would not allow for fresh fruits and vegetables in previous years. However, for the past 2 years the school has participated in the CEP program. Suzanne believed that “this program has allowed a greater selection of fresh fruits and vegetables incorporated in the daily meals of students, without the burden of the limited budget for fresh fruits and vegetables.”

**Summary.** The participants expressed a desire to obtain knowledge of childhood obesity through professional development courses. The school nurse reported having recent professional development in childhood obesity. Most school personnel desire up to date professional development in the areas that concern students dealing with childhood obesity. Three teachers, the administrator and the cafeteria manager were the only school personnel that were aware of the CEP program and the benefits of the program in the school.

### **Theme 3: School Personnel’s Expectations of Obese Students**

The third theme that emerged from the data explained the expectation school personnel have of obese students.

**Teacher responses.** Molly responded that although she may have different expectations for obese students compared to non-obese students they are not. Five out of six teachers reported that academic expectations are not lower; but, the effects of obesity may have an impact on a student’s academic performance. Morris reported he perceives obese students do not try as hard as they can in physical education. The students often

participate for a short time then ask for water or to sit down. The physical education teacher expects obese students to not put forth an effort and create reasons why he or she cannot participate in physical education classes. Molly reported obese students in her class are less likely to develop social skills. Molly stated “in my educational experience obese students are often shy and withdrawn from the peers in the classroom due to the embarrassment of looking different from the other students.” Kimberly stated she often expects obese students in her classroom to be either shy or trouble makers. Kimberly expressed “the troublemakers are embarrassed about their self-image and are class clowns and pick on other students so no one will have the opportunity to bully them.” Roland explained obese students often do not complete homework assignments and participate in group activities in the classroom even though most of the obese students are capable of the work. Contrary to the other six teachers, Sandra stated she does not expect any difference between obese students and any other student in her classroom. Sandra elaborated on this statement by saying “I do not have any preconceived perceptions of obese students. I require the obese students to be able to complete all assignments and fully function in all areas of the daily classroom schedule.”

**Administrator response.** The administrator expects obese students to need a larger size desk. George shared “in previous years I have ordered specialized desks to accommodate the size of some obese students. The larger desks were not a part of the yearly budget, which in returned put a strain on other areas in the school, such as funds to purchase educational materials or additional tutors. I also expect obese students to become ill or hurt themselves during school hours.”

**School nurse.** The school nurse expressed she had expectations of health complications among the majority of obese students. Tabitha explained “each year I expect to work with obese students who have been diagnosed by a medical professional with asthma, Type 2 diabetes and high blood pressure.”

**Social worker response.** When asked about childhood obesity in the school setting, the social worker explained most families in Tiger Elementary are at or below poverty level. Barbara stated “each year I expect families would like to provide healthier meals to their children but the cost of processed foods is cheaper and more accessible than fresh foods and vegetables. My second expectation is that children have adapted to the taste of sweet and salty foods and it is a hard undertaking to encourage students to consume a healthy diet.”

**School psychologist response.** The school psychologist stated a lack of motivation to achieve educational and personal goals is expected by obese students. Bentley shared, “I have worked with numerous obese students who do not strive for excellence. The majority of obese students I worked with are not self-driven and lack will power to meet his or her educational and personal goals.”

**Cafeteria manager.** During the interview the cafeteria manager expressed “I expect obese students to consume more chocolate milk than white milk and less fruits and vegetables compared to non-obese students.” The cafeteria manager explained she observes most students on a daily basis as he or she selects milk and food choices in the cafeteria line. This expectation is from her personal observation over the years at Tiger Elementary.

**Summary.** The participants expressed his or her undesirable expectations of obese students. Sandra, the first grade teacher indicated she did not have any expectations of obese students. The expectations that were listed from the six teachers ranged from obese students unable to sit in standard sized desks to lack of motivation, lack of social skills, lack of classroom participation, bullying and the low consumption of fruits and vegetables.

#### **Theme 4: School Personnel's Interactions With Obese Students**

The fourth theme that emerged from analysis of the data indicated that school personnel perceive their interaction with obese students as positive.

**Teacher responses.** Teachers in the interview emphasized he or she interacts with obese students the same way as any other student. Morris indicated "I make an extra effort not to discriminate against obese students because of their weight." Roland shared "I consciously try not to draw attention to any modifications obese students may need in the classroom. Kimberly stated she once had a student who complained that he could not see the board due to the size of the student in front of him. Because of this incident, Kimberly shared "I attempt to arrange seating of obese students where they are not directly blocking other students, and in a way they feel comfortable." Paul, the special education teacher, shared an experience with an obese student who towards him. Paul stated that he did share with the student after the conversation that exercising could help with weight loss, if this was a goal he was trying to achieve."

**Administrator response.** The administrator explained he cannot recall a time he treated obese students any differently than non-obese students. George shared "I actually

put forth an extra effort to interact with obese students. I try to connect with obese students in anticipations that the students will sense a feeling of belonging in the school atmosphere.”

**School nurse.** When asked about interactions with obese students, the school nurse described her interactions as the same as with any other student. According to the school nurse, all students are treated with dignity and respect and each student’s health needs are met to the best of her ability. Tabitha expressed “when I work with obese students, I am proficient and I perform my care duties without insulting or insensitive comments.”

**Social worker response.** The social worker described the interaction with obese students is the same as interacting with any other student on campus. Barbara explained that when she interacts with any student, she treats each child the same, regardless of his or her weight status.

Obese students often have more absence which allows me to stay in contact with the students and families and create a positive relationship. I feel this part of my job allows the rapport to be built between myself, the student and his or her family.

**School psychologist response.** When probed about interactions with obese students, the school psychologist explained he intentionally makes an effort to interact with obese students in a positive way. The school psychologist shared that often a rapport is built with obese student in an effort to increase their self-worth. Bentley shared, “I often have self-esteem building activities that I incorporate in my lessons. During these

lessons I typically choose a student who is obese and has a low self-esteem to partake in the activity.”

**Cafeteria manager.** When inquiring about interactions with obese students, the cafeteria manager explained a conscious effort is made to interact with obese students to make them feel comfortable and welcomed in the cafeteria. Suzanne described that she often communicates with obese students by suggesting the students choose fruits and vegetables. She tries to learn what the student enjoys and begins a conversation on the student’s favorite sports team or super hero to build a connection with the student. She explained, “When I make a connection with obese students, the students are more likely to accept suggestions instead of feeling singled out to select healthy foods.”

**Summary.** Building a relationship with obese students was a suggestion made by several participants in order to offer suggestions for a healthy lifestyle. These discoveries advise school personnel to potentially encourage relationships with obese students. Obese students need to feel that they are welcomed in the school environment and feel that they are part of the school family.

### **Theme 5: Perceptions of Cultural Differences Among Obese Students**

The fifth theme that arose specified that there are cultural differences about the perception of obesity.

**Teacher responses.** The participants shared viewpoints on the perception of obesity among cultures. Bentley suggested American Indian families do not see a student that is overweight as a health concern but rather a healthy child. Morris recounted a time when he had overheard two American Indian girls in the classroom share with each other



that another student in the class was too thin and needed to thicken up. After discussing this issue with the girls, the girls explained to him that family members expressed to the girls a need to put some meat on their bones so they would not look ill. Paul defined the “non-American Indian girls in class are often worried about their self- image and feel they are overweight when they have a normal body mass index.” Kimberly expressed the perceptions of weight among various cultures differ tremendously and that even as early as elementary school there is a discernable difference on how cultures perceive obesity in the school environment.

**Administrator response.** The administrator described the evident differences between cultures and childhood obesity. He shared cultures shape and guide families’ outlooks and beliefs. George shared that over 90% of the student body is American Indian students at Tiger Elementary. He said,

Some cultures, such as the American Indian culture, have a strong sense that being overweight or obese has been passed down from generation to generation and nothing can change that. Many American Indian families firmly believe a child should look healthy and have some fat on his or her body.

**School nurse.** The school nurse shared the cultural difference experienced between American Indian students and non-American Indian students are the lack of awareness of the dangers of obesity. Tabitha said,

When I share the adverse effects of obesity with American Indian students and families, the typical response I receive is American Indian people are big-boned people and their genetic makeup make them large. One student shared with me

that her mother told her, she was too thin and looked poorly, even though the student was overweight. There seems to be a perception among the American Indian students and families that a thin person is unhealthy.

According to the school nurse the perception of weight is very different among cultures.

**Social worker response.** The social worker shared as part of her duties, she has to call parents to follow up on missed school days which are often the result of health related issues with students. Barbara shared that American Indian, Hispanic, and African American cultures do not seem to be as concerned about the health related issues associated with obesity as other cultures at Tiger Elementary. When she explains to the parents of various cultures the dangers of obesity, she often feels as if she is “being ignored or will get excuses that obesity has been passed down from generation to generation .

**School psychologist response.** The school psychologist identified a cultural difference in the awareness of a variety of fresh fruits and vegetables. Many American Indian, Hispanic, and African American students were not able to identify a wide variety of fresh fruits and vegetables. Bentley described a lesson when “I asked students questions about eating asparagus and many students shared they had never tasted an asparagus and were unable to identify the vegetable.”

**Cafeteria manager.** The cafeteria manager shared that American Indian parents often scold their children for not eating all of their food, even when the children are full. It seems in their culture children must consume all food that is placed on their plates. Suzanne shared “a second helping of carbs is often requested by American Indian

students. Most students report the fruits and vegetables do not taste the same as those they eat at home.” Parents have probed the cafeteria manager for reasons why the vegetables are not seasoned the way children are accustomed to consuming them. Most American Indian families have shared that they add sugar and salt to fruits and sugar, salt and meat grease drippings to almost all vegetables. Several parents informed the cafeteria manager that their children would eat more meals at school if meals were prepared with added butter, sugar and salt. According to the cafeteria manager most American Indian students who bring lunch from home bring prepackaged processed lunches, chips, sodas, and dessert cakes or candy. Very seldom does an American Indian child bring fresh fruit or vegetables in his lunchbox. Tiger Elementary sells snacks from a different fund in the cafeteria to increase the school’s budget. American Indian students and parents are often the ones who purchase the salty and sweet snacks on a daily basis. Non-American Indian parents typically allow the purchase of salty and sweet snacks once a week, usually on Fridays.

**Summary.** The responses from the participants imply that in the majority of the American Indian culture obesity is not viewed in a severely negative way as compared to other cultures. Obesity is viewed as a healthy in the American Indian culture, whereas, it would be considered unhealthy in a non-American Indian culture. Genetics and the child’s body frame are often the reasons given by American Indian families to those who inquire about childhood obesity in the American Indian culture.

**Theme 6: Social and Emotional Perceptions of Obese Students**

The sixth theme that derived from the data analysis indicates a concern for obese students' social and emotional development.

**Teacher responses.** The participants in the study conveyed a consist report of concern for the social and emotional development and social and emotional being of obese students. Molly described kindergarten as a critical time where social skills are developed and enhanced. Lessons on how to interact with other people are learned in kindergarten. Obese students as young as kindergarten often struggle with social and emotional issues. Molly shared “making friends and maintaining constant friendships seems to be extremely hard for obese students. The obese students in kindergarten are often very whinny. They cry a lot and tattle frequently.” Sandra expressed “obese students in my classroom are often withdrawn and tend to play alone at school. Emily explained in her classroom obese students are typically very shy and need verbal prompts to actively participant in classroom activities. Kimberly described obese students as extremely quiet students who often seem depressed or sadden by his or her life. Paul stated “obese students in my classroom often fight other students for no apparent reason.” Sandra explained the social and emotional development of obese students often seems delayed. Sandra reflected on a second grader in her class who was so sad and depressed that he wanted to stop coming to school because he felt all the children did not like him. She said, “He was saddened by his body image and upset that other kids made fun of his physical appearance.”

**Administrator response.** When probed on the effects of social and emotional development of childhood obesity, the administrator indicated the majority of bullying cases are for obese students who have been in fights. George shared “Most of the obese students stated that before the fight occurred a peer was making jokes about them or their family members who were obese. The administrator reports he encourages obese students to ignore bullying; but, the majority of the time they are so upset it takes a long time to calm them down. The time it takes for a student to calm down takes away from classroom time and in return the student misses valuable classroom time. Most of the obese students who come in the administrator’s office are very sensitive and are often emotional. The administrator shared that he tries to make every student feel he is just as important and special as any other student in the school.

**School nurse.** The school nurse shared that several times in the past when a student has had an asthma attack, the attack began by the student hyperventilating as a result of crying and becoming extremely upset. Tabitha explained an incident “ a student shared with me that they were being picked on about their weight by other students in front of the entire class, and they started to cry and could not catch their breathe.” The school nurse receives homebound request forms yearly from parents who feel their child is being bullied because of their weight.

**Social worker response.** The social worker described she often receives request by parents to provide strategies to support obese students. The children become withdrawn at home and do not enjoy family activities. Barbara explained “a parent once shared with me that her child was very angry most of the time and cried often over things

that should not upset her.” The parent inquired if the child’s weight was creating the emotional distress in the child.

**School psychologist response.** The school psychologist reminisced about a parent who shared, through tears, the horror of hearing her child go to bed at night and crying because of bullying. Bentley stated “the parent shared that she feared her child would have severe emotional problems in the future.” Bentley worked with the child and gave the family strategies to increase the students’ emotional wellbeing.

**Cafeteria manager.** When inquired about social and emotional status of obese students, the cafeteria manager shared she often observes obese students eating alone in the cafeteria. Suzanne stated when I consistently see obese students not communicating with others and sitting alone I perceive the student is not able to make friends. I try to be a friend to all students in the cafeteria especially the obese students. I would like all students to feel welcomed and want to enter into the cafeteria.”

**Summary.** The responses of the interviews suggest that childhood obesity may affect how a student interacts with peers, teachers and his or her family. The participants implied obese students are frequently overly sensitive and regularly cry and whine. Obese students are often bullied which leads to anxiety, depression and low self-esteem.

### **Theme 7: Lack of Prevention and Intervention Programs for Obese American Indian Students**

The seventh and final theme that derived from the data analyses is the need for childhood obesity intervention programs for American Indian students.

**Teacher responses.** The teachers in the study expressed a concern for the lack of

prevention and intervention programs at the school. Roland stated to his knowledge, he has not witnessed the topic of childhood obesity addressed in the school. Sandra shared with the percentage of American Indian youth in Tiger Elementary school it seems this topic would be discussed and should focus on American Indian students. Roland explained the school has an American Indian youth specialist that comes weekly to work with American Indian students. Roland shared “he has only seen her address absences and academic concerns.” Roland has a vision that the American Indian youth specialist could assist in developing a cultural obesity prevention program that would assist the American Indian students at Tiger Elementary.

Paul stated he believes, as an educator, it is his responsibility to incorporate healthy living lessons into the curriculum, though finding the time to focus on lessons and allowing time for physical activities is a challenge. Kimberly shared as educators, a mandate has been established to meet a certain number of hours for reading, math and other core subjects. Kimberly stated “testing and preparing for testing consumes any spare time available.” Paul suggested reducing the time that has the greatest designated portion of the day, such as reading, to maybe 10 minutes a day, and use that time to allow students to participate in a physical activity and offer a healthy alternative snack.

Molly explained “a barrier in some students who want to be physically active is transportation.” Molly stated some students do not always have a way home from school or community supported activities so therefore the sports and other activities that are available to students after school are served by only a handful of students. Molly, Sandra, and Emily shared they have thought about the severe need for a prevention and

intervention obesity program at Tiger Elementary though they have never shared this concern with an administration or the School Improvement Team. Molly, Kimberly, Sandra, and Emily are all members of the School Improvement Team. Sandra who is the chair of the School Improvement Team stated she has contemplated on the need of obesity prevention at Tiger elementary due to the increase of obese students in the last couple of years since she has taught at Tiger Elementary.

One area that participants agreed needs to be reviewed is the reward system in the school. Paul stated “when students are rewarded they are often given pizza parties, ice cream parties, cake, and other unhealthy snacks.” Roland perceived rewarding students with food is teaching students that these types of food are good for them because they are being rewarded for an accomplishment in the school. Morris described a need to incorporate obesity prevention in the classrooms by enforcing healthy environment policies for all classrooms. Morris specified many of his coworkers give sugary treats to students on a daily basis. He believes this teaches students it is beneficial to eat candy every day because teachers give it to them. It also does not give students time to earn a reward. As an alternative of candy or food treats, a suggestion was made to offer stickers, homework passes, dance parties, stationary or desirable kid friendly items would be a better alternative than candy. Roland explained “the obesity epidemic in our nation is terrible and it is evident at Tiger Elementary.” He sees a desperate need for obesity programs to help obese students. Even though he believes it is a teacher’s job to educate the whole child, healthy eating habits must begin at home. Sandra expressed most parents are not educated on the importance of consuming a healthy diet.



**Administrator response.** When probed about obesity programs at Tiger Elementary the administrator replied the school does not have a designated program to work with obese students, though the need for a program such as this is vital. George expressed “the number of obese cases has increased each year with the highest percentage being the American Indian students. Collaborating with tribal affiliations to inquire of obesity programs for schools an attempt to create obesity prevention programs is a strategy the administration has thought of. George stated “obesity intervention programs have been discussed district wide though the discussion with school personnel about this issue in Tiger Elementary has not been discussed.” The administrator foresees barriers to obesity programs such as time restraints, funding and cultural relevant programs.

**School nurse.** The school nurse stated she believes an obesity prevention program will be beneficial, as well as an intervention program. Preventing obesity is crucial in decreasing the number of obesity cases. Other schools have implemented obesity prevention programs and the outcomes have been successful. If students are involved in physical activities that are fun, the students will perceive the activity as play rather than exercise. Intervention programs are beneficial but teaching all students how to live an active healthy life is a lesson that will benefit each student for his or her lifetime. Tabitha shared “I have been the co-chair of the American Indian club for five years. There has not been a discussion about health or weight issues in the American Indian club since I have been co-chair.”

**Social worker response.** When discussing obesity programs, the social worker described a need to incorporate parents and families in obesity programs. Barbara shared “the majority of the school population is American Indian students who live in poverty.” It is more difficult for a parent in poverty to buy healthier foods versus a dollar burger at McDonald’s. The observation of obese American Indian students at Tiger Elementary are often students who display low self-esteem, craving for additional unhealthy food, less exercise and overall very withdrawn from their peers. The majority of obese students come from obese families. When discussing programs to address obesity, the social worker explained the first step the school should consider is educating parents on the importance of healthy living. One school incorporated healthy cooking classes and offered free aerobics for families in the school gym. This program taught parents how to purchase and cook healthy meals. Families were given assignments such as playing ball with their family and preparing a healthy meal together. When families begin obesity prevention and intervention programs at home, school personnel have the opportunity to enrich what they are already doing at home.

**School psychologist response.** During the interview the school psychologist shared how parents have asked if any programs are available to help their child with obesity. Each year someone, often American Indian families, request the school psychologist to talk with a child about eating healthier and exercising. Creating a program that addresses the importance of a healthy lifestyle at Tiger Elementary may decrease the number of obesity cases in the school. The American Indian club discusses issues facing American Indian students and school and involves the community in

projects. Bentley suggests “working with the American Indian club to create an obesity prevention program that focuses on American Indian students and the community.”

**Cafeteria manager.** The cafeteria manager was asked about childhood obesity programs in the school. She stated she feels the schools needs to immediately put a program in place. Suzanne stated “not only students but staff need a program in place to prevent obesity. Several school staff has asked for a healthy alternative to the current school lunch, such as a salad bar.” Suzanne suggested offering a salad bar and healthier alternatives to the pizzas, chicken nuggets, and other processed food would help not only students but staff consume healthier meals at school which in return will allow school personnel to model healthy food choices. Implementing a prevention program for school personnel, as well as students, will help obese students have positive role models at school.

**Summary.** The school personnel interviewed expressed a need for obesity prevention and intervention programs at Tiger Elementary. The social worker expressed a need to incorporate families in an obesity program to assure students are being taught healthful living practices at home and school. The cafeteria manager suggested including staff as well as students in an obesity prevention program that would include offering healthier food choices in the cafeteria. The responses of the school personnel suggest that Tiger Elementary recognizes a need for obesity prevention and intervention programs.

### **Evidence of Quality**

Evidence of quality was upheld in this study through several methods. Reliability was verified through the use of interviews with 12 types of school personnel, sustaining a

data base, and maintaining evidence. A researcher's interview guide was used for data collection during the interviews (see Appendices A and B). The interview transcript from Instant messenger was printed and transcribed. After Peer debriefing was used as a means to improve the validity for this study and ensure accuracy of the outcomes. Each participant was provided a copy of his/her interview summary for review. Summaries of the interviews were modified as necessary based on the participants' feedback. In order to validate the findings, triangulation was used. The triangulation of data included interviews with school personnel who held various positions in the school, American Indian and non-American Indian personnel. Direct quotes were used from the data collection to support the findings and allow the reader to gain an understanding of the perspectives of the school personnel.

### **Summary**

This section was a presentation of the findings of this qualitative case study. The case study took place in a rural elementary school. To study the perceptions of childhood obesity at Tiger Elementary interviews with six teachers, a physical education teacher, an administrator, a social worker, a nurse, a school psychologist and a cafeteria manager two counselors, and two administrators were conducted. The findings were reported under seven themes: (a) overall concerns for obese students, (b) lack of personnel training on childhood obesity, (c) school personnel's expectations of obese students, (d) school personnel's interactions with obese students, (e) perceptions of cultural differences among obese students, (f) social and emotional perceptions of obese students, and (g)

lack of prevention and intervention programs for obese students. Section 5 will contain conclusions, implications, and recommendations based on findings from this case study.

## Section 5: Discussion, Conclusions, and Recommendations

Childhood obesity has tripled over the past 3 decades (CDC, 2014). The rural school in which the site of this study is located is no exception to this data. According to the [publicschools.org](http://publicschools.org) website the case school has not received a passing grade on the state health and academic report for the past 10 years. Even with the identified concerns of childhood obesity, which include asthma, Type 2 diabetes, heart, liver and kidney problems, high blood pressure, and low self-esteem, the educational effects, including school personnel's perceptions of childhood obesity, remain undetermined. On the contrary, spontaneous discussions with local educators revealed that school personnel had minimal knowledge about childhood obesity at Tiger Elementary. Subsequently, the fact that the school district and the case school provide very little professional development for educators on the topic of obesity, this study reinforced a first step in understanding a school's perception of childhood obesity.

The theoretical foundation for this study was Bronfenbrenner's (1979) ecological systems theory. This theory explains how a child's environment affects the development of the child's physical, social, emotional and language through the influence of family, friends, school and teachers (Feinstein, Driving-Hawk, & Baartman, 2009). The precise facet of the theory applied in this case study was the microsystem, which consist of the influences and experiences students have with his or her school, peers, and academics. The purpose of this case study was to explore the perspectives of twelve school personnel to add to the empirical literature on the topic of childhood obesity. To lead in the data collection of participants' perspectives, Bronfenbrenner's (1979) ecological systems

theory was preferred, since it is a better fit to the study of influences of students by school personnel. A case study was selected to analyze the inclusive perspectives of each school personnel. A qualitative approach was chosen over a quantitative one since the literatures on school personnel's perspectives at the case school were undetermined. I conducted interviews using Instant messenger and followed up with peer debriefing and allowed for the option of each participant to view his or her interview transcript. The composed data were evaluated to discover answers to the guiding research questions. The research questions that guided this case study were as follows:

1. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' social development?
2. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' emotional development?
3. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' academic development?
4. How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' physical development?

The participants consist of 12 school personnel. All the participants held various positions in the school. All school personnel were invited to be in the study by e-mail.

School personnel who agreed to participate in the study were asked to read the consent form and reply with an email using the words “I consent.” Each interview occurred individually after school using Instant Messenger. Before each interview began, a pseudonym was assigned to each participant to assure confidentiality. Participants answered 10 guiding questions that were related to the research questions, involving topics like the physical, social, emotional, and academic adverse effects of childhood obesity, professional development on the school’s role of childhood obesity, school intervention and prevention programs and American Indian students and childhood obesity.

Throughout the study, data obtained indicated that school personnel’s understanding of childhood obesity led to all seven of the themes acknowledged in this case study. The data discovered the school personnel desire professional development courses that highlight the American Indian culture and clearly explains the adverse effects of not only the physical but the social, emotional and academic effects of childhood obesity. The seven themes that derived from the data analysis are listed in the next part of this section. Section 5 is a presentation of the interpretations of the findings, implications for social change, recommendations for action, recommendation for further study, and a summary of the study which will include a reflection on the researcher’s experience with the research development.

### **Limitations of the Study**

As the researcher of this study, I need to take into consideration certain limitations of the case study. Participants were e-mailed an invitation to become a participant in the



study. School personnel that responded to the invitation may have been the school personnel who perceive schools have a role in childhood obesity. School personnel that did not perceive schools have a role in childhood obesity may have opted out of the study, which would subsequently exclude those teachers from the study. The participants may not represent the majority of elementary school personnel. The sample of school personnel from the rural southeastern part of the United States may not be representative of school personnel nationwide. Finally, the data were reported using self-reported data from school personnel who all held various positions in the school.

### **Interpretation of Findings**

The findings reflect the perspectives of 12 school personnel's understanding of childhood obesity. The seven emerging themes from the participants' perspectives were: (a) school professional's overall concerns for obese students, (b) lack of personnel training on childhood obesity, (c) school personnel's expectations of obese students, (d) school personnel's interactions with obese students, (e) perceptions of cultural differences among obese students, (f) social and emotional perceptions of obese students, and (g) lack of prevention and intervention programs for obese students. The themes emerged from data collected during the interviews as described in detail in Section 4. The conclusions summarize the answers to the four research questions created for the study. The school personnel's perspectives were in direct correlation with the literature review regarding topics of childhood obesity. Bronfenbrenner's ecological systems model was linked to the data analysis, which presented a further comprehensive theoretical foundation for this study. This empirical research was essential, based on the deficit of

studies revealed by a review of the professional literature, to offer a greater understanding of the perspectives of school personnel regarding their understanding of childhood obesity in the case school.

### **Theme 1: Overall Concerns**

The first theme that was derived from the data analysis was the theme of *overall concern* for obese students. The participants expressed a concern for the overall well-being of an obese student's physical, social, and emotional and academic development. The physical development of obese students was the leading emphasis of concern among participants. Tabitha, the school nurse explained "health complications that were once typically found in adults are being diagnosed in children at earlier ages." Health complications such as asthma, diabetes, sleep apnea, heart conditions, high blood pressure, high cholesterol and nonfatty liver disease have been diagnosed in children as young as age 4 (Castetbon & Andreyeva, 2012; Gurley-Calvez & Higginbotham, 2010). The health complications students are experiencing are frequently delaying appropriate physical development in students. Childhood obesity has also been associated with the onset of early puberty (Castetbon & Andreyeva, 2012).

Social developmental concerns were the second progressive area discussed by participants. Molly stated, "social skills are imperative in order for children to grow into adults who are able to interact appropriately with others and function in society." Bentley shared that students who lack social skills have a hard time being a team player and maintaining constant relationships as an adult. This supports researchers who have

documented that students who lack social skills are often shy, withdrawn and do not have many friends (Lederer, King, Sovinski, Seo, & Kim, 2015).

Emotional development was the third overall concern among the participants. Low self-esteem, low self-worth and a sense of loneliness were noted to be associated with childhood obesity. George explained, “obese students are typically sensitive and are often paranoid and feel others and making fun of his or her obesity”. Lessons to teach students how to implement self-calming techniques have been implemented into the school’s curriculum. Such actions are wise as Lee (2016) found that depression is the leading emotional delay in obese children.

Academic development was the fourth overall concern conveyed by the participants. Paul shared information about student performance in class. He said that obese children will frequently “sleep in class, not participate in the class or refuse to complete homework assignments.” The lack of class participation results in a low participation grade. Morris shared he must give a low score to obese students who do not attempt the physical fitness test during physical education classes. Barbara explained excessive absences may lead to academic failure because students may have a difficult time learning the information that was missed during their absence from class. According to Florin, Shults, and Stettler (2011), academic failure associated with childhood obesity may be a result of obese students obtaining excessive absences, receiving low grades for participation and performance and obese students being the class clown and habitually being referred to the principal’s office and losing instructional time.

**Theme 2: Lack of Personnel Training**

The second theme, *lack of personnel training*, focused on the lack of knowledge school personnel has of many physical, social, emotional and academic effects of childhood obesity. Molly shared she would like to understand how childhood obesity can alter a child's physical development. Molly explained by working with kindergarten children she has the pleasure of watching her students develop physically, cognitively, socially and emotionally. Molly specified she would like "to understand how childhood obesity can alter the development of the five domains in which she actively assesses her students." Sandra communicated the need for a professional development on how to communicate with students and families on the importance of a healthy lifestyle. Sandra shared that she "would like professional development on collaborating with families to help obese students be successful in all developmental areas". Sandra added that she has several families in her classroom that she believes would profit from learning the "dangers of obesity." Sandra believed that without a professional development course she may not be able to effectively communicate the precise risks a child has the potential to encounter living with childhood obesity.

Emily commented that with the high percentage of obese students in the school, it is imperative the school personnel be trained on childhood obesity. She stated that "the school needs a professional development on how to incorporate healthy living in all areas of the school." Kimberly discussed a lack of knowledge in all areas that pertain to childhood obesity. Kimberly stated "I have numerous years of experience working with

obese students though I feel inadequate on the adverse effects of obesity.” Kimberly replied she needs training on how obesity impacts an obese student’s life.

Paul revealed the urgent need for professional development of obesity among school personnel. Paul clarified “a lot of school personnel do not understand the medical reasons a student maybe obese.” For illustration, Paul elucidated that he has students with disorders such as Prader-Willi syndrome and downs syndrome. In Prader-Willi syndrome a child has an uncontrollable urge to consume food and never feel full (Dykens, Roof, & Hunt-Hawkins, 2016). Morbid obesity is a common side effect for students with Prader-Willi syndrome even when they are on a healthy diet. There are several disabilities and certain medications that have the negative side effect of uncontrollable weight gain even with proper diet and exercise (Dykens et al., 2016). Paul explained the weight gain in these students will occur no matter how hard the student or family tries to avoid obesity. Paul expressed his frustration with certain school personnel after he was approached with comments about the student’s obesity. Paul desires a professional development course for school personnel to enlighten his coworkers that some students have a medical reason to attribute to his or her obesity. Paul expressed “laziness and lack of parent or school obesity interventions is not always the reason to why a child is obese.”

Bentley described the urgent need for knowledge on the social and emotional development of obese students. Bentley expressed, “school personnel need to acquire training on how to implement strategies to increase obese students’ self-worth and decrease the number of depression cases I receive yearly.” Tabitha stated she believes it would be beneficial if school personnel received training in identifying the physical

adverse effects of childhood obesity. Tabitha stated that if school personnel “were able to refer obese students with physical adverse effects at the onset of the problem instead of waiting until it is out of control, the treatment maybe more successful.” George displayed an urgent need to provide obesity training for all school personnel. George stated “due to the steady increase of obesity in this school, I realize professional development is urgently needed to equip the faculty with knowledge on working with obese students.”

### **Theme 3: School Personnel’s Expectations of Obese Students**

The third theme, *school personnel’s expectations of obese students*, focused on the expectations of obese students. The results of this theme varied among participants. Molly expects obese students to be delayed in their social skills. Molly elaborated that “most obese students I have worked with come into my classroom extremely timid and shy. It is difficult for the obese student to walk in a room and begin to immediately develop a friendship.” Social skills are an area Molly typically expects to focus on when an obese student is in her classroom. Emily described her expectations for obese students as a lack of participation. Emily shared “In my experience working with obese students I often expect the student to need verbal prompts and modeling of appropriate behavior to participate in class.” Emily stated her obese students are often withdrawn and need prompts to actively participate in group projects in the classroom.

Kimberly expected obese students to be either peace makers or peace breakers. Kimberly explained, “my experience with obese students have been from two extreme outcomes. I expect obese students to be very shy and polite or bullies.” Kimberly explained she typically expects obese students to be bullies in an attempt to not be the

target of a bully due to his or her obesity. Roland shared he expects obese students are capable of doing all classroom work but he or she refuses to participate due to the added attention on the student. Roland explained that “I have observed obese students who are very smart though they refuse to participate in class and never turn in homework assignments.” Roland felt this occurs in an attempt to not draw extra attention to themselves such as raising his or her hand to ask or answer a question. Paul expects his obese students to be tired and sleepy during class. Paul shared “a common problem I have amongst my obese students is the lack of participation and obese students falling asleep.” Paul discusses these issues with parents who often state the student is on a medication that makes the student sleepy during the school day.

Morris had the expectation that obese students are capable of participating in all physical activities though many do not put forth an effort. Morris shared he enters the classroom with the expectation that the obese students are able to at least attempt all physical fitness tests. Morris explained, “I often have obese students tell me the physical education assignments are too hard for them to participate before they even try to participate in the physical activity.” Contrary to the other participants, Sandra stated “I do not have any expectations for obese students that are different from any other student in my classroom.” Sandra shared she requires the obese students to be held accountable with the same standards as all the other students in her classroom. Sandra does not provide any special accommodations due to a child’s obesity.

#### **Theme 4: School Personnel's Interactions With Obese Students**

The fourth theme, *school personnel's interactions with obese students*, focused on how school personnel affectively interact with obese students. Sandra shared obese students are not treated any different than any other student. Morris described his interaction with obese students as a positive learning experience. Morris replied, "I try to make every moment in my day be a teachable moment. With obese students I treat them the way I would like to be treated with dignity and respect." Morris replied he is discreet with modifications that have to be put in place for obese students. For example Morris made a game to where he chooses an obese child to be the star student and the prize was to sit in the oversized desk. Morris made the student obese student feel special to sit in a different seat instead of embarrassed that his desk was not like his peers. George stated "I make an effort to communicate with obese students in the hallways as a way to make them feel as if they belong to our school family."

The cafeteria manager indicated since the implementation of the CEP program she has a greater opportunity to become a positive influence on more children at the beginning of each day. Suzanne explained the CEP program has assisted many families with the expense of meals and lessen the burden of completing numerous forms of paperwork. Since the program began Tiger Elementary has had a 25% increase of students eating breakfast. Suzanne described, after a brief greeting she suggest healthy fruits and vegetables by approaching the student in a way that does not offend the student.



According to the conceptual framework of Bronfenbrenner's (1979) ecological systems model, teacher-student relationships directly influence a child's decision making process (Bendro, 2006; Feinstein, Driving-Hawk, & Baartman, 2009; Murray & Zvoch, 2011). The finding that school personnel have a positive relationship with obese students is perilous as literature displays in the microsystem level of the ecological model, habits and routines of student's are often developed by observing teachers and school personnel (Bronfenbrenner, 1989; Bronfenbrenner, 2005; Coatsworth et al., 2002; Corcoran, Franklin, & Bennett, 2000; Murray & Zvoch, 2011; Stacks, 2005). Participants in this study specified encouraging relationships with obese students, which proposed obese students are treated in a positive way.

#### **Theme 5: Perceptions of Cultural Differences**

The fifth theme, *perceptions of cultural differences*, centered on school personnel's perceptions that there are racial differences in how cultures perceive obesity. Molly shared as a kindergarten teacher she is required to discuss concerns with parents. One topic of concern Molly dislikes is talking to parents about a child being obese. Molly shared when she confronts parents about childhood obesity she typically receives a different response amongst cultures. Molly expressed she typically received the response "my child has baby fat or is predestined due to genetics to be overweight," by American Indian, Hispanic and African American families. The Caucasian and Asian families often demand details on how to prevent further weight gain.

Kimberly expressed the frustration of communicating with parents' about following up with a pediatrician when the students body mass index is above average.

Kimberly stated when she attempts to share her concerns of obesity with certain cultural groups especially the American Indian cultural she receives negative feedback. Kimberly shared an American Indian woman stated, “my child is big boned and will never be skinny. Big boned people are in our DNA and you will never change that. My child does not have a weight problem.” Tabitha proclaims communicating with families on the dangers of childhood obesity is diverse among ethnic groups. Tabitha shared “when I communicate with American Indian families about obesity I am often brushed off and told American Indians have a fat storing gene and no amount of exercise or eating right will change that.” Tabitha elaborated that most of the time the families want to ask questions about the students’ health complications that derived from obesity, and refrain from listening to her explanations on the dangers of obesity.

#### **Theme 6: Social and Emotional Perceptions**

The sixth theme, *social and emotional perceptions*, centered on school personnel’s perception that obese students are often shy, withdrawn, have a low self-esteem, or on the contrary may be very loud, bullies and class clowns. Emily expressed in her classroom obese students frequently are loners and need social stories to encourage socialization. Emily indicated, “I have a buddy system in my classroom and I try to pair an obese child with the most outgoing child as a peer model and to build social skills.” Kimberly stated the majority of obese students in her class only interact with teachers. She perceived the obese students want to be the teacher’s pet so they will have at least one solid relationship at school and avoid social situations with his or her peers. Kimberly voiced the sadness of observing a child who has been diagnosed with clinical

depression. Kimberly stated, “it breaks my heart to observe an obese child coping with depression that repeatedly asks me why he cannot be happy or look like the other children.”

Paul shared in his experience he frequently works with obese students who are loud and class clowns. Paul voiced, “I believe obese students who are loud and class clowns do so to fit in the classroom and create an atmosphere where other students will not get the chance to bully them because of his or her obesity.” Bentley articulated he has an alarming caseload of students who have severe emotional problems. Bentley specified “the majority of students I work with who have been admitted to the hospital for psychiatric issues are obese.” Bentley indicated the majority of his workday is spent talking to students and trying to build self-worth. He also works with obese student on self-calming strategies when the student is overly sensitive and frequently is in arguments with school personnel and peers.

### **Theme 7: Lack of Prevention and Intervention Programs**

The seventh and final theme that derived from the data analysis is the, *lack of prevention and intervention programs*. Molly specified a need for an obesity prevention program. Molly indicated, “early intervention is the key and if obesity prevention methods are introduced at an early age, children are more likely to continue practice a healthy lifestyle.” Sandra sensed an intervention program that included families would be beneficial at school. Sandra specified, “if we implement an obesity prevention program at school and it is not followed at home our work is in vain. I believe a child needs consistency and what happens at school should be continuing at home.” Emily indicated

involving the community and providing resources to assist families in beginning the prevention program would be beneficial. Emily indicated, “most of our families are not able to afford healthy food choices or have transportation to physical fitness activities. I feel that if the community is involved and makes contributions the obesity program will be more successful.”

Kimberly proposed a direct solution be put in place for the students who are currently struggling with obesity. Kimberly stated that it is her duty to educate the whole child and she does not sense adequate steps have been put in place to help her obese students become healthier. She said, “I believe a program should be immediately implemented to help obese students’ lose weight.” Roland shared that he thinks the school should be mandated to provide obesity intervention programs to obese students at Tiger Elementary. Roland elaborated “the number of obese students I see on a daily basis should set off an alarm that an obesity intervention program should be implemented and embedded in the schools daily schedule.” Paul shared the accountability of the common core subjects does not leave time for any extracurricular activities or lessons. Paul stated “to address obesity in my classroom, I incorporate healthy food choices and physical activities in my daily curriculum.” Paul gave the example of his math lessons. He presents healthy food choices and talks about ways food can help or hurt a student’s body. He allows his students to do math problems with pictures of healthy food and songs to allow students to dance and move for physical activity. Tabitha shared implementing obesity prevention and intervention program “will allow students to be fully aware of the dangerous consequences of childhood obesity.”

## Conclusions

The research questions used in this study were designed to understand the perceptions of school personnel pertaining to childhood obesity in a rural elementary school. The following is a summary of the responses to the four research questions. The conclusions of this case study were generated by discoveries of school personnel's perception of childhood obesity resulting from, analyzed data via open-ended interviews, using elementary teachers, an administrator, a nurse, a social worker, a school psychologist, and a cafeteria manager at Tiger Elementary.

### **Conclusion 1: Social Development Can Be Delayed by Childhood Obesity**

This conclusion is related to the first research question which focuses on the development of social and emotional skills. It is comparable to cognitive development in that the effects of initial development are enriched over time (Hunt & George, 2013). The development of social skills promotes students to engage in positive interactions with other people and teaches students how to function in society. Children with low social competence may engage in unhealthy behavior to avoid social situations in which they expect to receive negative social feedback or they may engage in sedentary activities or unhealthy eating to reduce the stress they feel from negative social experiences. This could result in energy imbalance and weight gain if such responses take the form of solitary and sedentary activities or unhealthy comfort eating (Cunningham, 2014).

The school personnel in the study reported that obese students in the case school often have fewer friends and have a difficult time with social interactions during school hours. All 12 participants shared they feel obese students are ashamed of their body

image and instead of being rejected by his or her peers; they choose to become antisocial to avoid the negative social consequences that are associated with childhood obesity.

Three participants reported some obese students become bullies and disrupt to class to eradicate the attention off of themselves. Emily, Paul, Roland, Kimberly, and Morris stated social development is encouraged in the classroom by assigning students to work in peer and group collaboration throughout the day. They all expressed even though the group activities are required most obese students try to find an excuse to work on the group projects alone.

Eight participants shared experiences of social activities where obese students sat alone in the corner. Morris reminisced of asking an obese student to join him during a teacher-student basketball game; however, the student refused recounting that he felt no one wanted him on the team because he was too big to play with the other students and would make the team lose the game. The restraining of social skill development in obese elementary students may lead to complications in developing relationships and collaborating with people.

**Relationship to the conceptual framework.** The ecological system theory corresponds with this study in that it draws attention to the role of a youth's development and how it affects his or her overall development. I selected the microsystem as it correlates with the influences obese students have within their school. According to the ecological model, social skills and making friendships in childhood are part of the microsystem (Bronfenbrenner & Morris, 2006).

**Relationship to the literature.** Over the past 30 years, children's social skills are associated with early academic success (Castetbon & Andreyeva, 2012; Puhl & Latner, 2007; Slining, Adair, Goldman, Borja, & Bentley, 2010; Wentzel & Asher, 1995). Students, who are not able to pay attention, actively participate in class, follow directions and get along with others, are not as successful in school as students who have strong social skills (Cawley & Spiess, 2008). Researchers have presented a compelling link between social emotional development and school success (Jalali, Sharafi-Avarzaman, Rahmandad, & Ammerman, 2016; Janssen, Craig, Boyce, & Pickett, 2004; Peracchi & Arcaleni, 2011; Puhl & Latner, 2007). According to Parízková (2016) and Robinson and Carter (2012), academic performance in elementary school appears to be founded on strong social and emotional skills. In this study, participants shared personal experiences of social delays and childhood obesity. As discussed in Section 4, most participants mentioned obese students are typically shy, withdrawn, and need encouragement to participate in class and group activities.

### **Conclusion 2: Emotional Development May Be Stalled by Childhood Obesity**

This conclusion is related to the second research question which focuses on emotional development that is defined as a child's ability to regulate emotions, control negative emotions, avoid and resolve conflicts, understand and display empathy, and conform to expected behaviors in the classroom (Archuleta, VanLeeuwen, & Turner, 2016; Gately, 2014; Larsen, Otten, Fisher, & Engels, 2014; Latzer & Stein, 2013). Children learn at an early age how to control their emotions and self-monitor undesired behaviors (Michels, Sioen, Boone, Clays, & Vanaelst, 2015; Wu, Kirk, Ohinmaa, &

Veugelers, 2016.). Children who are delayed in the development of emotional skills display academic and behavior problems at school (Kiviruusu et al., 2016; McGregor, McKenna, Gately, & Hill, 2016; Michopoulos et al., 2015; Wong, Ortiz, Stuff, Mikhail, & Smith, 2016). As referred to in Section 4, the participants communicated obese students in the case school were described to typically be nervous, emotionally sensitive, easily angered, depressed, low self-worth and often have feelings of low self-worth. The school psychologist shared most obese students lacked motivation, self-control, perseverance and often felt distress. All participants conveyed there is a sense of helplessness and hopelessness among the majority of obese students.

**Relationship to the conceptual framework.** The school is located on the microsystem level of the socioecological model and the interaction a child has with school personnel has an influence on a child's emotional development. Undesirable interactions with school personnel, adverse influences and stressors in the microsystem can have long lasting effects on a student (Swick & Williams, 2006). A disruptive ecology can often stunt emotional development along with destructive emotional and behavioral impacts for students. "Bronfenbrenner believed that a child's emotional and behavioral problems were created as a result of problems within the microsystem (Brendtro, 2006)."

**Relationship to the literature.** Habitual low self-worth and depression frequently enhanced by poor school performance, often leads to feelings of rejection, failure, low self-esteem, despair, and sadness in obese students (Aparicio, Canals, Arija, De Henauw, & Michels, 2016; Lee, 2016; Harrist et al., 2016). Obese children often become distant and do not socialize and participate in events he or she once took delight in (Lee, 2016).



Emotional despair in obese students often leads to additional weight gain and being withdrawn from friends and family members. Emotional development in young children is essential for the development of a stable mental health in adulthood (Guerrero et al., 2016).

### **Conclusion 3: Academic Success May Be Altered by Childhood Obesity**

This conclusion is related to the third research question which focuses on the increase in research to discover the correlation between childhood obesity and academic performance. Students who are physically active and consume a well-balanced diet that consist of fresh fruits and vegetables have increased memory, higher test scores, and have an overall greater academic success compared to students who are inactive and consume a diet filled with processed foods. As denoted in Section 4, the relationship of academic success and childhood obesity was an area unknown to many participants. Eight participants suggested he or she sensed obesity may have an effect on academic performance though vagueness was present in the data collection. Four participants expressed their perception of the correlation of academic success and childhood obesity was the result of obese student's lack of classroom participation, motivation and willingness to learn.

**Relationship to the conceptual framework.** According to the ecological systems model, when students have difficulties within his or her immediate environment, it is impossible to learn (Bronfenbrenner & Morris, 2006). Distractions from peers, family members, friends, or school can prevent a student's academic performance and can lead to academic failure (Wentzel, 1999). When a student's microsystem has been adversely

affected all areas of a student's life are undesirably affected (Bronfenbrenner & Morris, 2006). A student will not be academically successful until the microsystem is in balance within the student's immediate environment (O'Connor & McCartney, 2007).

**Relationship to the literature.** Children's brains and body grow rapidly in childhood (Wenger & Lovden, 2016; Wittberg, Northrup, & Cottrel, 2009). Consuming a healthy diet along with physical activity aids in a child's brain development, which in turn increases a student's academic performance. Students who partake in daily physical activity and consume nutritional meals have a greater ability to focus, complete assignments, comprehend information, follow directions and recall information previously given (Ebbeling, Pawlak, & Ludwig, 2002; Hassevoort, Khan, Hillman, & Cohen, 2016; Schwartz & Puhl, 2003; Wenger & Lovden, 2009; Wittberg, Northrup, & Cottrel, 2009). The literature review of the correlation between academic performance and childhood obesity may be of interest to families, physicians, educators, and lawmakers to improve the academic success of students in schools.

#### **Conclusion 4: Physical Development May Be Slowed Down by Childhood Obesity**

This conclusion is related to the fourth research question which focuses on children's physical development. Children require adequate nutrition and physical activity to appropriately develop (Ludwig, 2016). A child's physical development is crucial the first 8 years of his or her life (Haynes & Browne, 2016; Wang et al., 2016). Instead of normal development many obese students are dealing with physical complications such as metabolic syndrome, high blood pressure, Type 2 diabetes, asthma, sleep apnea and non-alcoholic fatty liver disease (Haynes & Browne, 2016; Ludwig,

2016; Wang et al., 2016). Physical development in children is often stalled in obese children due to health complications associated with childhood obesity (Wang et al., 2016). As referenced in Section 2 in the literature review and the data analysis in Section 4, all participants agreed that childhood obesity has an adverse effect on the physical development of obese students. The early onset of puberty, nonalcoholic fatty disease, metabolic syndrome and sleep apnea were not mentioned by participants during the interviews. Every participant shared a fear of obese students experiencing an early death or an adult life that was confined to health complications.

**Relationship to the conceptual framework.** According to Bronfenbrenner and Morris (2006), the inclusive wellbeing of an individual is contingent on the vigorous interaction and influences of genetic, developmental, social, and environmental factors that interact over the life course of individuals. Cultural and community factors influence eating behaviors and physical activity levels. The microsystem level suggests that a student's physical development may be influenced by the people in student's direct environment such a teacher who enforces daily physical activity at school.

**Relationship to the literature.** Childhood obesity adversely affects the physical development of children (Butte et al., 2016; Hawkins et al., 2016; Murer et al., 2016). Health complications that were once considered adult issues are now common in children who are obese. Obese children are beginning to experience the onset of puberty, chronic heart, lung, pancreas and liver diseases at very early ages (Hawkins et al., 2016; Haynes & Browne, 2016). The life expectancy of obese children continues to decline as obese

students are dealing with health complications that follow them into adulthood (Ludwig, 2016; Wang et al., 2016).

### **Implications for Social Change**

Understanding a school's perspective of childhood obesity, specifically among American Indian students, might lead to social change locally, within the region and nationwide. At the time of this study, the existing literature showed numerous examples of adverse effects of childhood obesity, though the case schools perspective of childhood obesity was undetermined (Derscheid et al., 2014; Dolores, 2008; Green et al., 2012; Loughrey, 2012; Mazzeo et al., 2012 and Odum et al., 2013). Findings from this case study can attest vital to the prevention and intervention of childhood obesity precisely in school settings. This study provides indications of the adverse effects of childhood obesity and how it can affect the social, emotional, physical and academic development of elementary students.

Typically, case studies put an emphasis on obesity in middle and high school. It is imperative that research on childhood obesity highlights elementary school students who are vigorously undergoing the development of his or her social, emotional, physical, and cognitive skills. Optimistically, from the results defined in this case study, the public health sector and school systems will create or implement prevention and intervention obesity programs in the elementary school settings. Utilizing the socioecological model, which considers the influence of the student's environment on his or her behavior, childhood obesity can be addressed properly. Bronfenbrenner's (1979) ecological system is an effective model that encourages prevention and interventions methods to prevent

childhood obesity by engaging alterations in the environment that positively influence behaviors (Bronfenbrenner & Morris, 2006). According to the ecological systems theory, if teachers' eating habits are unhealthy, it will indirectly influence the children's eating patterns, as the students will tend to mimic the eating patterns of the teacher and school personnel (Odum et al., 2013; Mazzeo et al., 2012).

This study may be of importance locally, to the case school, school board and the local American Indian tribes. Nationally this case study may influence policy makers, school boards, educators, parents, health professionals and tribal affiliations. Locally, this study may open a line of communication between the school personnel, students, families and tribal leaders. The participants provided many suggestions on implementing prevention and intervention strategies; henceforward, helping students by educating the whole child, instead of solely concentrating on academic success. Other valuable information that school personnel provided was the perception American Indian families have of childhood obesity. Cultural factors shape the larger context of the socioecological model. The socioecological model highlights how the connections between students and families within the school context can alter the school relationships and ultimately educational outcomes (Bajaj, 2009). An ecological context may be open to cultural expression when the culture is the majority of the school. When students have a sense of belonging he or she is more apt to develop relationships in the microsystem level of the ecological model (Machado-Casas, 2009).

### **Recommendations for Action**

The responses of the 12 participants generated six recommendations. During the interviews, participants seemed very eager to suggest ways to prevent childhood obesity in the case school. The participants desired their opinions to be perceived by the school and local school board. The six suggestions made in this section were generated in collaboration with the participants.

#### **Recommendation 1: Provide Required Professional Development for School Personnel**

The first recommendation that was suggested by all participants was a required professional development on childhood obesity for all school personnel. Many participants expressed a desire to understand how childhood obesity impedes the developmental areas of a student's life. Several participants had a mutual perception that all school personnel did not perceive childhood obesity prevention as a necessity, and the exposure to the adverse effects may change his or her perception. One participant shared all school personnel do not treat obese students equally and suggested sensitivity training on how to work with obese students is essential.

#### **Recommendation 2: Provide Alternatives to Food Rewards and Celebrations**

The second recommendation is to offer a healthy alternative to food rewards and celebrations. It is suggested that offering non-food items such as jump ropes, hula hoops, balls, stickers, stationary, bubbles, markers, and educational games as an alternative for individual rewards. As a classroom or school the suggestion was made to have a school dance or fun fitness day, as an alternative to ice cream and pizza parties. For holiday and

birthday festivities celebrated in the classroom, it is recommended the case school enforces healthy food alternatives to the typical menu of chips, cupcakes and soda or fruit punch.

### **Recommendation 3: Reduce Mandatory Time of Core Subjects by Five Minutes**

Time restraints were the notable barrier to implementing a prevention program conveyed by all participants. Reading, writing, and math have a required number of minutes that educators must teach as mandated by the local school board. It is recommended that the number of minutes required by each core subject be reduced by 5 minutes. This reduction of time would allow 15 minutes in the school day to implement an obesity prevention program that comprises teaching healthful living practices and participating in daily physical activities.

### **Recommendation 4: Write a Grant to Provide Healthy Snacks**

The fourth recommendation was to write a grant to expose students to a variety of healthy foods. With the implementation of the CEP program it allows for schools to be reimbursed for food. It is suggested that the school write an additional grant to receive fresh fruits and vegetables. The healthy snack could be offered to students in the midmorning or afternoon. The grant would provide new exposure for students to fruits such as kiwi and vegetables such as asparagus.

### **Recommendation 5: Collaboration with Families**

The fifth recommendation was to collaborate with school personnel and families to offer suggestions on meal preparation and physical fitness. It was recommended that workshops could be held by the cafeteria manager and local dieticians to instruct families

on healthy meal preparation. The physical education teacher recommended a fitness night that would include family aerobics and instructions on how to incorporate physical fitness with families at home.

### **Recommendation 6: Tribal Liaison to Create Obesity Prevention and Intervention Programs**

The final recommendation was creating a liaison with the local tribal agencies and the case school. A liaison may be able to assist the school in creating a culturally relevant obesity prevention and intervention program that embraces the American Indian culture. The liaison may possibly incorporate families and the community to ensure the environmental influences experienced by a student are aware the benefits of an obesity prevention and intervention program.

The data were analyzed and presented in summative form, to better understand the school personnel's outlooks provided during interviews. The data analysis demonstrated that the Tiger Elementary participants desired a comprehensive understanding of childhood obesity. Barriers of time restraint and the perception of the school's role in childhood obesity were communicated by the school personnel. The results also revealed that school personnel desire families to take more accountability in the role of childhood obesity by awareness of the adverse effects of childhood obesity.

This study's results can be disseminated through publication in a peer reviewed, educational journal or presented at a professional development conference or seminar. This study's results can also be disseminated through the Internet-based health resources



for increasing public awareness of childhood obesity. A copy of the study will be placed in the principal's office, the local school board and the office of the local tribal agencies.

The discoveries of the case study may refer nationwide to teachers, administrators, social workers, school psychologist, school nurses, cafeteria managers, school boards, health professionals, and American Indian tribes. Policy makers who set mandates on testing and regulate how much time is spent on core subjects would benefit from the results of the correlation between academic achievement and childhood obesity. The local school board may also benefit from the results of the study as the American Indian population is the majority of the county.

### **Recommendations for Further Study**

I sought to understand how school personnel perceive childhood obesity. Due to the limited scope of this study, the results cannot be generalized to include the perceptions of all school personnel in the school district or other districts across the state or other states in the country. For that reason, it is recommended that this study be replicated using a larger population of school personnel who work with American Indian students. Another suggestion would be to include school personnel from urban areas. As conferred in the recommendations for action located in this section, school personnel may lack knowledge of childhood obesity. Succeeding professional development, a subsequent study may possibly be performed to collect data for comparison about how school personnel perceive his or her role in childhood obesity. Cultural and family influences on childhood obesity may also be an interesting area for further study by looking at how American Indian families perceive childhood obesity. This type of study

could be helpful to school districts as they seek to create a culturally relative obesity prevention and intervention program.

### **Reflection**

Prior to leading the interviews, I spent time in reflecting on my personal perceptions of childhood obesity, both as an educator and a child who struggled with obesity, in an effort to eliminate my own opinions and bias. During the interviews, I abstained from making comments or sharing any type of childhood obesity experiences with participants until the participants had completed the interview protocol. Following the interview protocol and the accompanying probes was obliging in my determinations to remain unbiased throughout the interview process. As the researcher in this study, I found the process to be personally perplexing, yet exciting. The participants were eager to share their perceptions of childhood obesity, both the positive and the negative, and how school districts could intervene to improve the overall well-being of obese students. As a result of this study, I have clarified my own views of childhood obesity, in particular, as to how the school personnel perceive childhood obesity.

### **Conclusion**

The deficiency of empirical knowledge relating to school personnel's understanding of childhood obesity along with the need of school districts to better understand the role of schools in childhood obesity served as problems for this study. As a result of the aforementioned problems, schools are seeking to determine if childhood obesity has a direct correlation on the development of a student's cognitive, social, emotional and physical skills. According to Ahmed, Ong, and Dunger (2009), it is

essential that children have a combination of physical, cognitive, social and emotional skills to succeed in school. In an attempt to address this problem, I used the qualitative methodology of a case study to convey the insights of school personnel on childhood obesity. Analyses revealed that school personnel are willing to participate in professional development to gain a better understanding of childhood obesity.

Based on the analysis of the data, school personnel are likely to support a childhood obesity prevention and intervention program, yet they are overwhelmed by state mandates to assure certain core curriculum standards. Integrating health lessons and physical activity within core subjects may reduce the time restraint that was listed as a barrier for school personnel. While this study shows that a formal prevention or intervention program has not been established several participants stated that they provide obesity prevention methods by role modeling a healthy diet and participating in physical activities with the students. Being informed of the school personnel's request for more information on childhood obesity, the administration and local school board can support the school personnel in creating a healthy environment where students have the opportunity to acquire lifelong skills that promote a healthy lifestyle.

The results of this case study are anticipated to contribute to positive social change by facilitating current and future students, educators, administrators, school boards, American Indian tribal affiliations, and other community stakeholders in this school to understand the perspectives of Tiger Elementary School's personnel more extensively. The findings of this study recommend school systems provide professional development on childhood obesity to all school personnel, provide alternatives to food

rewards, reduce the time allotted for core subjects to allow time to teach healthy living and collaboration with tribal agencies and the community to decrease obesity. A progressive social change may possibly be conveyed to other schools as they may perhaps begin to collect data on school personnel's perceptions and the effects that childhood obesity may have on a students' social, emotional, physical and academic development. The data generated from the voice of the school personnel may lead to the implementation of obesity prevention and intervention programs to help obese students develop into healthy productive citizens in society.

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## Appendix A: Interview Guide for School Personnel Except for Cafeteria Manager

**Pseudonym of Interviewee:** \_\_\_\_\_

**Position in school:** \_\_\_\_\_

**Date/time of interview:** \_\_\_\_\_

**Member or non-member of tribe:** \_\_\_\_\_

**Topic: Understanding a School's response to Childhood Obesity**

**Good Afternoon. Thank you for participating in this research study. (Brief description of project) The purpose of this interview is to gain a greater understanding of the effects of childhood obesity has on students' social, emotional, academic and physical development. I want to reassure you that your responses will be kept confidential.**

1. What type of training or professional development have you received on the identification, prevention and intervention of childhood obesity?
2. What types of obesity prevention and intervention programs have been implemented in your school? Can you explain how the Community Eligibility Provisions (CEP) Healthy Hunger Free Kids Act 2010 plays a role in your school?
3. To what extent, if any do you feel a responsibility to play a major role in childhood obesity prevention?
4. Explain how you may incorporate healthy living in your daily interaction with students?
5. Explain your schools reward systems for good behavior, academic achievements and classroom celebrations?
6. Tell me what you know about social and emotional adverse effects of childhood obesity? (b) Do you feel the adverse effects will have an impact on the student's academic performance?



7. Tell me what you know about physical adverse effects of childhood obesity? (b)  
Do you feel the adverse effects will have an impact on the student's academic performance?
8. Can you tell me some of your thoughts about adverse effects of childhood obesity among American Indian students?
9. Explain how your school addresses childhood obesity with American Indian students and families?
10. What challenges do students at Tiger Elementary school face in regards to physical activity, a balanced diet and obesity prevention programs? What have you observed with obese American Indian students in regards to their social skills and self-esteem?

## Appendix B: Interview Guide for Cafeteria Manager

**Pseudonym of Interviewee:** \_\_\_\_\_

**Position in school:** \_\_\_\_\_

**Date/time of interview:** \_\_\_\_\_

**Member or nonmember of tribe:** \_\_\_\_\_

**Topic: Understanding a School's Response to Childhood Obesity**

**Good Afternoon. Thank you for participating in this research study. (Brief description of project) The purpose of this interview to gain a greater understanding of the effects of childhood obesity has on students' social, emotional, academic and physical development. I want to reassure you that your responses will be kept confidential.**

1. As the school cafeteria manager, how important is nutritional health to your school?
2. How are nutrition standards implemented to meet the district, state and national health guidelines? Can you explain how the Community Eligibility Provisions (CEP) Healthy Hunger Free Kids Act 2010 plays a role in your school?
3. Explain how the daily meals are chosen for students?
4. Describe the typical meal in a student's day?
5. What is your role in coordinating and implementing a balanced diet for student's in your school?
6. What type of training or professional development have you received on the prevention and intervention of childhood obesity?

7. If training or professional development on childhood obesity has been received describe the time frame and contents of the course or workshop?
8. What if any changes have you noticed in the overall health of students in your school?
9. Describe the eating patterns that you have noticed of students in your school?
10. Explain if you have recognized any difference in the eating patterns of American Indian students in your school?

## Appendix C: Informed Consent

My name is April Goins-Jones. I am a graduate student at Walden University, conducting this research project as part of the Doctorate in Education (Ed.D) program. The purpose of this case study is to explore how school personnel address the effects of obesity on students' social, emotional, academic and physical development. If you choose to participate in this study, you will be asked to participate in an interview. Your responses will remain confidential. Only I will have access to the interview data. When results of the data are reported, your name or school's name will not be revealed. The interview should take 45-60 minutes after school using Facebook Instant Messenger. If you are uncomfortable during the interview, you are free to not answer a particular question or withdraw at any time. You can choose whether to participate or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. There are no direct benefits to you for completing the interview, although it is hoped that results may prove helpful to school personnel toward better understanding of the problem of childhood obesity in schools. If you have any questions about the study, or if you have concerns about obesity in general and would like additional information or resources, please feel free to call me at [REDACTED] or if you have questions about your rights as a participant in this research, you may call the Office of University Research, Walden University at (562) 985-5314. If you agree to participate, please sign and print your name and date on this form in the space provided below.

Signature \_\_\_\_\_ Date \_\_\_\_\_  
Printed name: \_\_\_\_\_

## Appendix D: Invitation to Potential Participants

Date

(Pseudonym of Teacher/Cafeteria Manager/School Administrator/Nurse/Social Worker/)

Dear (Name of School Personnel),

I am currently working towards my Ed.D at Walden University under the supervision of Dr. Billie Andersson. The topic of my research is Understanding a Schools Response to Childhood Obesity. The research will involve interviewing faculty members who work with students and have worked with students from an American Indian tribe about their insights of childhood obesity. All the information that I collect will be confidential: names will not be used in reports of the research. I will provide you with you a consent form D and ask you to sign and date the form. This consent form will outline background information, voluntary nature of the study, procedures, risk and benefits of the study, compensation, confidentiality, and contact information. At completion of the research, I will supply you with the results of the study and talk with you about what I have found, if you so wish. The study will be cleared by the Institutional Review Board (IRB) to ensure that the study meets ethical and federal regulations. You are, of course, free to discuss your participation with research study staff (April Goins-Jones or Dr. Billie Andersson) at any time. I hope that you will agree to participate in my research study. If you decide to participate, please complete the form and return it to me as soon as possible. If you have any questions or concerns, please feel free to email me at april.goins-jones@waldenu.edu.

Sincerely,

April Goins-Jones, Ed.D Student, Walden University

## Appendix E: Summary of Instrumentation Plan Steps

Questions	Defining the population	Gathering the data	Analyzing the data	When to collect the data	Where and who will collect the data
How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' social development?	K-5 <sup>th</sup> grade teachers, special education teacher, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager	I will conduct individual interviews through Instant messenger using the interview guide to ask questions about the adverse effects of childhood obesity.	Typological coding will be used to find common words, phrases and notes used from the interview guide. NVivo 10 will be used to create themes that derive from the data.	After school hours at a time convenient for all school personnel, and a time that does not interfere with planning, teaching or any other required school duties.	I will conduct the interviews and will be the only one who collects Data will be collected using Instant Messenger.
How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' emotional development?	K-5 <sup>th</sup> grade teachers, special education teacher, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager	I will conduct individual interviews through Instant messenger using the interview guide to ask questions about the adverse effects of childhood obesity.	Typological coding will be used to find common words, phrases and notes used from the interview guide. NVivo 10 will be used to create themes that derive from the data.	After school hours at a time convenient for all school personnel, and a time that does not interfere with planning, teaching or any other required school duties.	I will conduct the interviews and will be the only one who collects Data will be collected using Instant Messenger.
How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students'	K-5 <sup>th</sup> grade teachers, special education teacher, physical education teacher, school administrator, nurse, psychologist and social worker	I will conduct individual interviews through Instant messenger using the interview guide to ask questions about the adverse effects of childhood obesity.	Typological coding will be used to find common words, phrases and notes used from the interview guide. NVivo 10 will be used to create themes that derive from the data.	After school hours at a time convenient for all school personnel, and a time that does not interfere with planning, teaching or any other required school duties.	I will conduct the interviews and will be the only one who collect Data will be collected using Instant Messenger.

academic development?					
How do school personnel (teachers, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager) address childhood obesity's effects on students' physical development?	K-5 <sup>th</sup> grade teachers, special education teacher, physical education teacher, school administrator, nurse, psychologist, social worker and a cafeteria manager	I will conduct individual interviews through Instant messenger using the interview guide to ask questions about the adverse effects of childhood obesity.	Typological coding will be used to find common words, phrases and notes used from the interview guide. NVivo 10 will be used to create themes that derive from the data.	After school hours at a time convenient for all school personnel, and a time that does not interfere with planning, teaching or any other required school duties.	I will conduct the interviews and will be the only one who collect Data will be collected using Instant Messenger