PREDICTORS OF OPINIONS OF K-12 HIGH AND LOW BMI STATE PRINCIPALS WITH VARYING DEMOGRAPHIC FACTORS IN THE ROLE AS INSTRUCTIONAL CATALYST FOR THE PREVENTION OF CHILDHOOD OBESITY

by

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ABSTRACT

PHILIP G. FRANCIS. Predictors of opinions of K-12 high and low BMI state principals with varying demographic factors in the role as instructional catalyst for the preventing of childhood obesity (Under the direction of DR. J. ALLEN QUEEN)

The researcher's purpose in the study was to examine the predictors of the opinions, attitudes or beliefs of K-12 high and low BMI state principals from varying demographic factors by serving in the role as instructional catalyst by leading classroom teachers in addressing childhood obesity and student wellness and for increasing students' athletic participation. The differences in obesity rates between K-12 students in the eight highest obesity states and the eight lowest obesity states causes one to pause and to rethink the roles of educators in addressing childhood obesity and student wellness. A descriptive research study was conducted utilizing survey responses from K-12 principals. The major research question addressed: What are the predictors of the opinions, attitudes or beliefs of K-12 high and low BMI state principals from varying demographic factors by serving in the role as instructional catalyst by leading classroom teachers in addressing childhood obesity and student wellness for increasing students' athletic participation? Nearly 600 principals responded, addressing the roles and directions of principals and avoiding the problem of the "imperfect panacea."

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TABLE OF CONTENTS

CHAPTER I: INTRODUCTION

The role of the public school principal has continued to evolve. While the position was once viewed as best filled by an individual having the adequate managerial skills to maintain the daily flow of activities during the school day, the principal-as-manager model of public school administration has dramatically changed to include a greater emphasis on instructional leadership. The importance of the principal's focus on facilities maintenance, athletics, finances, student discipline, and school safety remain but the additional activities for the principal to guide curriculum and instruction has modified the position. In essence, the new activities of the role has not minimized the importance of the principal's managerial responsibilities to the school, but has added a new element of responsibility in an era where school personnel are being asked to do more in relation to students' mental, physical, and social-emotional growth. In addition, the principal is expected to lead the faculty in addressing the "ills of society" such as tobacco, alcohol and drug use and now childhood obesity.

Statement of the Problem

The twenty-first century principal of today must address state legislation and law and implement local school board policy and highlight new initiatives. The reception a new policy receives from the principal conveys a message to teachers and staff. As a school leader, a principal is able to legitimize a policy if that policy is received as job embedded (Hope, 2002). These initiatives may be selected based upon simple to

complex combinations of federal, state, or district mandates and may require principals to establish the best methods for conducting needs assessments at the school level for making qualitative improvements in the lives of students. Principals are viewed by the school and community as initiators, innovators, motivators and communicators. As such, most are indispensable when it comes to the effective implementation of educational policy (Hope, 2002).

In recent years, the public school principal has been expected to assume a greater and more proactive role in the health and wellness of students. The concerns have come to the forefront of national educational conversations as the nation's school-aged children continue a downward spiral of unhealthy lifestyles. Nationally, some states fare better in health and wellness, but no state today can be classified as a healthy state. Researchers from the Centers for Disease Control (CDC, 2013) recently reported that while the eight highest BMI states have obesity rates ranging between 31.5-39.8%, the eight lowest BMI states have obesity rates ranging in general between 22-28%. No state today has a range that begins below 20% (http://www.webmd.com/diet/news/20120813/state-obesity-rankings-no-winners).

When reviewing childhood obesity rates, the experts in the CDC reported that national rates of obesity have more than tripled in the past 30 years. The percentage of obese children ages 6-11 in the United States increased from 7% in 1980 to nearly 20% in 2008. Similarly, the percentage of obese adolescents aged 12-19 years increased from 5% to 18% over the same period. In 2008, more than one-third of children and adolescents could be classified as overweight or obese. Overweight is defined as having excess body weight for a particular height, weight, age and gender in combination and

runs from the 85th percentile to the 94th percentile. Obesity is defined as having excess body fat with a BMI of 95th and greater percentile. Overweight and obesity are the result of "caloric imbalance"—too few calories expended for the amount of calories consumed—and are affected by various genetic, behavioral, and environmental factors.

The CDC (2012) reported that childhood obesity has both short and long-term effects on general health and well-being. Long term, obesity has created morbidity and comorbidity issues: obese youth are more likely to have risk factors for cardiovascular disease, high cholesterol or high blood pressure. In a population-based sample of 5 to 17-year-olds, 70% of obese youth had at least one risk factor for cardiovascular disease. Obese adolescents are also more likely to have comorbidity factors such as prediabetes, a condition in which blood glucose levels indicate a high risk for development of diabetes. Obese children and adolescents are at greater risk for bone and joint problems, sleep apnea, and social and psychological problems, such as stigmatization and poor self-esteem (CDC 2012).

Wechsler, McKenna, Lee, and Dietz (2004) reported many long-term health problems with obesity. Obese children and adolescents are likely to be obese as adults and are therefore at greater risk for adult health problems, including heart disease, type 2 diabetes, stroke, and osteoarthritis. Overweight and obesity are associated with increased risk for many types of cancer, including cancer of the breast, colon, endometrium, esophagus, kidney, pancreas, gall bladder, thyroid, ovary, cervix, and prostate, as well as multiple myeloma and Hodgkin's lymphoma (CDC 2012).

In review of these statistics, clearly demonstrated is a change in overall health and well-being of the children of the United States. Policy makers from across the country

have introduced legislation in search for ways to improve children's health including the Arkansas Act 1220 and the Impact Act.

Prior to this decade, there was little legislation enacted to address the alarming increase in childhood obesity in the nation's schools. These early efforts were focused mainly upon school lunch choices and vending machine policies on school campuses. Research in childhood obesity prevention legislation has now increased, as there is a focus upon identifying interventions to reverse obesity trends (Eyler, Nguyen, Kong, Yan, and Ross, 2012).

Currently, states legislators have moved beyond simply examining different food choices for students as a solution to the obesity problem and have enacted comprehensive legislation. Some of the legislation includes: requiring schools to measure student's body mass indexes (BMI), providing diabetes testing and training at schools, allowing for health care coverage to incorporate obesity evaluation and management, encouraging the use of school facilities by community groups to increase physical activity, requiring a minimum number of minutes per day in which a student is involved in physical activity, and creating task forces to provide legislative accountability (Craig, Felix, Walker and Phillips, 2010). With much of the responsibility of enacted and proposed legislation falling directly on school personnel, the school principal will have to be actively involved in the decision making at the school level. The questions of implementation and effectiveness of state and federal mandates will be determined by school leadership as new roles are assumed to create healthy climates for students.

Need for the Study

Specific research on the principal's role has been interpreted within the context of

other studies; however, there is a need for more direct studies on the topic. The limited research prompts the need to further investigate school principals' attitudes concerning the involvement levels in school change and the related affects on student health, especially high BMI. More specifically, the differences in obesity rates between K-12 students in the eight most obese states and K-12 students in the eight least obese states brings to question the current role, positions, and perceptions of the needed role of "the school" taken by school leaders, particularly in high BMI states.

The survey instrument to be utilized to solicit principal response was chosen because the researcher has found it to be the only measure of principals' perceptions, opinions, and belief systems of the roles and responsibilities principals have in providing a school atmosphere conducive to good health. Included are increased amounts of health and physical activity in courses and additional physical activities integrated with the core subject areas and providing appropriate staff development for the teachers prior to implementation. Therefore, the researcher proposes the following question for research:

Research Question

What variables serve as the greatest predictors of opinions, attitudes or beliefs of K-12 high and low BMI state principals, with varying demographic factors, in the role as instructional catalyst leading classroom teachers in addressing childhood obesity through increased student athletic participation?

Limitations of the Study

1. There may be factors, such as district mandates, that limit a principal's ability to implement curriculum or programs prohibiting response to any surveys.

2. All principals may not read and understand questions at the same content knowledge levels.
3. The researcher was limited to collecting data from public schools only, as private schools were not examined.

Definitions

Attitude - manner, disposition, feeling, position, etc., with regard to a person or thing; tendency or orientation, especially of the mind

Belief - confidence in the truth or existence of something not immediately susceptible to rigorous proof

Health - soundness of body or mind; freedom from disease or ailment

Implement - to put into effect according to or by means of a definite plan or procedure

Obesity - the condition of being very fat or overweight; corpulence

Opinion - a personal view, attitude, or appraisal.

Physical Activity - any body movement that works your muscles and requires more energy than resting.

Role – proper or customary function

Basic Assumptions

1. All principals will carefully read the survey instructions prior to responding to statements.
2. Principals will follow the survey instructions when responding to statements.
3. It is assumed that principals will answer all questions with honesty and integrity.

Summary

There is a large body of research on childhood obesity and healthy lifestyle choices and the relationships these have on the lives of children and youth. However, research appeared limited when examining the procedures implemented by school principals and the roles played in promoting the prevention and elimination of childhood obesity. The researcher's focus in this study was to examine principals' opinions, beliefs, and attitudes on promoting student wellness through increased physical activity, and to address the levels of childhood obesity, which in turn may affect policy creation and school-based decision making.

In Chapter One, the researcher provided historical information on the traditional roles of the public school principal and the recent transition in educational philosophy, which led to increased expectations of the principal to become a leader in curriculum and program implementation. Current legislation aimed at impacting childhood obesity and child nutrition was also discussed. Historical information was also provided on the increase in childhood obesity and the impact this has had on the nation's schools and students. Included within Chapter One were a need and purpose for the study, statement of the problem, significance of the study, proposed research questions, limitations of any research findings, operation definitions for the study, and basic assumptions.

In Chapter Two, the researcher has presented a Review of the Literature as background for the proposed study. In Chapter Three, the researcher presented the approaches chosen to research the problem and has discussed the proposed methodology for collecting and analyzing the data. In Chapters Four and Five, the researcher provided the study findings and recommendations.

CHAPTER II: LITERATURE REVIEW

This chapter has been divided into two sections. The first section includes reviewed childhood obesity health legislation. In the second section, the researcher has discussedcurrent research on childhood obesity and physical activity.

Obesity Legislation

Willette (2007) explained that "overweight" and "obesity" are terms given to ranges of weight that are greater than what is generally considered healthy for a given height. Obesity ranges are determined by using weight and height calculations to calculate a person's body mass index, or BMI. In children, BMI ranges above a normal weight have different labels than ranges associated with adults: "at risk of overweight" versus "overweight." BMI ranges take into account normal differences in the amount of body fat in boys versus girls and differences in body fat depending upon age. After a child's BMI is calculated, the BMI is plotted on a BMI-for-age growth chart where a percentile ranking is determined. The calculated percentile indicates the relative position of the child's BMI number among children of the same gender and age.

The push for obesity legislation, especially as the legislation relates to children, has continued to move to the forefront of political conversation. Despite the current sense of urgency in dealing with the issue, there is still a challenge to shed the once lackadaisical approach and attitude taken towards the crisis. Purcell (2010) emphasized that the North American liberal belief system is characterized by freedoms of choice as in

relation to diet and exercise. Monitoring the child's behavior becomes the responsibility of the parent. Purcell goes on to say that Tommy Thompson, former Secretary of the United States Department of Health and Human Services, best captured the same sentiment: "We must continue to work hard to spread the gospel of personal responsibility. Each of us has to take responsibility for making the right choices when it comes to diet and exercise." Until recent years, the aforementioned belief had played a major role in guiding public health policy.

Craig, Felix, Walker, and Phillips (2010) reported that prior to 2003, several states and the federal government had enacted limited legislation aimed at reducing and preventing childhood obesity, and school-based prevention focused mainly on improving nutrition and rewarding voluntary adoption of healthy nutrition and physical activity standards and providing model vending policies. In 2003, Arkansas' Act 1220 became the most "comprehensive school-based childhood obesity legislation at that time."

Arkansas' Act 1220

Arkansas' Act 1220 laid the framework of what was possible in state legislation and pioneered much of what was to follow. Craig et al. (2010) described the six components included in Act 1220 aimed at combating childhood obesity. The first component was a 15-member Child Health Advisory Committee, which was created and tasked with making recommendations to the State Board of Education and State Board of Health regarding physical activity and nutritional standards in public schools. Secondly, school districts were required to establish Nutrition and Physical Activity Advisory Committees to guide the development of locally specific policies and programs. The third component enacted statewide school-based BMI screening with reports to parents

for all public school children in grades K-12. The fourth component restricted student access to vending machines in public elementary schools, and in the fifth component, schools were required to disclose vending contracts and publicly report vending revenues. Finally, the Arkansas Department of Health was required to employ community health promotion specialists to provide technical assistance to schools in formulating and implementing the rules and regulations.

Craig et al. (2010) conducted a study to determine the factors and events leading to the successful passage of Act 1220. The study consisted of analyzing key informant interviews with the people involved in the passing of Act 1220. The questions examined included, "How did Act 1220 get started?" and "Who had the initial idea and how did it get from that idea to a piece of legislation ready for the introduction into the legislature?" Using John Kingdon's Multiple Streams Framework, Craig et al. (2010) described the "fast-paced and muddled experience of a policy design and installation" of an Act "such as the Arkansas Act 1220 to combat childhood obesity." Craig et al. (2010) concluded that policy, politics, and problem streams create windows to change leading to enactment of legislature.

The Cases of Mississippi and Tennessee

Amis, Wright, Dyson, Vardaman, and Ferry (2012) conducted research to investigate ways in which "stakeholders within schools responded to new legislation designed to increase levels of physical activity and improve the quality of physical education (PE) in high schools in Mississippi and Tennessee, states with among the highest level of childhood obesity and obesity-related illnesses in the country." Amis et al. (2012) reported that the purpose of the study was to investigate the processes involved

in, and outcomes of, implementing three new state-level, school oriented childhood obesity polices enacted between 2004 and 2007. The researchers followed policy implementation in eight high schools in Mississippi and Tennessee. Amis et al. (2012) collected data between 2006 and 2009 from interviews with policy makers, administrators, teachers, and students, as well as conducted observations of school-based activities and documents.

The researchers showed that significant barriers to the effective implementation of obesity-related polices were evident. Most notably, there included a value system that prioritized performances in standardized tests over PE. Amis et al. (2012) also noted that resource constraints and the overloading of school administrators with new policies work against the implementation of policies designed to promote improvements in student health through PE. The researchers also concluded that policies designed to address health and social problems in high school settings faced significant barriers to effective implementation. In order to have a broad impact, obesity-related polices must have been tied to mainstream educational initiatives that both incentivized and held accountable the school-level actors responsible for implementation.

Patterns and Predictors

Eyler, Nguyen, Kong, Yan, and Brownson (2012) conducted a study to determine the patterns and predictors of enacted state childhood obesity legislation in the United States between 2006 - 2009. Eyler et al. (2012) developed a content review for the state policies related to childhood obesity and described the predictors of enactment. The researchers collected data from an inventory of 2006 through 2009 state legislation on 27 childhood obesity topics from legislative data bases. The researchers' results showed that

common topics in the 27 percent of the bills that were enacted were community physical activity access, physical education, and school food policy. Bills with safe routes to school or health and nutrition content were twice as likely to be enacted, while bills containing product and menu labeling or soda and snack taxes were significantly less likely to be enacted. Eyler et. al (2012) concluded that bipartisan and committee support and term limits were important to bill enactment and that advocacy could be tailored to increase awareness and sense of priority among policy makers.

Federal Legislation

As state politicians examined childhood obesity legislation, there were two bills before Congress that directly addressed the issue of the impacts of childhood obesity. The first bill, as described by Henry and Royer (2004), was a resolution that sought to have Congress recognize childhood obesity as more serious than a simple appearance problem. The bill included the recognition of the health risks associated with childhood obesity, the diseases that could be prevented, treated or successfully managed through targeting obesity, and the encouragement of parents to promote healthy weight and increased physical activity in their children.

The second piece of legislation described by Henry and Royer (2004) was the Impact Act passed by the U.S. Senate in December 2003. The bill was touted as a "comprehensive piece of legislation that aimed to reduce obesity, especially among children and adolescents." The Impact Act went beyond simply recognizing the risks and impact obesity had on American society, as it established funding for childhood obesity prevention and intervention. The initial grants were to be used in "supporting training for students in health care profession programs as well as for the health care professionals to

identify, treat, and prevent obesity or eating disorders and aid individuals who are overweight, obese, or who suffer from eating disorders." This marked a major moment in legislation geared directly towards addressing the issues of childhood and adolescent obesity.

Lastly, some have argued that legislation geared towards reducing childhood obesity should punish corporations that specifically targeted children and adolescents through marketing campaigns. However, Harris and Graff (2012) noted that when government restrictions were proposed on these types of advertisements, First Amendment rights and the Constitutional Commercial Speech Doctrine were often invoked as barriers to successful action. Harris and Graff (2012) argued that a proper interpretation of the First Amendment should leave room for regulations that protect young people from advertising of calorie-rich, nutrient-poor foods and beverages.

The Role of the Principal in Policy Implementation

A tremendous amount of pressure has been placed on school principals in implementing state and district initiatives based on outcomes and accountability. Torres, Zellner and Erlandson (2008) conducted a study to examine the effect policy initiatives have on principals and schools in high-impact policy environments. Torres et al. utilized an online, Likert-style survey to solicit responses from 49 Texas public school principals. The survey allowed for five possible responses from principals: completely negative, mostly negative, mostly positive, completely positive, and not observed. The survey was organized into four sections which included: national and state accountability, site-based management, professional development, and schedule reform.

Torres et al. reported that overall, site-based management had the greatest positive impact and accountability had the most negative impact on policy areas focused on academic outcomes, staff morale, parent and community involvement, and professional development. Furthermore, Torres et al. reported that the overall perceptions of the impact of school-based management showed high positive ratings for each of the three dependent variables. Lastly, the researchers reported that principals, regardless of geographic district type and school grade level, viewed school based management as having the greatest positive impact on policy implementation, thus allowing for the most impactful role of the school principal.

Childhood Obesity and Physical Activity

School leaders play an influential role in determining the curriculum taught in the school. This is critical to impacting issues of childhood obesity because of the number of children attending school and the amount of time spent in school. According to Story (1999), schools provide an excellent opportunity for preventing and treating obesity, as more than 95% of American children between the ages of 5 and 17 years old are enrolled in schools. Story (1999) noted that schools have more continuous and intensive contact with children during their first two decades of life than any other institution. Importantly, included in this contact is the accessibility to physical education programs. These physical education programs, combined with consistent physical activity, are key interventions for preventing and treating obesity.

Wechsler, McKenna, Lee and Dietz (2004) further argued for the roles of schools and physical activity in reducing childhood obesity. In addition to emphasizing knowledge and skills of physical activity and keeping students active for most of physical

education classes, Wechsler et. al. (2004) stressed the need for additional opportunities for students to engage in physical activity. School leaders can ensure that in addition to regularly scheduled physical education classes, schools also offer students after-school programs, intramural sports programs, and physical activity clubs. The increased opportunities for physical activity would allow more students to get the recommended 30 minutes of daily, moderate activity required for health benefits. Wargo (2006) reported that 75 percent of students did not meet this standard in 2003.

As budgets for schools have continued to shift, school leaders have had to make decisions about dollar allocation. Cook (2005) reported that from 1991 to 2003, the number of students taking daily physical education classes declined by 14 percent and that by 2005, only 6 to 8 percent of schools across the country provided daily physical education for the entire school year. Cook (2005) attributed this decline to spending cuts and school struggles to find funds for physical education programs. Schaub and Marian (2011) noted that throughout the nation, there had been a significant decline over the past two decades in the number of students enrolled in physical education classes. Schaub and Marian (2011) also reported that the Secondary Education Reauthorization Act of 2010 excluded physical education from grants to core academic subjects such as math, science, history, economics, and English.

Li and Hooker (2010) reported on obesity in schools through the review of national survey data. The researchers discovered that children attending public schools were associated with higher BMI than those attending private schools, and children who participated on sports teams or sports lessons had a lower BMI and were less likely to be overweight. Li and Hooker (2010) concluded that since schools were a major setting of

student life, there was a need for schools to become actively involved in developing obesity prevention programs.

The Role of the Parent in Preventing Childhood Obesity

The role of the parent in raising healthy weight children has been discussed by Purcell (2010). Despite the recent push for school administrators to create policies to promote healthy student lifestyles, Elder, Arrendondo, Campbell, Baquero, Duerksen, In a study conducted by Ayala, Crespo, Slymen, and McKenzie (2010) the authors concluded that schools, at best, were marginally related to the weight status of the Latino elementary students. The authors reported overweight children as less active compared to normal weight children and that parents of overweight children also tended to be overweight or obese. These parents also provided less instrumental support to engage children in physical activity and set fewer limits on children's activities.

Murnam, Price, Telljohann, Dake and Boardley (2006) conducted a study to assess the supportiveness of parents with elementary school-aged children regarding the school's role in reducing the prevalence of overweight children. Parents of children described as overweight versus parents of children described as normal weight were associated with significantly lower odds of having high support for health education curricula in elementary schools that specifically addressed topics related to physical activity. Murnam et al. (2006) also reported that parents perceived healthy eating topics within the health education curricula as more important than the physical activity topics within the health education curricula. The authors concluded that schools should continue to educate students on physical activity topics within the health education

curriculum, despite the minimal importance to which parents gave the physical activity topics.

Parents can also play a supportive role in promoting physical activity for children by creating home environments which encourage movement. Boles, Scharf, Filigno, Saelens, and Stark (2013), examined the differences between the homes of obese and non-obese children to determine how physical activity was promoted. By utilizing a Home Health Environment visitation instrument, the researchers reported that families of obese preschoolers were more likely to have a television in the obese child's bedroom and also had fewer physical activity devices (non-motorized car moved by the child, exercise mats, jump ropes) compared with healthy weight preschoolers.

Impacts of Socioeconomic Status and Race on Physical Activity

Beaulieu, Butterfield, Mason, and Loovis (2012) examined the effects of socioeconomic and minority status upon physical activity in elementary school children. The researchers found that schools with large numbers of children receiving free or reduced price lunch provided less physical activity opportunities. The researchers also found that schools with low minority enrollment provided more physical activity opportunities than schools with very high minority enrollment. The researchers noted that educational leaders will have to examine the challenges of lack of facilities, traffic congestion, crime, bullying by older children, and deterioration of local playgrounds to address these issues.

Students and Physical Activity

Bocarro, Kanters, Cerin, Floyd, Casper, Suau, and McKenzie (2011) examined school-based physical activity in middle school children. According to Bocarro et al.

(2011), sport participation declined significantly among boys and girls during middle school years, with most adolescents adopting a pattern of leisure activities and sport participation that formed the foundation for their adult leisure lifestyle. The results of their study showed that more than half of the students were sedentary when observed during athletic play, which suggested that the school sport programs may not have engaged the students in high amounts of physical activity. Also noted was that focus groups conducted with female students revealed that they were perceived to have fewer sport options than boys.

Edwards, Bocarro and Kanters (2013) investigated the roles of schools in providing supportive environments for leisure-time physical activities in rural schools. The authors suggested that obesity rates for children living in rural areas may be higher than the obesity rates of other children due in part to fewer offerings for opportunities for physical activity at school. Although environmental support for extracurricular physical activity was low when compared to urban counterparts, school structures were also identified as contributors to place disparity, resulting in fewer options for leisure-time physical activities for children in rural schools.

In examining staff perceptions of children's physical activity, Huberty, Dinkel, Coleman, Beighle, and Apenteng (2012), reported a concern related to girls and physical activity. Study participants believed that girls were less likely to be physically active because of peer pressure and social norms. The authors also reported findings aligned with literature that suggested that girls were less likely to meet physical activity guidelines compared with boys. Huberty et al. (2012) suggested that the study provided

further evidence that there is a need to design programs or techniques to specifically target girls to improve levels of physical activity.

Impact of Weight on Physical Activity

Hannon (2008) conducted a study to determine if overweight students were less active than non-overweight counterparts. Student movement was monitored during physical education classes while students participated in various game play. Hannon (2008) determined there were no significant differences in steps per minute between overweight and non-overweight students during game play. Hannon (2008) concluded that physical education classes played an important role in student physical activity because such classes were often the only sources of physical activity for many students.

Contrary to Hannon's (2008) findings, Shriver, Harrist, Hubbs-Tait, Topham, Page, and Barrett (2011) examined the relationship between physical activity and fitness in third graders and found conflicting results. Shriver et al. (2011) compared physical activity by weight status and found that obese children spent significantly less time in moderate-intensity activities and combined moderate and vigorous intensity activities than non-obese children. These findings, coupled with the discovery that the children in the sample also reported lower amounts of overall physical activity compared to previous studies, led Shriver et al. (2011) to conclude that rural children in the sample suffered from higher rates of obesity than the national findings for the same age group as well as poorer fitness.

Gao, Oh, and Sheng (2011) reached similar conclusions to Shriver et al. (2011) and reported that overweight and obese students are not as physically active as normal weight students. In examining the differences in physical activity levels among middle

school students and across BMI levels, Gao et al. (2011) reported that overweight and obese students spent a significantly higher percentage of their time being sedentary, while students with normal weight spent higher percentages of time in moderate to vigorous physical activities than overweight and obese students. The authors recommended that physical educators and health promoters use strategies that motivated overweight and obese students to become more physically active in physical education class.

Stovitz, Steffen, and Boostrom (2008) conducted a study to examine the relationships between participation in physical activity among normal and overweight Hispanic and non-Hispanic White adolescents. The researchers found that overall, boys were more active than girls and that normal weight boys reported engaging in more physical activity than at-risk for overweight and overweight boys. Stovitz et al. (2008) also concluded that Hispanic girls engaged in less physical activity than their non-Hispanic White counterparts. The researchers also found that, as a group, Hispanic girls who were at-risk for overweight or overweight participated in fewer sports teams than normal weight non-Hispanic White girls. The authors suggested the need to investigate possible strategies to increase sports participation among overweight Hispanic girls.

Long Term Impacts of Physical Activity

Camhi, Phillips, and Young (2011) examined the long term effects of physical activity through physical education with ninth-grade adolescent girls. This was done through a trial that tested the effects of a life-skills oriented physical activity intervention conducted in a physical education class. Normal-weight and overweight girls who participated in the intervention showed an improvement in fitness as well as maintenance of those effects over two subsequent years. Obese girls showed no immediate fitness

improvements as well as no improvements over the next two years of school. None of the groups examined showed any significant declines in fitness. Camhi et al. (2011) suggest these findings have important implications for the inclusion of PE programs for adolescent girls to prevent decline in fitness over time.

Summary

School and home are where most students spend the majority of time on a daily basis, and researchers have suggested that parents and schools can both play a role in helping to reduce childhood obesity. Researchers have also reported that socio-economic status, race, and gender affect the opportunities and frequencies in which students engage in physical activity. Lastly, researchers have demonstrated that students who are overweight or obese tend to partake in less physical activity at school than healthier students, and that those who do partake may benefit from long-term effects of physical activity.

In Chapter Two, the researcher presented a Review of the Literature. In Chapter Three, the researcher has presented the approaches chosen to research the problem and discusses the proposed methodology for collecting and analyzing the data.

CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

One of the concerns the researcher had with the study was in getting surveys completed from principals who were overworked and overstressed**.** In the journal, *Principal*, which was themed, "The Healthy Principal," Queen, (2004), stated, "Whether dealing with curriculum standards, inappropriate student behavior, irate parents, or budget issues, principals are constantly moving from one crisis to another." This level of time consuming behavior does not give much time for completing surveys and just getting emails through is a miracle (Queen, p.44).

To select the survey population, the researcher first determined the percentages of childhood obesity by state as determined by the Center for Disease Control (CDC 2013). The researcher surveyed the population of K-12 public school principals from the eight highest BMI states and the eight lowest BMI states as determined by the average BMI levels of children and youth from the ages of ten to nineteen. These states can be found in Table 1. Principals were asked to respond to ten demographic questions and fourteen survey questions. Participation was voluntary and anonymous.

Table 1: State BMI averages

LOWEST BMI STATES	STATE BMI AVERAGE
1. Colorado	22
2. Vermont	24.6
3. New Jersey	24.7
4. New Hampshire	26
5. Washington (state)	26.2
6. Wyoming	26.6
7. Hawaii	27.4

Table 1: State BMI averages (continued)

8. Wisconsin	28
HIGHEST BMI STATES	STATE BMI AVERAGE
1. South Carolina	31.5
2. Michigan	32.3
3. Tennessee	33
4. West Virginia	33.5
5. Kentucky	35.7
6. Texas	36
7. Mississippi	39.2
8. Louisiana	39.8

Research Design

The researcher used a quantitative, descriptive model to conduct the study. The researcher used survey data collected from public school principals in sixteen states through Survey Share and examined the levels of relationships. A hierarchical multiple regression was utilized to examine variable predictors. The researcher included K-12 principals' races, genders, grade levels, the health status of the principals' states of employment (eight highest BMI states or eight lowest BMI states) and the perceptions related to school-based decision on the levels of students' daily physical activity.

Research Question

The researcher's purpose for conducting the study was to answer the question: What variables serve as the greatest predictors of opinions, attitudes or beliefs of K-12 high and low BMI state principals, with varying demographic factors, in the major role as instructional catalyst leading classroom teachers in addressing childhood obesity through increased student athletic participation?

Null Hypothesis

The researcher addressed the question using one null hypothesis to test among the means to determine any significant differences.

The Null: There are no statistically significant predictors among the several subgroups of principal's opinions, belief and attitudes from high BMI and low BMI states, gender, school organizations, ethnicity, and years of experience on the relationships of increasing students' physical activities and taking responsibility as the catalyst for preventing and lowering childhood obesity and thereby improving student wellness.

The alpha level for rejecting the nulls was set at or below the $p = .05$ level.

Instrumentation

The survey instrument has been used in other studies and was modified from a model originally developed by Drs. J. Allen Queen and Robert F. Algozzine. Dissertation Chair Dr. J. Allen Queen worked with the researcher and four other UNC-Charlotte doctoral students to modify the survey instrument for the current study. Survey questions were reviewed, revised and edited for clarity and understanding and only questions with an expert rating of four or higher (on a scale of one to five) were accepted for the final survey. Selected questions were included to provide information for answering the research question in the study.

The final survey consists of 24 questions and took approximately 15 minutes for participants to complete. Each question was related to a specific area of childhood obesity and was answered using a Likert rating scale. The survey was sectionalized and contained items regarding policy, intervention, physical activity, academic achievement and bullying.

Email addresses were purchased for principals working in the eight highest BMI states and the eight lowest BMI states. The number of principals per state was determined by U.S. Department of Education, National Center for Education Statistics,

Schools and Staffing Survey (SASS), "Public School Principal Data (2007-2008) as shown in Table 2.

Table 2: Number of public school principals by state

Alabama	1,480	Kentucky	1,360	North Dakota	370
Alaska	470	Louisiana	1, 340	Ohio	3,650
Arizona	1,910	Maine	680	Oklahoma	1,550
Arkansas	990	Maryland	1,420	Oregon	1,180
California	9,170	Massachusetts	1,810	Pennsylvania	3,190
Colorado	1,600	Michigan	3,700	Rhode Island	310
Connecticut	1,060	Minnesota	1,860	South Carolina	1,120
Delaware	210	Mississippi	1,050	South Dakota	440
District of Columbia	200	Missouri	2,000	Tennessee	1,620
Florida	3,340	Montana	560	Texas	8,300
Georgia	2,300	Nebraska	890	Utah	900
Hawaii	300	Nevada	540	Vermont	340
Idaho	700	New Hampshire	450	Virginia	1,980
Illinois	4,090	New Jersey	2,460	Washington	2,140
Indiana	1,900	New Mexico	710	West Virginia	740
Iowa	1,300	New York	4,660	Wisconsin	2,040
Kansas	1,370	North Carolina	2,380	Wyoming	330

Invitations were sent out inviting principals to go to Survey Share used by UNCC faculty. The mass distribution used only school email addresses. Due to highly effective blockage of emails by systems and perhaps limited interest in the study, only 598

principals' responses were available for use after an initial examination for outstanding outliers.

Data Collection

All data pertaining to completed surveys was collected through online responses. Participants were assigned a number by the organization hired to send the study out and collect returned forms. The Statistical Package for the Social Sciences (SPSS) Version 20 was used to analyze the collected data. A hierarchical multiple regression was used to determine any predictors for principal opinions, attitudes or beliefs.

Data Analysis

The researcher used the Statistical Package for the Social Sciences (SPSS) Version 20 to assess for statistical significance. Data analyses included descriptive statistics (state means and standard deviations of the independent and dependent high and low BMI states) and were computed for survey items related to principal opinions, beliefs, and attitudes on preventing and eliminating childhood through increased physical athletic activity.

Summary

In Chapter III the researcher described the research design and methodology to be used in the study. Included were a review of the proposed study, research questions, null hypotheses, population, sampling procedures, instrumentation, data collection and data analyses. In Chapter IV of this dissertation, the researcher reported the findings for the study and concluded with a summary. A multiple regression was used to answer the question and to respond to the null for Chapter IV and to provide the researcher's summary, conclusion and recommendations for further research in Chapter V.

CHAPTER IV: FINDINGS

In Chapter III, the researcher described the research design and methodology of the study. Also discussed was the research null in examining the impact of the predictor (independent) variables on the criterion (dependent) variables. Specifically, the research question proposed was as follows:

Research Question

The researcher's purpose for conducting the study was to answer the question: What variables serve as the greatest predictors of opinions, attitudes or beliefs of K-12 high and low BMI state principals, with varying demographic factors, in the major role as instructional catalyst leading classroom teachers in addressing childhood obesity through increased student athletic participation?

Null Hypothesis

The researcher addressed the question using one null hypothesis to test among the means to determine any significant differences.

The Null: There are no statistically significant predictors among the several subgroups of principal's opinions, belief and attitudes from high BMI and low BMI states, gender, school organizations, ethnicity, and years of experience on the relationships of increasing students' physical activities and taking responsibility as the catalyst for preventing and lowering childhood obesity and thereby improving student wellness.

The alpha level for rejecting the nulls was set at or below the $p = .05$ level.

Findings

Four hierarchical multiple regression analyses were conducted for each of the following dependent variables: (1) principal's responsibility to require teachers to do instruction on nutrition and physical fitness; (2) the promotion of athletic participation; (3) principal's responsibility for the promotion of school wellness; and (4) district holds principals accountable for obesity programs.

In each analysis, the following independent variables were entered: principal gender and ethnicity (Block 1), principal's education level and years of experience (Block 2), student socioeconomic status and school location (Block 3), and high or low BMI state (Block 4). Categorical predictors with three or more items were dummy coded prior to analyses, with the first level serving as the reference group.

I. Principal's Responsibility to Require Instruction on Nutrition and Physical Fitness

The final regression model with all predictors entered was significant, $F (20, 535) = 2.41$, $p < .01$, $R^2 = .08$. Controlling for the effects of other predictors, principals with 2-5 years ($b = -.42$, $p < .05$), 6-10 years ($b = -.49$, $p < .05$), 11-20 years ($b = -.42$, $p < .05$), and 21 or more years of experience ($b = -.76$, $p < .01$) had lower ratings on this item. Controlling for other predictors, principals with an educational specialist degree ($b = .39$, $p < .01$) had higher ratings on this item. Finally, controlling for other predictors, principals of Asian/Pacific Islander ethnicity ($b = -1.13$, $p < .001$) had lower ratings on this item. All remaining predictors were non-significant ($p > .05$) in the final model.

Table 3: Principal's responsibility to require teachers to do instruction on nutrition and physical fitness

Predictor	β	p
Years of Experience		
2-5 years	-.42	<.05
6-10 years	-.49	<.05
11-20 years	-.42	<.05
21 or more years	-.76	<.01
Education Level		
Educational Specialist	.39	<.01
Ethnicity		
Asian/Pacific Islander	-1.13	<.001

All other predictors were non-significant (P > .05) in the final model
For all predictors:
Total F value = 2.41
Total R^2 = .08
P<.01

II. Promotion of Athletic Participation

The final regression model with all predictors entered was significant, F (20, 535) = 5.73, p <.001, R^2 = .18. Controlling for other predictors, principals with 6-10 years (b = -1.04, p < .001) and 11-20 years of experience (b = -.65, p <.05) had lower ratings on this item. Controlling for other predictors, principals of schools in urban settings (b = .65, p <.05), suburban settings (b = .93, p <.01), and rural/agricultural locations (b = 1.29, p <.001) had higher ratings on this item. Controlling for other predictors, principals of Asian/Pacific Islander ethnicity (b = -.136, p <.001) had lower ratings on this item. Finally, controlling for other predictors, principals with postdoctoral study (b = -.93, p <.01) had lower ratings on this item. All other predictors were non-significant (p > .05) in the final model.

Table 4: Promotion of athletic participation

Predictor	β	p
Years of Experience		
6-10 years	-1.04	<.001
11-20 years	-.65	<.05
Setting		
Urban	.65	<.05
Suburban	.93	<.01
Rural/Agricultural	1.29	<.001
Ethnicity		
Asian/Pacific Islander	-.136	<.001
Education Level		
Postdoctoral Study	-.93	<.01

All other predictors were non-significant (P > .05) in the final model
For all predictors:
Total F value = 5.73
Total R^2 = .18
P<.001

III. Principals' Responsibility for Promotion of Physical Wellness

The final regression model with all predictors entered was significant, F (20, 535) = 8.59, p <.001, R^2 = .18. Controlling for other predictors, principals in high BMI states (b = -.55, p <.001) had lower ratings than principals in low BMI states. Controlling for other predictors, principals of schools in suburban (b = .67, p <.01) and rural locations (b = .67, p <.01) had higher ratings. Controlling for other predictors, principals with 6-10 years of experience (b = -.72, p <.01) had lower ratings, while principals with an educational specialist degree (b = .63, p <.001) had higher ratings. Finally, controlling for other predictors, principals of Asian/Pacific Islander ethnicity (b = -1.24, p <.001) had lower ratings. All other predictors were non-significant (p >.05) in the final model.

Table 5: Principal's responsibility for promotion of physical wellness

Predictor	β	p
BMI of State		
High	-.55	<.001
Setting		
Suburban	.67	<.01
Rural	.67	<.01
Years of Experience		
6-10 years	-.72	<.01
Education Level		
Educational Specialist	.39	<.001
Ethnicity		
Asian/Pacific Islander	-1.24	<.001

All other predictors were non-significant (P > .05) in the final model
For all predictors:
Total F value = 8.59
Total R^2 = .18
P<.001

IV. District Holds Principal Responsible for Obesity Programs

The final model with all predictors entered was significant, F (20, 535) = 3.36, p <.001, R^2 = .11. Controlling for other predictors, principals of schools in urban (b = .82, p <.01), suburban (b = .53, p <.05), and rural locations (b = .57, p <.05) had higher ratings. Controlling for other predictors, principals with 6-10 years of experience (b = -.72, p <.01) had lower ratings on this item, as did principals of Asian/Pacific Islander (b = -1.40, p <.001). All other predictors were non-significant (p >.05) in the final model.

Table 6: District holds principal responsible for obesity programs

Predictor	β	p
Setting		
Urban	.82	<.01
Suburban	.53	<.05

Table 6: District holds principal responsible for obesity programs (continued)

Rural	.57	<.05
Years of Experience		
6-10 years	-.72	<.01
Ethnicity		
Asian/Pacific Islander	-1.40	<.001

All other predictors were non-significant (P > .05) in the final model
For all predictors:
Total F value = 3.36
Total R^2 = .11
P<.001

The researcher discovered several correlations between the predictor variables and the criterion variables. Although several predictors were determined to be non-significant through multiple regression, others were found to demonstrate a strong statistical significance as determined by p-values and beta-values. Due to the overwhelming evidence, the researcher rejects the null hypothesis.

The researcher determined that a principal's years of experience was negatively correlated with a principal's belief in responsibility to require instruction on nutrition and physical fitness as principals with two or more years of experience were least likely to agree with the criterion. In examining principal sentiment in the promotion of athletic participation, the researcher determined that seasoned principals, those with six to twenty years of experience, were least likely to agree with the criterion. Lastly, the researcher determined that principals working in high BMI states rated significantly lower than their counterparts in low BMI states in the belief of principal responsibility for promotion of physical wellness.

The researcher also noted that principals with 6-10 years of experience rated low in every analysis conducted. The researcher found this to also be true for respondents of Asian/Pacific Islander ethnicity.

Summary

In this chapter, the researcher reported the findings for the study and concluded with a summary. Multiple regression analysis was used to answer the research question and to respond to the null which was rejected. In Chapter V, the researcher provided a summary, conclusions and recommendations for further research.

CHAPTER V: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDIES

Presented in this chapter by the researcher is a summary of the study including the research question, null hypothesis, and conclusions. Recommendations for further study are also discussed.

Summary of the Study

Obesity is a major epidemic in the United States. In recent years, childhood obesity has come to the forefront of the nation's attention as health concerns of children continue to mount. Experts in the CDC reported that national rates of obesity have more than tripled in the past 30 years. The percentage of obese children ages 6-11 in the United States increased from 7% in 1980 to nearly 20% in 2008. Similarly, the percentage of obese adolescents aged 12-19 years increased from 5% to 18% over the same period. In 2008, more than one-third of children and adolescents could be classified as overweight or obese.

Addressing the issues of childhood obesity today can potentially lead to many school-aged children in living longer, healthier lives. The CDC (2012) reported that childhood obesity has both short and long-term effects on general health and well-being. Long term, obesity has created morbidity and comorbidity issues: obese youth are more likely to have risk factors for cardiovascular disease, high cholesterol or high blood pressure. Obese adolescents are also more likely to have comorbidity factors such as prediabetes, a condition in which blood glucose levels indicate a high risk for

development of diabetes. Obese children and adolescents are at greater risk for bone and joint problems, sleep apnea, and social and psychological problems, such as stigmatization and poor self-esteem. Overweight and obesity are associated with increased risk for many types of cancer, including cancer of the breast, colon, endometrium, esophagus, kidney, pancreas, gall bladder, thyroid, ovary, cervix, and prostate, as well as multiple myeloma and Hodgkin's lymphoma (CDC 2012). Proactive adults can be essential in promoting healthier life choices for children and providing an opportunity to live as healthier adults.

Children cannot be held solely responsible for making healthy decisions. The adults in a child's life must take an active role in helping to make healthy choices regarding diet and exercise. While many health related decisions for children are made by parents, there is a renewed focus on the role that school personnel play in promoting health and wellness with students. Children spend thousands of hours in school and this provides numerous opportunities for teaching and promoting healthy habits.

In order for school personnel to be effective partners in the battle against childhood obesity, school leaders must be active decision makers in creating culture and policy to address the issue. As enacted and proposed legislation must be addressed by school personnel, the school principal will have to be actively involved in the decision making at the school level. The questions of implementation and effectiveness of state and federal mandates will be determined by school principals as new roles are assumed to create healthy climates for students.

In addition to addressing issues of nutrition in schools as a way to combat childhood obesity, school leaders must also examine the implementation of increased

physical activity in promoting health and wellness. Principals can ensure that in addition to regularly scheduled physical education classes, schools also offer students after-school programs, intramural sports programs, and physical activity clubs. The increased opportunities for physical activity would allow more students to get the recommended 30 minutes of daily, moderate activity required for health benefits.

The researcher's purpose in the study was to examine the predictors of the opinions, attitudes or beliefs of K-12 high and low BMI state principals from varying demographic factors by serving in the role as instructional catalyst by leading classroom teachers in addressing childhood obesity and student wellness and for increasing students' athletic participation. The survey population consisted of K-12 public school principals from the eight highest BMI states (Louisiana, Mississippi, Texas, West Virginia, Kentucky, Tennessee, Michigan, and South Carolina) and the eight lowest BMI states (Colorado, Vermont, New Jersey, New Hampshire, Washington state, Wyoming, Hawaii, and Wisconsin) as determined by the average BMI levels of children and youth from the ages of ten to nineteen. Principals were asked to respond to ten demographic questions and fourteen survey questions. Participation was voluntary and anonymous.

The researcher used a quantitative, descriptive model to conduct the study. The researcher used survey data collected from public school principals in the sixteen states through Survey Share and examined the levels of relationships. A hierarchical multiple regression was utilized to examine variable predictors. The researcher included K-12 principals' races, genders, grade levels, the health status of the principals' states of employment (eight highest BMI states or eight lowest BMI states) and the perceptions related to school-based decision on the levels of students' daily physical activity.

Through multiple regression analyses, the researcher was able to determine which predictors resulted in significant correlation with the criterion variables.

Research Question

The researcher's purpose for conducting the study was to determine what variables served as the greatest predictors of opinions, attitudes or beliefs of K-12 high and low BMI state principals, with varying demographic factors, in the roles as instructional catalyst leading classroom teachers in addressing childhood obesity through increased student athletic participation.

The researcher addressed the question using one null hypothesis to test among the means to determine any significant differences.

The Null: There are no statistically significant predictors among the several subgroups of principals' opinions, belief and attitudes from high BMI and low BMI states, gender, school organizations, ethnicity, and years of experience on the relationships of increasing students' physical activities and taking responsibility as the catalyst for preventing and lowering childhood obesity and thereby improving student wellness.

The alpha level for rejecting the nulls was set at or below the $p = .05$ level.

Review of Findings

In undertaking this study, the researcher intended to examine whether there were any predictors of opinions of K-12 high and low BMI state principals with varying demographic factors in the role as instructional catalyst for the prevention of childhood obesity. The independent variables included: principal gender, principal ethnicity, principal education level, principal years of experience, student socioeconomic status, school location, high BMI states and low BMI states. The dependent variables included:

principal's responsibility to require teachers to do instruction on nutrition and physical fitness, promotion of athletic participation, principal's responsibility for the promotion of school wellness, and district holds principals accountable for obesity programs.

Research Question and Null Hypothesis

Research Question: What variables serve as the greatest predictors of opinions, attitudes or beliefs of K-12 high and low BMI state principals, with varying demographic factors, in the roles as instructional catalyst leading classroom teachers in addressing childhood obesity through increased student athletic participation?

Null Hypothesis: There are no statistically significant predictors among the several subgroups of principal's opinions, belief and attitudes from high BMI and low BMI states, gender, school organizations, ethnicity, and years of experience on the relationships of increasing students' physical activities and taking responsibility as the catalyst for preventing and lowering childhood obesity and thereby improving student wellness.

The researcher rejected the null hypothesis. A hierarchical multiple regression resulted in the following statistical significances:

Principal's Responsibility to Require Instruction on Nutrition and Physical Fitness

The final regression model with all predictors entered was significant, $F (20, 535) = 2.41$, $p < .01$, $R^2 = .08$. Controlling for the effects of other predictors, principals with 2-5 years ($b = -.42$, $p < .05$), 6-10 years ($b = -.49$, $p < .05$), 11-20 years ($b = -.42$, $p < .05$), and 21 or more years of experience ($b = -.76$, $p < .01$) had lower ratings on this item. Controlling for other predictors, principals with an educational specialist degree ($b = .39$, $p < .01$) had higher ratings on this item. Finally, controlling for other predictors, principals

of Asian/Pacific Islander ethnicity (b = -1.13, p <.001) had lower ratings on this item.

Promotion of Athletic Participation

The final regression model with all predictors entered was significant, F (20, 535) = 5.73, p <.001, R^2 = .18. Controlling for other predictors, principals with 6-10 years (b = -1.04, p < .001) and 11-20 years of experience (b = -.65, p <.05) had lower ratings on this item. Controlling for other predictors, principals of schools in urban settings (b = .65, p <.05), suburban settings (b = .93, p <.01), and rural/agricultural locations (b = 1.29, p <.001) had higher ratings on this item. Controlling for other predictors, principals of Asian/Pacific Islander ethnicity (b = -.136, p <.001) had lower ratings on this item. Finally, controlling for other predictors, principals with postdoctoral study (b = -.93, p <.01) had lower ratings on this item.

Principals' Responsibility for Promotion of Physical Wellness

The final regression model with all predictors entered was significant, F (20, 535) = 8.59, p <.001, R^2 = .18. Controlling for other predictors, principals in high BMI states (b = -.55, p <.001) had lower ratings than principals in low BMI states. Controlling for other predictors, principals of schools in suburban (b = .67, p <.01) and rural locations (b = .67, p <.01) had higher ratings. Controlling for other predictors, principals with 6-10 years of experience (b = -.72, p <.01) had lower ratings, while principals with an educational specialist degree (b = .63, p <.001) had higher ratings. Finally, controlling for other predictors, principals of Asian/Pacific Islander ethnicity (b = -1.24, p <.001) had lower ratings.

District Holds Principal Responsible for Obesity Programs

The final model with all predictors entered was significant, F (20, 535) = 3.36, p

<.001, R^2 = .11. Controlling for other predictors, principals of schools in urban (b = .82, p <.01), suburban (b = .53, p <.05), and rural locations (b = .57, p <.05) had higher ratings. Controlling for other predictors, principals with 6-10 years of experience (b = -.72, p <.01) had lower ratings on this item, as did principals of Asian/Pacific Islander (b = -1.40, p <.001).

Researcher's Conclusions

After an analysis of data, the researcher rejected the null hypothesis and concluded that there are several predictors (independent variables) which demonstrated strong negative or positive correlations to the criterion variables and how principal opinions, attitudes and beliefs were impacted by the predictors. Perhaps most importantly was the negative correlation between principals in high BMI states and the belief that principals were responsible for promoting physical wellness of students. As the researcher discussed throughout the first two chapters of this study, childhood obesity has been a national epidemic for decades and the role of school leaders in finding solutions to the problem will continue to be at the forefront of national conversation. A major part of a child's day is spent at school and if health and wellness are promoted and taught at school, the researcher believes this will have a positive impact on changing school culture as it relates to student health and physical activity.

Recommendations for Further Research

The study results led to the researcher examining some of the key predictors and relationships of significance to the criterion variables. As a result of this examination, the researcher suggests the following recommendations for further study:

1) Further research may be conducted on the opinions, attitudes and beliefs of principals in high BMI states. This group rated low in the belief that principals are responsible for the promotion of physical wellness of students. This belief should be further examined if principals will be more heavily relied up promote student health and wellness.
2) Further research may be conducted with principals of Asian/Pacific Islander ethnicity. This group of principals rated low on every criterion variable, but because the response rate was very low among this group, conducting a survey specifically targeted the group may prove to provide more significant results.
3) Further research may be conducted with principals with 6-10 years of principal experience. This group of principals rated low on every criterion variable and further study may provide a better understanding as to why opinions, attitudes and beliefs of the group negatively correlate with the predictors.
4) Further research may be conducted using a new set of predictors to include principal BMI and principal's age to determine if these independent variables have a correlation on principals opinions on their role in preventing childhood obesity and promoting healthy living.

Summary

In Chapter One, the researcher provided historical information on the traditional roles of the public school principal and the recent transition in educational philosophy, which led to increased expectations of the principal to become a leader in curriculum and program implementation. Current legislation aimed at impacting childhood obesity and child nutrition was also discussed. Historical information was also provided on the

increase in childhood obesity and the impact this has had on the nation's schools and students. Included within Chapter One were a need and purpose for the study, statement of the problem, significance of the study, proposed research questions, limitations of any research findings, operation definitions for the study, and basic assumptions. In Chapter II, the researcher presented a Review of the Literature as background for the proposed study. In Chapter III the researcher described the research design and methodology used in the study. Included were a review of the study, research questions, null hypotheses, population, sampling procedures, instrumentation, data collection and data analyses. In Chapter IV the researcher reported the findings for the study. Multiple regression was used to answer the research question and to respond to the nulls. In Chapter V, the researcher provided a summary of the study, discussed research finding and conclusions and made recommendations for further research.

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APPENDIX A: SURVEY INSTRUMENT

SCHOOL PRINCIPALS ROLE IN THE PREVENTION AND REDUCTION OF CHILDHOOD OBESITY

As educational researchers, Dr. J. Allen Queen and Dr. Jim Watson are asking you, the school principal as instructional leader of your school, about your perceptions, opinions and attitudes of the effectiveness of local school district mandates, local board policies, state board policies, legislated programs or specific laws designed for classroom teachers to use with the expectation to prevent or eliminate childhood obesity. You will be asked about local board policies or state laws requiring teachers and administrators specific involvement in the process and the total assistance, training and preparation you, assistant principals, team leaders or all teachers have received in the form of adequate and sustained professional staff development. You will never be asked to be identified by name.

As principal, you have been included in this descriptive study as a principal of a school in a state ranked within the lowest or highest eight states, as determined by the BMI levels of students (in the form of state averages) determined by the CDC as of December 1, 2013. The survey has been emailed to you as part of the Survey Share system.

This major researcher is being assisted by five doctoral students completing their dissertations. They are Shelton Jefferies, Stacey Barber, Otis Floyd, Philip Francis, and Michele Aikens. A brief resume is available on each student by requesting by email to Dr.Queen at JAQueen@gmail.com

No identifying information or knowledge of you by name, or by any other means, is or will be available. The same is true of your assistant principals, classroom teachers, supportive staff and students.

We are most interested in your opinions, beliefs and perceptions of any policies, mandates or laws required to develop or implement any commercial or school-developed programs to prevent obesity and to learn about your perceptions, opinions and attitudes about teaching prevention of childhood obesity at your school.

To what degree should the prevention of childhood obesity instruction be part of the state or district curriculum and what would be your perceived role as principal. Finally, we hope to discover if there is any significant difference between the two groups of principal perceptions and to learn what the faculty, staff, parents and students have achieved at the different levels by implementing any specific local, district or state policies, procedures and programs in your school?

Please do not sign your name anywhere on the survey. This survey has arrived in your email at school with information with directions on how to open and use the Survey Share system. There are demographic questions followed by questions about general characteristics of your current school, teachers and students that can be checked directly on the system followed by survey questions. We estimate about 12-15 minutes to complete the survey. We hope you will join us in this important study and take a few minutes to complete the survey.

Contact Dr. Queen (jaqueen@uncc.edu) for questions about this study. Contact the Office of Research Compliance at UNC Charlotte for questions about research participation. 704-687-1871 or uncc-irb@uncc.edu

Please give us some basic information about yourself:

(1) *My current school is in the State of _____.*

(2) *I am a male_____, I am a female_____.*

(3) *I am Hispanic ____, I am White non-Hispanic _____, I am Black non – Hispanic _____.*

I am an American Indian/Alaska Native_____, I am an Asian/Pacific Islander ____ , Other_____.

(4) *My highest level of graduate school degree or related certificate completed for principal licensure is:*

Master's _____, Educational Specialist_____, Doctorate (Ed.D or Ph.D) _____, Post-Doctoral

Study of at least six months of full-time study_____, Other_____.

(5) *I have been a principal for 1_____, 2 -5 years_____, 6-10 years_____, 11-20 years _____, 21 or more years_____.*

(6) For the 2013-2014 school-year: *I am an elementary principal _____, I am a middle school principal____, I am a high school principal_____. I am a Grades K-8 principal____. I am a K-12 principal_____, Other_____. Please Explain:*

Please tell us about the students IN YOUR SCHOOL:

(7) *Number of Students and Grade Organizational Divisions: Elementary, K-5____, Middle/Jr. High 5-8 OR, 6-9_____, Other_____ Please briefly describe.*

(8) *The majority of our students come from a home environment that could be considered as being poor/poverty level _____. blue collared/working class_____, professional/upper middle class_____ . wealthy/upper class/top 10 percent income _____, Ultra-wealthy/top 1percent of national income.*

(9) *Our school is in a physical location that would be considered as: Inner city _____. Urban _____. Suburban _____ . Small town_____. Rural/Agricultural_____ . Rural/sparsely populated._____.*

(10) *What percentage of students eats lunch: prepared at school_____, brings lunch_____. eats no lunch _____, students participate in the free or reduced lunch program_____.*

Survey Directions: Please select the response that best reflects your level of agreement with **EACH** Question

GENERAL AREA	**PLEASE SELECT ONLY ONE CHOICE FOR EACH STATEMENT**			**THANK**	**YOU**
11. Childhood obesity can negatively impact an obese child's academic achievement at every grade level, K-12.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree
12. There is a relationship between the levels of a child's academic achievement and the levels of obesity as measured	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree

GENERAL AREA	PLEASE SELECT ONLY ONE CHOICE FOR EACH STATEMENT			THANK	YOU
by the BMI.					
13. Childhood obesity can influence a student's . interest, desire and motivation for learning.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree
14. Childhood obesity and academic achievement is related at every grade level.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree
15. Our school district requires student's BMI (body mass index) to be documented as an ongoing practice.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree
16. Our school district provides students with healthy meals, snacks, and activities to promote a healthy lifestyle.	*Strongly Disagree*	*Disagree*	*Neither Agree nor*	Strongly Agree	Agree
17. It is my responsibility as a school leader to support society's efforts to resolve childhood obesity by promoting and supporting health and physical education as much as support the major academic areas.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree
18. It is my responsibility as a school leader to promote and support health and physical education instruction as much as I support mathematics, language arts, science, and social studies instruction.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	Strongly Agree	Agree
19. It is my responsibility as a school leader to require teachers to implement interactive instruction of physical movement activities within core courses.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	*Strongly Agree*	*Agree*
20. It is my responsibility as a school leader to promote athletic participation as an important component in keeping the average student physically active and healthy.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	*Strongly Agree*	*Agree*

GENERAL AREA	**PLEASE SELECT ONLY ONE CHOICE FOR EACH STATEMENT**			**THANK**	**YOU**
21. My district provides all teachers the opportunities to receive necessary resources, including staff development, instructional materials and adequate funding for full implementation of local and state wellness policies targeting childhood obesity.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	*Strongly Agree*	*Agree*
22. I firmly believe the principal is primarily responsible for ensuring implementation of the schools wellness policy and the prevention of childhood obesity.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	*Strongly Agree*	*Agree*
23. District leadership holds principals accountable for implementation of state and local wellness policies focused on the prevention of childhood obesity.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	*Strongly Agree*	*Agree*
24. My district provides faculty staff development to ensure that students are not bullied physically, emotionally, or socially at school or in the local community.	*Strongly Disagree*	*Disagree*	*Neither Agree nor Disagree*	*Strongly Agree*	*Agree*