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Principals' Perceptions of Factors Associated with the Implementation of School Wellness Policies

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Principals' perceptions of factors associated with the implementation of school wellness policies

By

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Approximately 1/3 of the children in the United States are overweight or obese. Children in Mississippi have the highest rate of obesity among all other states. The outcome of this epidemic presents an increase in poor health.

To address the problems associated with overweight and obesity among children, schools in the U.S. were required to develop school wellness policies. School principals were identified as key individuals in overseeing the development and implementation of the policies. Existing research studies show a strong relationship or association between student health and academic achievement.

The purpose of this research study was to investigate elementary school principals' perceptions related to the implementation of school wellness policies. The study sought to examine principals' perceptions regarding physical activity, child nutrition, health education, and general beliefs about school health policy implementation. A web-based survey was sent to 670 elementary school principals with 123 (18%) responding.

The majority of the respondents were White females who had served four or more years as principals, had average enrollments of 500 students at their schools, and had school ratings of successful or high performing. Positive weak correlations were found to exist between school accountability ratings and principals' beliefs that physical activity promotes improved test scores and that physical activity and healthful nutrition promote increased school attendance. Positive weak correlations were also found between school accountability ratings and principals' beliefs that physical activity, child nutrition, and health education promote improved classroom behavior.

DEDICATION

I would like to dedicate this research to my wonderful parents, Mr. and Mrs. Curtis and Joan Davis, Jr., for their patience, love, encouragement, and prayers during this journey; my children who so patiently endured my absence when diligently working to pursue my degree; my entire family who would not let me quit when I desired to do so; two very special cousins, Sharon Green who greatly inspired me by reminding me of the words of Jeremiah 29:11 and Dr. Matilda Miller who walked this walk before me and so graciously looked back to grab my hand and gently guide me to the finish line; my close friend Bernadette Young who often held one-on-one prayer meetings for me at her beauty salon as I sat in her chair and shared my many concerns about completing my dissertation. I also dedicate this study to my entire church family at Truth Christian Center for their many prayers, love, and encouragement. This study would not be possible without my Lord and Savior Jesus Christ.

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CHAPTER I

INTRODUCTION

Because public schools have the unique ability to provide educational opportunities for all children despite their socioeconomic backgrounds or ethnicity, educators have a crucial role in improving student health (Satcher, 2009). According to Mulheron and Vonasek (2009), millions of children and adolescents in the United States can be reached through school interventions, thus saving millions of dollars that would be lost due to absences caused by poor health. Schools are the ideal setting for providing children and adolescents with nutritious meals, healthy snacks and beverages, consistent physical activity, and knowledge of lifelong healthy behaviors (Institute of Medicine, 2005). Moreover, for children to have an equal chance at being successful in schools and life, schools can assist children in developing lifetime physical activity and healthy eating habits (Satcher, 2009). When children and adolescents engage in healthy eating and participate in school-based sports or extracurricular activities, the risks of becoming overweight are significantly reduced (Ballard & Alessi, 2006; Burke et al., 1998; Elkins, Cohen, Koralewicz, & Taylor, 2004).

The school principal can significantly influence nutrition, physical activity, and policy decisions related to children's health at the local, district, state, and federal levels (Seifert & Vornberg, 2002). School principals are identified as individuals who can comprehend the dynamics of policy development, policy implementation, and advocacy for children. Principals can effectively put into practice state and federal laws designed to

improve student health and decrease childhood obesity (Seifert & Vornberg, 2002). The role of a principal is to lead teachers, staff, and students effectively and efficiently to not only improve academic achievement, but also improve student health.

In an effort to address concerns regarding poor nutrition and childhood obesity, the U.S. Congress mandated as part of the Child Nutrition and Women, Infants, and Children (WIC) Reauthorization Act of 2004 that every school district with schools participating in the national school lunch program develop and implement wellness policies for students and staff, beginning fall of 2006. Every school was required to establish a school wellness policy to include nutrition education goals, child nutrition regulations, guidelines for foods and beverages sold outside of school meals, and goals for physical activity. School principals were selected to provide oversight in developing and implementing these school wellness policies. The principals were considered gatekeepers for implementation of school wellness policies (Molaison, Carr, & Hubbard, 2007).

The Association for Supervision and Curriculum Development's (2010) evaluation of a Healthy School Communities (HSC) pilot project revealed that principals were the most important figures in implementing school change and school improvement related to increasing student wellness. Further, literature indicated that local wellness policies were considered an important tool for school principals, parents, local education agencies (LEAs) and school districts in promoting student wellness, preventing and reducing childhood obesity, and providing assurance that child nutrition guidelines meet the minimum federal standards (Ballard & Alessi, 2006; Burke et al., 1998; Elkins et al., 2004).

While the Child Nutrition and WIC Reauthorization Act of 2004 required school districts to develop and implement school wellness policies, the extant literature showed that many schools and districts were struggling in implementation. A study by Chriqui, Schneider, Chaloupka, Ide, and Pugach (2009) found that at the beginning of the 2007 and 2008 school year most students in the nation were enrolled in a school district with a school wellness policy. Other researchers found the quality of school wellness policies lacked development, were fragmented, and lacked sufficient plans for implementation and evaluation (Belansky, Chriqui, & Schwartz, 2009). Belansky et al. (2009) found the policies were overall weak and did not require schools to take action. Mulheron and Vonasek (2009) noted that a report by the National Governors Association (NGA) on actions taken by states to prevent childhood obesity and to encourage healthy behaviors found documented schools either lacked knowledge of mandated school wellness policy requirements or needed support implementing their wellness plans. Belansky et al. (2009) cited a Robert Wood Johnson Foundation (RWJF) research brief summarizing results of preliminary evidence on the implementation of school wellness policies that suggested studies were needed to examine how schools overcame barriers related to the implementation of school wellness policies. In general, school wellness policies have shown improvement years after the Child Nutrition and WIC Reauthorization Act went into effect, but have remained weak (Chriqui et al., 2010).

More studies are required to determine the effectiveness of school wellness policies and implementation of the policies for reducing and preventing overweight and obesity among children. Belansky et al. (2009) encouraged policy-makers, researchers, and advocates to seek strategies for promoting healthier schools and to strengthen school wellness policies. Kann, Brener, and Wechsler (2007) reported that the Center for

Disease Control and Prevention (CDC) urged scholars to conduct research studies and provide analyses of school wellness policies.

Statement of the Problem

The prevalence of overweight and obesity represent serious concerns for school leaders and policy makers as overweight and obesity have reached epidemic proportions (Molaison et al., 2007). Nearly one-third of children in the United States are overweight or obese (Ogden & Carroll, 2010). Thirty states have 30% or above overweight and obese children, and Mississippi has the highest rate with 44.4% of children ages 10-17 being overweight or obese (Trust for America's Health, 2009).

The prevalence of overweight and obesity in children in the United States tripled since 1970. The child obesity rate increased from 5% in the 1970s to 10% in the 1980s and 13.9% in the 1990s (Ogden & Carroll, 2010). The heaviest children are getting larger and young people of all ages, gender, and ethnic backgrounds are affected by this public health problem (Houston, 2006; Lamb, Carroll, & Ogden, 2009; Ogden, Carroll, & Flegal, 2008).

Overweight and obesity are major contributors of poor health among children and youth. The American Academy of Pediatrics (2006) identified overweight and obesity as the most common childhood medical condition based on several factors impacting the overall health of children. Between 1979 and 1999, hospital stays tripled among 6–17 year-old children with obesity related problems (Dietz, 2004). Further, obese adolescents experienced poor self-esteem and less psychosocial wellbeing than those who were not overweight (Mellin, Neumark-Sztainer, Story, Ireland, & Resnick, 2002). In general,

overweight and obesity increase the risk of death from heart disease by 57%, cardiovascular disease by 48%, and cancer by 7% (Healthy America, 2009).

According to Ballard and Alessi (2006), three factors that contribute to childhood obesity include (a) poor eating habits, (b) lack of physical activity, and (c) genetics. Lifestyle and culture have also been identified as significantly influencing obesity (Dehghani, Akhtar-Danesh, & Merchant, 2005). Notably, nutrition experts warned that the generation of children born in the year 2000 and after may be the first in their generation to have shorter life spans than their parents because of an increase in the consumption of processed food (Brownell, Harris, & Bargh, 2009).

Researchers have investigated specific variables associated with overweight and obesity. Gray et al. (2007) found there was a strong relationship between low household income and increased childhood weight status. State estimates of Medicare and Medicaid obesity related medical expenses were found to impose a drain on resources for healthcare (Finkelstein, Feibelkorn, & Wang, 2004). Finkelstein et al. reported that one-half of the expenditures related to obesity were financed by Medicare and Medicaid. Treating obesity and related medical conditions in adults and children totaled more than $100 billion per year (Houston, 2006). In Mississippi, the total adult obesity medical expenditure resulting from adult obesity from 1998 to 2000 was $757 million. One of the most startling trends reported was that the majority of overweight adolescents will eventually become obese adults (Ballard & Alessi, 2006).

In addition to overweight and obesity being linked in the literature as negative influences on overall wellness outcomes, there appears to be a link between overweight and obesity and low academic achievement in schools (Mulheron & Vonasek, 2009). Data reports from the U.S. Department of Education (2009) revealed that the average

Mississippi elementary students' mathematics scores in 2009 were lower than scores in 46 states, and the average Mississippi elementary students' reading scores in 2009 were lower than scores in 43 states. Mississippi's elementary students who were eligible for free or reduced-priced school lunch had an average reading score of 24 points lower than that of students who were not eligible for free or reduced-priced lunch.

Ballard and Alessi's (2006) review of the extant literature validated that obesity can have a definite negative influence on the academic development of students. Poor nutrition and lack of physical activity were linked to factors affecting academic achievement along with absenteeism, classroom behavior, concentration, self-esteem, cognitive performance, and test scores (National School Boards Association, 2010).On the other hand, there was strong evidence that showed a positive relationship between healthful nutrition and physical activity behaviors with improved academic performance and classroom behavior among school-aged children (Chriqui et al., 2009). Consistent with these findings, Taras and Potts-Datema (2005) found that being overweight and obesity were associated with lower levels of academic achievement.

School Wellness Policies

Issues related to childhood obesity present a clarion call to educators, nutritionists, health officials, and policy makers. The Child Nutrition and WIC Reauthorization Act required school districts to set general goals for implementing school wellness policies (Chriqui et al., 2009). The Act, however, provided no specific guidelines for physical activity, nutrition education, and other activities that promote health and fitness. Many school districts included plans for implementation in their written wellness policies as required by the Child Nutrition and WIC Reauthorization Act

of 2004, while they were not required to report on compliance and implementation. As a result, implementation and evaluation efforts were not monitored or conducted regularly.

Section 204 of the Healthy, Hunger-Free Kids Act of 2010 added Section 9A to the Richard B. Russell National School Lunch Act (NSLA), *Local School Wellness Policy Implementation*. The provisions set forth in Section 204 expanded upon the previous local wellness policy requirement from the Child Nutrition and WIC Reauthorization Act of 2004. The intent of section 204 of the Healthy Hunger-Free Kids Act of 2010 was to strengthen wellness policies by emphasizing ongoing compliance and assessment. The provision encourages community involvement. The approach was intended to foster broad-based community support for the development and implementation of effective wellness policies. Overall, the need for school wellness policies and ongoing monitoring and evaluation of school wellness policies is well documented in the literature.

Purpose of the Study

All public schools in the state of Mississippi were required to implement school wellness policies in 2006-2007. The purpose of this study was to investigate school principals' perceptions of physical activity, child nutrition, health education, and general beliefs related to the development and implementation of school wellness policies. Physical activity, child nutrition, and health education were selected because of their link to increased academic achievement (Chriqui et al., 2009). Health education provides an opportunity for students to gain knowledge and necessary skills for making healthy decisions (CDC, 2009a). The researcher also sought to determine if relationships existed between the specific factors associated with the implementation of school wellness

policies and school accountability ratings. Mississippi's school accountability ratings were determined by student performance on state assessments. The school accountability ratings were selected as the criterion variable for the study and served as a proxy for academic achievement.

Mississippi's School Accountability Ratings

Mississippi's school accountability ratings were determined based on performance on the Mississippi Curriculum Test, second edition (MCT2). According to Jordan, Kaase, and Simmons (2009), the MCT2 measures student achievement in language arts and mathematics in grades three through eight based on the 2006 Mississippi Language Arts Framework and the 2007 Mississippi Mathematics Framework. In addition to being the basis for state accountability in these grades, the MCT2 is designed to meet the federal testing requirements of the No Child Left Behind Act (NCLB*)* of 2001. NCLB is a federal law passed under the George W. Bush administration. NCLB represented legislation that attempted to accomplish standards-based education reform. NCLB was written to require 100 % of students (including special education students and those from disadvantaged background) within a school to reach the same set of state standards in math and reading by the year 2014 (U.S. Department of Education, 2009).

The MCT2 is given to students at the end of each school year to assess academic achievement (Mississippi Department of Education MDE; 2009b). Further, according to the MDE (2009a), Quality Distribution Index (QDI) is computed to measure achievement results on the MCT2. Schools and districts earn one point per percentage of students who score *Basic*; two points per percentage of students who score *Proficient*; and three points

per percentage of students who score *Advanced*. Schools and districts earn zero points for students who score *Minimal*. Individual schools receive an annual school performance classification based on the results of the QDI. Annual performance classifications are assigned in the summer/fall of each school year. Classifications range from highest to lowest academic performance and are listed as follows: *star school, high performing, successful, academic watch, low performing, at-risk of failing, and failing*. The intent of the study was to determine if principals' perceptions related to the implementation of school wellness policies were associated with the schools' 2009-2010 performance classifications (*star school, high performance, successful, academic watch, low-performing, at- risk of failing,* and *failing*).

Research Questions

The following research questions guided the study.

1. What are elementary school principals' perceptions regarding procedures and processes related to the implementation of their school wellness policies?
2. What are elementary school principals' perceptions regarding implementation of the physical activity component of their school wellness policies?
3. What are elementary school principals' perceptions regarding implementation of the child nutrition component of their school wellness policies?
4. What are elementary school principals' perceptions regarding implementation of the health education component of their school wellness policies?
5. What are elementary school principals' general beliefs about the implementation of their school wellness policies?

6. Do relationships exist between school accountability ratings and the school principals' perceptions regarding school wellness policies implementation of procedures and processes, physical activity, child nutrition, health education, and general beliefs?

Definitions of Terms

The following definitions of terms are presented to help clarify meanings and conceptualizations. These terms are used throughout the study.

Academic watch is the academic classification of schools that do not meet academic growth requirements with a QDI of 133-165 (MDE, 2009b).

Active recess includes body movements that result in an expenditure of energy and increased heart rate (MDE, 2009a).

Advanced refers to superior academic performance beyond proficient (MDE, 2009b).

At risk of failing is the academic classification of a school performing below the national average with a QDI of 100-132 (MDE, 2009b).

Basic refers to partial mastery of prerequisite knowledge of skills that are fundamental for proficient work at each grade level (MDE, 2009b).

Body Mass Index (BMI) is a body measure calculated as weight in kilograms divided by height in meters squared (Lamb et al., 2009).

Child nutrition refers to food and nutrition programs related to children (U.S. Department of Agriculture, 2006).

Coordinated School Health Program (CSHP) refers to a systematic approach to the improvement of health and well-being among students for successful school

outcomes. Eight interrelated school health components of the CSHP are as follows (a) health education, (b) physical education, (c) health services, (d) nutrition services, (e) counseling, psychological, and social services, (f) healthy school environment, (g) health promotion for staff, and (h) parent/community involvement (CDC, 2009a).

Failing refers to the academic classification of a school or school districts performing below the national average with a QDI of 0-99 (MDE, 2009b).

Health education refers to a sequentially planned, developmentally appropriate curriculum and instruction that promotes a healthy lifestyle. Students develop the basic knowledge, decision- making skills, and ability to obtain valid health information (MDE, 2009a).

High performing refers to the academic classification of a school performing above the national average with a QDI of 200-300 (MDE, 2009b).

Minimal refers to inadequate academic performance that indicates little understanding and minimum display of skills (MDE, 2009b).

No Child Left Behind Act (NCLB) of 2001 is a federal law. NCLB represents legislation that has attempted to accomplish standards-based education reform. The intent of the law is to hold primary and secondary schools measurably accountable to higher standards. NCLB also provides more opportunities to parents for school choice and places a greater emphasis on reading in schools. NCLB is written so that it requires 100 percent of students (including special education students and those from disadvantaged background) within a school to reach the same set of state standards in math and reading by the year 2014 (U.S. Department of Education, 2009).

Obesity refers to a body-mass index (BMI) greater than the 95th percentile based on age and gender (Ludwig, 2007).

Overweight refers to a BMI between the 85th to 95th percentile based on age and weight (Ludwig, 2007).

Physical activity includes any movement of the body that expends energy, such as exercise, sports, dance, swimming, lifting weights, or other body movements that result in an increased heart rate (MDE, 2009a). Physical activity also includes daily activities like walking programs, recess, etc. Physical activity characterizes all types of human movement that lead to an expenditure of energy associated with living, work, play, and exercise.

Physical activity based instruction allows students to practice movements learned in a variety of settings that lead to an expenditure of energy and/or support other subject areas (MDE, 2009a).

Physical education refers to sequentially planned, developmentally appropriate K-12 curriculum and instruction that promote lifelong physical activity (MDE, 2009a). Students develop the knowledge, motor skills, self-management skills, social skills, attitudes, and confidence needed to adopt and maintain physical activity throughout their lives.

Principal refers to the chief administrator in an elementary school, secondary school, or high school (Seifert & Vornberg, 2002).

Proficient refers to satisfactory academic performance indicating understanding and adequate display of skills (MDE, 2009b).

Quality of Distribution Index (QDI) measures the distribution of student performance on state assessments around the cut points for Basic, Proficient, and Advanced performance. The formula for the QDI is QDI = % Basic + 2% (Proficient) + 3% (Advanced; MDE, 2009b).

Star school refers to the highest possible academic classification of a school performing significantly above the national average with a QDI of 300 (MDE, 2009b).

Successful refers to the academic classification of a school performing at the national average with a QDI of 166-169 (MDE, 2009b).

Conceptual Framework of the Study

Figure 1 provides a visualization of the major components of the study. The specific components of the study are included in the illustration. As illustrated in Figure 1, the research study focused on three major sets of variables: (a) demographic variables, (b) school wellness policy variables related to implementation of the policies, and (c) school accountability ratings. The overall goal of this research study was to investigate school principals' perceptions of specific factors related to the implementation of school wellness policies. In addition, specific factors related to the development and implementation of school wellness policies and school accountability ratings were investigated to determine if relationships existed. The participants of the study were elementary school principals in the state of Mississippi.

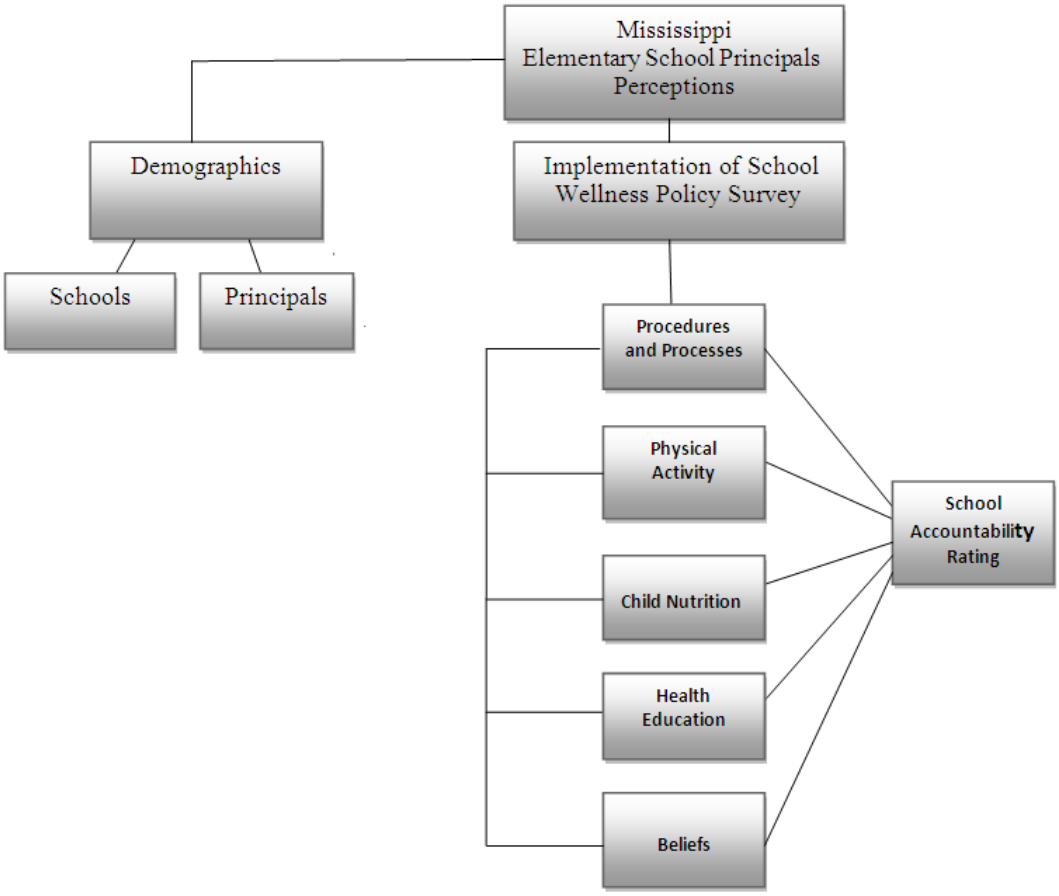

Figure 1 Conceptual Framework of the Study

Elementary school principals were selected because of early intervention success. Research studies suggest when students learn healthful habits early in their lives, the chance of maintaining the habits throughout their lives is enhanced (CDC, 2009a). Data for the study were collected utilizing a web based survey. The dependent variable for the study was the accountability rating assigned to each school for the 2009-2010 school year based on student performance on state assessment data. The survey also included questions to obtain school demographics.

Theoretical Framework

The theoretical framework for the study includes underpinnings from the CSHP model. A diagram of the CSHP model is presented in Appendix A. In addition, the federal Child Nutrition and WIC Reauthorization Act of 2004, the Mississippi Healthy Students Act (see Appendix B), and prior work completed by the CDC provide explanations of influences of student health and nutrition. The CSHP model consists of eight components that strongly influence student health and learning. The eight components of the CSHP include (a) health education, (b) physical education, (c) health services, (d) nutrition services, (e) counseling, psychological and social services, (f) healthy school environment, (g) health promotion for staff, and, (h) parent/community involvement. Descriptions of the eight components delineated from the CSHP are as follows (CDC, 2009a).

1. Health Education refers to a planned, sequential, K-12 curriculum that addresses the physical, mental, emotional and social dimensions of health. The curriculum is designed to motivate and assist students to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. Students develop and demonstrate increasingly sophisticated health-related knowledge, attitudes, skills, and practices. The comprehensive health education curriculum includes a variety of topics such as personal health, family health, community health, consumer health, environmental health, sexuality education, mental and emotional health, injury prevention and safety, nutrition, prevention and control of disease, and substance use and abuse. Qualified, trained teachers provide health education.
2. Physical Education is a planned, sequential K-12 curriculum that provides cognitive content and learning experiences in a variety of activity areas such as

basic movement skills; physical fitness; rhythms and dance; games; team, dual, and individual sports; tumbling and gymnastics; and aquatics. Quality physical education should promote, through a variety of planned physical activities, each student's optimum physical, mental, emotional, and social development, and should promote activities and sports that all students enjoy and can pursue throughout their lives. Qualified, trained teachers teach physical activity.

3. Health Services refer to services provided for students to appraise, protect, and promote health. These services are designed to ensure access or referral to primary health care services or both, foster appropriate use of primary health care services, prevent and control communicable diseases and other health problems, provide emergency care for illness or injury, promote and provide optimum sanitary conditions for a safe school facility and school environment, and provide educational and counseling opportunities for promoting and maintaining individual, family, and community health. Qualified professionals such as physicians, nurses, dentists, health educators, and other allied health personnel provide these services.
4. Nutrition Services include access to a variety of nutritious and appealing meals that accommodate the health and nutritional needs of all students. School nutrition programs reflect the U.S. Dietary Guidelines for Americans and other criteria to achieve nutrition integrity. The school nutrition services offer students a learning laboratory for classroom nutrition and health education, and serve as a resource for linkages with nutrition-related community services. Qualified child nutrition professionals provide these services.

5. Counseling and Psychological Services refer to services provided to improve students' mental, emotional, and social health. These services include individual and group assessments, interventions, and referrals. Organizational assessment and consultation skills of counselors and psychologists contribute not only to the health of students but also to the health of the school environment. Professionals such as certified school counselors, psychologists, and social workers provide these services.
6. Healthy School Environment is the physical and aesthetic surroundings and the psychosocial climate and culture of the school. Factors that influence the physical environment include the school building and the area surrounding it, any biological or chemical agents that are detrimental to health, and physical conditions such as temperature, noise, and lighting. The psychological environment includes the physical, emotional, and social conditions that affect the well-being of students and staff.
7. Health Promotion for Staff refers to opportunities for school staff to improve their personal health status through activities such as health assessments, health education and health-related fitness activities. These opportunities encourage school staff to pursue a healthy lifestyle that contributes to their improved health status, improved morale, and a greater personal commitment to the school's overall coordinated health program. This personal commitment often transfers into greater commitment to the health of students and creates positive role modeling. Health promotion activities have improved productivity, decreased absenteeism, and reduced health insurance costs.

8. Family/Community Involvement is an integrated school, parent, and community approach for enhancing the health and well-being of students. School health advisory councils, coalitions, and broadly based constituencies for school health can build support for school health program efforts. Schools actively solicit parent involvement and engage community resources and services to respond more effectively to the health-related needs of students.

The Child Nutrition and WIC Reauthorization Act of 2004 required each LEA or school district participating in the NSLP and/or National School Breakfast Program (NSBP) to establish a school wellness policy. All schools and institutions were to comply by the beginning of the 2006-2007 school year.

Local education agencies or school districts were required to include the following in their school wellness policies: (a) nutrition education goals, (b) school meal regulations that meet minimum federal guidelines, (c) guidelines for foods and beverages sold outside of school meals, (d) goals for physical activity and other school activities, and (e) plans for implementation (Chriqui et al., 2009). According to the Child Nutrition and WIC Reauthorization Act of 2004, goals and guidelines set by school districts should be designed to promote wellness and reduce childhood obesity. For measuring implementation of a school wellness policy, one or more persons within the school or school district must be designated to ensure the activities of the school wellness policy are met. Usually, the principal is the individual responsible for implementation of the school wellness policy. In addition, school wellness policy development and implementation should involve parents, students, representatives of the school food authority, the school board, school administrators, and the public.

In an effort to increase the implementation of goals related to physical activity and child nutrition as required by the federal Child Nutrition and WIC Reauthorization Act of 2004, the state of Mississippi's Legislature passed the Mississippi Healthy Students Act (MDE, 2009a). All schools in Mississippi and institutions mandated to comply with the requirements of the federal Child Nutrition and WIC Reauthorization Act of 2004 were required to increase physical activity and health instruction for students in grades K-12. The Mississippi Healthy Student's Act mandated 45 minutes per week of health education instruction and 150 minutes per week of physical activity-based instruction in grades K-8 (MDE, 2009a).

After a critical analysis and review of the Mississippi Healthy Students Act, the Child Nutrition and WIC Reauthorization Act, and the CSHP model, three critical components of the CSHP model were selected for the study. The three critical components include (a) physical education (physical activity and activity based instruction), (b) nutrition education (child nutrition), and (c) health education (comprehensive school health). These three components were selected because they are aligned with the minimum requirements of the Child Nutrition and WIC Reauthorization Act of 2004 and the Mississippi Healthy Students Act which specifically address child nutrition and physical activity. In general, the theoretical framework for the study implies that academic achievement improves when students are involved in physical activity, nutrition education, and health education (Belansky et al., 2009).

Research Methodology

The survey research design was selected to appropriately answer the study's research questions. The researcher uses a quantitative survey research design to obtain a

variety of information about a population (McMillan & Schumacher, 2006). The population for the present study included practicing elementary school principals from 152 school districts in the state of Mississippi. The assumption was made that they would have first-hand knowledge regarding their schools' wellness policy implementation. The instrumentation for the study was developed by the researcher based on the content from the Child Nutrition and WIC Reauthorization Act of 2004 and the Mississippi Healthy Student Act. The survey sought demographic information along with information about the principals' beliefs and behaviors. Data were collected using a web-based survey on Survey Monkey. Data obtained from participants' responses were automatically entered into a database and analyzed using the Statistical Package for the Social Sciences (SPSS) version, 19.0. Data analysis included descriptive statistics (frequencies, percentages, and standard deviations). Correlation coefficients were computed to determine if relationships existed between school accountability ratings and physical activity, child nutrition, health education, and general beliefs.

Delimitations

Several delimitations were recognizable at the onset of the study. The study was confined to responses that would be obtained using a quantitative web-based survey. While the CSHP model was chosen as the guiding theoretical framework, only three of eight components of the CSHP were selected because of their link to academic achievement. The three components include (a) physical activity, (b) child nutrition, and (c) health education. The population for the study consisted of practicing elementary principals in the state of Mississippi since they would have first-hand knowledge of the factors associated with implementation of their school wellness policies. The assumption

was that all schools had complied with the Child Nutrition and WIC Reauthorization Act of 2004 and the Mississippi Healthy Students Act. Data collection occurred during spring 2011. School accountability ratings were from the 2009-2010 school year.

Significance of Study

The study is of importance because of the obesity epidemic and associated risks for chronic diseases in Mississippi. This study may be useful to the Mississippi Department of Education's Office of Healthy Schools (OHS), the Mississippi Alliance for School Health (MASH), and the CDC's Division of Adolescent and School Health (DASH). In addition, this study could be useful to school administrators, students, and parents for the purpose of improving school wellness policies in an effort to decrease childhood obesity and increase academic achievement among Mississippi's children. Further, the study adds to the existing body of research devoted to strengthening school wellness policies for the purpose of decreasing childhood obesity and increasing academic achievement.

Organization of the Study

The study contains five chapters. The first chapter includes the introduction, statement of the problem, purpose of the study, theoretical framework, and conceptual framework. In addition, research questions, and method, definition of terms, delimitations, and significance of the study were included in chapter one.

The second chapter, the literature review, contains a review of the existing literature relevant to the study. Chapter three includes research procedures, a description of the research design, methodology, and procedures used in the study. Chapter three also includes a description of the research design, research questions, participants, the role of

the researcher, data collection, methods of surveying, data analysis, and validation of findings.

The fourth chapter contains a presentation of the findings from the study. The chapter includes analysis of data collected. The fifth chapter provides a summary of major findings from the study and the discussion related to the perceptions of principals' regarding the implementation of school wellness policies. The chapter concludes with general recommendations and recommendations for future research.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Mississippi's mandate for implementation of school wellness policies is associated with the federal Child Nutrition and WIC Reauthorization Act of 2004 and the Mississippi Healthy Student's Act. The Coordinated School Health Program model was selected to help explain the benefits of physical activity and good nutrition. The principal was identified as the key to successful school wellness policy implementation (Association for Supervision and Curriculum Development, 2010). The purpose of this chapter is to present a review of the literature related to the implementation of school wellness policies.

School Wellness Policies

In an effort to address nutrition and physical activity and the effects on academic achievement, the federal Child Nutrition and WIC Reauthorization Act of 2004 required LEAs or school districts participating in the National School Lunch Program and/or National School Breakfast Program to establish a school wellness policy by the beginning of the 2006-2007 school year. School districts were required to include the following in their school wellness policies: (a) nutrition education goals, (b) school meal regulations that meet minimum federal guidelines, (c) guidelines for foods and beverages sold outside of school meals, (d) goals for physical activity and other school activities, and (e) plans for implementation.

The voluntary NSLP and NSBP are two programs available to public schools serving grades K-12 and to nonprofit private schools and residential childcare institutions (Collins, Goodman, & Moulton, 2008). Participation in the NSLP and the NSBP include a written agreement with the United States Department of Agriculture (USDA). School meals cannot be less restrictive than regulations issued by the Secretary of Agriculture. Participating NSLP schools must serve lunches that meet the federal requirements and offer free or reduced-priced meals to eligible children based on household income. Schools and institutions receive subsidies and commodities from the USDA for every reimbursable meal. While the federal government cannot require states to participate in the NSLP or the NSBP, states can make participation mandatory. Participation is mandatory for the NSBP in Illinois, Georgia, and Louisiana. Participation in the NSLP is mandatory in Arizona, Maine, and North Carolina. The majority of school districts in Mississippi participated in the NSBP and the NSLP during the 2009-2010 school year. The Mississippi Department of Education data showed 194 school districts in Mississippi participated in the NSBP and 201 Mississippi school districts participated in the NSLP.

State Policies

Over 14,000 school districts in the United States indicated primary jurisdiction for establishing school wellness policies (RWJF, 2009). States can establish policies or pass legislation that affect schools but the school districts have local control. School wellness policies were found to have a positive influence on school districts (Agron et. al., 2010) and were key in the prevention of adolescent obesity. Researchers found that successful school health policies and programs are essential to the health and welfare of children as well as when they become adults (Balaji et al., 2010).

According to RWJF (2009), every state was found targeting specific goals and strategies to improve the health of its citizens. The researchers noted that there was a wide range of efforts in progress to address the obesity crisis. Notably, an increasing number of states had published plans that specifically focused on physical activity and healthy eating.

The Healthy Students Act addresses the Mississippi's high rates of childhood obesity in public schools by improving nutrition, physical activity, and health education. According to the Center for Mississippi Health Policy (2010), during 2006 the Mississippi Legislature instructed the State Board of Education to create a wellness curriculum with rules and regulations to be followed by school districts in implementing their curricula. School wellness policies were required to promote an increase in physical activity and healthy eating habits in an effort to decrease the rate of childhood obesity among students. The Mississippi Legislature directed the State Board of Education to adopt regulations identifying nutrition standards along with physical education and health education requirements. The regulations became effective during the 2008-2009 school year. The Mississippi Healthy Students Act mandates 45 minutes per week of health education instruction and 150 minutes per week of physical activity-based instruction in grades K-8 (MDE, 2009a).

Implementation of School Wellness Policies

Limited implementation of school wellness policies was found to be of significant concern for policy makers (Pekruhn, 2009). Pekruhn stated that finding ways to hold state agencies, local school districts, and individual schools accountable for successful implementation of school wellness policies was imperative. Because schools did not

receive incentives or penalties for implementing school wellness policies, policies were often ignored or implemented only to meet the minimum standards as required under legislation (Pekruhn, 2009). According to Chriqui and Chapoulka (2011), when attempting to obtain school wellness policies for a study, nine school districts had to be issued a request for information through the Freedom of Information Act (FOIA). The purpose of the study by Chriqui and Chapoulka was to analyze a national sample of school districts' school wellness policy implementation. Only two school districts responded to the FOIA request. The researcher found that four out of nine did not have policies. All nine school districts did not have web sites. Chriqui and Chapoulka concluded that when local schools make school wellness policies available to the public, schools are held accountable for implementation. School wellness policy transparency leads to increased knowledge among parents, school administration and the local community.

Metos and Nanney (2007) found that complying with the Child Nutrition and WIC Reauthorization Act of 2004 was a positive move toward improving the school nutrition and physical activity environment, but it did not guarantee a comprehensive or effective policy. Metos and Nanney concluded that schools and stakeholders must work cooperatively to strengthen school wellness policies. Studies showed that schools have a major role in collaborating to address obesity and overweight among children (Lee, Ho, & Keung, 2010).

Findings from a nationwide survey of 2,400 participants from 50 states showed that 72% of physical education teachers and community health professionals did not feel that schools were adequately implementing school wellness policies (Action for Healthy Kids, 2008). Over 65% of school nutrition service professionals and more than 80% of

physical education teachers and community health professionals did not feel that schools were monitoring the implementation of school wellness policies. A cross-sectional descriptive study conducted in 2007 assessed Pennsylvania's Public School District's school wellness policies by comparing the policies with mandated requirements (Probart et al., 2008). Probart et al. found it questionable whether the district-level personnel could implement school wellness policies. Probart et al. concluded that the ability of school wellness policies to influence childhood overweight and obesity depended on efforts at both the local school and district levels. School districts need additional support in the rigor, development, implementation, and evaluation of school wellness policies.

Pekruhn (2009) found that Arkansas, South Carolina, and Rhode Island required the integration of school wellness policies, nutrition policies, physical activity, and education policies as the components of school improvement planning processes. Nutrition and physical activity were placed on equal standing with math, science, and reading in terms of state accreditation and/or funding in these states (Pekruhn & Bogden, 2007).The integration of school wellness policies with other education policies promotes stronger implementation. Isolating education policies contributes to the lack of implementation as educators attempt to prioritize the level of importance of various policies (Pekruhn, 2009).

The literature showed that many states require schools to publicly report progress of school wellness policy implementation to the state's department of education and to the general public. In addition, Pekruhn (2009) noted that Alabama, Florida, Kentucky, Indiana, New Mexico, Mississippi, and Tennessee had specific state requirements for implementing school wellness policies to account for local accountability. These states were required to provide state-level review and evaluation of school wellness policies:

Colorado, Kansas, New Jersey, New Mexico, Pennsylvania, North Carolina, Hawaii, and Maryland. Kentucky, Nevada, North Carolina, Oklahoma, and Tennessee school districts were required to report implementation of school wellness policies to their respective state departments of education. Pekruhn (2009) suggested that with reporting, review, and evaluation, districts would ensure they were implementing school wellness policies and also collecting data on the effects of policies. Pekruhn reiterated that while it may be simple for policymakers to develop, approve, and expect health-related policies to be implemented and assessed, school staff and administrators have the challenge of meeting those expectations without compromising core academics.

Molaison et al. (2007) conducted an in-depth study to determine principals' benefits to implement school wellness policies. The National Food Service Management Institute (NFSMI) surveyed 3,235 principals throughout the U.S. which included an equal number of elementary, middle, and high school principals. The findings from the study indicated there were five predominant benefits to school wellness policy implementation. The five benefits included (a) improved student health, (b) improved academic achievement, (c) better nutrition education of teachers and coaches, (d) improved student attendance, and (e) a healthy food service menu. Conversely, five predominant barriers were identified. The barriers included (a) higher cost to the school, (b) less revenue from vending, (c) more training for foodservice staff, (d) problems with providing rewards in the classroom, and (e) less participation in the school lunch program (Molaison et al., 2007).

Trost and Mars (2009) reported on findings from another nationwide study conducted by the Center on Education Policy in 2007. Trost and Mars reported the Center on Education Policy found 62% of elementary schools and 20% of middle schools

significantly decreased time in physical activity and increased the instructional time they allocated to reading, language arts, and math. Nutrition, physical activity, and education policies fell by the wayside (Pekruhn, 2009).

Overall, the extant literature revealed that schools are required by law or other regulations to implement specific policies related to school wellness, but limitations to implementation were time and money (Brownson et al., 2010; Longley & Sneed, 2009; School Nutrition Association, 2007). Cox et al. (2011) found three barriers that the majority of school board members identified as significant in addressing physical activity and physical education were budget problems, lack of time in a school day, and other district priorities. A school's ability to overcome limitations may be positively linked to the strength of accountability stipulations achieved through monitoring and enforcement (Brownson et al., 2010).

The Mississippi Healthy Students Act requires schools to develop health councils to monitor proper implementation of school wellness policy requirements (Center for Mississippi Health Policy, 2010). The health councils must be composed of a broad group of stakeholders that work together on policy development. The health councils are required to meet at least three times a year, perform a self- assessment, and provide an annual report to their local school board.

The Mississippi Healthy Students Act was reviewed by the CMHP (2010) after one year of implementation. As a part of the review, principals responded to a school wellness policy implementation survey. The principals reported full implementation of school wellness policies was highest among middle schools (73.3%), followed by high schools (73.0%), and elementary schools (69.4%). The use of a monitoring instrument was highest among high schools (43.8%), followed by elementary (43.1%), and, middle

schools (41.7%). Full implementation of a school health council was highest among elementary schools (61.4%), followed by middle schools (59.3%), and, high schools (59.1%). The highest percentages of full implementation of the minimum requirements of the local school wellness policy in 2008 were in the categories of food safe schools (87.2%), counseling, psychological, and social services (84.0%), and nutrition (81.0%). The components with the lowest percentages of implementation were in having a quality staff wellness program (42.8%), and marketing a healthy school environment (42.5%).

Coordinated School Health Program (CSHP) Model

The CSHP was selected from the literature to provide the theoretical framework for the study. The CSHP model consists of eight components that strongly influence student health and learning. The eight components of the CSHP include (a) health education, (b) physical education, (c) health services, (d) nutrition services, (e) counseling, psychological and social services, (f) healthy school environment, (g) health promotion for staff and, (h) parent/community involvement.

Allensworth and Kolbe (1987) investigated an expanded theory of a comprehensive school health program that would protect and improve the health of students and personnel. The comprehensive school health program included eight components that were to be coordinated to have possible collaborative results. The eight components of the comprehensive school health program included (a) health education, (b) physical education, (c) health services, (d) food services, (e) counseling, (f) health environment, (g) site health promotion program for faculty & staff, and (h) integrated school and community health promotion efforts. To determine if the eight components should be considered a definite part of the comprehensive school health program, the

American School Health Association (ASHA) was awarded a grant by the Metropolitan Life Foundation to invite nationally recognized leaders to co-author an article to describe individual components of the model. Descriptions of the eight components were as follows (Allensworth and Kolbe, 1987).

1. The health education program was defined as a planned progressive k-12 curriculum that focused on physical, mental, emotional and social areas of a student's health.
2. The school health service program was defined as a service that provided varied preventative health interventions and remediation for students.
3. The school health environment was defined as the psychological and physical environment in which students, faculty, and staff were required to work.
4. Physical education was defined as a program used to serve as an avenue for students to practice cardiovascular and respiratory exercises as a means to relieve stress and to freely practice self and social development.
5. The school psychology program was defined as a service that provided psychological testing, counseling, and interventions to better the functioning and acclimation of students.
6. The school counseling program was defined as a program that provided vocational and developmental guidance.
7. The school food service program was defined as a service that provided one-third to one-half of students' daily nutritional intake.
8. The worksite health promotion program was defined as a service that provided faculty and staff with programs to assist in maintaining healthy behaviors. (p. 411-412)

According to the Allensworth and Kolbe (1987), the idea of a comprehensive school health program in all of the nation's schools at first seemed to be overwhelming but after closely analyzing the concept it appeared to be an attainable goal. Marx, Wooley, and Northrop (1998) suggested that the comprehensive approach to school health provided a systematic way to effectively address the needs of the whole child by linking health with education in an effort to efficiently promote healthy behavior among school children. The Comprehensive Health School Program is currently identified as the CSHP model as titled by the CDC.

Physical Activity and Physical Education

Schools serve as excellent venues to provide young people the opportunity for daily physical activity and to build skills that will support lifelong healthy behaviors (Chriqui et al., 2009). Belansky et al. (2009) found that physical inactivity was a key contributor to obesity among children. Further, when children participated in regular physical activity they experienced better health and increased academic performance (Belansky et al., 2009). Prior research studies provided support for a positive relationship between physical education and the development of social skills, academic performance, increased attendance, and a reduction in discipline referrals (MDE, 2009a). Dobbins et al. (2001) found that adults who experienced physical activities in school when young were found to be significantly more active as adults, compared with those adults who did not encounter a variety of physical activities while attending school. In Texas students who were more physically fit tended to have better grades and higher test scores (Texas Education Agency, 2009). The Institute of Medicine and American Heart Association's recommendation to improving daily physical activity in schools included policies

requiring increased moderate to brisk physical activity, physical education, elementary school recess, activity breaks, and physical activity before and after school (Cox et al., 2011; Institute of Medicine, 2004; Pate et al., 2006).

Numerous studies have substantiated the positive link between physical activity and high academic achievement. According to the Texas Education Agency (2009), a study measuring the physical fitness of over 2.4 million students found that physically fit students were more likely to do better on state's standardized tests. A study of Massachusetts public schools revealed that students scored higher on state math and English tests as their physical fitness increased (Chromitz et al., 2009). A study conducted by Grissom (2005) evaluated the relationship between physical fitness and academic achievement using a Fitnessgram. In 2002, there were 884,715 public school students in Grades 5, 7 and 8 in California who participated in the Fitnessgram, a physical fitness test. The physical fitness test scores were compared to reading and math scores on the Stanford Achievement Test/9th edition (SAT/9), a standardized norm-referenced test. Grissom (2005) found that students with higher fitness scores had increased scores on the SAT/9 assessment for reading and math. Grissom (2005) found overall Fitnessgram scores were associated with increased academic achievement on reading and math scores for students in grades 5, 7, and 8. There were similar findings with positive relationships between Fitnessgram scores and standardized math and English scores among 4th, 6th, and 8th grade students in Massachusetts (Chromitz et. al, 2009; Edwards, Mauch, & Winkelman, 2011; Grissom, 2005). Hillman et al. (2005), investigated the relationship between age, level of fitness and cognitive function among children and adults ages 5 to 39. Physical fitness was measured through Fitnessgram and cognitive function was measured by using a neuroelectric activity. Both measured

outcomes were compared. Hillman et al. (2005) concluded that aerobic fitness was positively linked to increased cognitive function.

Lichtman and Poser (1983) administered a pre and post-test to a group of students participating in a physical fitness activity and to a group of students participating in a hobby. The study revealed that the students participating in the physical activity improved more on a simple cognitive task and had positive behavior than the students participating in a hobby. The researchers suggested that concentration and learning may be positively affected by physical activity. Research study findings have also suggested a strong link between the level of attentiveness and physical activity (Lichtman & Poser, 1983). Lichtman and Poser concluded that physical activity is related to positive increased changes in mood and mental operation. Children participating in a 10-minute physical fitness activity in the classroom showed a 20% improvement in on-task behavior during instruction (Mahar et al, 2006). Hillman et al. (2009) found an improvement in attention and academic achievement after pre-adolescent children walked 20 minutes of moderate intensity on a treadmill.

Another significant study related to physical activity was conducted by Shephard (1983). The Trois Rivieres regional experiment, a longitudinal study, showed the impact of physical activity on academic performance. Students who participated in an additional five hours of physical activity per week had a statistically significant increase in academic performance over control students who participated in the school's standard time of physical activity. Shephard (1983) concluded that students who participated in additional physical activity had higher grades than control students, and math, reading, and writing improved.

Researchers found that physical exercise was positively correlated with an improvement in test scores (Belansky et al., 2009; Hill, 2008; Texas Education Agency, 2009). A review of controlled experimental studies found that children who had increased time in physical education or other school-related physical activities showed consistency in grades and their scores on standardized assessments, even after spending less time in the classroom (Belansky et al., 2009). The results of an analysis of 1,800 middle school students indicated that students who were more successful in passing physical fitness tests did better on academic assessments than students who had poorer outcomes (Belansky et al., 2009). Further, another study using Fitnessgram to measure physical fitness of more than 2.4 million students found that the physically fit students did better on standardized tests than less physically fit students (Texas Education Agency, 2009).

Overwhelmingly, research studies showed that physical fitness played a vital role in students' academic success. A meta-analysis of more than 40 studies that observed how participating in regular physical activity affects cognition found that regular physical activity significantly improved numerous categories of cognitive function in children and adolescents (Sibley & Etnier, 2003).

Studies were present in the literature linking benefits of active recess to positive student achievement. Ramstetter, Murray, and Garner (2010) conducted a comprehensive review on active recess related literature. The purpose of their review was to examine the significance of active recess as part of a school day. Findings from the review determined that children were more attentive and actively productive in the classroom setting after spending time in active recess.

A 1998-99 study conducted by Belansky et al. (2009) on approximately 11,000 children ages 8 to 9 showed that 30% of the children had little or no active recess.

Students who were given more than 15 minutes of active daily recess time showed an improvement in classroom behavior. Some ten years later, RWJF (2010) authorized a Gallup poll of 1,951 principals, deputy principals, and assistant principals. Students received between 16 to 30 minutes of active recess per day as reported by school principals (RWJF, 2010). The majority of the principals (77 %) reported taking active recess away as punishment although more than 8 out of 10 believed active recess had a positive impact on academic achievement. Two-thirds of the respondents reported students listened better after active recess and were more focused in the classroom. Specifically, findings from RWJF's (2010) study showed that increased active recess time was linked to better behavior and focus in the classroom. In a similar study, the Baltimore Open Society Institute conducted a query regarding implementation of a program that increased active recess time for students. Findings from the study revealed a major decrease in school suspension rates (Maxwell, 2007).

According to Healthy People 2020 (2011), during 2006, 3.8% of public and private elementary schools required daily physical education for students. One objective of the Healthy People 2020 initiative suggested an increase from 3.8% to 4.2% of physical education including active recess in the United States by the year 2020.

Child Nutrition

School is the ideal setting to promote healthful eating, as over one-third of a student's daily food consumption may take place in the school environment (Bell & Swinburn, 2004). The extant literature showed a relationship existed between nutrition and health and nutrition and learning (Mississippi Department of Education, 2009a). Researchers found children who ate a healthy breakfast performed better academically

(Food Research and Action Center, 2009). On the other hand, a study performed by Rainville, Lofton, and Carr (2009) revealed that 47% of school professionals felt that healthful school nutrition was not a priority. Shahid (2003) found that principals wanted to be involved in nutritional policy development, but had no clear understanding of the effects of nutrition on learning.

Murphy et al. (1998) reported on a study conducted by the Massachusetts General Hospital and Harvard Medical School focusing on a breakfast pilot program called Maryland Meals for Achievement offering free breakfast for students in the classroom . The Maryland Meals for Achievement project resulted in significant increases in Maryland's School Performance Assessment Program's (MSPAP) Composite Index scores (a score that averages all students across all grades and all subjects). In addition, students in the program had decreased absenteeism and suspensions. In a research study conducted by Murphy et al. (1998), consistent results were found. Murphy et al.'s findings revealed that eating breakfast enhanced memory, academic performance, school attendance rates, psychosocial function, and mood. The classroom breakfast project was conducted in participating schools that offered breakfast in the classroom each morning.

Additional studies revealed that increased participation in the NSBP increased test scores, improved attendance, and class participation, and reduced absenteeism and tardiness (Rampersaud et al., 2005). According to researchers, obese children missed nine more days of school each year than children who were not obese (Action for Healthy Kids, 2004). One absence was determined to cost a school district between 9 to 20 dollars per student (Mulheron & Vonasek, 2009).

Florence et al. (2008) conducted a research study that focused on the importance of nutrition, specifically overall diet quality to academic performance. Their study

consisted of 5,200 students enrolled in fifth grade. The results of the study showed that students with lower overall diet quality were significantly more likely to perform poorly on the standardized literacy assessment. The findings demonstrated a link between diet quality and academic performance. Florence et al.'s study supported effective implementation and funding in nutrition programs as a means to improve diet quality, long term health, and academic performance.

A two year pilot study of 4,588 low-income elementary school students in Florida examined the effect of an obesity prevention dietary intervention on academic achievement (Hollar et al., 2010). The researchers found that after the implementation of the intervention, there was a positive effect on academic achievement. The dietary intervention component consisted of substituting less healthy food with healthier choices (Hollar et al., 2010).

Edwards, Mauch, and Winkelman (2011) conducted a research study that consisted of 800 sixth grade students. The findings demonstrated a link between eating breakfast and higher math scores. Eating breakfast was suggested to improve cognition, memory functions, attendance, and academic achievement. In a 1998 study by Murphy et al., results revealed that students who ate school-supplied breakfasts had higher increased attendance rates and math scores than those who did not regularly eat school-supplied breakfasts.

A Wisconsin school district implementing a comprehensive wellness program including healthy foods in the cafeteria and vending machines and promotion of physical activity reported greatly improved classroom behavior (Keeley, 2004). Teachers and principals reported fewer student interruptions, fidgeting, and foul language. The school

district reported improved concentration and attendance, along with a cessation of vandalism, drug and weapons violations, and expulsions.

Minkin (2008) reported that Health Magazine selected Amory Middle School located in Monroe County, Mississippi, as one of the top 10 healthiest schools in the nation. A rock climbing wall and fitness center were set up for students and their families. In addition, a hydration policy and a healthy snack policy were implemented. The hydration policy allowed students to bring water into the classroom and the healthy snack policy encouraged more healthful food choices outside of school breakfast and lunch.

A pilot study conducted by the USDA's fresh fruit and vegetable pilot program offered 107 schools free fruits and vegetables. Teachers reported an increase in students' attention during class and improved student eating behaviors (Buzby, Guthrie, & Kantor, 2003).

A meta-analysis of twenty-two research studies showed that eating breakfast daily improved memory, academic achievement, attendance, psychosocial function, and mood (Rampersaud et al., 2005). Meyers et al. (1989) found a significant increase in math, reading, and vocabulary test scores among third through fifth grade students that participated in a school breakfast program. These students also had a decreased rate of tardiness and absenteeism. Florence et al. (2008) found a positive link between overall diet quality including fruit and vegetable consumption and academic achievement. Students with increased overall diet quality were less likely to fail standardized reading and writing tests.

According to Healthy People 2020 (2010), during 2006 approximately 7% of school districts required schools to make fruits or vegetables available whenever food

was offered or served. Healthy People 2020 suggested an increase of the availability of fruits or vegetables from 6.6% to 18.6% in school districts in the United States by the year 2020.

Health Education

McManus and Sorenson (2000) suggested that unhealthy students cannot learn and achieve to their highest potential. A significant number of school performance problems have been associated with unhealthy behaviors such as dropping out of school, absenteeism, and crime. In addition, low academic achievement, problems with memory, lack of attentiveness, and low motivation were linked to students who participated in high-risk behavior (McManus & Sorenson, 2000). Lee, Cheng, Fung, and St. Leger (2006) conducted a study in Hong Kong on students from schools that implemented and practiced a program promoting healthy behaviors. These researchers also conducted a study on students in schools that did not implement and practice a program promoting healthy behaviors (Lee et al., 2006). Students who attended the schools that implemented healthy behavior programs had less health risk behaviors and fewer unhealthy eating behaviors than students who attended schools that did not implement and practice healthy behavior programs.

Schoener, Guerrero, and Whitney (1988) conducted a study on third and fourth grade students receiving comprehensive health education. Schoener, Guerrero, and Whitney revealed that those students had significantly higher reading and math scores than students who did not receive comprehensive health education. Eggert et al. (1994) found that comprehensive health education and social skills programs for at-risk students

improved test performance, attendance, and school connectedness. This successful outcome among students was still apparent after six years.

During the 2007–08 school year, approximately 90% of all students were enrolled in a school district with an effective policy that included goals for health education (Chriqui et al., 2009). Many temporary interventions in elementary schools have linked behavior-focused health education with increased nutrition knowledge, more confidence regarding food preparation, lower rates of overweight and obesity, and increased fruit and vegetable consumption, specifically in elementary schools with a high rate of students who are eligible for free and reduced-price lunch (Coleman et al., 2005). School districts should ensure that nutrition-specific elements and physical education class should be included in health education curricula requirements (Chriqui et al., 2009).

Health education provides students with activities that help develop the skills they need to avoid tobacco use, dietary behaviors that cause disease, inactive lifestyle, alcohol and drug use, and behaviors that cause injuries (CDC, 2009b). Principals believe that research-based prevention programs that target substance abuse and violence decrease these negative behaviors among students including discipline problems within the school setting (Yang, 2010).

According to McManus and Sorenson (2000), research showed a distinct link between health behaviors and school performance. Studies suggested that comprehensive school health education programs can have a positive influence on health behaviors in students which can result in higher academic achievement. Comprehensive school health education programs have the ability to facilitate healthy behaviors by students through positively changing knowledge about health, attitudes, and behaviors, which in turn can lead to improving school and academic performance (Allensworth & Kolbe, 1987;

McManus & Sorenson, 2000). Comprehensive school health education programs are an important part of the school curriculum. The goal of health education is to promote and enhance students' health (Fetro, Givens, & Carroll, 2009).

According to Healthy People 2020 (2010), 7.5% of elementary schools including public and private schools required cumulative health education instruction that met the United States National Health Education Standards. The Healthy People 2020 initiative suggested an increase in required cumulative health education instruction from 7.5% to 11.5% by the year 2020.

Chapter Summary

The federal Child Nutrition and WIC Reauthorization Act of 2004 required each LEA or school district participating in the NSLP and/or NSBP to establish a SWP. In response to the high rate of childhood obesity among children in Mississippi, the Mississippi Legislature addressed the childhood obesity issue in 2007 by creating the Healthy Students Act. The intent of the Mississippi Healthy Students Act was to address the state's high rates of childhood obesity in public schools by improving nutrition, physical activity, and health education. According to the Mississippi Healthy Students Act, schools are required to develop health councils to monitor proper implementation of school wellness policy requirements.

The comprehensive school health program model consists of eight components which include (a) school health education, (b) school physical education, (c) school health services, (d) school food services, (e) school counseling, (f) school health environment, (g) school site health promotion program for faculty and staff, and (h) integrated school and community health promotion efforts. Three of the eight

components (child nutrition, physical activity, and health education) were specifically reviewed and found to have positive research links to academic achievement.

The literature showed positive correlations or associations between nutrition and health and nutrition and learning (MDE, 2009a). Previous research studies provided support for positive relationships between physical education and the development of social skills, academic performance, increased attendance, and a reduction in discipline referrals (MDE, 2009a). Research findings indicated that comprehensive school health improved student health, and therefore contributed to improved academic performance (Allensworth & Kolbe, 1987).

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Introduction

Chapter Three provides the research design, instrumentation, data collection, and data analysis procedures used in this study. The purpose of this research study was to determine if relationships existed between specific factors of the implementation of school wellness policies and school accountability ratings as perceived by elementary school principals. This quantitative research study included data collected from elementary school principals in the state of Mississippi by using a survey research design. The population included approximately 690 practicing elementary school principals. The researcher developed a web-based survey instrument using original items to collect data (see Appendix C). Data collected from participants were entered into a database and analyzed using SPSS, version number 19.0.

Research Design

The researcher chose a quantitative survey research design because it provides the ability to obtain a variety of information about a population (McMillan & Schumacher, 2006). Selecting an appropriate research design, data collection method, and data analysis procedure should be influenced by the research questions (Kerlinger & Lee, 2000). Further, a survey research design is suitable when collecting data involving attitudes, beliefs, or perceptions (Creswell, 2003; Kerlinger & Lee, 2000). In a quantitative survey research design, the researcher chooses participants and administers a questionnaire for

collection of data. Survey research design is non-experimental research that collects information at one point in time (Sproull, 2002).

For the purpose of collecting data, web and mail survey response rates were compared. Findings showed that a web survey application had a higher response rate than mailing a hard copy questionnaire when both were preceded by an advance mail notification (Kaplowitz, Hadlock, & Levine, 2006). The difference in cost between the mailed hard copy questionnaire and the web survey was substantial. Given the use of the web survey and large population, the researcher deemed the web survey most beneficial.

In terms of data analysis, the selected research design may be further categorized as descriptive research and correlational research. Descriptive research involves observing and describing data and characteristics about the population being studied (Sproull, 2002). Descriptive research is the most commonly used research design in educational research (Creswell, 2003). Correlational research is the study of relationships between variables (Punch, 2005). Correlational research in education looks for behaviors, capabilities, or conditions that co-vary, or correlate, with each other (Charles & Mertler, 2002). The purpose of the study was to investigate Mississippi's elementary school principals' perceptions of specific factors associated with the implementation of school wellness policies and school accountability ratings.

Research Questions

This study was directed by six key research questions. The questions were as follows.

1. What are the perceptions of elementary school principals regarding procedures and processes related to the implementation of their school wellness policies?

2. What are the perceptions of elementary school principals regarding implementation of the physical activity component of their school wellness policies?
3. What are the perceptions of elementary school principals regarding implementation of the child nutrition component of their school wellness policies?
4. What are the perceptions of elementary school principals regarding implementation of the health education component of their school wellness policies?
5. What are the general beliefs of elementary school principals about the implementation of their school wellness policies?
6. Do relationships exist between school accountability ratings and the school principals' perceptions regarding school wellness policies implementation of procedures and processes, physical activity, child nutrition, health education, and general beliefs?

Participants

The population for the study included practicing elementary school principals from 152 school districts in the state of Mississippi consisting of 690 practicing elementary principals. The researcher referred to the MDE's website to obtain e-mail addresses of the principals serving at the schools. Practicing elementary principals were selected because of the success of early interventions related to health, physical education, and nutrition on achieving positive outcomes (Belansky et al., 2009; Chriqui et al., 2009; Murphy et al. 1998). The population was recruited through e-mail to participate in the study since the majority of Mississippi's schools were required to develop and

implement school wellness policies. The researcher sent an e-mail to explain the purpose of the research study, a description of the web-based survey content, and the survey to 670 practicing elementary school principals. Twenty principals participated in a pilot study and were not included in the mailing with the formal survey. The researcher received responses from 123 (18%) elementary school principals.

Instrumentation

After a thorough review of the literature, the researcher developed a web-based survey using a questionnaire format to efficiently collect and analyze study data. The survey sought factual information and measures of beliefs and behaviors. The survey instrument consisted of 33 items organized in six distinct sections. The sections included (a) procedures and policies, (b) physical activity, (c) child nutrition, (d) health education, (f) beliefs, (g) and demographics. The items for the survey were adapted from a review of the federal Child Nutrition and WIC Reauthorization Act of 2004, the Mississippi Healthy Students Act, and the CSHP model. The validity and reliability of the instrument were assessed.

Table 1 provides a display of the survey sections and the items associated with each specific section. The information provided in the survey and item sections presented in table 1 are derived from the Principals' Perceptions of Factors Associated with the Implementation of School Wellness Policies survey (see Appendix C). The survey is comprised of 33 items.

Table 1 Survey Sections and Items for Principals' Perceptions of Factors Associated With the Implementation of School Wellness Policies

Survey Sections	Items
Procedures and Processes	1-4
Beliefs	5-15
Physical Activity	16-17
Child Nutrition	18-23
Health Education	24-26
Demographics	27-30, 32-33
School Accountability Rating	31

Elementary principals were given questions and asked to choose the most appropriate answers to represent their experiences. Items 1-26 addressed experiences and behaviors of the administrators. Items 27-30, 32, and 33 queried the principals regarding demographics. Item 31 queried the principals for their respective school accountability ratings.

The researcher conducted a pilot study to identify problems that should be resolved before beginning the actual research study. According to Gay and Airasian (2000), conducting a pilot study is compared to having a dress rehearsal of the actual study. Unexpected problems are identified for revisions before administering the study.

After obtaining approval from the Institutional Review Board (IRB) at Mississippi State University (See Appendix D) the pilot study was conducted. Twenty elementary school principals were randomly selected from the total population of elementary school

principals in the state of Mississippi. These 20 elementary school principals were not included in the actual study. They were contacted through webmail and asked to participate in the pilot study. The participants were asked to respond to the survey instrument in the same manner that the actual respondents were later asked to do. After the participants completed the survey instrument, data were analyzed in order to answer all of the research questions and to test the statistical procedures. The pilot study revealed an overall Cronbach's alpha of .804, indicating reliability. The Cronbach's alpha is a coefficient of reliability and is commonly used as a measure of the internal consistency or reliability (Creswell, 2003). In a scale from 0 to1, reliability is strongest from .7 and above. Cronbach's alpha for the physical activity variable was .745. Cronbach's alpha for the beliefs variable was .906. Cronbach's alpha for the health education variable was .696. Cronbach's alpha for the procedures and processes variable was .687. Cronbach's alpha for the child nutrition variable was .565. For content validity, the researcher found that it was necessary to make minor revisions to the survey instrument based on responses from expert reviewers.

Subsequently, after survey responses were received from the administrators, the actual survey data were also analyzed to determine the reliability estimates. Table 2 provides a display of the Cronbach's alpha for responses received from the 123 practicing principals. The Cronbach's alpha for the five grouped factors are listed in the table. The five grouped factors are physical activity, beliefs, health education, procedures and processes, and child nutrition.

Table 2 Cronbach's Alpha for Principals' Perceptions of Factors Associated With the Implementation of School Wellness Policies (*N*=123)

SWP implementation factors	Cronbach's alpha (α)
Physical activity	.745
Beliefs	.906
Health education	.696
Procedures and processes	.687
Child nutrition	.565
Overall	.804

Cronbach's alpha for the physical activity variable was .745. Cronbach's alpha for the beliefs variable was .906. Cronbach's alpha for the health education variable was .696. Cronbach's alpha for procedures and processes variable was .687. Cronbach's alpha for the child nutrition variable was .565. Even though the child nutrition Cronbach's alpha was .565, content validity was established as a result of a review of all survey items by an expert practitioner in the field. Rounding up for health education and procedures and processes, all of the factors showed strong Cronbach's alpha at .700 or higher. Child nutrition showed a moderate Cronbach's alpha. The overall Cronbach's alpha was .804.

Data Collection

Data for the research study were collected using the web-based survey instrument developed by the researcher. The cost advantage of a pre-notice/web questionnaire suggested that this approach would be beneficial for the study of populations with full access to the Internet (Kaplowitz et al., 2006). The assumption was that all practicing elementary school principals had Internet access. As mentioned earlier, the researcher

conducted a pilot study using a sample of 20 participants from the sample population. Pilot study participants were not used in the final survey. The purpose of the pilot study was to evaluate content validity and internal consistency reliability, length of time to complete the survey, and the process of interpreting results.

A consent letter (Appendix E) to the participants was sent out to 670 principals with a thorough explanation of the purpose of the study, the number of items and sections of the survey, possible risks to participants, and the amount of time it would take to complete the survey. A link to the survey was included at the end of the letter for participants who consented to participating in the survey. A reminder was sent out two weeks after the initial release of the survey. There were 123 respondents (18% response rate) to the survey.

Statistical Data Analysis

Data collected from participants' responses were entered into a database and analyzed using SPSS, version number 19.0. Descriptive statistics were computed for the survey items related to demographics, physical activity, child nutrition, health education, beliefs, and school accountability ratings. Frequencies, percentages, and standard deviations were determined for each item. The data were analyzed and interpreted based on its usefulness to school leaders and other stakeholders involved with promoting healthy children. Preliminary data analysis was completed to determine normality of the data and the internal consistency reliability. Correlation coefficients were computed to determine if relationships existed between the specific factors associated with the implementation of school wellness policies and school accountability ratings.

The main result of a correlation is called the *correlation coefficient* (or *r*), which ranges from *-1.0 to +1.0*. The closer *r* is to *+1 or -1*, the more closely the two variables are related. If *r* is close to 0, it means there is no relationship between the variables. According to Hinkle, Wiersma, and Jurs (2003), a correlation coefficient of .73 between two variables would be understood to mean that there is a high positive correlation between the two variables. The guidelines used in this study are summarized in Table 3.

Table 3 Interpretation of the Pearson Correlation Coefficient

Size of the Pearson Correlation Coefficient	Interpretation of the Relationship
.90 to 1.00	Very high positive correlation
.70 to .90	High positive correlation
.50 to .70	Moderate positive correlation
.30 to .50	Low positive correlation
.00 to .30	Little if any correlation

A high (or low) negative correlation has the same interpretation as a high (or low) positive correlation. A negative correlation indicates that high scores in one variable are associated with low scores in the other variable.

Chapter Summary

Chapter three provided the research design, instrumentation, data collection, and data analysis procedures used in this study. This quantitative research study included data collected from elementary school principals in the state of Mississippi by using a survey research design. The population included approximately 670 practicing elementary school principals. There were 123 respondents to a web-based survey. Some respondents did not respond to all items on the survey. The researcher developed a web-based survey instrument using original items to collect data. Data collected from participants were entered into a database and analyzed using SPSS, version 19.0. In addition, the chapter included pilot study data and acceptable Cronbach's alphas for school wellness implementation factors on the survey for the purpose of reporting internal consistency or reliability.

CHAPTER IV

FINDINGS

The purpose of this research study was to investigate elementary school principals' perceptions of specific factors related to the development and implementation of school wellness policies. More specifically, the researcher sought to examine principals' perceptions regarding physical activity, child nutrition, and health education related to the implementation of the school wellness policies in elementary schools in the state of Mississippi. The specific components of physical activity, child nutrition, and health education were culled from the Coordinated School Health Program model and selected because of research linking them with increased academic achievement (Chriqui et al., 2009). Chapter Four begins with the presentation of the descriptive data analysis, covers the results of the study, and ends with a summary of the overall research findings.

Demographic Findings

The population of this study included elementary school principals from the state of Mississippi. There was a total of 690 elementary school principals during the school year 2009-2010. Twenty principals participated in the pilot study and were not included in the formal study. Thus, 670 elementary school principals were mailed surveys and invited to participate in the study, with 123 (18%) responding to the survey. In some instances, there were no responses to items or data were missing and were not included in the analysis.

Personal Demographic Characteristics

Survey items 27, 32, and 33 queried the participants regarding personal demographics. Table 4 provides a summary of the principals' responses to the survey items (gender, ethnicity, and length of time principals had served at their respective schools). Frequencies and percentages are provided for the personal demographic characteristics. Items with no responses or missing data are not included in the data analysis for specific items.

Table 4 Frequencies and Percentages of Personal Demographic Characteristics of the Respondents

Characteristics	Number	Percentage
Gender		
Female	69	62.7
Male	41	37.3
Total	110	100
Ethnicity		
Black/African American	36	32.4
White/Caucasian	73	65.8
Other	2	1.8
Total	111	100
Length of time as principal at respective school		
Less than 1 year	5	4.5
2-3 years	33	29.5
4 or more years	74	66
Total	112	100

The majority of the 110 participants (*n*=69, 62.7%) responding to survey item 32 (gender) were females. There were 41 males, representing 37.3% of the principals. Of the 111 principals responding to survey item 33 (ethnicity), 73 (65.8%) were White/Caucasian, 36 (32.4%) were Black/African American, and 2 (1.8%) identified

themselves as other ethnicity (Native American, Hispanic, or Asian). Most of the principals' (*n*=74, 66%) responding to survey item 27 indicated that they had served 4 or more years in their respective schools as principals. Almost one-third of the 112 principals (*n*=33, 29.5%) indicated they had served 2-3 years as principals in their respective schools, and only 5 (4.5%) principals' indicated they had served less than one year in their respective schools.

School Demographic Characteristics

Survey items 28 through 30 queried the respondents regarding school demographics. Table 5 provides a summary of the principals' responses to questions 28 through 30 (school enrollment, weekly discipline referrals, and average daily attendance). Frequencies and percentages are provided for the demographic characteristics of the principals' schools. Items with no responses or missing data were not included in the data analysis for specific items.

Almost one-half (*n*=53, 47.3%) of the 112 principals responding to survey item 28 (school enrollment) indicated that their schools had enrollments of 500 or more students. Forty-one (36.6%) of the principals who responded to the survey item reported their schools had enrollments of between 301 and 500 students. Only 18 (16.1%) of the principals indicated their schools had enrollments of 300 or less students.

The majority (*n*=92, 83.6%) of the 110 principals responding to survey item 29 (weekly discipline referrals) reported 11 or less discipline referrals on a weekly basis for item. Only 18 (16.4%) of the respondents reported having 12 or more discipline referrals on a weekly basis.

Table 5 Frequencies and Percentages of Demographic Characteristics of Respondents' Schools

Characteristics	Number	Percentage
School enrollment		
Less than 100	1	.9
100 – 200	4	3.6
201 – 300	13	11.6
301 – 400	22	19.6
401 – 500	19	17
More than 500	53	47.3
Total	112	100
Discipline referrals on a weekly basis		
0-5	54	49.1
6-11	38	34.5
12-17	10	9.1
18 or more	8	7.3
Total	110	100
Average daily attendance		
60% or below	0	0.0
70-80%	2	1.8
81-89%	13	11.8
90-94%	40	36.4
95-100%	55	50
Total	110	100

The majority (*n*=95, 86.4%) of the 110 principals responding to survey item 30 reported average daily attendance as 90-100%. Only 15 (13.6%) of the principals indicated their schools had an average daily attendance of 89% or below.

Survey item 31 queried the respondents regarding their school's accountability ratings. Table 6 provides a summary of the 108 principals' responses.

Table 6 Frequencies and Percentages of Respondents' School Accountability Ratings (*N*= 108)

School Rating	Number	Percentage
Failing	0	0.0
At risk of failing	16	14.8
Academic watch	21	19.4
Successful	38	35.2
High performing	27	25
Star school	6	5.6
Total	108	100

The majority of the 108 principals (*n*=65, 60.2%) responding to survey item 31 (school accountability rating) were principals of schools with ratings of s*uccessful or high performing school* status. However, 21 respondents of this study were principals of schools that had a rating of *academic watch* (19.4%). Additionally, 14.8% (*n*=16) of the respondents were principals with a school rating *of at-risk of failing*. Only 6 (5.6%) principals reported that they had a school rating of *star school* status.

Table 7 shows the mean and standard deviation for the respondents' school accountability ratings. Codes were entered for the rating of each school using a scale of 1 to 6 in to determine the mean (1=f*ailure*, 2=*at risk of failing*, 3=*academic watch*, 4=*successful*, 5=*high performing*, and 6=*star school*).

Table 7 Mean and Standard Deviation for Respondents' School Accountability Ratings (*N*= 108)

	M	SD
School accountability ratings	3.87	1.120

The mean score for the respondents' school accountability ratings was 3.87 with a standard deviation of 1.120. The schools had an average accountability rating close to *successful.*

Research Question 1

The first research question asked the following: What are the perceptions or elementary school principals regarding procedures and processes related to the implementation of their school wellness policies? The principals' perceptions were collected using the survey, *Principals' Perceptions of Factors Associated with the Implementation of School Wellness Policies* found in Appendix C. Survey items 1 through 4 were used primarily to address research question 1.

Survey item 1 was used to determine how many components of the CSHP were implemented by the principals to develop their schools' wellness policies. Table 8 provides a summary of the principals' responses to the survey item using a scale of 1 to 5 (1=*none*, 2=*3 or less*, 3=*4*, 4=*5*, and 5=*6 or more*).

Table 8 Frequencies and Percentages of the Number of CSHP Components Used to Develop School Wellness Policies at Respondents' Schools (*N*=123)

Number of Components	Number	Percentage
None	0	0.0
3 or less	6	4.9
4	17	13.8
5	16	13.0
6 or more	84	68.3
Total	123	100

Of the 123 principals responding to survey item 1, the majority of the respondents (*n*=84, 68.3%) used 6 or more coordinated school health program components when

developing their schools' wellness policies. Thirty-three principals (26.8%) reported that they used four or five coordinated school health program components. Only 6 principals (4.9%) reported using three or less coordinated school health program components to develop their schools' wellness policies.

Survey item 2 was used to determine how often the school health councils met during the school year at the principals' schools. Table 9 provides a summary of the 122 principals' responses to the survey item on a scale of 1 to 5 with 1=*once*, 2=*twice*, 3=*three times*, 4=*four times*, and 5=*five or more times*.

Table 9 Frequencies and Percentages of the Yearly Meetings Held by the School Health Council at the Respondents' Schools (*N*=122)

Meetings Per Year	Number	Percentage
Once	16	13.1
Twice	33	27.1
Three times	42	34.4
Four times	22	18.0
Five or more times	9	7.4
Total	122	100

The majority of the 122 respondents (*n*=73, 59.8%) to this item held school health council meetings three or more times during the school year. Thirty-one principals (25.4%) held school health council meetings four or more times during the school year. Sixteen respondents (13.1%) reported that they held only one school health council meeting during the school year.

Survey item 3 was used to determine how often teachers were offered professional development focused on school wellness policies during the most recent school year. Table 10 is a summary of the123 principals' responses to the survey item on

a scale of 1to 6 with 1=*none, 2=once, 3=twice, 4=three times, 5=four times*, and 6=*five times or more*.

Table 10 Frequencies and Percentages of School Wellness Policy Professional Development for Teachers at Respondents' Schools (*N*=123)

School Wellness Policy Professional Development	Number	Percentage
None	25	20.3
Once	43	35.0
Twice	31	25.2
Three times	13	10.6
Four times	0	0.0
Five times or more	11	8.9
Total	123	100

The majority of the 123 respondents (*n*=74, 60.2%) to this item reported that they provided classroom teachers with school wellness policy professional development once or twice during the school year. Thirteen principals (10.6%) reported their schools provided classroom teachers with school wellness policy professional development three times during the school year. Several principals (*n*=25, 20.3%) did not provide classroom teachers with school wellness policy professional development during the school year.

Survey item 4 was used to determine how principals rated the effectiveness of their respective School Health Councils. Table 11 provides a summary of the 123 principals' responses to the survey item on a scale of 1 to 5 with 1=*poor,* 2=fair, 3=*good,* 4=*very good,* and 5=*excellent*.

Table 11 Frequencies and Percentages of the Effectiveness of the School Health Council at Respondents' Schools (*N*=120)

Effectiveness of Health Council	Number	Percentage
Poor	8	6.7
Fair	31	25.8
Good	51	42.5
Very good	25	20.8
Excellent	5	4.2
Total	120	100

Only 8 respondents (6.7%) to this item rated the effectiveness of their school health councils as being poor. The majority of the 120 principals in this study (*n*=82, 68.3%) rated the effectiveness of their school health councils as either good or fair. There were 30 principals (25%) that reported that their school health councils were either very good or excellent.

Table 12 provides a summary of the means and standard deviations for items listed under Procedures and Processes. Survey data were coded to compute means for each of the survey items. The items covered (a) the number of coordinated school health program components used (on a scale of 1 to 5 with 1=*none*, 2=*3 or less*, 3=*4*, 4=*5*, and 5=*6 or more*), (b) school health council meetings per year (on a scale of 1 to 5 with 1=*once*, 2=*twice*, 3=*three times*, 4=*four times*, and 5=*five or more times*), (c) school wellness policy professional development (on a scale of 1 to 6 with 1=*none* , 2=*once*, 3=*twice*, 4=*three times*, 5= *four times*, and 6=*five times or more*), (d) and the effectiveness of the school health council on a (scale of 1 to 5 with 1=*poor*, 2=*fair*, 3=*good*, 4=*very good*, and 5=*excellent*).

Table 12 Means and Standard Deviations of Survey Items for Procedures and Processes

	Mean	SD
Number of components	4.45	.907
Meetings per year	2.80	1.113
School wellness policy professional development	2.53	1.190
Effectiveness of health council.	2.90	.947

Table 12 shows that the principals used on average between five and six coordinated school health program components to develop their school wellness policies (*M*=4.45, *SD*=.907) and school health councils met on average close to three times per school year (*M*=2.80, *SD*=1.113). The data also show that teachers were offered school wellness policy professional development activities an average of one to two times per year (*M*=2.53, *SD*=1.190). The average rating for the effectiveness of the principals' school wellness policies was good (*M*=2.90, *SD*=.947).

Research Question 2

The second research question asked the following: What are the perceptions of elementary school principals regarding implementation of the physical activity component of their school wellness policies? The principals' perceptions were collected using the survey, *Principals' Perceptions of Factors Associated with the Implementation of School Wellness Policies* found in Appendix C. Survey items 16 and 17 were used primarily to address this research question.

Survey item 16 was used to determine how principals rated the physical fitness of the students at their respective schools. Table 13 provides a summary of the 119

principals' responses to the survey item on a scale of 1 to 5 with 1=*poor*, 2=*fair*, 3=*good*, 4=*very good*, and 5=*excellent*.

Table 13 Frequencies and Percentages of the Physical Fitness of Students at Respondents' Schools (*N*=119)

Physical Fitness of Students	Number	Percentage
Poor	3	2.5
Fair	38	32.0
Good	58	48.7
Very good	19	16.0
Excellent	1	.8
Total	119	100

The majority of the 119 respondents (*n*=77, 64.7%) to this item rated the physical fitness of their students as good or very good. Thirty-eight (32%) principals rated the physical fitness of their students as fair. Only 3 principals (2.5%) rated the physical fitness of their students as poor and 1 principal (.8%) rated the physical fitness at his/her school as excellent.

Survey item 17 was used to determine how principals described the activity levels of their students. Table 14 provides a summary of the 120 principals' responses to the survey item on a scale of 1 to 5 with 1=*very low*, 2=*low*, 3=*medium*, 4=*high*, and 5=*very high*.

Table 14 Frequencies and Percentages of Student's Activity Levels at Respondents' Schools (*N*=120)

Student's Activity Levels	Number	Percentage
Very low	4	3.3
Low	46	38.3
Medium	60	50.0
High	8	6.7
Very High	2	1.7
Total	120	100

Table 14 shows that approximately one-half (*n*=60, 50%) of the 120 participants responding to this item described their students' activity levels as being medium. Forty-six (38.3%) of the respondents described their students' activity levels as being low. In addition, ten (8.4%) of the respondents described their students' activity levels as high or very high. Only 4 principals (3.3%) described their students' activity levels as very low.

Table 15 provides a summary of the means and standard deviations for items under the heading Physical Activity. The survey items on a scale of 1 to 5 addressed (a) physical fitness of students (survey items on a scale of 1 to 5 with 1=*poor*, 2=*fair*, 3=*good*, 4=*very good*, and 5=*excellent*) and (b) students' activity levels (survey items on a scale of 1 to 5 with 1=*very low*, 2=*low*, 3=*medium*, 4=*high*, and 5=*very high*).

Table 15 Means and Standard Deviations of Physical Activity at Respondents' Schools

	M	SD
Physical Fitness of students	3.19	.762
Students' activity level	2.65	.729

Table 15 shows that the principals rated the physical fitness of their students as good (*M*=3.19, *SD*=.*762*). The principals perceived student activity levels were on average low (*M*=2.65, *SD*=.729).

Research Question 3

The third research question asked the following: What are the perceptions of elementary school principals regarding implementation of the child nutrition component of their school wellness policies? The principals' perceptions were collected using the survey, *Principals' Perceptions of Factors Associated with the Implementation of School Wellness Policies* found in Appendix C. Survey items 18 through 23 were used primarily to address this research question.

Survey item 18 was used to determine how many times per week different types of fruit were offered to students for lunch at the principals' respective schools. Table 16 provides a summary of the 116 principals' responses to the survey item on a scale of 1 to 5 with 1=*3*, 2=*4*, 3=*5*, *4=6*, and 5=*7 or more*.

Table 16 Frequencies and Percentages of Times Per Week Different Types of Fruit were Offered for Lunch at Respondents' Schools (*N*=116)

Fruit Offered for Lunch	Number	Percentage
3	34	29.3
4	14	12.1
5	62	53.4
6	1	.9
7 or more	5	4.3
Total	116	100

Table 16 shows the slight majority of the 116 respondents (*n*=62, 53.4%) to this item reported their schools offered students different types of fruit five times per week for

lunch. Forty-eight (41.4%) principals reported that their schools offered students different types of fruit four times per week for lunch. Only 6 principals (5.2%) reported that their schools offered students different types of fruit six or more times per week for lunch.

Survey item 19 was used to determine how many times per week different types of fruit were offered for breakfast. Table 17 provides a summary of the principals' responses to the survey item on a scale of 1 to 5 with 1=*3,* 2=*4,* 3=*5,* 4=*6,* and 5=*7 or more*.

Table 17 Frequencies and Percentages of Times Per Week Different Types of Fruit Offered for Breakfast at Respondents' Schools (*N*=116)

Fruit Offered for Breakfast	Number	Percentage
3	76	65.5
4	10	8.6
5	28	24.1
6	1	.9
7 or more	1	.9
Total	116	100

Table 17 shows the majority of the 116 respondents (*n*=76, 65.5%) to this item reported that their schools offered students different types of fruit three times per week for breakfast. Thirty-eight (32.7%) of the principals reported that their schools offered students different types of fruit four or five times per week for breakfast. Only 2 principals (1.8%) reported that their schools offered students different types of fruit six or more times per week for breakfast.

Survey item 20 was used to determine how many times per week different types of vegetables were offered at the principals' schools. Table 18 provides a summary of the 115 principals' responses to the survey item on a scale of 1 to 5 with 1=*4 or less,* 2=*5,* 3=*6,* 4=; and 5=*8 or more*.

Table 18 Frequencies and Percentages of Times Per Week Different Types of Vegetables Offered to Students at Respondents' Schools (*N*=115)

Vegetables Offered to Students	Number	Percentage
4 or less	46	40
5	58	50.5
6	5	4.3
7	5	4.3
8 or more	1	.9
Total	115	100

Table 18 shows the majority of the 115 respondents (*n*=104, 90.5%) to this item reported that their schools offered their students different types of vegetables five or more times per week. Ten (8.2%) of the principals reported that their schools offered students different types of vegetables six or seven times per week. Only one principal (.9%) reported that different types of vegetables were offered to students eight or more times per week.

Item 21 on the survey was used to determine how often the principals' schools offered their students 2% milk. Table 19 provides a summary of the principals' responses to the survey item on a scale of 1 to 4 with 1=*25% of the time,* 2=*50% of the time,* 3=*75% of the time* and 4=*100% of the time*.

Table 19 Frequencies and Percentages of Students Offered 2% Milk at Respondents' Schools (*N*=113)

Students Offered 2% Milk	Number	Percentage
25% of the time	0	0
50% of the time	0	0
75% of the time	1	.9
100% of the time	112	99.1
Total	113	100

Results of the study show the majority of the113 respondents (*n*=112, 99.1%) to this item reported that their schools offered students 2% milk 99.1% of the time. Only one principal (.9%) reported that students were offered 2% milk 75% of the time.

Survey item 22 was used to determine how often 100% fruit juice with no added sugar was offered to students at the principals' respective schools. Table 20 provides a summary of the 100 principals' responses to the survey item on a scale of 1 to 4 with 1=*25% of the time,* 2=*50% of the time,* 3=*75% of the time,* and 4=*100% of the time*.

Table 20 Frequencies and Percentages of Students Offered100% Fruit Juice at Respondents' Schools (*N*=115)

Students Offered 100% Fruit Juice	Number	Percentage
25% of the time	5	4.3
50% of the time	18	15.7
75% of the time	9	7.8
100% of the time	83	72.2
Total	115	100

Table 20 shows the majority of the 115 respondents (*n*=83, 72.2%) to this item reported that their schools offered students 100% fruit juice 100% of the time. Only 9 principals (7.8%) reported that their schools offered students 100% fruit juice 75% of the time. Twenty-three (20%) reported that their schools offered students 100% fruit juice 50% of the time or less.

Survey item 23 was used to determine how often 100% vegetable juice with no added sugar was offered to students at the principals' respective schools. Table 21 provides a summary of the 112 principals' responses to the survey item on a scale of 1 to 4 with 1=*25% of the time*, 2=*50% of the time*, 3=*75% of the time*, and 4=*100% of the time*.

Table 21 Frequencies and Percentages of Students Offered100% Vegetable Juice at Respondents' Schools (*N*=112)

Students Offered 100% Vegetable Juice	Number	Percentage
25% of the time	80	71.4
50% of the time	9	8.0
75% of the time	1	.9
100% of the time	22	19.7
Total	112	100

Table 21 shows the majority of 112 respondents (*n*=80, 71.4%) to this item reported that their schools offered students 100% vegetable juice 25% of the time. Ten principals (8.1%) reported that their schools offered students 100% vegetable juice 50-75% of the time. Twenty-two principals (19.7%) reported that their schools offered students 100% vegetable juice 100% of the time.

Table 22 provides a summary of the means and standard deviations for items under the heading Child Nutrition. The survey items covered (a) different types of fruit offered for lunch (on a scale of 1 to 5 with 1=*3,* 2=*4,* 3=*5,* 4=*6,* and 5=*7 or more*), (b) different types of fruit offered for breakfast (on a scale of 1 to 5 with 1=*3,* 2=*4,* 3=5, *4=6,* and 5=*7or more*), (c) different types of vegetables (on a scale of 1 to 5 with 1=*4 or less,* 2=*5,* 3=*6,* 4=*7,* and 5=*8 or more*) (d) 2% milk (on a scale of 1 to 4 with 1=*25% of the time,* 2=*50% of the time,* 3=*75% of the time,* and 4=*100% of the time*), (e) 100% fruit juice (on a scale of 1-4 with 1=*25% of the time, 2=50% of the time, 3=75% of the time,* and 4=*100% of the time*), and (f) 100% vegetable juice (on a scale of 1 to 4 with 1=*25% of the time,* 2=*50% of the time,* 3=*75% of the time,* and 4=*100% of the time*).

Table 22 Means and Standard Deviations of Child Nutrition Components at Respondents' Schools

	M	SD
Times per week fruit offered for lunch	2.39	1.053
Times per week fruit offered for breakfast	1.63	.937
Times per week vegetables offered	1.82	1.014
2% milk	3.99	.094
100% fruit juice	3.48	.911
100% vegetable juice	1.69	1.193

Table 22 shows that for lunch, students were offered different types of fruit on an average of four or more times per week (*M*=2.39, *SD*=1.053). For breakfast, students were offered different types of fruit on an average of three to four times per week (*M*=1.63, *SD*=.937). The principals reported that students were offered different types of vegetables on an average of four to five times each week (*M*=1.82, *SD*=1.014). Students were offered 2% milk 99.1% of the time (*M*=3.99, *SD*=.094), 100% fruit juice over 75% of the time (*M*=3.48, *SD*=.911), and 100% vegetable juice close to 50% of the time (*M*=1.69, *SD*=1.193).

Research Question 4

The fourth research question asked the following: What are the perceptions of elementary school principals regarding implementation of the health education component of their school wellness policies? The principals' perceptions were collected using the survey, *Principals' Perceptions of Factors Associated with the Implementation*

of School Wellness Policies found in Appendix C. Survey items 24-26 were used primarily to address this research question.

Survey item 24 was used to determine how many minutes per week students received health education instruction. Table 23 provides a summary of the114 principals' responses to the survey item on a scale of 1 to 4 with 1=*45 minutes or less,* 2=*50 minutes or less,* 3=*55 minutes or less,* and *4=60 or more.*

Table 23 Frequencies and Percentages of Weekly Health Education at Respondents' Schools (*N*=114)

Weekly Health Education	Number	Percentage
45 minutes or less	54	47.3
50 minutes	23	20.2
55 minutes	9	7.9
60 or more	28	24.6
Total	114	100

Table 23 shows the majority of the 114 respondents (*n*=77, 67.5%) reported that their students received health education instruction 50 minutes or less per week. Thirty-seven principals (32.5%) reported that their students received health education instruction of 55 minutes or more per week.

Survey item 25 was used to determine how many minutes per week students received nutrition education instruction. Table 24 provides a summary of the 114 principals' responses to the survey item on a scale of 1 to 4 with 1=*45 minutes or less,* 2=*50 minutes or less,* 3=*55 minutes or less,* and *4=60 or more.*

Table 24 Frequencies and Percentages of Nutrition Education at Respondents' Schools (*N*=114)

Nutrition Education	Number	Percentage
45 minutes or less	79	69.3
50 minutes	15	13.2
55 minutes	7	6.1
60 or more	13	11.4
Total	114	100

Table 24 shows the majority of the 114 respondents (*n*=79, 69.3%) to this item reported that their students received 45 minutes or less of nutrition education instruction per week. Thirty-five principals (30.7%) reported that their students received 50 minutes or more of nutrition education instruction per week.

Survey item 26 was used to determine how principals' rated health education at their respective schools. Table 25 provides a summary of the principals' responses to the survey item on a scale of 1to 5 with 1=*45 minutes or less*, 2=*50 minutes or less*, 3=*55 minutes or less*, and 4=*60 or more*.

Table 25 Frequencies and Percentages of the Health Education Rating at Respondents' Schools (*N*=115)

Health Education Rating	Number	Percentage
Poor	3	2.6
Fair	42	36.5
Good	55	47.8
Very good	13	11.3
Excellent	2	1.7
Total	115	100

Table 25 shows the majority of the 115 respondents (*n*=70, 60.8%) to the item rated their schools' health education instruction as good, very good, or excellent. Fifteen principals (13%) rated their schools' health education instruction as very good or

excellent. Only three principals (2.4%) rated their schools' health education instruction as poor.

Table 26 provides the means and standard deviations for items under Health Education. The items covered (a) weekly health education instruction (on a scale of 1-4 with 1=*45 minutes or less*, 2=*50 minutes or less*, 3=*55 minutes or less*, and 4=*60 or more*), (b) nutrition education instruction (on a scale of 1-4 with 1=*45 minutes or less*, 2=*50 minutes or less*, 3=*55 minutes or less*, and 4=*60 or more*), and (c) health education (on a scale of 1 to 5 with 1=*45 minutes or less*, 2=*50 minutes or less*, 3=*55 minutes or less*, and 4=*60 or more*.

Table 26 Means and Standard Deviations of Health Education at Respondents' Schools

	M	SD
Health education instruction 4	2.16	1.485
Nutrition education instruction 4	1.60	1.028
Health education instruction 5	2.73	.765

Table 26 shows that on a weekly basis, students received on average over 50 minutes of health education instruction (*M*=2.16, *SD*=1.485) and approximately slightly more than 45 minutes of nutrition education (*M*=1.60, *SD*=1.028) each week. On average, principals' rated health education instruction as good (*M*=2.73, *SD*=.765) at their respective schools.

Research Question 5

The fifth research question asked the following: What are perceptions of elementary school principals regarding general beliefs related to the implementation of

their school wellness policies? The principals' perceptions were collected using the survey, *Principals' Perceptions of Factors Associated with the Implementation of School Wellness Policies* found in Appendix C. Survey items 5 through 15 were used primarily to address this research question.

Survey item 5 was used to determine if principals believed that the implementation of school wellness policies promoted academic achievement. Table 27 provides a summary of the 123 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 27 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that School Wellness Policies Promotes Academic Achievement (*N*=123)

	Number	Percentage
Strongly disagree	1	0.8
Disagree	3	2.4
Not Sure	19	15.4
Agree	73	59.3
Strongly Agree	27	22.1
Total	123	100

Table 27 shows the majority of the 123 respondents (*n*=100, 81.4%) to the item agreed or strongly agreed that implementing their schools' wellness policy promoted academic achievement. Nineteen principals (15.4%) were not sure that implementing their school's wellness policies promoted academic achievement. Only four principals (3.2%) disagreed or strongly disagreed that implementing their schools' wellness policies promoted academic achievement.

Survey item 6 was used to determine if principals believed that the principal was responsible for implementing school wellness policies. Table 28 provides a summary of

the 123 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree,* 2=*disagree,* 3=*not sure,* 4=*agree,* and 5=*strongly agree*.

Table 28 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that School Wellness Policies Implementation is the Responsibility of the Principal (*N*=123)

	Number	Percentage
Strongly disagree	24	19.5
Disagree	14	11.4
Not Sure	11	8.9
Agree	74	60.2
Strongly Agree	0	0.0
Total	123	100

Table 28 shows the majority of the123 respondents (*n*=74, 60.2%) agreed that it is the principal's responsibility to implement the schools' wellness policy. Thirty-eight principals (30.9%) disagreed or strongly disagreed that it is the principal's responsibility to implement the schools' wellness policy. Only 11 principals (8.9%) were not sure if it were the principal's responsibility to implement the school's wellness policy.

Survey item 7 was used to determine if principals believed that physical activity improved student test scores. Table 29 provides a summary of the principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree,* 2=*disagree,* 3=*not sure,* 4=*agree,* and 5=*strongly agree*.

Table 29 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that Routine Physical Activity Promotes Improved Test Scores (*N*=123)

	Number	Percentage
Strongly disagree	0	0
Disagree	2	1.6
Not Sure	12	9.8
Agree	63	51.2
Strongly Agree	46	37.4
Total	123	100

Table 29 shows the majority of the 123 respondents (*n*=109, 88.6%) to this item agreed or strongly agreed that routine physical activity improves test scores. Only two principals (1.6%) disagreed that routine physical activity improves test scores. Twelve principals (9.8%) were not sure if routine physical activity improves test scores.

Survey item 8 was used to determine if principals believed that routine physical activity promotes improved classroom behavior. Table 30 provides a summary of the 122 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree,* and 5=*strongly agree*.

Table 30 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that Routine Physical Activity Promotes Improved Classroom Behavior (*N*=122)

	Number	Percentage
Strongly disagree	0	0
Disagree	1	.8
Not Sure	9	7.4
Agree	64	52.5
Strongly Agree	48	39.3
Total	122	100

Table 30 shows the majority of the 122 respondents (*n*=112, 91.8%) to this item agreed or strongly agreed that routine physical activity improves classroom behavior. Only 1 principal (.8%) disagreed that routine physical activity improves classroom behavior. Some principals (*n*=9, 7.3%) were not sure that routine physical activity improves classroom behavior.

Survey item 9 was used to determine if principals believed that routine physical activity promotes increased school attendance. Table 31 provides a summary of the 122 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 31 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that Routine Physical Activity Promotes Increased School Attendance (*N*=122)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	5	4.1
Not Sure	28	23
Agree	56	46
Strongly Agree	33	26
Total	122	100

Table 31 shows the majority of the 122 respondents (*n*=89, 72%) to this item agreed or strongly agreed that routine physical activity increased school attendance. Only 5 principals (4.1%) disagreed that routine physical activity increased school attendance. Twenty-eight principals (23%) were not sure that routine physical activity increased school attendance.

Survey item 10 was used to determine if principals believed that good nutrition promotes improved test scores. Table 32 provides a summary of the 122 principals'

responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 32 Frequencies and Percentages of Respondents' Perceptions Regarding Belief that Good Nutrition Promotes Improved Test Scores (*N*=122)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	2	1.6
Not Sure	4	3.3
Agree	71	58.2
Strongly Agree	45	36.9
Total	122	100

Table 32 shows the majority of the 122 respondents (*n*=116, 94.1%) to this item agreed or strongly agreed that good nutrition improves test scores. Only six principals (4.9%) were not sure or disagreed that good nutrition improves test scores.

Survey item 11 was used to determine if principals believed that good nutrition promotes positive classroom behavior. Table 33 provided a summary of the 123 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 33 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that Good Nutrition Promotes Positive Classroom Behavior (*N*=123)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	2	1.6
Not Sure	13	10.6
Agree	74	60.2
Strongly Agree	34	27.6
Total	123	100

Table 33 shows the majority of the 123 respondents (n=108, 87.8%) to this item agreed or strongly agreed that good nutrition promotes positive classroom behavior. Only two principals (1.6%) disagreed that good nutrition promotes positive classroom behavior. Thirteen principals (10.6%) were not sure that good nutrition promotes positive classroom behavior.

Survey item 12 was used to determine if principals believed that good nutrition increases school attendance. Table 34 provides a summary of the 121 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 34 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that Good Nutrition Promotes Increased School Attendance (*N*=121)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	2	1.7
Not Sure	20	16.5
Agree	62	51.2
Strongly Agree	37	30.6
Total	121	100

Table 34 shows the majority of the 121 respondents (*n*=99, 71.8%) to this item agreed or strongly agreed that good nutrition promotes increased school attendance. Only two principals (1.7%) disagreed that good nutrition promotes increased school attendance. Twenty principals (16.5%) were not sure that good nutrition promoted increased school attendance.

Survey item 13 was used to determine if principals believed that health education promotes increased school attendance. Table 35 provides a summary of the 122

principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree* and 5=*strongly agree*.

Table 35 Frequencies and Percentages of the Respondents' Perceptions Regarding Belief that Health Education Promotes Increased School Attendance (*N*=122)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	9	7.4
Not Sure	29	23.8
Agree	59	48.3
Strongly Agree	25	20.5
Total	122	100

Table 35 shows the majority of 122 the respondents (*n*=88, 72.1%) to this item agreed or were not sure that health education promotes increased school attendance. Only nine principals (7.4%) disagreed that health education promotes increased school attendance. Twenty-five principals (20.5%) strongly agreed that health education promotes increased school attendance.

Survey item 14 was used to determine if principals believed that health education promotes improved test scores. Table 36 provides a summary of the 122 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 36 Frequencies and Percentages of Respondents' Perceptions Regarding Belief that Health Education Promotes Improved Test Scores (*N*=122)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	6	4.9
Not Sure	30	24.6
Agree	64	52.5
Strongly Agree	22	18.0
Total	122	100

The majority of the 122 respondents (*n*=86,70.5%) to this item agreed or strongly agreed that health education promotes improved test scores. Only six principals (4.9%) disagreed that health education promotes improved test scores. Twenty-two principals (18%) strongly agreed that health education promotes improved test scores.

Survey item 15 was used to determine if principals believed that health education promotes positive classroom behavior. Table 37 provides a summary of the 121 principals' responses to the survey item on a scale of 1 to 5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree*.

Table 37 Frequencies and Percentages of Respondents' Perceptions Regarding Belief that Health Education Promotes Positive Classroom Behavior (*N*=121)

	Number	Percentage
Strongly disagree	0	0.0
Disagree	4	3.3
Not Sure	35	29
Agree	63	52.1
Strongly Agree	19	15.6
Total	121	100

Table 37 shows the majority of the 121 respondents (*n*=82, 67.7%) to this item agreed that health education promotes positive classroom behavior. Only four principals

(3.3%), disagreed that health education promotes positive classroom behavior and 35 (29%) principals were not sure if health education promoted positive classroom behavior.

Table 38 provides a summary of the means and standard deviations on a scale of 1-5 with 1=*strongly disagree*, 2=*disagree*, 3=*not sure*, 4=*agree*, and 5=*strongly agree* for items under beliefs related to the implementation of school wellness policies. Belief statements focused on positive outcomes resulting from various components of school wellness policy implementation.

Table 38 Means and Standard Deviations of Respondents Beliefs Regarding the Implementation of School Wellness Policies

	M	SD
School wellness policies promote academic achievement	3.99	.741
The principal is responsible for SWP implementation	3.10	1.224
Physical activity promotes improved test scores	4.24	.694
Physical activity promotes improved positive classroom behavior	4.30	.641
Physical activity promotes increased school attendance	3.96	.817
Good nutrition promotes improved test scores	4.30	.615
Good nutrition promotes improved positive classroom behavior	4.14	.657
Good nutrition promotes increased school attendance	4.11	.728
Health education promotes increased school attendance	3.82	.843
Health education promotes improved test scores	3.84	.775
Health education promotes positive classroom behavior	3.80	.737

Likert scale was 1=*strongly disagree* to 5=*strongly agree* with 3=*not sure*

Table 38 shows the principals on average agreed that implementing school wellness policies promotes academic achievement among students (*M*=3.99, *SD*=.741) but were not sure that the principal should be solely responsible for implementing their school wellness policies (*M*=3.10, *SD*=1.224). The mean score for the belief that routine

physical activity promotes improved student test scores was 4.24 (*SD*=.694). On average, principals agreed that routine physical activity improved student classroom behavior (*M*=4.30, *SD*=.641), and promoted increased school attendance (*M*=3.96, *SD*=.817). The mean score for the belief that good nutrition promotes improved test scores was 4.30 (*SD*=.615). On average, principals agreed that good nutrition promoted positive classroom behavior (*M*=4.14, *SD*=.657), and promoted increased school attendance among students (*M*=4.11, *SD*=4.11). In addition, the mean score for the belief that health education promoted increased school attendance was 3.82 (*SD*=.843). On average, principals agreed that health education promoted improved test scores (*M*=3.84, *SD*=.775), and promoted positive classroom behavior among students (*M*=3.80, *SD*=.737).

Research Question 6

The sixth research question asked the following: Do relationships exist between school accountability ratings and the school principals' perceptions of factors (procedures and processes, physical activity, child nutrition, health education, and general beliefs) associated with school wellness policy implementation?

Table 39 provides the Pearson Correlations and the p-values for the relationships found to exist between the schools accountability ratings (dependent variable) and the specific variables represented in procedures and processes. Correlations were computed for the schools' accountability ratings and (a) the number of coordinated school health program components used, (b) the number of health council meetings, (c) school wellness policy professional development, and the (d) effectiveness of the health councils.

Table 39 Pearson Correlations of Respondents School Accountability Ratings and Factors of Procedures and Processes Related to School Wellness Policies Implementation

	School rating (*r*)	*p value*
Number of components	.009	.929
School Health council meetings	.010	.915
Teacher professional development	-.026	.790
Effectiveness of the Health Council	.204	.036*

*p>. 05
**p<.01

A Pearson product-moment correlation coefficient was computed to assess the relationship between the school accountability ratings (dependent variable) and the number of components used from the coordinated school health program to develop school wellness policies. A positive, almost nonexistent correlation (*r*=.009, *p*=.929) was found between the two variables. In addition, a positive nonexistent correlation was found to exist between the school accountability ratings and the number of schools' health council meetings (*r*=.010, *p*= .915). A negative, almost nonexistent, correlation (*r*=-.026, *p*=.790) was found between the schools' accountability ratings and number of teachers' professional development activities. Lastly, a significant positive very weak correlation (*r*=.204, *p*=.036*) was found between the school accountability ratings and the principals' perceptions indicating the effectiveness of their schools' health councils.

Table 40 provides a display of the Pearson correlations and the p-values for the relationships found to exist between the school accountability ratings (dependent variable) and the specific variables represented in beliefs. Correlations were computed for the school accountability ratings and variable described as (a) implementation and academic achievement, (b) the principal and implementation, (c) physical activity and test scores, (d) physical activity and behavior, (e) physical activity and attendance, (f)

nutrition and test scores, (g) nutrition and behavior, (h) nutrition and attendance, (i) health education and attendance, (j) health education and test scores, and (k) health education and behavior.

Table 40 Pearson Correlations of Respondents School Accountability Ratings and Beliefs Related to School Wellness Policies Implementation

	School rating (*r*)	*p value*
School wellness policies promote academic achievement	.128	.188
The principal is responsible for SWP implementation	.123	.204
Physical activity promotes improved test scores	.270	.137
Physical activity promotes improved positive classroom behavior	.263	.006**
Physical activity promotes increased school attendance	.279	.004**
Good nutrition promotes improved test scores	.145	.137
Good nutrition promotes improved positive classroom behavior	.297	.002**
Good nutrition promotes increased school attendance	.197	.042*
Health education promotes increased school attendance	.129	.184
Health education promotes improved test scores	.142	.145
Health education promotes positive classroom behavior	.204	.036*

*p>. 05
**p<.01

A Pearson product-moment correlation coefficients was computed to assess the school accountability ratings and the belief that implementation of school wellness policies promote academic achievement. A positive weak correlation (*r*=.128, *p*= .188) was found between the two variables. In addition, a positive weak correlation was found between the school accountability ratings and the belief that the principal is responsible for school wellness policy implementation (*r*=.123, p=.204). Positive weak correlations were found between school accountability ratings and belief that good nutrition promotes improved test scores (*r*=.145, *p*=.137), and school accountability ratings and belief that health education promotes increased school attendance (*r*=.129, *p*=.184). Likewise, school accountability ratings and belief that health education promotes improved test

scores (r=.142, p=.145) had a positive weak correlation. A significant positive weak correlation was found between school accountability ratings and belief that good nutrition promotes increased school attendance (r=.197, p=.042*). Further, a significant correlation was found between school accountability ratings and belief that health education promotes improved classroom behavior (r=.204, p=.036*). Similarly, significant positive correlations were found between school accountability ratings and belief that physical activity promotes improved test scores (r=.270, p=.005**), and school accountability ratings and belief that physical activity promotes improved classroom behavior (r=.263, p=.006**). Lastly, significant weak relationships were found between school accountability ratings and belief that physical activity promotes increased attendance (r=.279, p=.004**), and school accountability ratings and belief that good nutrition promotes improved behavior (r=.297, p=.002**).

Table 41 provides a display of the Pearson correlations and the p-values for the relationships found to exist between the school accountability ratings (dependent variable) and the specific variables represented in physical activity. Correlations were computed for school accountability ratings and physical fitness of students, and school accountability ratings and student activity levels.

Table 41 Pearson Correlations of Respondents School Accountability Ratings and Physical Activity Related to School Wellness Policies Implementation

	School rating (r)	*p value*
Physical fitness of students	-.201	.037
Student activity levels	-.029	.767

*p>. 05
**p<.01

A Pearson product-moment correlation coefficient was computed to assess the relationship between the school accountability ratings and principals' perceptions related to physical fitness of the students. A weak negative correlation (r=-.201, p=.037) was found between the two variables. School accountability ratings and students' activity levels (r=-.029, p=.767) were found to have non-existent correlation.

Table 42 provides a display of the Pearson Correlation and the p-values for the relationships found to exist between the school's ratings (dependent variable) and the specific variables represented in child nutrition. Correlations were computed for schools accountability ratings and the principals' perceptions related to fruit offered for lunch, fruit offered for breakfast, vegetables, 2% milk, 100% fruit juice, and 100% vegetable juice.

Table 42 Pearson Correlations of Respondents School Accountability Ratings and Child Nutrition Related to School Wellness Policies Implementation

	School rating (r)	*p value*
Fruit offered for lunch	.044	.653
Fruit offered for breakfast	.067	.492
Vegetables	-.022	.825
2% milk	-.009	.925
100% fruit juice	-.064	.515
100% vegetable juice	.055	.578

*p>. 05
**p<.01

A Pearson product-moment correlation coefficient was computed to assess the relationships between the school accountability ratings and how many times per week different types of fruit was offered for lunch. A weak positive almost nonexistent correlation (r=.044, p=.653) was found between the two variables. Additionally, weak

positive almost nonexistent correlations were found between the school accountability ratings and how many times per week different types of fruit was offered for breakfast (r=.067, p=.492), and between the school accountability ratings and how often 100% vegetable juice was offered to students (r=.055, p=.578). Negative almost nonexistent correlations were found between the school accountability ratings and how many times per week different types of vegetables were offered to students (r=-.022, p=.825), the school accountability ratings and how often 2% milk was offered to students (r=-.009, p=.925), and the school accountability ratings and how often 100% fruit juice was offered to students (r=-.064, p=.515).

Table 43 provides a display of the Pearson correlations for the relationships found to exist between the school's ratings (dependent variable) and the specific variables represented in health education. Correlations were computed for school accountability ratings and health education instruction, nutrition education instruction, and rating health education instruction.

Table 43 Pearson Correlations of Respondents' School Accountability Ratings and Health Education Related to School Wellness Policies Implementation

	School rating (r)	p *value*
School rating		
Health education instruction	.086	.378
Nutrition education instruction	-.025	.796
Health education	.170	.080

*p>. 05
**p<.01

A Pearson product-moment correlation coefficient was computed to assess the relationship between the school accountability ratings and how many minutes per week students received health education instruction. A positive almost nonexistent correlation

was found between the two variables (r=.086, p=.378). Furthermore, a positive very weak correlation was found between school accountability ratings and how principals rated their health education instruction at their schools (r=.170, p= .080). A negative correlation was found between school accountability ratings and nutrition education instruction provided at the school (r=-.025, p=.796).

Chapter Summary

Chapter four presented the study's research findings beginning with descriptive data analysis. The study investigated the principals' perceptions of specific factors related to the development and implementation of school wellness policies. The researcher examined principals' perceptions involving procedures and processes, physical activity, child nutrition, health education, and general beliefs related to the implementation of school wellness policies in elementary schools in the state of Mississippi. Personal demographic characteristics, research questions and the dependent variable (school's ratings) were analyzed using frequencies, percentages, means, and standard deviations. Correlation matrices were used to show bivariate relationships among the variables in the study. Significant relationships were found to exist between the following: (a) school accountability ratings and belief that physical activity improves positive classroom behavior; (b) school accountability ratings and belief that physical activity promotes increased school attendance; (c) school accountability ratings and belief that good nutrition promotes positive classroom behavior; (d) school accountability ratings and belief that good nutrition promotes increased school attendance; and (e) school accountability ratings and belief that health education promotes positive classroom behavior.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Introduction

The purpose of this chapter is to present an overall summary of the study, conclusions, general recommendations, and suggestions for future research. The purpose of the study was to investigate elementary principals' perceptions of specific factors related to the development and implementation of school wellness policies. The study sought to determine if relationships existed between school accountability ratings and the elementary school principals' perceptions regarding school wellness policies implementation of procedures and processes, physical activity, child nutrition, health education, and general beliefs

Summary

The first chapter of the study provided information on the elementary school principals' exclusive opportunities to improve student health. Overweight and obesity contribute to poor health among children and youth. In an effort to target and resolve the problem of childhood obesity, the U.S. Congress mandated as part of the Child Nutrition and WIC Reauthorization Act of 2004 to require schools to develop school wellness policies. Chapter one provided a description of general goals set for schools and local education agencies to use in developing and implementing their school wellness policies. Further, this chapter included information on Section 204 of the Healthy, Hunger-Free

Kids Act of 2010. An explanation of the Mississippi's school accountability performance ratings scale was included in this chapter.

The following six research questions that guided the study were included in this chapter. The questions were as follows:

1. What are elementary school principals' perceptions regarding procedures and processes related to the implementation of their school wellness policies?
2. What are elementary school principals' perceptions regarding implementation of the physical activity component of their school wellness policies?
3. What are elementary school principals' perceptions regarding implementation of the child nutrition component of their school wellness policies?
4. What are elementary school principals' perceptions regarding implementation of the health education component of their school wellness policies?
5. What are elementary school principals' general beliefs about the implementation of their school wellness policies?
6. Do relationships exist between school accountability ratings and the school principals' perceptions regarding school wellness policies implementation of procedures and processes, physical activity, child nutrition, health education, and general beliefs?

Further, a conceptual framework of the study provided as a visual for the major components of the study. The study was based on the CSHP. The eight components of the CSHP include (a) health education, (b) physical education, (c) health services, (d) nutrition services, (e) counseling, psychological and social services, (f) healthy school environment, (g) health promotion for staff, and (h) parent/community involvement.

The second chapter provided a review of the literature on factors associated with the implementation of school wellness policies. Specifically, the literature review included current literature found on school wellness policy, state policies, implementation of school wellness policies, the coordinated school health program model, physical activity and physical education, child nutrition, and health education. The chapter included research studies on the relationships found in the extant literature.

The studies included in chapter two provided support for positive relationships between physical education and the development of social skills, academic performance, increased attendance, and a reduction in discipline referrals (Mississippi Department of Education, 2009a). In addition, the literature showed relationships existed between nutrition and health and nutrition and learning (Mississippi Department of Education, 2009a). Further, studies suggested that comprehensive school health education programs can have a positive influence on health behaviors in students, which can result in higher academic achievement (Allensworth & Kolbe, 1987; McManus & Sorenson, 2000).

Chapter 3 provided the research design, instrumentation, data collection, and data analysis procedures used in this study. This quantitative research study included data collected from elementary school principals in the state of Mississippi by using a survey research design. The population included approximately 690 practicing elementary school principals. There were 123 respondents to a web-based survey. The researcher developed a web-based survey instrument using original items to collect data. Data collected from participants were entered into a database and analyzed using SPSS, version number 19.0. In addition, the chapter included acceptable Cronbach alphas for school wellness implementation factors on the survey for the purpose of reporting internal consistency and reliability.

Chapter 4 provided a presentation of the survey results and data analysis. Data were analyzed and organized based on the six research questions that guided the study. Descriptive statistics were used to present the data on the principals' perceptions of the factors associated with the implementation of school wellness policies. Tables were also included that presented personal demographic variables of gender, ethnicity, and the number of years principals served at their respective schools. In addition, a table was included that presented school demographic variables of school enrollment, average daily attendance and the number of discipline referrals reported on a weekly basis. Further, tables with survey items, frequencies, and percentages pertaining to individual research questions one through five were included in this chapter. Finally, Pearson Product Moment correlation coefficients were presented under research question six to show the relationships between the factors associated with the implementation of school wellness policies and school accountability ratings.

This chapter contains the summary, conclusions, and recommendations drawn from the study. The study is summarized within the context of each of the research questions and conclusions include analysis with relevant literature. Recommendations for current educators, specifically principals, policymakers, and for future research are addressed at the end of Chapter 5.

Findings and Conclusions

The majority of the respondents in the study were Caucasian (n=73, 65.8%) and women (*n*=69, 62.7%). The majority of principals (*n*=74, 66%) indicated that they had served four or more years in their respective schools as principals. Almost one-half of the principals served in schools with enrollments of 500 or more students (*n*=53, 47.3 %)

with an average daily attendance rate of 90-100% (*n*=95, 86.4%). The data used in the study were collected from elementary school principals in the state of Mississippi. The majority of the respondents (*n*=65, 60.2%) reported their schools' ratings as s*uccessful* or *high performing*. S*uccessful* was the average among schools' ratings.

Findings and Conclusions by Research Question

Research Question 1

Research question one investigated elementary school principals' perceptions regarding procedures and processes related to the implementation of their school wellness policies. The majority of respondents (*n*=84, 68.3%) used 6 or more coordinated school health program components when developing their schools wellness policies. Principals used an average of between 5 and 6 coordinated school health program model components when developing school wellness policies (*M*=4.45, *SD*=.907). Schools' health councils met two to three times during the school year (*n*=73, 59.8%), and classroom teachers were offered school wellness policy professional development once or twice during the school year (*n*=74, 60.2%). School health councils met on an average of approximately three times per school year (*M*=2.80, *SD* =1.113), and school wellness policy professional development was offered to teachers between once or twice per year (*M*=2.53, *SD*=1.190). Lastly, principals rated the effectiveness of their schools' health councils as either fair or good (*n*=82, 68.3%) with a mean of 2.90 (*SD*=.947) indicating good.

The CSHP model consists of eight components that strongly influence student health and learning (CDC, 2009a). The Child Nutrition and WIC Reauthorization Act of 2004, Section 204 directed local educational agencies to establish a plan for measuring

implementation of school wellness policies by designating one or more persons among stakeholders within the local school and community to ensure that schools successfully implement school wellness policies (U. S. Congress, 2004). The Mississippi Healthy Students Act (Mississippi Department of Education, 2009a) charged all schools in Mississippi to establish school health councils. The schools' health councils were required to meet at least three times a year, perform a self-assessment, and provide an annual report to their local school board. The principals indicated they were in compliance with the Mississippi Healthy Students Act.

The literature contains studies that focused on the implementation of school wellness policies; however, few studies examined school wellness policy professional development for elementary school teachers. Moreover, an examination of the literature provided some support for the conclusion drawn from the findings in this study. School wellness policy development and implementation should involve parents, students, representatives of the school food authority, the school board, school administrators, teachers and the public (U. S. Congress, 2004).

Conclusion one. Elementary school principals used between five and six coordinated school health program model components to develop school wellness policies.

Conclusion two. Elementary school principals reported their schools' health councils held close to three meetings per year and rated the effectiveness of their school health councils as good.

Conclusion three. School wellness policy professional development was offered to elementary school teachers on average of twice per year.

Few studies investigated the effectiveness of school health councils. However, an investigation of the literature provided support for the conclusion drawn from the findings in this study. For measuring implementation of a school wellness policy, one or more persons within the school or school district must be designated to ensure the activities of the school wellness policy are met.

Research Question 2

Research question two investigated the perceptions of elementary school principals regarding implementation of the physical activity component of school wellness policies. The majority of principals (n=77, 64.7%) rated the physical fitness of their students as good or very good. On average, principals rated the physical fitness of their students as good (M=3.19, SD=.762). `Principals perceived student activity levels were on average low (M=2.65, SD=.729).

Conclusion four. Elementary school principals rated their students' physical fitness as good and their students' activity levels as low.

According to the Texas Education Agency (2009), a study measuring the physical fitness of over 2.4 million students revealed that physically fit students were more likely to score higher on state's standardized tests. A Grissom (2005) study investigated the relationship between physical fitness and academic achievement. In the year 2002, 884,715 California public school students in grades 5, 7, and 8 participated in

Fitnessgram, a physical fitness test. The physical fitness test scores were compared to reading and math scores on the Stanford Achievement Test 9th edition, a standardized normed-referenced test. The study revealed that students with higher fitness scores showed increased scores on the SAT/9 assessment for reading and math.

A study conducted by Shephard (1983), the Trois Rivieres regional experiment, was a longitudinal study which revealed the impact of physical activity on academic performance. Students involved in an additional five hours of physical activity per week had a statistically significant increase in academic performance over control students who participated in the school's standard time of physical activity. Shephard (1983) concluded that students who participated in additional physical activity had higher grades than control students. Math, reading, and writing improved among those students.

Research Question 3

Research question three investigated the elementary school principals' perceptions regarding implementation of the child nutrition component of their school wellness policies. On average, principals reported students were offered different types of fruit four or more times per week for lunch (M=2.39, SD= 1.053). Likewise, the principals reported that students were offered different types of fruit for breakfast three or more times each week (M=1.63, SD=.937). Students received different types of vegetables five or more times per week as reported by principals (M=1.82, SD=1.014). The majority of principals (n=112, 99.1%) reported that their schools offered students 2% milk 99.1% of the time (M=3.99, SD=.094). The majority of principals (n=83, 72.2%) reported that their schools offered students 100% fruit juice 75% of the time. Principals reported that schools offered 100% fruit juice on an average of slightly over 75% of the

time (*M*=3.48, *SD*=.911). The majority of principals (*n*=80, 71.4%) reported that their schools offered students 100% vegetable juice 25% of the time (*M*=1.69, *SD*=1.193).

Conclusion five. Elementary school principals reported their students were offered different types of fruit three or more times per week during lunch and breakfast. In addition, elementary school students were offered different types of vegetables five times per week.

Conclusion six. Two percent milk was offered to elementary school students 99.1% of the time.

Conclusion seven. Slightly over 75% of the time elementary school students were offered 100% fruit juice and 100% vegetable juice was offered between 25% and 50% of the time.

A crucial relationship exists between nutrition and health and nutrition and learning. The Mississippi Healthy Students Act directed all Mississippi schools to offer a minimum of one fresh fruit or vegetable choice to students each day, offer a minimum of three different fruits and five different vegetables weekly, and schools should try to offer dark green and/or orange vegetables or fruits three times per week. In addition, the Act charges Mississippi schools to offer milk choices with a maximum milk fat of 2% and offer 100% fruit and vegetable juice with no added sugar.

According to Healthy People 2020 (2010), 6.6% of school districts required schools to make fruits or vegetables available whenever food was offered or served during 2006. The Healthy People 2020 initiative suggested an increase of the availability

of fruits or vegetables from 6.6% to 18.6% in school districts in the United States by the year 2020.

Research Question 4

The fourth research question investigated the elementary school principals' perceptions regarding implementation of the health education component of their school wellness policies. The majority of principals (*n*=77, 67.5%) reported that their students received health education instruction fifty minutes or less per week. Students received slightly over 50 minutes of health education instruction per week (*M*=2.16, *SD*=1.485). The majority of principals (*n*=79, 69.3%) reported that their students received 45 minutes or less of nutrition education instruction per week. Moreover, students received nutrition education approximately between 45 to 50 minutes per week (*M*=1.60, *SD*=1.028). The majority of principals (*n*=70, 60.8%) rated their schools' health education instruction as good or fair. The principals' average rating for health education instruction was good (*M*=2.73, *SD*=.765).

Conclusion eight. Elementary school students received slightly over 50 minutes of health education instruction and 45to 50 minutes of nutrition education each week. Principals rated their overall schools' health education instruction as good.

Existing research findings revealed a significant link between health behaviors and school performance. Studies suggested that comprehensive school health education programs can have a positive influence on health behaviors in students, which can result in increased academic achievement (McManus & Sorenson, 2000). Several trial

interventions in elementary schools linked behavior-focused health education with improved nutrition knowledge, better confidence regarding food preparation, lower rates of overweight and obesity, and increased fruit and vegetable consumption, specifically in elementary schools with a high rate of students who receive free and reduced-price lunch (Coleman, et al., 2005). The Healthy People 2020 initiative suggested an increase in health education instruction from 7.5% to 11.5% by the year 2020.

Research Question 5

The fifth research question investigated elementary school principals' general beliefs related to the implementation of their school wellness policies. The majority of the principals (*n*=100, 81.4%) agreed or strongly agreed that implementing their schools' wellness policy promoted academic achievement. Principals agreed that implementing the school wellness policy promoted academic achievement among students (*M*=3.99, *SD*=.741). The majority of the principals (*n*=74, 60.2%) agreed that it is the principals' responsibility to implement the school wellness policy. However, principals were not sure that the principal should be solely responsible for implementing their school wellness policies (*M*=3.10, *SD*=1.224). The majority of the principals (*n*=109, 88.6%) agreed or strongly agreed that routine physical activity improved test scores (*M*=4.24, *SD*=.694). The majority of the principals (*n*=112, 91.8%) agreed or strongly agreed that routine physical activity improved classroom behavior (*M*=4.30, *SD*=.641). The majority of the principals (*n*=89, 72%) agreed or strongly agreed that routine physical activity increased school attendance (*M*=3.96, *SD*=.817). The majority of the principals (*n*=116, 94.1%) agreed or strongly agreed that good nutrition improved test scores (*M*=4.30, *SD*=.615). The majority of the principals (*n*=108, 87.8%) agreed or strongly agreed that

good nutrition promoted positive classroom behavior. On average, principals agreed that good nutrition promoted positive classroom behavior (*M*=4.14, *SD*=.657). The majority of the principals (*n*=99, 71.8%) agreed or strongly agreed that good nutrition promoted increased school attendance (*M*=4.11, *SD*=.728). The majority of the principals (*n*=88, 72.1%) agreed or were not sure that health education promoted increased school attendance (*M*=3.82, *SD*=.843). The majority of principals (*n*=94, 77.1%) agreed or were not sure that health education promoted improved test scores (*M*=3.84, *SD*=.775). The majority of the principals (*n*=63, 52.1%) agreed that health education promoted positive classroom behavior (*M*=3.80, *SD*=.737).

Conclusion nine. Principals believed that implementing school wellness policies promoted academic achievement among.

School principals were recognized as the significant stakeholders in developing and implementing school wellness policies and were considered crucial participants to all actions occurring at the school facility related to the implementation of the policies (Molaison et al., 2007). The ASCD (2010) evaluation of a Healthy School Communities (HSC) pilot project showed that the principal was the key figure in implementing school change and school improvement related to improving student health. However, the findings from this study suggested that principals' were not sure that it was their responsibility to implement school wellness policies.

Conclusion ten. Principals believed that routine physical activity promoted improved student test scores, improved student classroom behavior, and increased school attendance among students.

The literature revealed that physical exercise was positively correlated with an improvement in test scores (Belansky et al., 2008; Texas Education Agency, 2009). According to Belansky et al. (2009), a study conducted on approximately 11,000 children ages 8 to 9 showed that 30% of the children had little or no active recess. Students who were given more than 15 minutes of active daily recess time showed an improvement in classroom behavior. The Baltimore Open Society Institute conducted a query regarding implementation of a program that increased active recess time for students. Findings from the study showed an impressive decrease in school suspension rates (Maxwell, 2007).

Conclusion eleven. Principals believed that good nutrition promoted improved test scores, promoted positive classroom behavior, and promoted increased school attendance among students.

The literature showed that eating breakfast enhanced memory, academic performance, school attendance rates, psychosocial function, and mood (Murphy et al., 1998). In Murphy et al.'s study principals consistently agreed that good nutrition improved test scores, classroom behavior, and school attendance among students. On the other hand, Shahid (2003) found that principals wanted to be involved in nutritional policy development, but lacked knowledge of the effects of nutrition on learning. In addition, a study conducted by Rainville et al. (2009), showed that 47% of school professionals believed that healthy school nutrition was not important.

Conclusion twelve. Principals believed that health education promoted increased school attendance, promoted increased test scores, and promoted positive classroom behavior among students.

According to the literature, a study revealed that students who received comprehensive health education had significantly higher reading and math scores than those who did not receive comprehensive health education (Schoener et al., 1988). Eggert et al. (1994) found that comprehensive health education and social skills programs for at risk students increased test scores, attendance, and school connectedness. Principals believed that research based prevention programs that targeted substance abuse and violence decreased negative behaviors among students including discipline problems within the school setting (Yang, 2010).

Research Question 6

Research question six examined if relationships existed between school accountability ratings and the school principals' perceptions regarding school wellness policies implementation of procedures and processes, physical activity, child nutrition, health education, and general beliefs. Pearson product-moment correlation coefficients were computed to assess the relationships between the schools accountability ratings and number of components used from the coordinated school health program to develop school wellness policies.

A significant positive weak correlation was found between school accountability ratings and belief that good nutrition promotes increased school attendance (r=.197, p=.042*). Further, a significant weak correlation was found between school accountability ratings and belief that health education promotes improved classroom behavior (r=.204, p=.036*). Similarly, significant weak positive correlations were found between school accountability ratings and belief that physical activity promotes improved test scores (r=.270, p=.005**) and school accountability ratings and belief that physical

activity promotes improved classroom behavior (r=.263, p=.006**). Lastly, significant weak relationships were found between school accountability ratings and beliefs that physical activity promotes increased attendance (r=.279, p=.004**) and school accountability ratings and belief that good nutrition promotes improved behavior (r=.297, p=.002**).

Conclusion thirteen: A positive weak relationship exists between school accountability ratings and perceptions of principals related to the effectiveness of the schools' health councils.

Few studies have investigated principals' ratings of school's health councils. According to the Child Nutrition WIC Reauthorization Act schools were to form a health council to monitor the implementation of school wellness policies. The Mississippi Healthy Students Act required Mississippi schools to develop a school health council that meets approximately three times per year to monitor and assess implementation of school wellness policies.

Conclusion fourteen: A positive relationship exists between school accountability ratings and perceptions of principals related to good child nutrition.

The Massachusetts General Hospital and Harvard Medical School conducted a breakfast pilot program called the Maryland Meals for Achievement offering free breakfast for students in the classroom (Murphy et al., 1998). The Maryland Meals for Achievement project resulted in significant increases in MSPAP Composite Index scores. In addition, there were decreases in absenteeism and suspensions among students.

Conclusion fifteen: A positive relationship exists between school accountability ratings and perceptions of principals related to health education instruction.

Comprehensive school health education programs have the ability to facilitate healthy behaviors by students through positively changing knowledge about health, attitudes, and behaviors, which leads to improving school and academic performance (Allensworth & Kolbe, 1987; McManus & Sorenson, 2000). Lee, Cheng, Fung, and St. Leger (2006) conducted a study in Hong Kong on students from schools that implemented and practiced a program promoting healthy behaviors. These researchers also conducted a study on students in schools that did not implement and practice a program promoting healthy behaviors (Lee et al., 2006). Students who attended the schools that implemented healthy behavior programs had less health risk behaviors and fewer unhealthy eating behaviors than students who attended schools that did not implement and practice healthy behavior programs.

Conclusion sixteen: A positive relationship exists between school accountability ratings and perceptions of principals related to students' physical activity.

Schools are an excellent setting to provide children with the opportunity for daily physical activity and to build skills that support lifelong healthy behaviors (Chriqui et al., 2009). Numerous studies have substantiated the positive link between physical activity and high academic achievement. According to the Texas Education Agency (2009), a study measuring the physical fitness of over 2.4 million students found that physically fit students were more likely to do better on state's standardized tests.

Policy Implications

The federal Child Nutrition and WIC Reauthorization Act of 2004 required local educational agencies or school districts to develop school wellness policies that included general guidelines to promote an increase in physical activity and healthy nutrition in an effort to decrease overweight and obesity among children. The Child Nutrition and WIC Reauthorization Act lacked strong measures in successfully implementing school wellness policies. The Healthy, Hunger-Free Kids Act of 2010 was mandated to expand upon the previous school wellness policy initiative in an attempt to strengthen school wellness policies by including ongoing implementation and assessment. The Mississippi Healthy Students act mandated Mississippi schools to adopt specific guidelines that promoted stronger implementation of school wellness policies.

The findings from this study revealed that principals' perceptions of the factors associated with the implementation of school wellness policies were linked to strengthening the implementation of school wellness policies. In addition, there is a connection between principals' perceptions of the implementation of school wellness policy factors and positive school accountability ratings.

Few studies have investigated principals as being the key to strengthening the implementation of school wellness policies. Researchers and policy makers have called for more studies to find successful strategies to further increase effectiveness and to strengthen school wellness policies in an effort to decrease child overweight and obesity.

This study implied that the inclusion of the principal is the most significant person to influence school wellness policy implementation for school policies that target the epidemic of child overweight and obesity. The principal is in an exclusive position to

influence nutrition activities, physical activities, and policy decisions related to children's health at the school, district, state, and federal levels.

General Recommendations

The literature revealed that school wellness policies were found to have a positive influence on school districts (Agronet al., 2010) and were a key to the prevention of adolescent obesity. However, policy makers were concerned with the lack of implementation of school wellness policies (Pekruhn, 2009). Pekruhn found that finding ways to hold state agencies, local school districts, and individual schools accountable for successful implementation of school wellness policies was crucial. This study provided additional findings in support of the importance of further strengthening school wellness policies. The following are specific recommendations derived from the study and relevant literature that may help to make school wellness policies stronger.

Recommendation one. School health councils should be in place in all local schools and school districts to guide and assess the implementation of school wellness policies. This study found a correlation between the school's ratings and the effectiveness of school health councils.

Recommendation two. Healthy foods should be offered to all school students. This study found correlations between the principals' beliefs toward nutrition promoting increased attendance and school accountability ratings. In addition, this study found correlations between the principals' beliefs toward healthy nutrition promoting improved classroom behavior and school's accountability ratings.

Recommendation Three. Health education instruction should be an intricate part of weekly classroom instruction. This study found correlations between the principals' beliefs toward health education promoting improved classroom behavior and school's accountability ratings.

*Recommendation Four. S*tudents should participate in physical activity on a daily basis during school hours. This study found a significant correlation between the principals' beliefs toward physical activity promoting increased test scores, improved classroom behavior, and increased school attendance and school's accountability ratings.

Recommendation Five. Schools should fully implement SWP to promote academic achievement and address obesity and overweight among children.

Recommendations for Future Research

The results of this study support the importance of the call for additional studies focused on strengthening the implementation of school wellness policies.

Recommendation one. Future studies using qualitative measures such as case studies can be conducted for a more explorative investigation of the implementation of school wellness policies in an effort to decrease the epidemic of childhood obesity.

Recommendation two. Future studies should be conducted to examine schools that implement all eight components of the CSHP model. This study limited focus to three components of the CSHP model.

Recommendation three. Future national studies should be conducted in schools to compare the implementation of school wellness policies across the United States.

Recommendation four. Future studies should be conducted to investigate principals' perceptions of factors associated with the implementation of school wellness policies in middle and or high schools.

In the literature, policy makers suggested that studies are needed to investigate strategies used by schools that overcame barriers related to the implementation of school wellness policies (Belansky et al., 2009). In addition, more research is needed to determine effective policies in an effort to decrease and/or prevent overweight and obesity among children. The CDC compels scholars to conduct research studies and provide analyses of school wellness policies (Kann et al., 2007).

Limitations

This study was confined to responses obtained using a quantitative web-based survey. This study included only three of eight components of the CSHP model: (a) physical activity, (b) child nutrition, and (c) health education. The population for the study was limited to practicing elementary school principals in the state of Mississippi. The assumption was that all schools had complied with the federal Child Nutrition and WIC Reauthorization Act of 2004 and the Mississippi Healthy Students Act. The collection of data took place during spring 2011, and school accountability ratings reflected the 2009-2010 school year. The study results may be generalized only to

elementary principals in the state of Mississippi. There were responses from 123 (18%) of 670 practicing elementary school principals.

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APPENDIX A

COORDINATED SCHOOL HEALTH PROGRAM MODEL

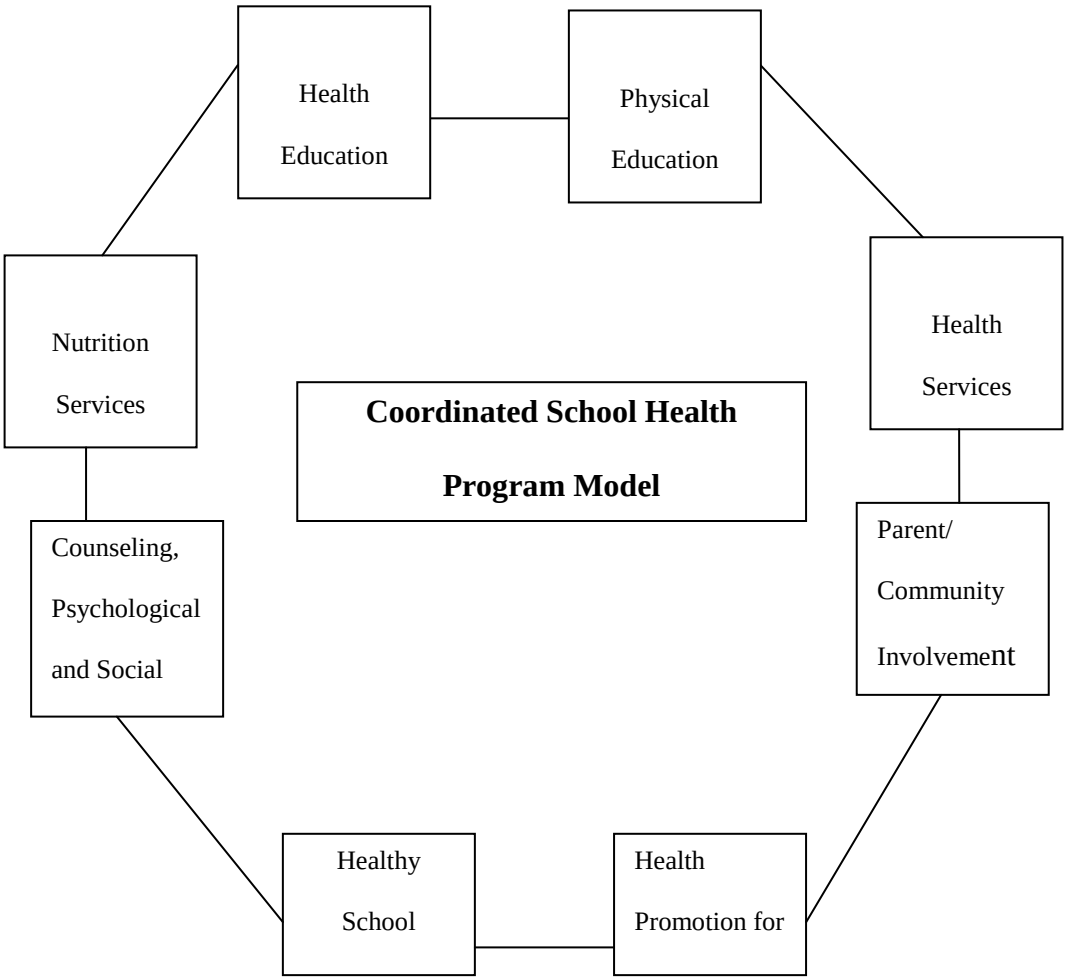

Figure 2 Coordinated School Health Program Model

APPENDIX B

MISSISSIPPI HEALTHY STUDENTS ACT OF 2007

MISSISSIPPI LEGISLATURE

2007 Regular Session

To: Education; Appropriations

By: Senator(s) Chaney, Thomas, Clarke, Wilemon, King, Albritton, Burton, Butler, Chassaniol, Dawkins, Dearing, Gollott, Gordon, Harden, Hewes, Horhn, Jackson (11th), Jordan, Lee (47th), Michel, Morgan, Pickering, Ross, Tollison, Walls, White

Senate Bill 2369

(As Sent to Governor)

AN ACT TO BE KNOWN AS THE MISSISSIPPI HEALTHY STUDENTS ACT; TO AMEND SECTION 37-13-134, MISSISSIPPI CODE OF 1972, TO REQUIRE A MINIMUM PERIOD OF PHYSICAL ACTIVITY-BASED INSTRUCTION AND A MINIMUM PERIOD OF HEALTH EDUCATION INSTRUCTION IN GRADES K-8, AS DEFINED BY THE STATE BOARD OF EDUCATION; TO REQUIRE ONEHALF OF A CARNEGIE UNIT IN PHYSICAL EDUCATION OR PHYSICAL ACTIVITY IN GRADES 9-12 FOR GRADUATION; TO PROVIDE THAT BEGINNING WITH THE 2008-2009 SCHOOL YEAR, THE SCHOOL WELLNESS PLANS OF LOCAL SCHOOL DISTRICTS SHALL PROMOTE INCREASED PHYSICAL ACTIVITY, HEALTHY EATING HABITS AND ABSTINENCE FROM THE USE OF TOBACCO AND ILLEGAL DRUGS; TO REQUIRE THE APPROPRIATION OF SUFFICIENT STATE-SOURCE FUNDS FOR THE STATE DEPARTMENT OF EDUCATION TO EMPLOY A PHYSICAL ACTIVITY COORDINATOR TO ASSIST SCHOOL DISTRICTS IN THE

IMPLEMENTATION OF PHYSICAL EDUCATION PROGRAMS; TO PROVIDE THAT THE STATUTORY DUTIES OF THE LOCAL SCHOOL HEALTH COUNCILS SHALL BE MANDATORY RATHER THAN PERMISSIVE; TO DIRECT THE STATE BOARD OF EDUCATION TO ADOPT REGULATIONS, FOR COMPLIANCE BY SCHOOL DISTRICTS BEGINNING WITH THE 2008-2009 SCHOOL YEAR, THAT ADDRESS THE FOLLOWING AREAS: HEALTHY FOOD AND BEVERAGE CHOICES; HEALTHY FOOD PREPARATION; MARKETING OF HEALTHY FOOD CHOICES TO STUDENTS AND STAFF; FOOD PREPARATION INGREDIENTS AND PRODUCTS; MINIMUM AND MAXIMUM TIME ALLOTMENT FOR STUDENTS AND STAFF LUNCH AND BREAKFAST PERIODS; THE AVAILABILITY OF FOOD ITEMS DURING THE LUNCH AND BREAKFAST PERIODS; AND METHODS TO INCREASE PARTICIPATION IN THE CHILD NUTRITION SCHOOL BREAKFAST AND LUNCH PROGRAMS; TO PROVIDE THAT THE STATE SUPERINTENDENT OF PUBLIC EDUCATION SHALL APPOINT AN ADVISORY COMMITTEE TO ASSIST THE STATE BOARD OF EDUCATION IN DEVELOPING THE REGULATIONS REQUIRED BY THIS ACT; AND FOR RELATED PURPOSES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MISSISSIPPI:

SECTION 1. This act shall be known as the Mississippi Healthy Students Act.

SECTION 2. Section 37-13-134, Mississippi Code of 1972, is amended as follows:

37-13-134. (1) The Legislature recognizes that there is a problem with Mississippi student inactivity and obesity * * *, and therefore requires the

following guidelines for school district physical education, health education and physical activity and fitness classes:

Kindergarten through Grade 8: One hundred fifty (150) minutes per week of physical activity-based instruction and forty-five (45) minutes per week of health education instruction, as defined by the State Board of Education.

Grades 9 through 12: 1/2 Carnegie unit requirement in physical education or physical activity for graduation.

All instruction in physical education, health education and physical activity must be based on the most current state standards provided by the State Department of Education.

(2) Beginning with the 2006-2007 school year, each local school board shall, consistent with regulations adopted by the State Board of Education, adopt a school wellness plan which shall promote a healthy lifestyle for Mississippi's school children and staff. Beginning with the 2008-2009 school year, the school wellness plan shall also promote increased physical activity, healthy eating habits and abstinence from the use of tobacco and illegal drugs through programs that incorporate healthy lifestyle choices into core subject areas which may be developed in partnership with the Institute for America's Health.

(3) The Legislature shall appropriate sufficient state-source funds for * * * the State Department of Education * * * to employ a physical activity coordinator to assist districts on current and effective practices and on implementation of physical education and physical activity programs.

(4) The physical activity coordinator employed under Section 37-13-133 must

have the qualifications prescribed in any of the following paragraphs, which are listed in the order of preference:

(a) A doctorate in physical education, exercise science or a highly related field, and at least three (3) years of experience in teaching physical education in Grades K-12 or in physical activity promotion/fitness leadership; or

(b) A master's degree in physical education, exercise science or a highly related field, and at least five (5) years of experience in teaching physical education in Grades K-12 or in physical activity promotion/fitness leadership; or

(c) A bachelor's degree in physical education, a teacher's license, and at least seven (7) years of experience in teaching physical education in Grades K-12 or in physical activity promotion/fitness leadership.

(5) The Governor's Commission on Physical Fitness and Sports created under Section 7-1-551 et seq., the Mississippi Council on Obesity Prevention and Management created under Section 41-101-1 et seq., the Task Force on Heart Disease and Stroke Prevention created under Section 41-103-1 et seq., the Mississippi Alliance for Health, Physical Education, Recreation and Dance, and the Mississippi Alliance for School Health shall provide recommendations to the State Department of Education regarding the employment of the physical activity coordinator. The department shall consider the recommendations of those entities in employing the physical activity coordinator.

(6) The physical activity coordinator shall present a state physical activity plan each year to the Governor's Commission on Physical Fitness and Sports, the Mississippi Council on Obesity Prevention and Management, the Task Force

on Heart Disease and Stroke Prevention, the Mississippi Alliance for Health, Physical Education, Recreation and Dance, and the Mississippi Alliance for School Health.

(7) The physical activity coordinator shall monitor the districts for adherence to current Mississippi school accountability standards and for implementation of the physical education curriculum on file with the State Department of Education. The State Department of Education shall monitor and act as a clearinghouse for the activities of the local school health councils established pursuant to subsection (8) of this section.

* * *

(8) (a) The local school board of each school district shall establish a local school health council for each school which shall ensure that local community values are reflected in the local school's wellness plan to address school health. Such councils shall be established no later than November 1, 2006.

(b) The local school health council's duties shall include, but not be limited to, the following:

(i) Recommend age appropriate curriculum and the number of hours of instruction to be provided in health and physical activity-based education, provided that the number of hours shall not be less than that required by Section 37-13-134;

(ii) Recommend appropriate practices that * * * include a coordinated approach to school health * * * designed to prevent obesity, cardiovascular disease, Type II diabetes and other health risks, through coordination of:

1. Health education;

2. Physical education;

3. Nutritional services;

4. Parental/Community involvement;

5. Instruction to prevent the use of tobacco, drugs and alcohol;

6. Physical activity;

7. Health services;

8. Healthy environment; * * *

9. Counseling and psychological services;

10. Healthy lifestyles; and

11. Staff wellness.

(iii) Provide guidance on the development and implementation of the local school wellness plan. * * *

(c) The local school board shall appoint members to the local school health council. At a minimum, the school board shall appoint one (1) person from each of the following groups:

(i) Parents who are not employed by the school district;

(ii) The director of local school food services;

(iii) Public schoolteachers;

(iv) Public school administrators;

(v) District students;

(vi) Health care professionals;

(vii) The business community;

(viii) Law enforcement;

(ix) Senior citizens;

(x) The clergy;

(xi) Nonprofit health organizations; and

(xii) Faith-based organizations.

(9) Nothing in this section shall be construed to prohibit or limit the sale or distribution of any food or beverage item through fund-raisers conducted by students, teachers, school groups, or parent groups when the items are intended for sale off the school campus.

SECTION 3. (1) The State Board of Education shall adopt regulations as provided in this section not later than March 1, 2008, which shall be effective for compliance by school districts beginning with the 2008-2009 school year, for the Child Nutrition School Breakfast and Lunch Programs that are not in conflict with the regulations of the United States Department of Agriculture (USDA). The regulations shall take into account the most recent and advanced scientific principles regarding good human health and fitness, and the effect of the regulations must be that the good health, well-being and fitness of Mississippi school children shall be advanced. The regulations shall include, but not be limited to, the following areas:

(a) Healthy food and beverage choices;

(b) Healthy food preparation;

(c) Marketing of healthy food choices to students and staff;

(d) Food preparation ingredients and products;

(e) Minimum and maximum time allotment for students and staff lunch and breakfast periods;

(f) The availability of food items during the lunch and breakfast periods of the Child Nutrition School Breakfast and Lunch Programs; and

(g) Methods to increase participation in the Child Nutrition School Breakfast and Lunch Programs.

(2) To assist the State Board of Education in developing the regulations required by this section, the State Superintendent of Public Education shall appoint an advisory committee comprised of the following members: one (1) representative of the Office of Child Nutrition in the State Department of Education; one (1) member of the State Board of Education; one (1) licensed dietitian; one (1) licensed physician; one (1) local public school superintendent; one (1) school food service director from each of the four (4) congressional districts; one (1) principal of a local public elementary or middle school; one (1) principal of a local public high school; the president of the Mississippi School Nutrition Association or his designee; one (1) member of the Senate, who shall serve in an advisory capacity only; and one (1) member of the House of Representatives, who shall serve in an advisory capacity only. All members of the advisory committee must be residents of the state and active practitioners in their respective fields. The State Superintendent shall appoint the members of the advisory committee not later than April 30, 2007, and shall designate the member who will be the chairman of the committee. The advisory committee shall hold its first meeting not later than June 1, 2007, and shall meet at such

other times as necessary. The advisory committee shall make its recommendations to the State Board of Education on the regulations required by this section not later than October 15, 2007.

To effectuate the purposes of this section, upon the request of the chairman of the advisory committee, any department, division, board, bureau, commission or agency of the state or of any political subdivision of the state shall provide to the committee such facilities, assistance and data that will enable the committee to properly carry out its functions under this section.

Members of the advisory committee who are not public employees who live in the Jackson, Mississippi, metropolitan area or a member of the Legislature shall receive per diem at the rate authorized by Section 25-3-69 for attending meetings of the committee, and shall be reimbursed in accordance with Section 25-3-41 for mileage and actual expenses incurred in the performance of their duties. The legislative members of the committee shall be paid from the contingent expense fund of the house of which he or she is a member in the same manner as provided for committee meetings when the Legislature is not in session; however, no per diem or expense for attending meetings of the committee may be paid while the Legislature is in session. A committee member may not incur per diem, travel or other expenses unless previously authorized by vote, at a meeting of the committee, which action must be recorded in the official minutes of the meeting. Nonlegislative members will be paid from funds available to the State Department of Education or from any other funds made available to the committee for that purpose.

(3) Local school districts may adopt rules and regulations that may be more stringent but not in conflict with those adopted by the State Board of Education under this section.

SECTION 4. This act shall take effect and be in force from and after July 1, 2007, except for Section 3, which shall take effect and be in force from and after the passage of this act.

APPENDIX C

PRINCIPALS' PERCEPTIONS OF FACTORS ASSOCIATED WITH THE IMPLEMENTATION OF SCHOOL WELLNESS POLICIES

Procedures and Processes	Answer Choices
1. The coordinated school health program (CSHP) has eight components: 1) health education, 2) physical education, 3) health services, 4) nutrition services, 5) counseling, psychological and social services, 6) healthy school environment, 7) parent/community involvement, and 8) health promotion for staff. How many components of the CSHP did you use when developing your school's wellness policy?	○ None ○ 3 or less ○ 4 ○ 5 ○ 6 or more
2. During the school year, how often did the school health council meet?	○ Once ○ Twice ○ Three times ○ Four times ○ Five or more times
3. During the most recent school year, how often were teachers offered professional development for school wellness policy implementation?	○ None ○ Once ○ Twice ○ Three times ○ Four times ○ Five times or more
4. Rate the effectiveness of the work of the health council.	○ Poor ○ Fair ○ Good ○ Very good ○ Excellent
Beliefs	
5. Implementing the school's wellness policy promotes academic achievement.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
6. The principal is responsible for implementing the school's wellness policy?	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ strongly agree
7. Routine physical activity promotes improved student test scores.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
8. Routine physical activity promotes	○ Strongly disagree

improved classroom behavior.	○ Disagree ○ Not sure ○ Agree ○ Strongly agree
9. Routine physical activity promotes increased school attendance.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
10. Good nutrition promotes improved test scores.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
11. Good nutrition promotes positive classroom behavior.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
12. Good nutrition promotes increased school attendance.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
13. Health education promotes increased school attendance.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
14. Health education promotes improved test scores.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
15. Health education promotes positive classroom behavior.	○ Strongly disagree ○ Disagree ○ Not sure ○ Agree ○ Strongly agree
Physical Activity	
16. Rate the physical fitness of your students.	○ Poor ○ Fair ○ Good ○ Very good

	○ Excellent
17. How do you describe your student's activity level?	○ Very low ○ Low ○ Medium ○ High ○ Very high
Child Nutrition	
18. How many times per week are different types of fruit offered for lunch?	○ 3 ○ 4 ○ 5 ○ 6 ○ 7 or more
19. How many times per week are different types of fruit offered for breakfast?	○ 3 ○ 4 ○ 5 ○ 6 ○ 7 or more
20. How many times per week are different types of vegetables offered?	○ 4 or less ○ 5 ○ 6 ○ 7 ○ 8 or more
21. Milk choices with a maximum of 2% milk fat are offered	○ 25% of the time or less ○ 50% of the time ○ 75% of the time ○ 100% of the time
22. 100% fruit juice with no added sugar is offered	○ 25% of the time or less ○ 50% of the time ○ 75% of the time ○ 100% of the time
23. 100% vegetable juice with no added sugar is offered	○ 25% of the time or less ○ 50% of the time ○ 75% of the time ○ 100% of the time
Health Education	
24. Students receive health education instruction how many minutes per week?	○ 45 minutes or less ○ 50 minutes ○ 55 minutes ○ 60 or more
25. Students receive nutrition education instruction how many minutes per week?	○ 45 minutes or less ○ 50 minutes ○ 55 minutes ○ 60 or more
26. How do you rate health education	○ Poor

instruction at your school?	○ Fair ○ Good ○ Very good ○ Excellent
Demographics	
27. How long have you been principal at this school?	○ <1 year ○ 2-3 years ○ 3 or more years
28. What was your school's 2009-2010 enrollment?	○ Less than 100 ○ 100-200 ○ 201-300 ○ 301-400 ○ 401-500 ○ More than 500
29. On average how many behavioral office referrals were there on a weekly basis?	○ 0-5 ○ 6-11 ○ 12-17 ○ 18 or more
30. Average daily attendance during most recent year?	○ 69% or below ○ 70-80% ○ 81-90% ○ 90-95% ○ 95-100%
31. What is your school's rating? (We appreciate your honesty when answering this question. We have no way of identifying your school, and this information is critical to this study.)	○ Failing ○ At risk of failing ○ Academic watch ○ Successful ○ High performing ○ Star school
32. What is your gender?	○ Male ○ female
33. What is your ethnicity?	○ Black/African American ○ White/Caucasian ○ Native American ○ Hispanic ○ Asian

APPENDIX D

IRB APPROVAL LETTER

MISSISSIPPI STATE
UNIVERSITY

Compliance Division
Administrative Offices
Animal Care and Use (IACUC)
Human Research Protection
Program (IRB)
1207 Hwy 182 West, Suite C
Starkville, MS 39759
(662) 325-3496 - fax

Safety Division
Biosafety (IBC)
Radiation Safety
Hazardous Waste
Chemical & Lab Safety
Fire & Life Safety
70 Morgan Avenue
Mississippi State, MS 39762
(662) 325-8776 - fax

http://www.orc.msstate.edu
compliance@research.msstate.edu
(662) 325-3294

September 28, 2010

Melissa Davis
Leadership and Foundations
Mail Stop 9698

RE: IRB Study #10-160: Principals' Perceptions of Factors Associated with Implementing School Wellness Policies

Dear Ms. Davis:

The above referenced project was reviewed and approved via administrative review on 9/28/2010 in accordance with 45 CFR 46.101(b)(2). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

Please note that the MSU IRB is in the process of seeking accreditation for our human subjects protection program. As a result of these efforts, you will likely notice many changes in the IRB's policies and procedures in the coming months. These changes will be posted online at http://www.orc.msstate.edu/human/aahrpp.php. The first of these changes is the implementation of an approval stamp for consent forms. The approval stamp will assist in ensuring the IRB approved version of the consent form is used in the actual conduct of research.

Please refer to your IRB number (#10-160) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at cwilliams@research.msstate.edu or call 662-325-5220.

Sincerely,

[For use with electronic submissions]

Christine Williams
IRB Compliance Administrator

cc: Frankie Williams (Advisor)

APPENDIX E

CONSENT LETTER

Consent Letter

Dear Principal:

You are invited to participate in a research study titled: PRINCIPALS' PERCEPTIONS OF FACTORS ASSOCIATED WITH THE IMPLEMENTATION OF SCHOOL WELLNESS POLICIES conducted by Melissa Davis. This study is fully supported by the Mississippi Department of Education Office of Healthy Schools.

The purpose of this research study is to investigate school principals' perceptions of specific factors related to the development and implementation of school wellness policies (SWP). More specifically, the researcher will examine principals' perceptions regarding physical activity, child nutrition, and health education related to the implementation of school wellness policies in elementary schools in the state of Mississippi. In addition, the researcher will determine if relationships exist between the specific factors associated with the implementation of school wellness policies and school accountability ratings.

As an elementary school principal in the state of Mississippi, your participation is very important. Principals have been chosen to participate in this study to support research on the Comprehensive School Health Program/School Wellness Policy implementation in Mississippi. This information will be used to fulfill a doctoral degree requirement at Mississippi State University. A potential benefit will be stronger SWPs that will increase academic achievement among school aged children in Mississippi. This study is important because of the childhood obesity epidemic in Mississippi. Children are facing shorter life spans than their parents because of the numerous life threatening diseases that are caused by obesity. Your participation will involve the completion of a survey. There are no known risks associated with this research. The amount of time for your participation will be approximately 10 minutes to complete the survey.

This survey instrument consists of 33 items in 6 sections. The first five sections relate to your perspectives on procedures and processes, beliefs, physical activity, child nutrition, and health education. The last section collects demographical information related to the school.

Responses are anonymous and will be kept confidential. We will do everything we can to protect your privacy. Your identity will not be revealed in any public manner. All data will be analyzed in an aggregate format.

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or withdraw from this study.

If you have any questions or concerns about this study or if any problems arise, please contact Melissa Davis at 662-803-6940 or md7@msstate.edu or Dr. Frankie K. Williams at fwilliams@colled.msstate.edu. If you have any questions or concerns about your rights as a research participant, please contact the Mississippi State University Office of Research Compliance (ORC) at 662-325-3294 or irb@research.msstate.edu.

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study by completing the survey.

Sincerely,

Melissa Davis

Doctoral Student
md7@msstate.edu
Please click on link below to begin survey
https://www.surveymonkey.com/s/melissadav