University of Nevada, Reno

Implementing a Wellness Policy: Perceptions of Elementary School Employees

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by

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ABSTRACT

Schools are increasingly the focal point for policy-driven childhood obesity prevention efforts – including the provision of education, services and environmental interventions. School wellness policies were mandated per Senate Bill 2507 (2004), the 2004 Child Nutrition and Women, Infants, and Children (WIC) Reauthorization Act, for all schools that receive funding through the federal school meals program. Local policies were to include nutrition guidelines for all foods available at schools, as well as goals for nutrition education and physical activity. Since the policies went into place in School Year 2006-2007, a growing number of studies have been conducted about the experiences of school employees. The objective of this study was to contribute to this body of knowledge by investigating the experiences of wellness coordinators, principals and foodservice managers in implementing the Washoe County School District (WCSD) School Wellness Policy. Twenty semi-structured interviews were conducted with elementary school principals (n=9), wellness coordinators (n=3) and foodservice managers (n=8). Participants' responses were transcribed verbatim from audio recordings. NVivo 7.0® Qualitative Analysis Software was used to code the data. Two investigators coded a portion of the data to assess reliability; an 80% inter-rater reliability was achieved. Participant responses addressed the following topics: changes due to the policy, roles and responsibilities, facilitating policy implementation, challenges to policy implementation, priority of the policy and suggestions for improvement. Overall, three themes were identified from the responses made by school employees. In general, participants indicated that they perceived that the school food environment had become more healthful. They also commented that there had been insufficient support of

implementation since the initial “roll-out” of the policy – including inadequacies in resources, communication and enforcement. Lastly, school employees commented that the policy was a low priority for schools because the highest priority was achieving academic standards. If the findings of this qualitative study were discovered among a representative sample of school employees, it would be of benefit to compare the effectiveness of different communication strategies and resources relative to the implementation of health and nutrition-related policies.

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CHAPTER 1: INTRODUCTION

The prevalence of overweight children in the U.S. continues to increase. In data from the most recent National Health and Nutrition Examination Survey (NHANES) (2007-2008), 19.6% of children 6-11 years and 18.1% of children 12-19 years were classified as overweight, or having a body mass index (BMI)-for-age at or greater than the 95th percentile on the gender-specific 2000 growth charts developed by the Center for Disease Control and Prevention (CDC) (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Over 95% of children attend school, making the school environment a setting that can significantly impact their nutritional intake and level of physical activity (Nollen, Befort, Snow, Daley, Ellerbeck, & Ahluwalia, 2007). Per Senate Bill 2507 (2004), the 2004 Child Nutrition and Women, Infants, and Children (WIC) Reauthorization Act, all schools that receive funding through the federal school meals program were required to develop a school wellness policy by the start of the 2006-2007 school year. These policies were to include nutrition guidelines for all foods available at schools, as well as goals for nutrition education and physical activity (U. S. Congress, 2004).

Prior to this legislation, in 2002, Washoe County School District (WCSD) Superintendent Jim Hager called for the formation of a committee to investigate the financial and nutritional impact of foods available to students at school, outside of the National School Lunch Program and School Breakfast Program. The committee was made up of a number of district representatives including individuals from Student Services, Nutrition Services, principals, and the Nevada Department of Education, as well as community nutrition professionals. The purpose of the study was three-fold: 1) To determine the types of foods and beverages that were available for purchase; 2) To

estimate the amount of revenues generated from the sales of these foods; and 3) To identify how these revenues were used. To obtain this information, the committee surveyed all schools in the district. The committee's findings were outlined in a report (Bonine, et al., 2003).

According to the report 91% of responding schools indicated that students have access to foods outside of the school meals program during the school day, including during the breakfast and lunch periods. These foods were available through a number of venues including school stores, a la carte, vending machines, and/or fundraisers. An estimated $1.1 million dollars were generated district-wide from the sale of foods outside of school meals, and the majority of this (63%) was revenue that was brought in from a la carte sales of foods and beverages. Another important finding was that many of the foods and beverages available outside of the school meals program were of low nutritional quality. For example, 73% of schools reported that they had sugar-sweetened beverages (i.e. sports drinks, soft drinks, and other juice drinks) available. Baked goods and crackers, not low in fat, were reported to be available in 63% of schools that completed the survey, and 59% of schools reported having salty snacks not low in fat. Candy was available for purchase by students at 44% of schools.

In the report issued by the Food and Beverage Study Committee, members voiced their concern over a number of alarming national trends observed among children, such as the increase in overweight and diabetes, low nutrient intakes, and the substitution of soda for more healthful beverages such as milk, water, and 100% fruit juices (Bonine, et al., 2003). Committee members also indicated that the prevalence of unhealthful foods available in Washoe County schools contributes to these trends being seen nationwide.

As a result of this study, a recommendation was made to develop a policy that would improve the types of foods available at schools with the intent of promoting the health and wellbeing of students. Such a policy was developed and pre-tested in select elementary, middle and high schools in the district. One year later, the policy was approved by the Washoe County Board of Trustees to be implemented district-wide by July 1, 2006. According to this, "Child Nutrition, Wellness, and Healthy School Environment Policy," each school was required to designate a Wellness Coordinator who would be responsible for setting goals related to areas defined in the wellness policy such as nutrition, physical activity, and for reporting yearly data regarding policy implementation to the Nevada Department of Education (WCSD, 2006).

The policy also established nutrient and portion size standards for all foods and beverages sold or offered to students from one half-hour before school starts to one half hour after the school day ends. These included standards for fat, sodium, added sugar, caffeine, and total calorie content of foods. Certain items (foods of minimal nutritional value, such as soda water, soft drinks, chewing gum, candies and water ices) are prohibited under the policy. Exemptions are included in the policy, so that foods that do not meet the new requirements are allowed on special occasions, such as state and national holidays, "established religious observances such as Christmas, Hanukkah, and Kwanzaa," and student birthday parties (WCSD, 2006).

Guidelines were also established pertaining to the length and scheduling of meal times, as well as physical activity. Students should have at least 15 minutes to consume breakfast, and a minimum of 20 minutes to consume lunch. Schools are also expected to provide 30 minutes of physical activity for students each day. Under the new regulations,

elementary schools are required to hold the mid-day recess before the students sit down to eat lunch (WCSD, 2006).

Similar policies have been put into effect nationwide (Moag-Stahlberg, Howley, & Luscri, 2008), and since their adoption, there has been limited research on how effectively or to what degree they have been implemented, and what the experience and perceptions of educators and administrators have been regarding such policies. In general, the existing research suggests that educators want to be included in the policy development process, and perceive that to successfully implement these policies there needs to be greater cooperation among administrators, school staff and foodservice workers (Nollen, et al., 2007; U.S. GAO, 2005; Whatley Blum, et al., 2007).

As part of a study examining the implementation of the WCSD Wellness Policy in northern Nevada, ten focus groups were conducted with teachers in area schools (Himler, Benedict, Snow, Spears, & Kerwin, 2009). This study found that while teachers supported the goals of the policy, overall, certain aspects of the policy were seen as challenging. Concerns included scheduling recess before lunch and no longer using foods of low-nutritional value in fundraising. Teachers also voiced confusion over what they felt to be inconsistencies between the foods served as part of the National School Lunch Program (NSLP) and the nutrition guidelines laid out in the wellness policy.

The purpose of this study was to gain insight into the experiences and perceptions of school employees, namely, principals, wellness coordinators and foodservice managers, regarding implementing the WCSD Wellness Policy. These employees were selected for interview because they were perceived to be key stakeholders regarding wellness policy implementation and oversight. It was presumed that learning more about

their perspectives would be helpful in determining what, if any, elements of the policy were particularly challenging, as well as what elements have been especially beneficial, and how improvements might be made to increase and sustain the policy's success. Teachers, another important stakeholder group, were surveyed. These data, however, are not reported here.

Chapter 2 of this thesis provides a review of the literature. In particular, the review includes a discussion of the role schools may play in impacting the health and wellness of children, how policies have been used in the past to try to alter the health environment of schools and what challenges and successes have been experienced. It also provides an overview of the research that has been done up to this point examining the perceptions and experiences of school employees in the implementation of health and wellness policies. A description of the methods used in this thesis is provided in Chapter 3. Specifically, this includes a description of the overall study, the participants, as well as the techniques used in data collection and analysis. Chapter 4 presents the results of the study, and Chapter 5 provides a discussion of the results, the limitations of the study, and suggestions for further research.

CHAPTER 2: LITERATURE REVIEW

An epidemic of overweight children has emerged as a significant public health concern in the U.S., and accompanying this trend has been increased interest in what may be potential causes of this health phenomenon. Over 95% of children in the United States attend school and consume anywhere between approximately 19-50% of their daily food intake at school (Nollen, et al., 2007). Therefore, the school setting has the potential to significantly affect the nutritional intake and physical activity of children. According to Senate Bill 2507 (2004), the Child Nutrition and WIC Reauthorization Act of 2004, any school that receives funding through the federal school meals program was required to develop a school wellness policy by the start of the 2006-2007 school year. These policies were to include nutrition guidelines for all foods available at schools, as well as goals for nutrition education and physical activity (U.S. Congress, 2004).

Limited research has been done to investigate the perceptions and experiences of school administrators, educators and staff in implementing the new wellness policies. What has emerged from the existing research is that the cooperation of foodservice directors, staff, and school administrators is critical to the successful implementation of these policies (U.S. GAO, 2005; Whatley Blum, et al., 2007). School employees have stated that they need to be included more closely in the policy development process. Since they are the ones who will be eventually implementing the policy, they said they should have more of a voice in what is drafted (Nollen, et al., 2007).

This review of the literature will describe existing research regarding the perceptions of administrators and foodservice personnel related to health and nutrition policy implementation. How policies have been used in the past to try to impact the

health of the school environment, and what successes and challenges have come about will also be examined. There is a great deal that might be gained from a better understanding of their experiences. This review will also briefly examine the existing research on overweight and obesity in children and adolescents, including the related health risks, and the current eating patterns of children and adolescents. It will also seek to summarize the current research regarding the school food environment and how it impacts student nutrition and health, as well as the school physical activity environment and how it might affect the rising trend in obesity.

Childhood and Adolescent Overweight

In the past thirty years there has been a three-fold increase in the prevalence of 6-19 year olds in the United States with a body mass index (BMI) for age at or above the 95th percentile on sex-specific growth charts produced by the Centers for Disease Control and Prevention (CDC). In data from the 2007-2008 National Health and Nutrition Examination Survey (NHANES), 31.7% of 2-19 year olds were classified as having a BMI above the 85th percentile for their age and gender (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). This represents a statistically significant increase in the percentage of overweight children when compared to data from 1999-2004 surveys (Odgen, et al., 2006). In the most recent NHANES data from 2007-2008, 31.7% of 2-19 year olds had a BMI for age at or above the 85th percentile, 16.9% had a BMI for age at or above the 95th percentile and 11.9% had a BMI for age at or above the 97th percentile (Odgen, et al., 2010).

Other recently reported data indicates that children may not only have increased BMIs but also have an increase in a number of cardiovascular risk factors. The Bogalusa

Heart Study is a long-term epidemiologic study with the purpose of investigating the etiology of heart disease in a well-defined pediatric population. The study sample is made up of children of both African-American and European-American descent in Bogalusa, Louisiana. Data has been collected from children in the Bogalusa region, since the study was initiated in 1973. The trends in weight and health status found in the data from Bogalusa have mirrored trends in the weight and health status of data collected from children on a national level. From 1983-1994, researchers in Bogalusa witnessed a much greater proportion of children whose BMI for age fell at or above the 95th percentile. Increases in the percentage of children at or above the 95th percentile were 50% greater during the period between 1983-1994 when compared with increases seen between 1973-1984 (Nicklas, Yang, Baranowski, Zakeri, & Berenson, 2003).

The Bogalusa Heart Study has also resulted in data that illustrates why addressing the trend of increased obesity among children is a critical public health concern. This study indicates that children who are overweight, as they near the age of puberty, tend to have an increased risk of being overweight or obese as adults. In data from this study, 52-62% of adolescents between the ages of 13-17, who were above the 75th percentile for BMI for age on sex-specific CDC growth charts, remained at or above the 75th percentile 12-14 years later, as adults (Srinivasan, Bao, Wattigney, & Berenson, 1996). Similarly, data from another paper based on the study in Bogalusa by Guo, Wu, Chumleau & Roche (2002), reported that of 2 to 20 year olds with BMI values at or above the 75th percentile for age, 50% of them were at increased risk of being overweight (BMI > 25) as adults, and 10% were at increased risk for being obese (BMI > 30) as adults. As younger

children develop higher BMI for age, the risk of those children becoming overweight or obese adults appears to increase more acutely

Being obese as a child can have immediate negative health consequences, as well as lead to the development of risk factors for a number of chronic diseases in adulthood. Overweight children, as young as 7-8 years of age, have been found to consistently demonstrate certain risk factors for cardiovascular disease, such as poor lipid and insulin levels and high blood pressure (Freedman, Dietz, Srinivasan, & Berenson, 1999). Srinivasan et al. (1996) reported significantly higher prevalence of a variety of cardiovascular risk factors, including dyslipidemia, hypertension, and adverse plasma insulin levels when comparing overweight adults with lean adults, all of whom had BMI's above the 75th percentile as adolescents. Preventing overweight in children and adolescents is particularly critical, given that research suggests that overweight adolescents are more likely to become overweight adults and are at greater risk for cardiovascular disease.

Eating Patterns of Children and Adolescents

In trying to understand the trend of obesity among children and adolescents, research has been conducted to identify the quality of foods consumed by youth. Overall, it appears that children are consuming fewer servings of nutrient-rich foods that are low in calories, such as fruits, vegetables, and low-fat milk and other dairy products (Eaton, et al., 2008). In addition, when presented with foods that are energy-dense and low in nutrients, children and adolescents tend to choose larger serving sizes (Colapinto, Fitzgerald, Taper, & Veugelers 2007). The perceptions of parents and teachers appears to correspond to this data, as demonstrated in a recent survey of parents and teachers of

middle school students in Minnesota, where a small proportion of parents and teachers, 12% and 11% respectively, felt that students attending their school consumed a healthful diet (Kubik, Lytle, & Story, 2005b).

Staff at the CDC developed the Youth Risk Behavior Surveillance System (YRBSS) to assess a number of specific behaviors in children and adolescents that are believed to put their health at risk. The survey is given biennially to a nationally representative sample of 9-12 grade students. Among the data collected is information about diet and physical activity. According to YRBSS data collected in 2007, only 21.4% of high school students reported eating five or more servings of fruits and vegetables (excluding fried potatoes) per day in the week before the survey. Survey data also indicated that as students moved to higher grade levels their intake of fruits and vegetables decreased. Among 9th and 10th grade students, 23.7% and 22.4% respectively, consumed at least 5 servings of fruits and vegetables per day, whereas only 19.9% of 11th grade students and 18.6% of 12th grade students consumed this amount of fruits and vegetables. Only 14.1% of high school students reported having consumed at least 3 glasses/day of milk during the week before the survey. Similarly, 9th grade students were more likely than 12th grade students to consume at least 3 glasses/day of milk (9th grade students – 14.6% consumed 3 glasses milk/day, 10th grade =15%, 11th grade = 13.5% and 12th grade = 13.2%). In addition, 33.8% of high school students reported that they had consumed soda or pop (including diet soda or diet pop) at least once each day in the seven days before the survey (Eaton, et al., 2008).

In a large study of Canadian fifth grade students (n = 4,966), Colapinto et al. (2007) also found that there is a trend toward young people consuming larger portion

sizes of low-nutrient, energy dense foods. As they reported, a significantly greater percentage of fifth graders (63.5%) indicated that they usually consumed portions of French fries that were larger than the recommended serving size (in their study, a recommended portion was defined as 2.5 oz. of French fries), compared to the 36.5% of students the same age who indicated that they usually consumed portions of French fries that were equal to or less than the recommended serving size. They also found that a significantly greater percentage of children (77.9%) consumed larger than recommended portions of meat and 78.2% consumed larger portions of potato chips, when compared with those students of the same age who consumed portions equal to or less than the recommended serving size. Among this sample of fifth graders, 52.3% chose portions less than or equal to the recommended guidelines for vegetable intake, indicating that children appear to be more likely to consume large servings of energy dense foods and less likely to consume large servings of nutrient-rich foods that are less energy dense.

Regularly consuming larger portions of energy dense foods has been associated with greater total energy and fat intakes, whereas routinely consuming larger portions of vegetables was associated with lower total fat intakes. As Colapinto, et al. (2007) described, those children who indicated consuming large portions of French fries had energy intakes that were, on average, 243 calories greater than children who usually ate servings equal to or less than the recommended portion sizes. They also found that children who reported consuming larger portions of meat and potato chips, tended to have greater energy intakes than children who reported consuming, at most, the recommended serving size. The average fat intake among this sample of fifth grade students was 30.3% of total energy intake. However, those children who reported usually consuming large

portions of vegetables had significantly lower fat intakes, and children who indicated regularly consuming large portions of French fries, meat and potato chips generally had significantly higher fat intakes.

Recent data indicates that children are consuming greater amounts of high-calorie, high-fat foods low in nutritional quality. Other research links these trends to the increasing prevalence of obesity among children. In the Bogalusa Heart Study, Nicklas et al. (2003) reported that eating habits such as consuming sweets, meats, and sweetened beverages, as well as the total gram amount of foods/beverages consumed were all found to be positively associated with 10-year-olds being classified as overweight.

Physical Activity Among Children and Adolescents

Energy intake is only one side of the equation. The other factor that needs to be considered in understanding the increasing prevalence of overweight is physical activity habits of children and adolescents. As Nicklas et al. (2003) observed in the Bogalusa Heart Study, 10-year-old children in their sample consumed a greater amount of foods and beverages, and they also spent less time engaging in physical activity compared to children from earlier samples in the Bogalusa study. The convergence of these two trends added further support to their conclusions that both of these changes in behavior are associated with the increasing prevalence of overweight in their sample.

In nationally representative samples, similar results have been found. In data from the 2007 YRBSS, only 34.7% of high school students reported meeting the current recommendations for physical activity (defined as at least 60 minutes/day on at least 5 days/week of physical activity that increases the heart rate and leads to breathing hard for at least part of the time). Physical activity was found to be higher among 9th grade

students, 38.1% of whom reported engaging in the recommended amount of physical activity, when compared with higher grade levels (34.8% of 10th and 11th grade students and 29.5% of 12th grade students). However, almost 25% of high school students reported that over the previous week they had not engaged in 60 or more minutes of physical activity on any day (Eaton, et al., 2008).

The small proportion of adolescents engaging in physical activity coincides with large amounts of time spent playing computer or video games and watching television. As indicated by the 2007 YRBSS, almost 1 in 4 high school students reported that, on an average school day, they were on the computer for something other than schoolwork or playing computer/video games for more than 3 hours/day. Another 35.4% stated that, on an average school day, they spent more than 3 hours/day watching television (Eaton, et al., 2008).

In 2007 YRBSS data, 53.6% of high school students reported attending at least one physical education class in an average school week, and 30.3% indicated they attended physical education classes daily during the school week. In both cases, attending physical education class was more prevalent among 9th grade students than at higher grade levels (Eaton, et al., 2008).

School Food Environment

Over the past few decades, the school food environment has grown ever more complex. Students have access to food through multiple obvious, as well as less obvious venues throughout the school building and at various times throughout the school day. The federal school meal programs, including the National School Lunch Program (NSLP) and School Breakfast Program (SBP) have long been part of the food environment in

primary and secondary schools. However, vending machines, a la carte sales in the cafeteria, school stores, snack carts, fundraisers, bake sales, and teachers providing food as rewards or incentives have all added to a myriad of food opportunities that students have and food choices students make each school day.

National School Lunch Program (NSLP)

The NSLP, established in 1946, was designed to provide children in schools with nutritious meals to address problems of food insecurity, hunger and poor nutrition. The program is managed by the Food and Nutrition Services (FNS) of the United States Department of Agriculture (USDA). In 2008, the USDA reported that over 9.3 billion federal dollars were spent on the NSLP. Currently, the program serves lunch to approximately 30.5 million children each school day (USDA, 2010). Meals served through the federal meal programs must adhere to the Dietary Guidelines for Americans, which includes limits on saturated fat, total fat, and sodium. NSLP meals are also regulated in terms of energy, and other nutrients such as protein, iron, vitamins A and C, and calcium. Guidelines have also been established for the appropriate portion sizes of items sold as part of the SBP and NSLP. Local school food authorities are reimbursed with federal funds based on the number of meals they serve to students that meet federal guidelines, and a significant portion of school foodservice funding is based on these revenues (GAO, 2005).

Competitive Foods

The U.S. Government Accountability Office (GAO) (2005) defines competitive foods as any food sold or available on school grounds, that is not sold through the federal school meal programs. School food authorities will often supplement their budgets with

revenues from the sale of competitive foods. However, many other school groups outside of school foodservices also sell foods to raise revenues for school projects and programs. Unlike the federal school meal programs, there are no federal guidelines pertaining to the nutritional content or portion size of competitive foods available at schools. However, the federal government does prohibit the sale of foods of minimal nutritional value (which is defined as foods containing less than 5% of the recommended daily intake of 8 nutrients per serving, including: protein, vitamin A, vitamin C, niacin, riboflavin, thiamine, calcium and iron) during the school lunch period. Other than these foods, that include, primarily, hard sugar-based candies and sugar-sweetened soft drinks, other competitive foods have not been subject to federal oversight (GAO, 2005).

The School Health Policies and Programs Study (SHPPS) is conducted by the CDC every six years and includes a nationally representative sample of school districts (n=445) with data from all 50 states, including the District of Columbia. The most recent SHPPS was completed in 2006 and reported on the availability of competitive foods in schools. SHPPS data indicated that in 2006, 33% of elementary schools, 71% of middle schools, and 89% of high schools had canteens, school stores, snack bars, and/or vending machines where students could purchase competitive foods and/or beverages (O'Toole, Anderson, Miller, & Guthrie, 2007).

SHPPS data also revealed that foods and beverages sold by school organizations such as sports teams, clubs and Parent Teacher Associations in the community or at school to raise funds was a very prevalent practice. According to SHPPS 2006, school organizations used food for fundraising purposes in 76% of elementary schools, 78% of middle schools, and 84% of high schools. Foods of low nutritional quality were more

often used in fundraising than healthful foods. In schools that participated in food fundraising, chocolate candy or baked goods not low in fat were sold at approximately 50% of elementary schools, 56% of middle schools and 67% of high schools. Only 21% of all schools sold fruits, vegetables or baked goods low in fat for fundraising purposes. In 23% of schools fundraising items could be purchased by students during the lunch period (O'Toole, et al., 2007).

The School Nutrition Dietary Assessment Study (SNDA-III) was designed to offer a cross-sectional sample of all U.S. public schools and children grades 1 through 12 that participate in the NSLP. In data collected in 2004-2005 (n=287), researchers found that competitive foods were available from at least one source at 73% of elementary schools, 97% of middle schools and 100% of high schools. A la carte options were available at breakfast and lunch at all grade levels, but there was a considerable difference in the availability at elementary schools versus middle and high schools. At the elementary level a la carte could be found at 66% of schools at lunch and 33% of schools at breakfast, compared with middle and high schools where a la carte items were available at 90% and 92% of schools, respectively, at lunch, and 67% and 61% of schools, respectively, at breakfast (Fox, Gordon, Nogales, & Wilson, 2009b).

Also included in the SNDA-III were 24-hour dietary recalls completed by students representing all grades (n=2,314) randomly selected from the cross-sectional sample of U.S. schools participating in the NSLP. Researchers found that competitive food consumption was higher among middle and high school students where 44% and 55%, respectively, reported consuming at least one competitive food on an average school day. Among elementary students, 29% reported consuming at least one

competitive food during an average school day. Dessert and snack items were found to be the most commonly consumed competitive food among students, with 53% of all students reporting these foods as foods they ate at school on an average school day. These were followed by 46% of students reporting they consumed beverages other than milk or 100% fruit juice (Fox, et al., 2009b).

Data from the SNDA-III also included the number of calories that competitive foods contributed to the diets of students at each grade level. The energy contribution was lowest at the elementary school level, where students who consume competitive foods obtained, on average, 216 kcals from competitive foods, with 63% of these calories coming from foods that were energy-dense and low in nutrients. At middle and high schools where students are more likely to have competitive foods make up the majority of their meals, students obtained 273 and 336 kcals from competitive foods, respectively. However, the percentage of calories that were derived from low-nutrient energy-dense foods was similar at all grade levels (63% and 65%, respectively) (Fox, et al., 2009b).

In a recent study by Kubik et al. (2005b) that surveyed middle-school parents (n=350) and teachers (n=490), 90% of respondents felt that more healthful foods and beverages should be available for sale in a la carte and vending machines at school. However, 25% of teachers and 40% of parents believed that selling foods of low nutritional value as part of school fundraisers was acceptable because it generated needed funding for school programs and activities. This represents somewhat of a contradiction, given that the foods sold most frequently in fundraisers are foods of low-nutritional quality, but clearly shows that parents and teachers value this method of achieving necessary revenues for school programs (Kubik, et al., 2005b).

Another very prevalent competitive food practice occurring in schools is the use of food as a reward or incentive in the classroom. In a recent survey of the food practices occurring at 16 middle schools in Minnesota, researchers found that the food practice most commonly reported was the use of food as a reward or incentive (Kubik, Lytle, & Story, 2005a). In another study, Kubik et al. (2005b) found in their survey of middle school teachers that 50% believed that food is often used as an incentive or reward for students, and that high-fat and high-sugar foods were most often used because students tend to like these foods better. SHPPS 2006 data indicated that 17% of all schools had policies in place that prohibited staff from giving food or food coupons to students as a reward for good behavior or academic achievement. The use of food or food coupons as a reward was discouraged in 19% of all schools (O'Toole, et al., 2007).

Except for foods of "minimal nutritional value," sold when school meals are being served, other competitive foods are not subject to federal regulation of nutrient content or portion size (Finkelstein, Hill, & Whitaker, 2008). There is increasing evidence that the majority of foods offered through competitive venues, tend to be high in fat, high in added sugars, of low nutrient quality and energy dense. In a study of middle schools in Minnesota, Kubik, Lytle, Hannan, Perry, & Story (2003) observed that 13 out of 16 middle schools had a la carte programs, and found that 16% of foods offered and 7% of foods sold through a la carte, were foods that they had defined, for the purpose of their study, as "foods to promote." "Foods to promote" were defined as foods that contained less than 5 g of fat/serving, bottled water, 1% and skim milk, 100% fruit juice, and lower-fat versions of high-fat foods such as desserts and baked French fries that were prepared by the school with less than 7 g of fat/serving; "Foods to limit" were all other

snacks and sweetened drinks. In the same study, seven of 16 schools had snack vending machines, where roughly 80% of all snack foods offered were considered "foods to limit." Fifteen of 16 middle schools had beverage vending machines and 16% of beverages offered were from the "foods to promote" category.

Similar findings were reported by French, Story, Fulkerson, & Gerlach (2003) who observed, in a sample of 20 secondary schools, that the largest proportion of a la carte items offered (11.5% of items) fell into the chips/crackers category, whereas 4.5% of all a la carte items offered were categorized as fruit and vegetable items. Items in the chips/crackers group were found to be the most energy dense a la carte offerings with approximately 515 kcal/100 g serving and 50% of these calories from fat. Chips/crackers items also contributed very negligible amounts of essential nutrients, such as vitamins A and C and calcium. French, et al. (2003) reported that their data serves as further evidence that competitive foods in schools disproportionately consist of foods high in fat and calories and low in nutrient value.

Access to foods at school varies by grade level and these differences may impact nutrient intakes. Data from the Youth Risk Behavior Surveillance Survey (YRBSS) suggests that as students reach higher grade levels, intake of key food groups decreases, such as fruits, vegetables and dairy (Eaton et al., 2008). Delva, O'Malley, & Johnston (2007) examined the changes in food offerings available to students at different grade levels, and found that school food environments appear to become less healthful as students reach higher grade levels. As they reported, middle school students appear to have less access than high school students to all types of competitive foods. Delva et al. found that, on average, middle school students have access to 1.9 healthy items/student

and high school students have access to approximately 2.4 healthy items/student. They also observed significant differences in the availability of less-healthful options among middle school and high school students. Among middle school students, 44% have access to candy as a competitive food, as compared to 74% of high school students, 61% of middle school students have access to salty snacks that are not low in fat, versus 85% of students in high school, and 66% of middle school students have access to baked goods and cookies not low in fat, as opposed to 84% of high school students. These investigators concluded that the school food environment appears to become less healthful at higher grade levels, and at both middle and high schools, less-healthful competitive food options are significantly more prevalent than healthful competitive food options (Delva et al., 2007).

Clearly, schools represent a complex food environment where students are confronted with many food choices outside of the school meals program. However, schools also represent one environment where educators, parents and policy makers can work to influence the types of foods that students can purchase and consume regularly. This may be increasingly important given the growing evidence that the school environment can have a detrimental impact on overall student health, both in terms of intake of key nutrients and increases in BMI.

In one recent study of eighth graders from 16 middle schools in Minnesota, researchers examined the different types of "food practices" occurring at each school. These "food practices" mostly represented additional opportunities for students to eat and drink outside of the cafeteria. For example, these included things such as being allowed to consume food or drink beverages in the classroom, in the hallway, using food or food

coupons as rewards or incentives in the classroom, individual classrooms using food fundraisers to bring in revenues, and allowing school-wide food fundraisers. Scientists observed that, on average, a school allowed three of these food practices, and that two of the most commonly reported food practices were foods used as incentives or rewards in the classroom and the sale of foods to fundraise. However, more importantly, they noticed that for each food practice reported by a school, student BMI's increased 10% (Kubik, et al., 2005).

Similarly, in data from the SNDA-III, a cross-sectional study designed to be representative of all public schools, grades 1 through 12 participating in the NSLP, associations between food intake and BMI z-score were analyzed for a random sample of 2, 228 children from all grade levels. It was reported that at schools where French fries or dessert were offered more than one time per week, elementary school students had a significantly higher likelihood of obesity (odds ratio for French fries = 2.70, $P<0.01$; odds ratio for dessert = 1.78, $P<0.05$). Children were also significantly more likely to have a higher BMI z-score at middle schools where foods low in nutrients and high in energy density were available for sale in vending machines in or near the cafeteria ($\beta=-0.32$; $P<0.01$) (Fox, Dodd, Wilson, & Gleason, 2009a).

Other studies have also shown an association between the types of foods offered at school and the kinds of foods that students choose to purchase and consume. Snelling, Korba, & Burkey (2007) conducted a study in three public high schools that compared competitive food offerings to foods offered through the NSLP. They coded the food offerings using a system based on the "Stoplight Diet" where "green" foods were low in calories and fat, but also rich in fiber, vitamins and minerals, such as fruits and

vegetables, whole grains and low-fat milk products, and considered to be foods that should be consumed at every meal; "yellow" foods were moderate in calories and fat, and included most protein sources and certain complex carbohydrates; "red" foods, including fried foods and other high-fat foods, or low-fat foods that were high in added sugars, were calorie dense. They observed that about a quarter of foods offered through the NSLP were considered "red" foods, whereas two-thirds of competitive offerings fell into this category of high-fat, calorie-dense, high-sugar foods. Twenty-two percent of competitive food offerings were categorized as "green" foods, but 33% of NSLP food offerings fell into this category (i.e. foods that should be eaten at every meal) (Snelling et al., 2007).

Snelling et al. (2007) also found an association between the foods offered at these schools and the purchasing habits of high school students. Students appeared to be more likely to purchase foods that were available in greater proportion. For example, of the 23% of NSLP food offerings considered "red" foods, these foods made up 27% of the foods students purchased as part of their NSLP meal. "Red" foods made up 61% of the competitive foods offered at the school, and of competitive foods purchased by students, 83% were "red" foods (Snelling et al., 2007).

In another study, Kubik et al. (2003) investigated how food offerings might be associated with dietary intake of students. They found, in a sample of 7th graders from 20 middle schools in Minnesota, that 13 of the 20 middle schools had a la carte programs that sold foods in competition with the NSLP. In addition, they observed that, in schools with a la carte programs, students consumed significantly less fruits and vegetables; on average, one serving less of fruits and vegetables combined per day (3.39 servings/day;

p=0.02), compared with students at middle schools without a la carte programs (4.23 servings/day). They also found that students from schools with a la carte programs generally consumed approximately 31.08% (p=0.02) of calories from fat, whereas students in schools without an a la carte program generally consumed an estimated 28.49% of calories from fat. All students were found to exceed the U.S. Dietary Guideline for only 10% of total calories derived from saturated fat, but students from schools without an a la carte program surpassed this guideline by 0.5% (p=0.03), whereas students with an a la carte programs generally surpassed the recommendation by 1.5% (Kubik, 2003).

Briefel, Crepinsek, Cabili, Wilson, & Gleason (2009), also endeavored to quantify the effects of the school food environment on the caloric intake of students. Using data from SNDA-III, they reported that 17% of elementary school children consumed sugar-sweetened beverages, including soft drinks while at school. These percentages increased at the secondary school level to 32% of middle school students and 36% of high school students (p. S97-S98). On average, for middle school students, 29 kcals were derived daily from sugar-sweetened beverages, and this number increased to 46 kcals for high school students.

Over 90% of children attending public school in the U.S. attend schools that do not have vending machines in the cafeteria. As such, Briefel, et al. (2009) found that 67% of elementary school students who consume sugar-sweetened beverages at school, bring them from home (p. S98). However, they also found that in secondary schools limiting venues that sell sugar-sweetened beverages decreased the number of kcals contributed by these products. For example, middle school students consumed between

16-52 fewer kcals daily from sugar-sweetened beverages (P<0.001-P<0.05)) when they attended schools without snack bars or stores that sell foods and drinks, without pour rights contracts, without a la carte, or at schools with a la carte programs that sold no low-nutrient, high energy density foods. At the middle and high school these school environment characteristics were not found to have significant effects (Briefel, et al., 2009).

This research suggests that students purchase food in relative proportion to the foods that are made available to them, and a number of studies indicate that the majority of competitive food offerings available in schools are foods of low nutritional value and of high energy density (Kubik et al., 2003; Snelling et al., 2007). Recent studies also indicate that competitive food programs may be associated with nutrient intakes that are not consistent with U.S. Dietary Guidelines and greater BMI values (Kubik et al., 2003; Kubik et al., 2005, Fox, et al., 2009a).

School Wellness Policies

Policy History

Policies pertaining to the school food environment, competitive foods and health promotion have greatly increased in the past several years. In 2002, only 19 states had competitive food policies in place that exceeded USDA regulations (GAO, 2005). Two years later, the Child Nutrition and WIC Reauthorization Act of 2004, was passed by Congress. This legislation mandated that all school districts that participate in the National School Lunch Program establish a local school wellness policy by the first day of the 2006 school year. However, this was a mandate associated with no additional monies being allotted to schools to help in developing or implementing the new policies.

Per the Child Nutrition and WIC Reauthorization Act of 2004, each school district's wellness policy had to include at least the minimum requirements, which were as follows (S. 2507, 2004):

1. Includes goals for nutrition education, physical activity and other school-based activities that are designed to promote student wellness in a manner that the local educational agency determines is appropriate;
2. Includes nutrition guidelines selected by the local educational agency for all foods available on each school campus under the local educational agency during the school day with the objectives of promoting student health and reducing childhood obesity;
3. Provides an assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture pursuant to subsections (a) and (b) of section 10 of the Child Nutrition Act (42 U.S.C. 1779) and section 9 (f) (1) and 17 (a) of the Richard B. Russell National School Lunch Act (42 U.S.C. 1759 (f) (1), 1766 (a), as those regulations and guidance apply to schools;
4. Establishes a plan for measuring implementation of the local wellness policy, including designation of 1 or more persons within the local educational agency or at each school, as appropriate, charged with operational responsibility for local wellness policy; and
5. Involves parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy (U.S. Congress, 2004).

Following this mandate, in 2005, close to 200 bills pertaining to the nutritional quality of foods in schools were introduced by state legislators nationwide. In this same year, 39 states either considered or enacted legislation addressing the nutritional quality of beverages and foods available in schools (National Conference of State Legislatures, 2006). In 2006, 23 states considered or enacted new or additional policies related to foods and beverages available in schools (National Conference of State Legislatures, 2007). The federal mandate appears to be having its intended impact on motivating individual states to take action in developing policies related to nutrition and physical activity.

Wellness Policy Development

Since the school wellness policies went into effect in the 2006 school year, one recent study examined the wellness policy development process in a nationwide sample of school districts. This study conducted by Longley and Sneed (2009) was composed of three phases. Phase One evaluated the regulatory environment for wellness policy formation, before and after the legislative mandate, in each state. Based on the presence of certain criteria, states were classified as either strong or weak legislative environments. These criteria included the existence of policies regarding fat, sugar and energy content of foods sold a la carte, the existence of policies related to nutrition and portion standards for beverages, the presence of regulations for the times and places where foods could be sold, and the availability of statewide training on how to develop a wellness policy. In 2004, before wellness policies were mandated, 30 states met none of these criteria, and only three states (California, Tennessee, and Mississippi) had regulatory environment scores of five or greater classifying them as having strong legislative environments for

wellness policy development. In 2006, after the wellness policy mandate went into effect, 22 states had regulatory environment scores of five or greater and were classified as strong legislative environments for wellness policy development (Longley & Sneed, 2009).

Quality of Wellness Policies

It appears that wellness policy legislation has increased the number of activities related to nutrition and physical activity in schools when compared with the existence of these activities in schools before the government mandate. Using a quantitative survey (Phase Three of the study; Phase Two to be discussed below), Longley and Sneed (2009) had foodservice directors report the wellness policy components that had been in place at their school prior to the wellness policy legislation, and the components that were in place in 2007 after the wellness policies were supposed to be in effect. The survey was completed by a stratified, random sample of 363 foodservice directors (representing a response rate of 43%) from medium-sized and larger schools nationwide (2500-9900 students). The data indicated that 67.2% of schools had standards for physical education specified by the state in place before the federal wellness mandate. Recess before meals was in place before the mandate in 68.3% of schools. In 56.5% of schools, policies were in place to ensure adequate time for meals. However, very few foodservice directors (6.9%) reported having nutrition guidelines for food given to students as rewards or for foods used in fundraisers, before the wellness legislation. Only 7.2% indicated that they had nutrition guidelines in place for foods served during school parties before the wellness mandate. Overall, before the legislation, only 34.7% of wellness components

were reported to be in place, whereas after the legislation 72.4% of wellness components were reported as implemented in schools (Longley & Sneed, 2009).

Another study by Moag-Stahlberg, Howley, & Luscri (2008) indicated that certain aspects of the wellness policy mandate had been implemented more completely than others. In this study they collected a national sample of school wellness policies, aiming for three policies from each state, representing a small, medium and large student enrollment. At least one policy was collected from every state (n=256). These policies were compared with the requirements mandated in the Child Nutrition and WIC Reauthorization Act of 2004, as well as the more extensive best practice recommendations made by Action for Healthy Kids (AFHK), a nonprofit organization that assisted over 70% of schools nationwide in developing their local wellness policies. Moag-Stahlberg, et al. found that 68% of policies fulfilled the minimum requirements of the actual legislation. However, not one of the 256 policies reviewed included provisions addressing all of the best practices detailed in the AFHK's Wellness Policy Fundamentals.

Nutrition standards for foods served from competitive food venues (including a la carte, vending machines, concession stands and school stores) were included in 77% of all policies reviewed. Of the policies reviewed, 63% had provisions that related to using food and beverages as rewards, but only 39% of policies had any restrictions on the portion sizes of foods that could be sold in schools (Moag-Stahlberg, et al., 2008).

Perhaps one of the weakest areas of policy development was related to evaluation, monitoring, and modification of the wellness policies. Goals for evaluation and measurement of policy implementation were only included in 15% of district policies.

Only 21% of the policies reviewed had a plan for implementation written into the actual policy. The majority of schools (68%) had identified a person or group of people who were responsible for overseeing the implementation, evaluation and monitoring of the wellness policy. However, only 2% of policies included anything about a source of funding to support activities related to implementation and evaluation. A process for evaluating, revising and modifying their wellness policy was included in the policy of one in three schools. One limitation that should be recognized in regards to this study was that researchers requested that supplemental documents be submitted along with the district wellness policy, such as regulations and procedures relating to the policy. However, many schools neglected to include these, so they were not reviewed as part of the study. Therefore, some of the gaps in policy components may be due to the fact that they are not detailed in the official policy itself, but exist outside the policy in supporting documents (Moag-Stahlberg, et al., 2008).

Perceptions of School Administrators and Staff

Phase Three of the study by Longley and Sneed (2009) involved a quantitative survey of foodservice director's opinions regarding factors they perceived as barriers to or supports of school wellness policy implementation. Foodservice directors indicated that the factor they believed had the most supportive effect on wellness policy development and implementation was the federal mandate for a policy (4.3 +/- 0.9 on a 5-point scale with 1 = not in place and 5 = very supportive). Other supportive factors identified were concern for the health of students and having guidelines and state laws in place that related to foods available at school. They found no significant association between socioeconomic status of a school district (as determined by the number of free

and reduced-price meal applications), geographic region, the state legislative environment relative to wellness, the size of the school district and how much support a school district had in developing a school wellness policy (Longley & Sneed, 2009).

A number of barriers to policy development and implementation were also revealed by Longley and Sneed (2009), and the barriers were found to fit into two categories: resource barriers and categorical barriers (p. 100). Barriers were scored on a four-point scale where 1 = not a barrier and 4 = a major barrier. The barriers seen as most problematic were the resource barriers, such as the need to fundraise with food (2.7 +/- 1.1) and competition for teachers' time (2.5 +/- 1.2) and principals' time (2.4 +/- 1.2). The No Child Left Behind Act (NCLBA) was seen as leaving teachers and principals with little time for additional activities outside of the requirements of the NCLBA legislation according to foodservice directors who completed the survey. Barriers that posed fewer challenges for foodservice directors was the perception that they were unconnected to the power structure involved in developing and implementing the policy (2.1 +/- 1.1), and the perceived lack of administrative support for their efforts related to the policy (2.0 +/- 2.0). Barriers did not achieve scores as high as those given to factors seen to support the implementation of the policies. This would seem to indicate that while barriers are present, they are not seen as impossible to work around.

Similar results were found in a qualitative study of school faculty, staff, and community collaborators using the School Health Index (SHI) a self-assessment tool and guide to developing health promotion initiatives that was produced by the CDC (Austin, Fung, Cohen-Bearak, Wardle & Cheung, 2006). This study took place at 9 schools representing a diverse sample of urban and suburban schools of all grade levels in the

Midwest and New England. In order to be eligible, schools needed to be public primary or secondary schools that were planning to use the SHI for the first time within six months. Semi-structured interviews were conducted with the staff person responsible for coordinating the school's work with the SHI. Participants in the study perceived three of the most prominent barriers to health promotion activities to be limited staff time, limited resources, and pressure for certain levels of achievement on standardized tests. These obstacles included, more specifically, the sale of snack foods of low nutrient value in order to cover costs related to operating the school foodservice, a lack of equipment and space for physical activity, and inadequate funding for staff members involved in health promotion activities.

Roberts, Pobocik, Deek, Besgrove, & Prostine (2009), conducted a qualitative study of Texas middle school principals (n=24) and foodservice directors (n=10) where subjects participated in semi-structured phone interviews aimed at learning more about their experiences with the Texas Public School Nutrition Policy (p. 297). In the 24 participating schools chosen at random from 10 of 20 school districts in Texas, the researchers found that although these stakeholders perceived barriers to implementation of the policy, no one disagreed with the overall purpose of the Texas Public School Nutrition Policy. This study also revealed that many teachers disliked the policy because they were no longer allowed to use foods of low nutritional value in fundraisers or as rewards for students. There was concern that fundraising revenues would decrease if they were no longer allowed to use low-nutrient snack foods. However, the principals noted that this was not viewed as an impossible challenge. Other sentiments voiced by these stakeholders were that schools were not responsible for children's nutrition and that

parents should play a more significant role in impacting their child's. Foodservice directors and principals also indicated that there was a lack of communication about the policy, and that those responsible for implementing the policy, such as school staff, and those impacted by the policy, such as students, should be included in the development of the policy.

A collaborative approach to policy development has also been suggested as an important predictor of success in two health promotion initiatives (Austin, et al., 2006; Longley, et al., 2009). The Child Nutrition and WIC Reauthorization Act of 2004 also stipulates the development of a wellness team or committee in their mandate to have, "A plan for measuring implementation of the local wellness policy, which should include one or more persons within the district who is given the responsibility of ensuring that schools comply with the wellness policy (S. 2507, 2004)." As well as their requirement to, "Include parents, students and representatives of the school foodservice, the school board, school administrators, and the public in development of the school wellness policy (S. 2507, 2004).

Among a sample of high school foodservice directors and principals in Pennsylvania, researchers similarly found varying levels of knowledge of policy existence and enforcement between these two key stakeholder groups. For example, it was significantly more likely that a principal would indicate that a wellness policy component existed and was enforced, when compared with a foodservice director. Also, foodservice directors were more likely to indicate uncertainty about whether a specific policy component existed, than were principals. Indicating that communication about the

policy between foodservice directors and principals may need improvement (McDonnell, Probart, Weirich, Hartman, Bailey-Davis, 2006b).

In Phase Two of the study conducted by Longley and Sneed (2009) they identified 21 foodservice directors from school districts representing states with both weak and strong legislative environments to take part in a qualitative, semi-structured phone survey. The survey was comprised of open-ended questions developed with the purpose of learning more about foodservice managers' perceptions of implementing the policy. The data were analyzed using Creswell's six-step method of qualitative data analysis. One important finding from these interviews was that, for the first time, individuals within the school who usually worked independently were brought together to collaborate on student wellness. Foodservice directors regarded this as a novel collaboration that accompanied the wellness legislation. Longley and Sneed suggest that one area that needs further research is the effectiveness of these new teams in policy development and implementation.

McDonnell and Probart (2008) investigated the participation and perceptions of various stakeholder groups in Pennsylvania through the use of a survey distributed to school employees in a variety of positions (school foodservice directors (n=28), cafeteria managers (n=22), other school foodservice employees (n=31, teachers (n=6), secretaries (n=5) and school nurses (n=3) and 5 employees in other positions). Roughly half of those surveyed noted that they had been involved in development of their local wellness policy. Satisfaction with the policy was fairly high (3.9 +/- 1.0, on a 5-point scale with 5=very satisfied and 1=very dissatisfied) among those who responded and were involved with the policy. However, a number of barriers were also cited. The most significant challenges

were perceived to be the costs associated with implementation, achieving the support of key stakeholders, and enforcing the policy at the school level. In regards to making implementation of wellness policies easier, participants were asked to rank a number of materials and tactics for execution of the policy. Communicating data linking students' health to the wellness policy and communicating about associations between academic achievement and the wellness policy were believed to be the two most important strategies for successful policy implementation.

A study conducted by Molaison, Carr, & Federico (2008) also examined attitudes about the school wellness policy among a variety of key stakeholder groups (p. 1). A quantitative survey was developed in Phase II of the study, based on information gathered from focus groups conducted with school nutrition directors (SNDs), teachers, principals, parents and community professionals, from four school districts from different geographic areas across the U.S., in Phase I of the study. The survey addressed: wellness policy goals, issues related to implementation, policy-related resources and training. Among survey responders (n=575), each stakeholder group was represented almost equally (Molaison, et al., 2008).

Relating to wellness policy goals, participants were asked to indicate the importance of each goal using a 4-point Likert-type scale, 4 indicating most important. Responses were as follows: (a) USDA requirements to be met in regards to school meals (3.84 +/- 0.41), (b) curriculum to include physical education (3.82 +/- 0.44), (c) include physical activity into the school day at the elementary level (3.81 +/- 0.47), (d) have healthy items on the menu for children (3.77 +/- 0.48) and, (e) have healthy food choices among the items sold at school (3.52 +/- 0.81). In terms of goal attainment, the four

goals rated most important were also rated as most successfully implemented. The lowest rated goal was for nutrition education to be included as part of the school day at the elementary level (Molaison, et al., 2008).

When asked to reflect on roles and responsibilities related to the wellness policy, participants ranked encouraging healthy eating among students (3.70 +/- 0.51) as the most important role or responsibility, as well as the most attainable goal (3.52 +/- 0.96). This was followed by encouraging physical activity (3.66 +/- /54) and making sure that policy guidelines are adhered to (3.60 +/- 0.60), as the next most important goals. In general, the policy components that participants tended to rate as having a high level of perceived importance, they often ranked as having low attainability (Molaison, et al., 2008).

Molaison, et al. (2008), reported that stakeholders strongly agreed that the greatest benefits of the wellness policy included improved physical fitness among students, encouraging healthy eating habits for life, and raising consumption of healthful foods (p. 5). Stakeholders believed that the greatest barrier to policy implementation was obtaining the support of key stakeholder groups; specifically, administrators, teachers, and families. "Leave less time for the 'No Child Left Behind' Program" and "demand a lot of time from teachers" were both ranked as minor barriers to implementation, and this was in contrast to the sentiments voiced in the focus groups (Phase I) (p. 5).

In regards to training, Molaison, et al. (2008) asked participants to rank areas where they needed training on a 5-point Likert-type scale, with 5 indicating strong agreement (p. 6). Stakeholders indicated that they most strongly agreed that training was needed on tactics to use in implementing the wellness policy (3.72 +/- 0.93). The

resource that stakeholders believed was most in demand to improve policy implementation were a school nurse (4.41 +/- 0.89) for each school and physical education teachers (4.41 +/- 0.88). Although the necessary resource, most commonly discussed in the focus groups was additional funding, surprisingly, in survey responses it did not rank as high as expected (4.15 +/- 0.90).

In the School Health Index study, mentioned earlier, Austin et al. (2006) recognized that the nine schools in their sample differed in an important way. The schools varied in the degree of assistance each received in facilitating the SHI at their school. The CDC recommends that a team approach be used when the SHI tool is utilized at a school to evaluate the strengths and weaknesses of its efforts at health promotion. Austin et al. suggested that the level of assistance they received with facilitation has an important impact on how successfully they plan and implement health promotion activities. Specifically, they found that individuals from schools with "medium" and "high" levels of facilitation believed that there were three important roles that facilitators played in strengthening the efforts of their health promotion teams. These include:

1. Administration buy-in: Facilitators helped to make sure that the health promotion team had the support of school administrators before they began working. This included ensuring that administrators would allow team members to have protected time for them to meet regularly, and that team decisions about new initiatives would be implemented.
2. Team structure: Facilitators helped maintain team structure by making sure to include key stakeholders from the school and community in the team, taking

responsibility for maintaining communication among team members and scheduling consistent meetings, as well as managing group conflicts and focusing on consensus building.

3. Team sustainability: Facilitators helped to keep the emphasis on goals and tasks that are reasonable and realistic, in order to maintain team motivation and a sense of concrete accomplishment.

Therefore, the establishment of a wellness team or committee, in line with the mandates detailed in the federal legislation, appears to enhance health promotion activities.

Research has also been conducted on the experiences and perceptions of individual stakeholder groups, such as a recent study of school nutrition managers conducted by the National Food Service Management Institute in 2009. The researchers reported that 199 school nutrition directors responded to a questionnaire that was sent to a random sample of 700 school nutrition directors nationwide. Researchers noted that although school nutrition directors felt they lacked some of the necessary training and confidence in their ability to make decisions related to nutrition, they felt strongly that, in regards to school wellness, they played an important role (Zoellner & Carr, 2009).

Similarly, McDonnell, Probart, & Weirich (2006a) conducted focus groups with foodservice directors (n=46) from schools in Pennsylvania. Foodservice directors who had signed-up to attend a mandatory training session related to the wellness policy were recruited to participate in a focus group before the training occurred. The focus groups took place in 2005, but wellness policies did not have to be in place until the beginning of the 2006 school year. Investigators found that most of the directors saw themselves playing a key role in the development of the wellness policy, but that some expressed

concerns about limited knowledge of policy development, and some believed that they lacked the authority necessary to serve in this role. Some of the barriers that were mentioned by foodservice directors were that there would be a loss of revenue for the school nutrition program because they could no longer fundraise by selling foods of low nutritional value. They also did not believe that the school would allocate the time and money needed to meet the policy requirement for physical education and nutrition education because schools were primarily focused on the academic curriculum. Furthermore, they expressed concern that administrators would fail to enforce the policy because of a lack of time and because the policy might result in a decrease in revenues for the school.

Since the wellness policies went into effect in 2006, a limited number of studies have been conducted. These studies have evaluated the content of such policies, variables related to successful implementation, and the experiences and perceptions of educators and administrators. There are additional studies regarding other policies that may have be relevance to wellness policy implementation. These studies suggest that school personnel often perceive barriers that hinder implementation. These barriers include things such as a lack of time and resources, health and nutrition being lower priorities, and poor communication about the existence and importance of the policies (Bauer, Patel, Prokop & Austin, 2006; Bauer, Yang, & Austin, 2004; Nollen, et al., 2007). These studies also suggest that school personnel feel it is important for policy-makers to communicate with them more closely throughout the policy-making process. Better communication between policy makers, administrators, and educators would allow educators to have a better understanding of the existence and purpose of the policies and

would allow school employees to contribute advice on how to design policies to work most effectively within the school environment (Nollen et al., 2007).

One of the mandates of the Child Nutrition and WIC Reauthorization Act is that each state's school wellness policy have provisions for evaluating and measuring the implementation of the policy. However, in a very recent study looking at the statewide implementation of wellness policies in Pennsylvania, schools indicated that measuring and evaluating the implementation of the policy was one of their greatest challenges. The investigators went on to recommend to other school districts that there is a significant need for future research stating that, "The extent to which policy goals are implemented and barriers associated with implementation are areas in need of follow-up research" (Probart, McDonnell, Weirich, Schilling, & Fekete, 2008, p. 1502).

This thesis seeks to gain insight into the perceptions and experiences of wellness coordinators and foodservice managers implementing the wellness policy. By gaining an understanding of what aspects have been particularly challenging, and what has facilitated implementation, we will gain a better idea of how components of the policy could be designed to be more effective within the school environment.

This chapter was intended to provide a brief analysis of recent research that is relevant to the present study. I have described the increasing obesity rates among children in the U.S., as well as summarized research related to the present state of food environments in schools. I have also attempted to provide an overview of the kinds of policies that have been put into place related to nutrition and physical activity in schools, the impact of these policies, and how school personnel are reacting to the policy implementation process.

CHAPTER 3: METHODS

This chapter outlines the purpose and design of the study, and provides details about recruitment of participants and data collection. This chapter also details the steps involved in the qualitative data analysis including categorizing the data and identifying themes.

Study Overview

This study represents one component of a larger study entitled, "Implementation of a School Wellness Policy: A Multilevel Analysis," which is funded by the University of Nevada Agricultural Experiment Station (Benedict, et al., 2006). The other components of this multi-phase implementation analysis include an assessment of the school environment with a focus on those physical characteristics that relate to the policy, and a quantitative survey of teachers related to their awareness and perceptions of the policy, the impact the policy has had on their classroom and teaching practices, and their role in implementing the policy. Although the larger study involves all school levels, this thesis research focuses on elementary schools only.

Purpose and Design

The purpose of this project was to gain a better understanding of the experiences and perceptions of elementary school employees who potentially play central roles in the implementation of the Washoe County School District (WCSD) Wellness Policy; namely the school foodservice managers and the wellness coordinators. The research questions I investigated were:

1. In regards to specific policy components, what changes have elementary school employees noted?

2. How have the perceived roles and responsibilities of elementary school employees changed since the wellness policy was implemented?
3. What made implementing the wellness policy easier for elementary school employees?
4. What made implementing the wellness policy difficult for elementary school employees?
5. What suggestions do elementary school employees have for improving the policy?

I employed a qualitative research design, using semi-structured interviews of elementary school wellness coordinators and foodservice managers in WCSD as my method of data collection. I chose a qualitative approach because very little is known about the implementation of the WCSD School Wellness Policy and the goal of my research was to gain an understanding of the experiences and perceptions of those individuals involved in the implementation process. As Creswell (2007) explains, a qualitative approach is useful when an existing theory is not already in place to explain a process, or when a researcher is working with a sample or population that is unique, and on whom a model has not been tested previously.

Sample

Participants in this study were foodservice managers, principals and school wellness coordinators from elementary schools in Washoe County School District (WCSD). The goal was to interview those who were presumed to have significant involvement in and/or knowledge of implementation of the wellness policy at their school. In schools where a wellness coordinator had not been identified, the school

principal was invited to complete the interview. All elementary schools in WCSD (n=64) were eligible to participate. Using the recruitment procedures described below, 13 schools agreed to participate. Due to the nature of the overall study design (Benedict, et al., 2006), only 12 were included in this component of the study. Ultimately, I interviewed at least one and sometimes two school employees from each of the participating schools. This included eight foodservice managers, nine principals, and three wellness coordinators.

Recruitment

A letter of support for the study was provided by the District Superintendent. This letter, along with a letter of invitation to participate in the study, was sent to each elementary school principal. Once permission was granted from the principal, letters of invitation were sent to the foodservice manager and the wellness coordinator (or principal) at participating schools. These letters were followed by personal phone calls to explain the procedures, answer questions, confirm his/her participation, and schedule a time and place to conduct the interview.

Protection of Human Subjects

In order to ensure protection of human subjects, before research commenced, the study protocol was approved by the University of Nevada, Reno, Institutional Review Board (IRB). Once approved by the IRB, it was submitted to the Washoe County School District Office of Public Policy, Accountability & Assessment for approval.

Data Collection

Semi-structured interviews were conducted in a quiet, private room with the foodservice manager and school wellness coordinator (or principal), interviewed

separately. Interviews lasted between 15- 30 minutes. Interviews were recorded using a digital voice recorder and then transcribed verbatim. Notes were taken during the interview, as well, to supplement the transcripts.

The interview questions are included in three separate interview guides, one for foodservice managers, one for wellness coordinators, and one for principals, at schools that have not named a wellness coordinator (see Appendixes A, B, and C). These interview guides were developed to focus on how employees perceive and experience changes mandated by the new policy, barriers to and resources for policy implementation, and their roles and responsibilities related to the policy. Other than these topics, the only notable differences among the interview guides is that foodservice managers were asked questions specific to their activities in the cafeteria. The interview guides were pretested by content experts, and revised according to their suggestions. During the interviews participants' responses were allowed to guide follow-up questions and probes by the interviewer.

Data Analysis

The recorded interviews were transcribed verbatim. Twenty-five percent of the transcripts were randomly selected for review by a second investigator to ensure the reliability of the written transcripts. Only minor discrepancies were found, and none of these altered the meaning in any way. The verbatim transcripts were then analyzed and coded using the phases of coding described by Strauss and Corbin (1990), starting with open coding. In the "open coding" phase, the transcripts are reviewed with the aim of identifying categories in the data that are mentioned by multiple participants. The second phase of coding described by Strauss and Corbin, is axial coding, where the data is

analyzed to try to find interconnections between categories identified in the first phase of coding. The final phase of coding, selective coding, seeks to create a story that explains the experience of the individuals within the sample that is informed by the interconnections that have been drawn among categories. Between the first and second phase of coding the reliability assessment was performed and is described below.

Data analysis using a qualitative approach is an iterative process. As such, I aimed to saturate the categories that I identified by using the constant comparative approach. Categories were developed starting with the first transcripts analyzed, but as subsequent interviews were analyzed, categories were revisited to see how new data fit into existing categories, and whether additional categories needed to be created to accommodate novel findings (Strauss & Corbin, 1990). One aim of the study was to compare and contrast the perceptions of different school employees (i.e., foodservice managers, wellness coordinators, or principals). Therefore, one important aspect of data analysis was comparing the experiences and perceptions of these two groups of individuals. The disparities and similarities in their experiences contributed to our understanding of how policy implementation is proceeding.

In analyzing the data, I used the computer software NVivo 7.0 ® to manage the data during the coding process. Bazeley (2007) describes NVivo as supporting researchers engaged in qualitative data analysis by serving as a set of tools to use during the coding process. Qualitative analysis software does not perform the analysis for the researcher, but instead assists in five different aspects of analysis: (a) managing data, (b) managing ideas, (c) querying data, (d) graphically modeling data, and (e) reporting from the data.

During the "open coding" phase, I reviewed the transcripts first, as the primary coder, with the goal of identifying categories in the data that were presented by multiple members of the sample (Straus, et al., 1990). These identified categories made up the initial coding framework. Based on the coding framework, a codebook was developed that defined each of the categories and detailed their relationship to specific questions from each of the interview guides. Using NVivo 7.0 ® I established the initial coding framework by developing a "node" for each identified category. Nodes can be described as a, "container for what is known about, or evidence for, one particular concept or category" (Bazeley, 2007).

Assessment of Reliability

In order to ensure the reliability of the coding process, a secondary coder reviewed two-thirds of the data. Miles and Huberman (1994) explain that, "Definitions become sharper when two researchers code the same data set and discuss their initial difficulties. A disagreement shows that a definition has to be expanded or otherwise amended" (p. 64). After establishing the coding framework for the introductory questions and first two questions of each interview guide, through NVivo 7.0 ®, I provided the secondary coder with a duplicate, uncoded set of all interview transcripts. Using the codebook and the initial coding framework, she coded data bits into the categories I had defined.

In order to maximize reliability, in regards to coding, NVivo 7.0 ® has an option for preparing a coding comparison report which compares how transcripts were coded by each coder and computes a percentage of agreement. The report quantifies the total number of references that each coder put into a category. The report also details how

many of those references overlapped, or were coded into the same node by each coder, and how many of those references were non-overlapping, or were coded into different nodes by the two coders (Bazeley, 2007).

Using this report, we calculated a percentage of agreement based on the following equation from Miles and Huberman (1994):

Reliability = number of agreements/total number of agreements + disagreements

By dividing the total number of non-overlapping references for all transcripts by the total number of references for all transcripts, we calculated our percentage of agreement to be 76%. Miles and Huberman (1994) suggest that at first, intercoder reliability is rarely above 70% (p. 64). In reviewing the coding comparison reports we established that out of 125 non-overlapping references, a majority represented cases of disagreement over category, with a small proportion due to mistakes, and over-lapping nodes. I discussed all discrepancies with the secondary coder. In cases where there were disagreements over category, we discussed whether one category was more appropriate than the other, or whether the fragment of text really needed to be coded in both categories. In cases where we felt that the categories were very closely related, we agreed to merge two nodes into one node and revised the codebook to reflect this change.

When all discrepancies were addressed, the entire process was repeated with Questions #3-7 of all interview transcripts. Following this process, coding comparisons reports were generated for all transcripts for Questions #3-7. The agreement was only 51%. All discrepancies were again discussed. I found that, out of 225 non-overlapping references, the majority were attributed to ambiguous categories. Due to the low degree of agreement, we reviewed all of the discrepancies and established nodes that needed to

be better defined, as well as nodes that needed to be merged into one category. With more clearly defined nodes it was more apparent where certain segments of text belonged in a particular category. After revising the codebook, each coder reviewed their transcripts and coded any text that had not been coded in the previous coding.

After all transcripts were reviewed, coding comparison reports were generated again and agreement increased to 80%. Of the 193 non-overlapping references, the majority were attributed to disagreements over category, and a small proportion were due to nodes that needed to be merged or mistakes in coding. After discussing all discrepancies the coding framework and codebook were revised accordingly and the rest of the initial coding was completed for all transcripts by the primary coder.

After completing the coding process, the nodes were roughly organized into categories that reflected the topics addressed in the interview questions. The following categories were identified: changes due to the policy, roles and responsibilities, facilitating policy implementation, challenges to policy implementation, and suggestions for improvement.

In this chapter, the purpose and design of the qualitative study on which this thesis is based was described. This study is one component of a larger, multi-level analysis of wellness policy implementation in the Washoe County School District. The methods of data collection and analysis have been detailed above.

CHAPTER 4: RESULTS

This chapter describes the results of interviews conducted with elementary school principals (n=9), wellness coordinators (n=3), and foodservice managers (n=8) between August of 2009 and February of 2010. The participants came from a diverse sample of 12 WCSD elementary schools that varied in terms of the number of students enrolled and percentage of students eligible for free and reduced price school meals (see Table 1) (Nevada Department of Education, 2010b). In regards to academic achievement, half of the elementary schools that participated were considered by the Nevada Department of Education to have "adequate yearly progress," whereas 33% were considered to be "in need of improvement" regarding academic standards, and two of the schools were considered to be "high achieving" schools (Nevada Department of Education, 2010a).

It should be noted that not all participants were familiar with the WCSD School Wellness Policy. Of the eight foodservice managers interviewed, when asked how they had first learned about the policy, some were unfamiliar with the school wellness policy. As one foodservice manager stated, "I'm not really sure what it is." Another said,

> I've heard about it basically in our Manager's meetings, but I've never been given any actual information on it, if that makes sense. Nobody has ever said this is what it is, and these are…this is the parameters. Nobody has ever done that.

However, most were aware of certain changes that pertained to them, such as scheduling recess before lunch and establishing nutrition guidelines and portion size standards for competitive foods. None were familiar with the policy by name. All of the principals and wellness coordinators had at least a general familiarity with the policy.

The first research question addressed changes due to the wellness policy. Specifically, differences that school employees had noticed around the school after the policy was approved by the WCSD Board of Trustees, including the degree to which specific policy components had been implemented. Participants' responses were organized into the following general topics: changes in foods and beverages, changes due to recess before lunch, changes in physical activity, and changes in policies/goals related to the wellness policy.

Changes in foods and beverages were discussed by all three groups of participants: wellness coordinators, foodservice managers, and principals. Nutrition and portion size standards for foods and beverages available at school represent one part of the school wellness policy. Participants indicated that they had observed a decrease in less nutritious foods and beverages, and an increase in more healthful options available to students in a number of school settings. The findings are presented in Table 2.

A few principals noted that there were less unhealthful foods at school parties. As one principal remarked, "...whenever there's some sort of class event. You know a Christmas party, Halloween, any of that stuff. There's other treats too, but it's not inundated with junk food like I've seen in my past schools." Another principal commented on the presence of more healthful foods in classrooms when she noted, "And even class events…you go into a classroom and there are, there's always a vegetable tray, there's always fresh fruit…."

Foodservice managers, principals, and wellness coordinators all noted that teachers and other school employees were using foods low in nutritional value less often as rewards or snacks given to students. As one principal commented,

> I think there's just not so much widespread use of food as rewards in the classroom. It used to be really common for every teacher to have you know a sack of mini candy bars or jolly ranchers or things like that…and if everybody got something done in a great way as a class…you toss one on everybody's desk. Even if you know the Halloween size, little ones, but now it's…a sticker or something on the class chart or a marble in the jar that you're working for - some other kind of reward.

A foodservice manager stated, "Although I used to give my lunchroom workers snacks, like I'd bring Otter Pops for them, and we're not allowed to now." A few participants said that they perceived that teachers were more likely to reward using foods permitted in the policy, or to use trinkets and other toys instead. The same was true for foodservice managers, one of whom said, "Well we have little key chain tags we give them at the end of the week and then we have pencils and stuff, but the kids (chuckle) they want the Otter Pops…." A few principals and a wellness coordinator noted that they don't always know what's going on in each individual classroom, therefore, were uncertain about the degree to which classroom practices had changed.

Another observation made by all three employment groups was the removal of vending machines from elementary schools. As one principal commented, "Well, we don't have Coke machines anymore in the hallway, and I remember the days when we used to offer Coke and candy bars and we don't do that anymore."

A few foodservice managers and principals also indicated that there was less fundraising with food, and that foods that were sold on campus met the nutrient requirements mandated in the wellness policy. As one principal commented, "and if we

Table 1. Select Characteristics of Participating Elementary Schools

School	Student Enrollment[a]	% of Students Eligible for Free and Reduced Price School Meals [a]	School Employees Interviewed		
			Foodservice Manager	Principal[b]	Wellness Coordinator
1	686	17.49%	X	X	
2	564	36.35%			X
3	499	6.01%	X	X	
4	568	68.49%	X	X	
5	558	27.96%	X		X
6	678	49.71%	X		X
7	584	2.40%		X	
8	388	13.40%		X	
9	569	13.88%	X	X	
10	521	47.22%	X	X	
11	141	87.94%		X	
12	204	15.69%	X	X	

[a] During the 2009-2010 Academic Year

[b] For those schools that had not yet designated a Wellness Coordinator, principals were invited to participate.

Table 2. Similarities and differences in perception among school employees of foods and beverages available and recess before lunch, since the school wellness policy was implemented.

Food and Beverage Observations	Foodservice Managers	Principals	Wellness Coordinators
1. Less "junk" food at classroom events		X	
2. More healthful foods provided as classroom snacks by teachers and parents		X	
3. No more vending machines	X	X	X
4. Less candy given out as snacks/rewards	X	X	X
5. Fewer food-based fundraisers	X	X	
6. No significant changes		X	X
Recess Before Lunch Obsevations	**Foodservice Managers**	**Principals**	**Wellness Coordinators**
1. Students are hyperactive and loud in cafeteria	X	X	X
2. Students eat more and waste less	X	X	
3. No change in students' food intake	X	X	

Note. X = a finding that 2 or more members of this employment group noted.

do have any sugars in any of our sales that the classrooms do for a fundraiser, they know they have to match the guidelines."

In contrast, some principals and wellness coordinators perceived that there had not been a significant change in foods and beverages because offerings, outside of the meals provided by Nutrition Services, were very limited. As one wellness coordinator noted, "I don't know that they've changed…because, I mean, we've never had any vending machines or anything like that for the students." A principal reflected a similar sentiment,

> Well, you know we never had anything for kids before anyway. We never had any soda or, you know being an elementary school, you know a soda machine, so I can't say it's really changed at all. Because we also don't have a la carte here. We just have the milk you know – three different kinds of milk and water's always available…so I don't think it's…one way or the other impacted us.

Others noted positive changes in school foods and beverages that they didn't think were necessarily due to the wellness policy. One wellness coordinator, who was recently assigned this position, and relatively unfamiliar with the policy, commented,

> …well I'm not sure what the policy is, but as far as…not giving unhealthy snacks to kids and stuff, I think for the most part teachers were already trying to make sure that if they gave snacks…they weren't just candy and stuff, more like pretzels and things like that….But I think that was just because the teachers, on their own, had a sense of, you know, proper nutrition….Just because I think we just have that knowledge. You know, the nutrition knowledge…

This suggests that even those individuals who were relatively unaware of the policy may have perceived an overall cultural change towards a greater emphasis on nutrition and health among students, parents, and teachers.

Foodservice managers were asked specific questions about the impact of the policy on the school meals program and a la carte. All of the schools involved in the study participated in the National School Lunch Program, and about half of the participating schools also served School Breakfast. No one indicated that the policy had impacted either program. While a number of foodservice managers indicated that they sold water, milk, 100% fruit juice and occasionally an extra entrée a la carte, only one school reported that they had sold additional items a la carte before the policy was put into place. This foodservice manager stated that they had to stop selling certain items after the policy was implemented, and that revenues decreased significantly as a result. As she remarked,

> Well, we used to have Gatorade. That was a big 'goer,' and we can't have Gatorade anymore - so only juice and water and fruit….Right, none of the desirable items are on there. We used to have like little graham cracker snacks and…Rice Krispie treats and stuff…we don't have any of that. So yeah, we hardly have any a la carte service now.

Changes due to recess before lunch were also discussed by all three employment groups. In our sample, 7 out of 12 schools had implemented the recess before lunch portion of the policy (see Table 3). Three schools had scheduled lunch so that certain grades had recess before lunch and other grade levels had recess after. In one school, they had recess after lunch for all grades. In general, some participants from each group

(foodservice managers, principals, and wellness coordinators) perceived recess before lunch to have had no significant impact on their lunch routine. Others indicated that having recess before lunch had a negative impact on their school. A couple of principals indicated that they had some positive impressions of the effects recess before lunch has had on their schools.

The changes participants noticed related to recess before lunch are presented in Table 2. In general they related to the amount of food that students eat and the cafeteria environment. All three groups of participants commented on the fact that when students enter the cafeteria from recess they come in louder and hyperactive compared to when they come directly from the classroom. As one foodservice manager commented,

> They come in louder. They do come in the door louder because we have to have them be quiet, tell the line all the time to be quiet because I can't hear them give their names to us because they're…the line's loud coming in and I think it was quieter before because they were coming through the school and they were already in that talk quieter thing.

Foodservice managers went on to further explain that when it's hard to hear students' names, it takes longer to move kids through the reimbursable meal line, which means students in the line have to wait longer and get less time to eat.

Participants had varied opinions about whether or not students consumed more of their lunch when recess was before or after lunch. A couple of principals and foodservice managers perceived that when students were not in a rush to get out to recess, they consumed more of their lunches. Other foodservice managers and principals indicated that the wellness policy had not had its intended effect of ensuring that students

consumed more of their lunches. As one foodservice manager explained, "…they don't really eat their lunch, even though I think it was supposed to be promoted so the kids would eat their lunch and not want to rush off to play, but I don't see it that way." A principal said similarly that, "…generally, the kids don't rush to eat lunch to go to recess. So, if the intent was to provide more eating time, that's not really an issue."

A couple of principals had observed positive changes after implementing recess before lunch. As one principal commented,

> We combined our lunches and put them all together. That created…a chunk of time that we can work with and, basically, what we were able to do is give them five more minutes for recess before lunch and five more minutes to eat.

Another principal noted that some of her teachers perceived that students returning to class from lunch were more prepared to go back to schoolwork than students returning from recess. As this principal explained, "…some of the, especially the primary teachers, noticed that the kids were coming in more ready to learn from the cafeteria than they have from recess last year."

Time to sit and eat lunch was another component of the policy that foodservice managers, in particular, were asked about. Half of the foodservice managers offered an estimate of the amount of time students had to sit and eat, and they all responded that students had somewhere between 10 and 20 minutes. However, one foodservice manager noted that if there were any delays in the movement of the students through the lunch line, students might have less than 10 minutes. She indicated they have, "Between 20 and 10 minutes. Depending on if they're the first in line or the last in line. And

sometimes they don't even get ten minutes, if there's…any difficulty…." So, depending on where in line a student ended up, their time to sit and eat may be shorter or longer.

Of the eight foodservice managers that participated, five stated that students needed more time to eat lunch, and three said that students had plenty of time to eat lunch. As one foodservice manager commented, "The kids don't have enough time to eat….And I don't think that has anything to do with the wellness policy. It just has to do with they don't give them enough time to eat." This perspective was much different from that of other managers who reported that recess before lunch had negatively impacted the amount of time students had to eat. As noted above, some observed that when students came from the classrooms they were able to get them through the lunch line more quickly, and if students needed extra time to eat they could remain in the lunchroom into the recess time to finish eating.

Changes in physical activity was another topic that was discussed. As part of the wellness policy, students are to have 30 minutes of physical activity each day. All principals and wellness coordinators agreed that they meet the 30 minutes of physical activity per day, primarily through recess. Participants also cited physical education programs, and other school-specific activities that contribute to the physical activity requirement. However, none of these activities represented a change due to the school wellness policy. One principal did comment that he or she was able to add five additional minutes to their lunch recess as a result of scheduling of recess before lunch.

As part of the school wellness policy, schools are to have policies in place for students with food allergies, and policies in place for handling and accounting of revenue from fundraisers, field trips and school stores. Results are displayed in Table 3. With the

exception of one foodservice manager, all employees interviewed were aware of their school's policy regarding food allergies. However, five of the 12 principals (or wellness coordinators) interviewed were unaware of where school employees could find the written policy, and three of the eight foodservice managers did not know where the written allergy policy could be found.

Eight of 12 principals/wellness coordinators were aware of their school's policy related to revenues and accounting, and six of these participants knew where school employees could find the written policy. Three of the principals/wellness coordinators were confused by the question and failed to respond.

As part of the wellness policy, schools were to establish goals related to physical activity, nutrition education, and other areas related to student wellness. However, no participants indicated that any formal goals had been established in any of these areas, as a result of the policy.

The second research question addressed changes in roles and responsibilities of school employees. Participants' responses touched upon the following general topics: communication, enforcement/adherence, and cafeteria logistics. The responses generated are summarized in Table 4. In general, principals indicated the greatest change in their roles and responsibilities. Some foodservice managers discussed minor changes in their day-to-day tasks, but others were unfamiliar with the policy and/or unaware of any changes in their jobs because they were newer employees and the policy was in place when they had started working at the school. All three wellness coordinators indicated they had been very recently assigned this position, and therefore, were unable to comment on any changes in their responsibilities.

Table 3. Components of the WCSD School Wellness Policy that have been implemented by participating elementary schools as reported by school employees.

School	Recess Before Lunch	Allergy Policy		Revenue Policy
		Principals/Wellness Coordinators	Foodservice Managers	Principals/Wellness Coordinators
1	Y	Y	Y	Unknown[a]
2	Partial	Y	N/A	N
3	Y	Y	Y	Y
4	Y	Y	N	Unknown[b]
5	N	Y	Y	Y
6	Partial	Y	Y	Y
7	Y	Y	N/A	Y
8	Partial	Y	N/A	Y
9	Y	Y	Y	Unknown[a]
10	Y	Y	Y	Y
11	Y	Y	N/A	Y
12	Partial	Y	Y	Y

Note. N/A = Foodservice manager did not participate at this school.

Partial = Some schools have one or more lunches that have recess before lunch, and one or more lunches that have recess after lunch.

[a] Participant was confused by the question, and didn't provide an answer.

[b] Participant indicated there were clear procedures for how funds were dealt with, but didn't think there was a formal policy in place.

Communication about the policy was one change in responsibility that only the principals commented upon. Principals indicated that one of the primary changes in their role, was that they were now responsible for informing both parents and teachers about the policy. As one principal stated, "Every year there's a certain amount of time…where you get inquiries from new parents. Parents that are either new to the district, or to the school, or they're just having a first grader eat at school for the first time…." Principals mentioned informing parents about both what foods were appropriate to pack in their students' lunches, as well as what foods were allowed to be brought in for classroom parties and snacks.

Principals also noted that they have to communicate with their teachers about what foods are allowable. As one principal said, "…making sure the teachers were aware of the change in policy regarding the kinds of snacks that could be offered to kids as rewards and things like that. And the kinds of things that could be sold for fundraisers during the school day."

Enforcement of the policy requirements was another commonly mentioned change in roles and responsibilities. Most of the principals indicated that they are in charge of making sure that teachers and other school employees adhere to the nutrition guidelines for allowable foods, in their classrooms.

Managing cafeteria logistics was mentioned by both principals and foodservice managers as a way in which their roles and responsibilities had changed. Principals noted that they had rescheduled the lunch routine so that students came into the cafeteria directly from outside and that they left the cafeteria and proceeded back to their classrooms. Another change they mentioned was managing how students' clean their

Table 4. Principals' perceptions of how their roles and responsibilities have changed since the school wellness policy was implemented.

Communication Findings
1. Informing parents about the school wellness policy 2. Informing teachers about the school wellness policy
Enforcing/Monitoring Adherence Findings
1. Making sure teachers adhere to nutrition standards in their classrooms
Cafeteria Logistics Findings
1. Changing entry and exit procedures for lunch 2. Ensuring that students are cleaning hands after playing at recess before eating 3. Managing payment process when students come to lunch straight from recess 4. Making sure students have 20 minutes to sit and eat

hands when they enter the lunchroom from the playground. As one principal said, "The only thing we had to do was just change the rotation of how the kids came in so they could access the hand sanitizers and then handling of the cards…." This principal was referring to the other challenge that some principals encountered with recess before lunch, which was the added responsibility of managing how students pay for their reimbursable meals. Some mentioned that they don't give students their ID cards prior to lunch, for fear that they would become lost on the playground. Another principal commented that other added responsibilities of the wellness policy were making sure that students have 20 minutes to sit and eat, and that they have an adequate amount of recess.

No one perceived that they needed to manage their time differently in order to accomplish these new roles and responsibilities. As one principal stated, "I just looked at it as something we had to do…I don't know that I really managed my time, it was just something that we had to do…."

As discussed previously in this chapter, at least one participant from each group (foodservice managers, principals, and wellness coordinators) was unfamiliar with the policy, or familiar with the policy, and therefore were unaware that they had any new responsibilities as a result of the policy. As one principal discussed, she knew that the policy existed, but said that, "There's nothing I needed to implement."

The third research question addressed factors that facilitated policy implementation. The following general topics were commented upon by participants: supportive individuals and resources. The results related to resources are displayed in Table 5.

Many participants indicated that there were supportive individuals in the school and community who impacted policy implementation. Several principals perceived that members of their staff strongly supported the policy, and indicated this to be representative of their concern for the health of their students. As one principal commented, "…well I think all my teachers understand and support the policy in terms of nutritional guidelines….and, you know, wanting kids to be healthier and better refreshed, and all of that." Another principal indicated that teachers show their support,

> By stressing to students that if you bring a snack it needs to be a healthy snack and here are some options and some choices. Talking to parents about, you know, we try not to celebrate birthdays and things because, number one, it takes away from academic and instruction time, and number two…don't bring cupcakes if you do (laugh). So I think teachers are trying to communicate with the parents about what are appropriate snacks, you know, what are appropriate things to have for celebrations like birthdays and Christmas parties or those kinds of things.

This principal also observed that teachers who strongly supported the policy had an impact on their colleagues. As she said,

> …they hear other teachers talking about what they're doing, and they work closely as grade levels, so for example, if one or two teachers in a grade level are talking to their kids about healthy snacks, the other teachers in the grade level would hear that or have knowledge of that.

One principal also noted that he perceived that the nutrition services staff was very supportive of the policy. Other principals commented that families showed support

for the policy through the foods that they sent with their children to school for lunch and to share as snacks.

Resources were the second topic that was discussed among participants relative to things that made policy implementation easier (see Table 5). Written material, websites, and specific individuals were the three most commonly reported resources among all three employment groups. Almost all of the principals and wellness coordinators reported receiving a written copy of the policy. Most of these participants did not have much to say about the written resources they received. One principal stated that she received the written policy as well as a handbook/binder in which, "There were ideas and suggestions for how to implement it at the school-wide level…so that resource binder from the district was helpful."

Almost all of the principals and foodservice managers indicated that they used other individuals as resources, or had certain people in mind that they would refer to if they had questions about the wellness policy. Almost everyone reported that they would go to their direct supervisor, either the Superintendent for Elementary Education or the Director of Nutrition Services, if they had questions. A few principals and a foodservice manager specified that they either had, or would, contact colleagues for advice. As one principal stated,

…when I knew that we were going to start with it when this school opened, right from the get go, I started asking around, 'Well, who's already doing this? Who was in the pilot? Who's been playing with this new set of rules?'...And got some input from other principals, and actually had selected a couple of teachers from a school that was already doing that, who gave me some insights from the teacher's

Table 5. Similarities and differences in the perceptions of wellness coordinators and principals in regards to the availability of resources related to the wellness policy.

Interview Question	Foodservice Managers (n=8)	Principals (n=9)	Wellness Coordinators (n=3)
1. Initially, what resources were provided to you regarding the policy?			
• For example, were you provided with any written materials?	3	7	2
• Did you receive any training?	N/A	1	0
2. If you had questions, where did you go for answers?			
• Could you contact a person?	8	8	0
• Visit a website?	4	6	2
3. Is there a wellness team at your school to assist in coordinating all aspects of the wellness policy?	0	0	0
4. Do you receive ongoing communication about the policy?	N/A	2	0

Note. N/A = Participants were not asked about this particular resource.

> perspective of what worked. And then, you know, sort of….I just gleaned what I could from the other principals.

A foodservice manager expressed a similar response when she said, "I think some of the other kitchen managers have a really good understanding of it, and I'm sure if I were to ask them…they would either direct me to the right place or they'd say here and give me paper…."Another foodservice manager commented that she would also refer to her principal with questions. Members of all three employment groups indicated that they would use the school district website as a resource for information related to the wellness policy.

The fourth research question addressed challenges to implementation. In general, participants discussed the following topics: recess before lunch, resources, adjusting to change, policing/enforcing the policy, and the priority of the policy. The results are summarized in Table 6.

Many principals, foodservice managers, and wellness coordinators reported that school employees, parents and students had displayed opposition to the policy, especially the recess before lunch component, when it was first implemented. Several principals attributed this resistance to adjusting to change. As one principal stated, "I think some of that is just in the face of any kind of change, there is going to be some opposition because it is different." Another principal noted that, "I have some staff who'd like to go back…for very vague reasons. I have not been able to get any real valid, pin-point reason of why, except, 'That's how we used to do it.'"

The recess before lunch mandate and the management of lunchroom logistics associated with this change, were commented upon by all employment groups. A couple

of principals indicated that one of the challenges of having recess before lunch was that it impinged upon the autonomy of their school, since it was a policy that was developed and imposed on them by individuals outside of the school setting. They also perceived that it seemed like those who drafted the policy had no input from school employees. As one principal stated, "it was just that the biggest deal, I think for any of us, would be the…recess/lunch being dictated to us. And not giving us the latitude of what we know works with our schools."

Many principals and one wellness coordinator also commented on the fact that switching the schedule to recess before lunch put a burden on staff because it requires extra duty teachers during the lunch period. As the wellness coordinator explained,

> …what you run into is we don't have enough classified staff to do duties, and you have to worry about the certified contract where they have a thirty-minute duty-free lunch. And so this has added an extra burden on who's going to do those lunchroom duties. And playground duties...

One challenge mentioned by a couple of foodservice managers, principals, and a wellness coordinator, was that students come in off the playground with dirty hands. As one wellness coordinator explained, "…one of the problems was the kids play on the playground and get filthy and then come in and eat lunch. And we try to do Purel on their hands, which doesn't wash your hands anyway, you've just got dirty hands with Purel on them and that was a big issue." One principal reported that hand soap is provided by the school district, but hand sanitizer must be purchased out of the school's budget, and that the cost of purchasing hand sanitizer was another unexpected burden of recess before lunch.

Table 6. Similarities and differences in perceptions of challenges to wellness policy implementation as reported by school employees.

Challenges noted by two or more participants	Foodservice Managers	Principals	Wellness Coordinators
1. Lunch room logistics	X	X	X
2. Impinges on school-level autonomy		X	
3. Lack of resources related to the policy	X	X	X
4. Individuals who oppose the policy	X	X	
5. Informing teachers and parents about the policy		X	
6. Policing/Enforcing the policy		X	
7. Policy being a low priority	X	X	X

Some foodservice managers and principals discussed ensuring students have 20 minutes to eat, as a challenge of having recess before lunch. Both groups of participants indicated that when recess follows lunch, students who are slower eaters can remain in the lunchroom to finish. As one principal noted,

> There are probably still a couple who continue to express irritation because in the old way the kids ate first, if you had a straggler or a slow eater, you could send the whole group on out and the last one who dawdled could stay at the table and eat, and it didn't matter if another group came in after them. They could still sit there. Now, when it's the end of lunch, it's the end of lunch because they're expected back in the classroom for instruction.

As mentioned earlier, all employment groups had observed that students enter the lunchroom hyperactive and louder when they have recess first. Foodservice managers observed that having a louder lunchroom made it more difficult for them to hear students say their names, which made it harder to move students through the lunch line. Waiting longer in line for lunch meant that students often had less time to sit and eat their lunches.

Another challenge mentioned by a few principals, was the logistics around how students pay for their reimbursable meals. As one principal described,

> The biggest issue with elementary kids is identifying who they are when they get to the pay station in the lunchroom. So that their lunch account is credited. And with very young students who are new to school anyway, the lunchroom is a very scary place, confusing and all of that…the kids used to have a little card, like a little credit card, and the teachers would hand them out, and they'd come to the

lunchroom and hand them in, and it was controlled. But when you were doing playing before eating, if you handed them out, they got lost on the playground. This was another factor that caused students to wait longer in the line to get their lunch and sometimes lead to them having less time to sit and eat.

Resources were another topic discussed in regards to challenges to implementation. All three groups of participants discussed their perceptions of wellness policy resources available to them. The results are summarized in Table 5. All indicated that they had resources available to them. However, it is worth noting that one of the questions that all principals were asked was, "Initially, what resources were provided to you regarding the policy?" In response to this question, the first response of four principals was either, "No," "None," or "I don't know of any." Upon further probing, in regards to different types of resources (written, websites, etc.) principals revealed that they had received some resources in each of these formats.

Almost all principals and wellness coordinators reported receiving a written copy of the policy when it was first implemented. For most of these participants, they remember only receiving a written copy of the text, with no memorable supplementary resources. One principal and no wellness coordinators reportedly received training related to the school wellness policy. One principal indicated that she had arranged for a representative from Nutrition Services to come out and explain the wellness policy to her staff when the policy was first implemented. Another principal stated that she had heard of a training related to wellness policies when she had attended an educator's conference, but had not participated.

Most principals and wellness coordinators indicated that they had not sought the advice of other people in regards to the policy, but all reported that they would consult their direct supervisor or the school district website, if they had questions about the policy. One foodservice manager reported having difficulties finding policy information on the district website. As she stated, "And I actually went online to try to find it, and well, I didn't. Have you ever tried to navigate the district website?...It's not very user-friendly." Another foodservice manager indicated she had trouble obtaining information about the school wellness policy from her school's office, so she found a copy of the policy on the WCSD website and printed it out to read in preparation for the interview.

Two foodservice managers reported that they first learned about the wellness policy at a manager's meeting, and two indicated that they had learned of it initially through an email from Nutrition Services. Three foodservice managers were unfamiliar with the wellness policy. A number of foodservice managers stated that they were unsure where they would go to find answers to questions they might have about the policy. However, most of them seemed confident that they would be able to find a resource.

Two principals reported that they received some limited ongoing communication about the policy since its implementation. However, the vast majority reported they had received no communication about the policy since it was first implemented.

Informing teachers and parents and students about the policy, was another challenge described by principals. As one principal observed,

> I guess communicating that with the parents, and then trying to determine, as we have lots of folks who want to bring in things and donate to classes, and so

> accepting their generosity and not making them feel like they're in trouble, if, you know, it's cupcakes again…

Others principals perceived that most teachers knew that they were not supposed to give out foods of low nutritional value to students as treats or rewards. Another principal observed that students needed to be informed as well, when she said,

> …like I said to the kids the other day..., 'You can't bring cupcakes to your classrooms if it's your birthday. We do the end of the month birthday. If you want to bring a treat like cheese or a piece of fruit, that would be fine.'

Another challenge noted by principals was policing and enforcing the policy. As one principal observed, "There's a few teachers that continue to provide sweets when being asked not to, and so I have to discourage that continuously, and it becomes just one other thing." A couple of principals described this change as one of the most challenging components of the policy for teachers at their schools. Another stated that one of the difficulties of the policy was trying to get parents to comply with the nutrition guidelines of the policy in regards to foods they send in to share with other students.

As the final question of the interview, all participants were asked to comment on whether or not they perceived the policy was a high or low priority for their school. Results are summarized in Table 7. The majority of all participants indicated that the policy was a low priority for their school. Two wellness coordinators and five principals indicated that the policy was a low priority at their school because greater importance was placed on academic achievement. As one principal commented, "Because all the pressures on us with No Child Left Behind to make academic goals ever more quickly." Another principal communicated the same sentiment when she said, "I'd say it's a little

bit of a low priority only because of the fact that making AYP, or adequate yearly progress, has to be our highest priority at the school." Wellness coordinators also brought up academic goals such as "adequate yearly progress" in their explanations of why they perceived the policy to be of low priority for the school.

One foodservice manager and one wellness coordinator reported that the policy was a low priority because they perceived that not that many people knew about it. As one wellness coordinator stated, "Because a lot of the teachers didn't even know that there was one (a wellness policy)."

One foodservice manager and one principal indicated they perceived the policy to be of "medium" priority, or not a high priority, but not a low priority. They attributed this to the fact that the policy hadn't been fully implemented and because certain aspects of the policy were seen as burdensome or challenging to implement.

Two principals and one foodservice manager reported that they perceived the policy was a high priority at their school, but they expressed that this was due to the fact that they personally placed a lot of importance on health and nutrition being important to students' academic success. As one principal indicated, she couldn't say that the policy itself was of the highest priority, but that student wellness was a high priority. As she commented,

> Oh, I think it's high. I mean…I don't…I can't say like "The Policy" it's….it's….when I look at it is, it's part of our lives. It's part of the kids' lives. It's part of what we want them to be the best they can be and they have to be healthy to be the best they can be.

Table 7. Similarities and differences in the perceptions of school employees regarding the priority of the school wellness policy.

School	Foodservice Manager	Principal	Wellness Coordinator
1	High	Low	N/A
2	N/A	N/A	Low
3	Low	Low	N/A
4	Doesn't Know	High	N/A
5	Medium	N/A	Low
6	High	N/A	Low
7	N/A	Medium	N/A
8	N/A	Low	N/A
9	Doesn't Know	Low	N/A
10	Doesn't Know	Low	N/A
11	N/A	Low	N/A
12	Low	High	N/A

Note. N/A = No participant at this school.

Four foodservice managers reported that they did not know the priority of the policy at their school. They attributed their lack of knowledge either to being unfamiliar with the policy, or to lack of communication about the policy or school priority's by other school employees such as teachers and principals. As one foodservice manager stated, "…that's a tough one because I…I don't deal with the teachers or the principal often enough and, from what I see and hear, I wouldn't say it's their highest priority…." Another indicated that she didn't think anyone was really aware of the policy.

The final research question addressed suggestions for policy improvement. Participants discussed the following general topics in response to these questions: policy priority, communication, resources, and enforcement.

Foodservice managers, principals and wellness coordinators all commented on the fact that they perceived that communication about the policy could be improved. The most common sentiment expressed by all employment groups was that they didn't receive any ongoing communication about the policy. They perceived that the policy had been discussed when it was first implemented, but hadn't been discussed since that time. As one principal stated,

> I think since its initial "roll-out," so to speak, there hasn't been much said about it so maybe it's time to, you know, have another review of it. Let people know if there have been any changes made. Maybe update some resources related to things, and I think that would help it be again in our…more in our front of our brain about how, 'Oh yeah, here's something else we need to continue to do, or work on implementing.

Another topic related to communication that all three employment groups commented on was their confusion over differentiating between the school wellness policy and the WCSD Employee Wellness Program. This confusion seemed to arise around the discussion of policy communication because all three groups of employees reported receiving lots of communication about the Employee Wellness Program, but virtually no communication about the school wellness policy. One principal suggested that the school wellness policy be designed to more closely resemble the WCSD Employee Wellness Policy. As she noted,

> And actually, I think it would probably be a good thing if they did some kind of programs like they do for the adults, for the kids because….like right now we have "Maintain Don't Gain," so it makes you think about what you're putting into your mouth over the holidays.

Also in regard to communication, one principal noted that in a time when schools are being encouraged to use evidence-based techniques, no research-based evidence was provided as reasoning for the changes that resulted from the policy. As she observed,

> …it doesn't come based with a lot of support and a lot of study. It didn't bring evidence...everything we do, we're supposed to say, "Here's the research that backs it up," and when this was implemented it was more of somebody's, it came across, I'm not saying it was, but it came across as this is somebody's pet project, and they're going to change the whole thing, but behind it, did not provide really any good research-based information.

She suggested that reports on how implementation was going and whether schools were seeing the intended results would also be of benefit. As she stated, "And it's kind of like

it hasn't been brought up again. It was a one shot "spray and pray" type of thing. And so no follow up, no verification that it's done any differences or it's made any differences."

Resources were seen as another aspect of the policy that could be improved to increase the degree of implementation. All three groups of participants commented on a need for better resources related to the policy. One principal indicated that resources needed to be very specific, when he noted,

> You know if you're going to have a principal or a school implement things, it better be laid out, you know, step-by-step, perfectly, and with a real goal in mind, and tell me exactly what you want, and I can get the teachers to implement these things, and we can go. Other than that, you know, we're so fixed with reading and math and passing the CRTs (Criterion-Referenced Tests) and AYP (Adequate Yearly Progress) that…this is really small.

A wellness coordinator also requested resources that were more user-friendly for teachers at her school to refer. As she commented,

> …it would be nice to have some kind of a handout for the teachers. So that they can know what's too much sugar, what snacks can we have, what can't we have. I know we can't have Coke machines or, you know, stuff like that. But teachers have no idea and I have no idea what to tell them.

Increasing enforcement of the policy was also noted by a couple of principals as a suggestion for improving implementation. A couple of principals perceived there to be little to no consequences for non-compliance with the policy. As one principal stated, "If they had some teeth in it, it would probably make for better adapting, and adoptions, but it's just like science and social studies, everybody pushes it to the back." Another

principal stated that he perceived the policy to be somewhat vague, in terms of what was expected, and remarked that, “no one’s really going to come around and monitor,” what schools were actually doing.

In conclusion, the results from the twenty interviews were rich in content. Participants offered insight on changes due to the policy – including changes in their roles and responsibilities, facilitating policy implementation, challenges to policy implementation, and suggestions for improving the policy and its implementation. When the data was compared, across questions, investigators identified three themes. One theme that was discussed widely was that participants observed that the food environment at schools became healthier. Another theme was that there was insufficient support of implementation. Lastly, participants clearly expressed that the wellness policy was a low priority for school employees. In the next chapter, the results and these themes will be discussed more thoroughly and compared to other related research, the limitations of the study will be described, and suggestions for further research, as well as recommendations for practice will be outlined.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

This chapter presents a discussion of the findings of interviews with WCSD elementary school employees regarding implementation of the WCSD School Wellness Policy. Limitations of the study, recommendations for further study and practice are also presented.

As noted in Chapter 4, the interviews provided a rich data set regarding school employees' experiences and perceptions with the wellness policy. This included changes due to the policy – including changes in their roles and responsibilities, experiences facilitating policy implementation, challenges that have been encountered, and lastly suggestions for improving the policy. In addition, investigators identified three themes that captured the participants' perceptions and experiences in a more general way. The themes were discussed by multiple participants, often in response to a variety of questions. One theme that was discussed widely was that participants observed that the food environment at schools became healthier. Another theme that was identified was that there was insufficient support of implementation. Lastly, participants openly expressed that the wellness policy was a low priority for school employees.

All three groups of participants observed that the food environment at schools became healthier, which has also been commonly reported in other studies. School employees noted that there was a decrease in unhealthful foods and an increase in foods of higher nutritional value. This includes decreases in unhealthful foods given out by teachers as snacks or rewards, used in fundraisers, and brought by parents and students to school parties. Moag-Stahlberg, et al. (2008) reported a similar finding in their study of a nationwide sample of wellness policies, where they found that nutrition guidelines were

included in most of the policies and that as part of those nutrition standards, guidelines were established for what types of competitive foods could be sold on campus and what foods could be given away as rewards or incentives by teachers. A number of other studies also reported that nutrition guidelines were the most frequently implemented component of most wellness policies (Longley, et al., 2009, Probart, et al., 2008, Roberts, et al., 2009).

These are important findings because a number of studies have found that the school nutrition environment has been rife with opportunities to obtain foods of low nutritional value, and that students are more likely to choose less healthful foods, and consume larger portions of these foods. These foods have also been found to displace more healthful foods in students' diets (Colapinto, et al., 2007, Fox, et al., 2009b, Kubik, et al., 2003, Snelling, et al., 2007, O'Toole, et al., 2007). This is also noteworthy given that Kubik, et al. (2005) reported that when middle school policies allowed specific food practices, such as the use of food as rewards and incentives and food fundraising in the classroom, students' BMIs were greater. Policies that have the potential to minimize the frequency of these food practices could have important implications for student health.

In general, school employees were supportive of the general goal of the policy, to promote student health and wellness, but indicated that since the policy's "roll-out" there had been insufficient support of implementation. We heard this described through the comments of a number of participants who mentioned inadequacies related to: resources, communication, and enforcement. They also said that certain components of the policy seemed to have been designed without taking into consideration the perspective of those who would be implementing the policy, in particular, the recess before lunch mandate.

As seen in other studies, most school employees were supportive of the wellness policy because they perceived that the health and nutritional wellbeing of their students are important goals and that both play a role in students' academic success. Kubik, et al. (2005) reported similarly that most parents and teachers feel that the nutritional health of students should be a priority for schools. Molaison, et al. (2008) also observed that school employees ranked promoting healthy eating and encouraging physical activity as the two most important components of the wellness policy. However, Molaison, et al. (2008) also noted that, although school employees reported these to be the most important goals of the wellness policy, they did not rank them as high in terms of the attainability of these policy components. Similarly, our data indicates that, although almost all school employees expressed that their students' nutrition and health is very important, it didn't always mean the policy was effectively implemented at their school.

A lack of resources, related to the wellness policy, was a topic that many participants discussed. Some could recall receiving written information, but all groups of participants indicated that they received very little, if any, training related to the school wellness policy. Similarly, Molaison, et al. (2008) reported that one resource that stakeholders indicated they needed was training on strategies for implementing the wellness policy. In this study, respondents indicated that additional staff was another necessary resource that they were lacking. In particular, they noted that they needed a nurse in every school, and more physical education teachers, in order to fulfill the mandates of their wellness policies. Participants in our study reported that increased staff was needed to accommodate the extra duties associated with having recess before lunch.

Enforcement of the policy was another area that was discussed. This created new roles and responsibilities for principals, and with that, challenges. Principals commented that they had to remind teachers not to reward students with certain types of foods, and had to sometimes discourage parents and students from bringing disallowed foods to school parties to share with other students. Roberts, et al. (2009) similarly reported that one of the biggest challenges of implementing the policy was that teachers disliked no longer being allowed to reward students or fundraise with foods low in nutritional value, and that parents would bring disallowed foods into school to share with other students. McDonnell, et al. (2006a, 2008), as well as, Longley, et al. (2009) also reported that they perceived enforcement to be a major challenge of the wellness policy, primarily due to competing demands for principals' attention and time. With things like academic achievement and No Child Left Behind (NCLB) standards, participants in these studies perceived that wellness policy components might go unenforced. Another challenge reported by McDonnell, et al. (2006a) was that it would be difficult for principals to try to enforce the nutrition guidelines for all foods available at school. We found that the principals and wellness coordinators in our study indicated that it was indeed a challenge to try to regulate what goes on in individual classrooms, as well as what parents and students bring to school to share with other students.

A number of previous studies have reported that wellness policies often fail to include plans for policy enforcement, evaluation and revision (Longley, et al., 2009, Moag-Stahlberg, et al., 2008, Probart, et al., 2008). A few participants in our study also commented that they perceived there to be no enforcement or evaluation of the policy from anyone at the district or state level.

Some school employees commented that the recess before lunch mandate had a number of unintended consequences that posed challenges for them and for the students. Some of the difficulties that school employees in our study experienced were related to lunchroom logistics such as how to best have students sanitize their hands as they leave recess and enter the lunchroom, managing human resources such that there were adequate staff to supervise students as they enter and exit the cafeteria, and, during mealtime, calming students who return from recess hyperactive and loud, and lastly, making sure the schedule allowed for students to have twenty minutes of seated time to eat. Rainville, Wolf, & Carr (2006) reported very similar findings from their focus group study of administrators, teachers, parents, and foodservice personnel from three school districts in Maine, Colorado, and Kentucky. When asked about recess before lunch, participants indicated a number of barriers, the most common ones being logistical concerns such as supervision, hand washing, entering and exiting the cafeteria, and scheduling issues. Another barrier mentioned was the idea that it was breaking with tradition to place recess before lunch.

However, two principals in this study did comment that they perceived recess before lunch could have positive impacts, such as children being more ready to learn if they return to the classroom from the cafeteria, as opposed to coming in off the playground. According to Rainville, et al. (2006), some teachers and parents also remarked that they believed school administrators who oppose the change could be convinced by research that displays the benefits of switching to recess before lunch. These were both comments that we also heard from a few participants. One principal indicated that she had heard teachers say that when students return to the classroom from

the cafeteria, as opposed to the playground, they are more prepared to learn. A couple of principals also indicated that they would be more apt to support the recess before lunch mandate, if they were presented with research that explains the benefits of the change.

Lack of communication about the policy at all levels of the school hierarchy, was another topic of discussion among participants. Principals seem to have a general knowledge of the policy and could recall receiving information about the policy when it was first approved, but almost no one reported receiving ongoing communication about the policy. Foodservice employees, in general, were less familiar with the details of the wellness policy. When prompted, a number of foodservice managers indicated they were aware of certain aspects of the policy (such as recess before lunch), but they did not initially recognize the school wellness policy, by that name. Other studies reported similar findings. McDonnell et al. (2006b) found that some principals and foodservice managers were unaware of their wellness policy's existence, as did Roberts et al. (2009) who reported that some parents, principals and teachers indicated they were unaware of a wellness policy.

Another theme that was identified in our data was that the wellness policy was perceived as being of low priority for the school. According to McDonnell, et al. (2006a), foodservice managers anticipated wellness policies would be of low priority because school employees focus most of their attention on the core curriculum and No Child Left Behind (NCLB). In our study, all employment groups commented that one reason the policy was a low priority was because achieving academic standards was the top priority for schools. Nollen, et al. (2007) similarly reported that, although student health is of importance to schools, academic success is the chief concern. Longley, et al.

(2009) also observed that one of the biggest barriers to policy implementation mentioned by principals and teachers was devoting so much of their time to NCLB concerns.

This study and previous studies indicate that it is common for school employees to perceive health and wellness-related goals and policies to be of lower priority relative to the achievement of academic standards (Longley, et al., 2009; McDonnell, et al., 2006a; Nollen, et al., 2007; Zoellner, et al., 2009). This may indicate a lack of knowledge or understanding of the relationship between health status, cognition, and academic performance. According to a review conducted by Murray, Low, Hollis, Cross, and Davis (2007), there is limited evidence from rigorous controlled studies that support the effect of specific health services, including nutrition, on academic outcomes. However, there was no indication that school employees believe that the student wellness policy is being promoted as a high priority with the goal of having a positive impact on academic achievement.

Some of the foodservice managers in our study indicated that they didn't know if the policy was a high or low priority at the school, mostly because they had not engaged in communication about the policy with the principal or teachers at their school. McDonnell, et al. (2006a) and Zoellner, et al. (2009) reported similarly that school nutrition employees seem eager to participate in the implementation of school policies related to nutrition, but they often feel they lack authority, training, or the confidence to communicate with other school employees and contribute to putting the policy into place.

Limitations

Some of the limitations of this study are inherent to qualitative research, in general. The findings reported here cannot be generalized to other school employees

(Achterberg & Shepherd, 2003). Another limitation of our study is that it only includes school employees from the elementary level. As described previously, this study was part of a larger study that did involve school employees from the middle and high schools. Additionally, we were unable to obtain participation from both wellness coordinators (or principals) and foodservice managers at each school. At a number of schools only one employee participated. One unexpected limitation was that most schools had not named a wellness coordinator. Therefore, at most elementary schools the principal was interviewed. Another limitation that was unanticipated was that a number of employees had limited knowledge or were confused about the details of the policy.

Recommendations for Further Study

This study provided insight into the experiences and perceptions of principals and foodservice managers regarding the implementation of school wellness policies at the elementary school level. The experiences and perceptions of other school employees, such as teachers, and school employees at other grade levels, such as middle and high schools in WCSD will be examined in other phases of this study. The findings from this study are not generalizeable to a larger population because of the nature of the study. Therefore, it would be worthwhile to collect quantitative data from a representative sample to see if these findings reflect the experiences and perceptions of all WCSD elementary school employees, or of school employees in other districts. If this is true, it would be important to research strategies to determine alternative ways to implement wellness policies that are more acceptable to school employees. For example, it would be useful to study what communication techniques and specific types of resources are most

effective for informing school employees, about the existence and importance of wellness policies, as well as the specific content of the policy.

Conclusions

In conclusion, there were three prominent themes that emerged from the analysis of the 20 interviews with elementary school employees. Overall, one theme that emerged was that school employees had observed a positive change in the nutrition environment of their schools. They described a decrease in "junk food," and in some cases, an increase in the availability of more healthful foods. Another theme identified from participants' responses was that there was insufficient support of implementation. School employees remarked that there had been inadequate resources, communication, and enforcement since the initial "roll-out" of the wellness policy. Additionally, nearly all participants indicated that the school wellness policy was a low priority for their schools. More specifically, school employees indicated that achieving academic standards was the top priority for their schools, and as such, student wellness had not received much attention. As a result, we observed that the school employees in this study were concerned about the health and wellness of their students, but found the wellness policy to be challenging to implement and poorly supported by higher levels of administration. Further research is needed to better understand the experiences of other school employees in this and other school districts. This information can then be used to develop strategies that may further enhance the school food environment.

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APPENDICES

Appendix A

School Wellness Coordinator Interview Guide

School Wellness Coordinator Interview Guide

Read script as follows…

> *"I would like to thank you for agreeing to participate in this interview about the District's Student Wellness Policy. Our goal is to learn about the experiences and opinions of school employees. Your answers will help us better understand how to make changes in schools to promote students' health. It won't take any more than 45 minutes"*
>
> *"For the purpose of this interview, I would like to use a pseudonym. That way, your real name will not be included on the audio-recordings or in the written transcript. What name would you like to be called today?"*
>
> *"I will be jotting down a few items throughout the interview to help keep myself organized."*
>
> *"I will now be turning on the recorder to begin the interview. Do you have any questions before we get started?"*

"Warm-up" Questions:

1. How long have you worked in your current position?

2. How long have you been employed here at the WCSD?

3. During this time were you always in this position?

4. How long have you been at this particular school?

Part 1

"My first few questions are about how you implemented the Student Wellness Policy."

1. How was it decided that you would be the School Wellness Coordinator?

Follow-up list:

□ How long have you been the Wellness Coordinator?

2. What new responsibilities have you taken on since becoming the School Wellness Coordinator?

Follow-up list:

□ How did you manage your time to accomplish these new tasks?

Probes:

- *Did you get any time release for this?*

□ How has your role as Wellness Coordinator changed from when you started to now?

□ What's good about being the Wellness Coordinator?

□ What is the most challenging part of being the Wellness Coordinator?

Probes:

- *I am curious about how you are dealing with this challenge?*

3. **Initially, what resources were provided to you regarding the policy?**

Follow-up list:

□ For example, were you provided with any printed materials?

Probes:

- *What do you remember about them?*

□ Did you receive any training?

Probes:

- *What was the training like?*

- *Who provided it?*

□ If you had questions, where did you go for answers?

Probes:

- *Could you contact a person?*

- *Refer to printed material?*

- *Visit a web site?*

4. **Currently, what types of resources are provided to you?**

Follow-up list:

□ Do you receive ongoing communication about the policy?

□ If you have questions about the policy, where do you go to find answers to those questions?

Probes:

- *Without using names, is there a person you feel has an understanding of the policy that could offer assistance?*

- *Can you provide me with an example of the support or assistance you received?*

5. **To what degree are others at your school involved in implementation and oversight of the policy?**

Follow-up list:

□ Without using names, how many people are helping you, and what are their positions?

Probes:

- *How do you work together?*

- *How do you share the responsibilities?*

- *How do you make decisions?*

6. **Tell me about anything that helped you to implement the Wellness Policy that you haven't mentioned already.**

Follow-up list:

□ Without using names, are there individuals who strongly support the policy, or offer assistance with policy implementation?

Probes:

- *How do they show it?*

- *To what degree do they influence others?*

7. **We talked about some things that helped you implement the policy. Tell me about anything that made implementing the policy challenging, that you haven't already mentioned.**

Follow-up list:

□ Again, without using names, are there individuals who strongly oppose the policy?

Probes:

- *How do they show it?*

- *To what degree do they influence others?*

8. **How do you feel about being the Wellness Coordinator?**

Follow-up list:

□ What kind of reaction did you get from your colleagues?

Probes:

- *How did you deal with this?*

Part 2

"You have provided me with wonderful insight into the process of implementing the Student Wellness Policy. Now I would like to ask you some more specific questions."

9. **Tell me about your policy related to food allergies.**

Follow-up list:

□ Where can school employees find it?

10. **According to the policy, guidelines must be followed for revenues from sales such as field trips, fundraisers, and school stores. Does your school have formal guidelines in place?**

Follow-up list:

□ Where can school employees find it?

11. **How has the school environment changed as a result of the policy?**

Follow-up list:

□ How has the school schedule changed?

□ In general, how have foods and beverages available to students changed?

Probes:

- *Have you noticed a change in portion sizes?*

□ How does your school incorporate physical activity into each day?

Probes:

- *Has it changed since the policy was approved?*

12. **As designated in the policy, schools are to establish goals to promote student wellness. I would like to discuss these with you. To begin with, have you established any goals related to physical activity?**

Probes:

- *Can you describe them for me?*

13. **Have you established any goals related to nutrition education?**

Probes:

- *Can you describe them for me?*

14. **Have you established any other goals to promote student wellness?**

15. **Would you describe the policy as being a high or low priority for the school? Why?**

16. **Is there anything else you'd like to tell me?**

"In preparation for school observations can we get a copy of the school schedule and campus map? In addition, could you mark where foods and beverages are

sold outside of the cafeteria, and when those venues are open."

"Thank you again for your generosity in sharing your time, insights and experiences with me. If you have any questions you can contact the researchers – contact information is on the information sheet provided to you."

Appendix B

Food Service Manager Interview Guide

Food Service Manager Interview Guide

Read script as follows…

"I would like to thank you for agreeing to participate in this interview about the District's Student Wellness Policy. Our goal is to learn about the opinions and experiences of school employees. Do not worry if you are unfamiliar with certain aspects of the policy. This is not a test of your knowledge of the policy. Your feedback will help us better understand how best to make changes in schools to promote students' health. It won't take more than 45 minutes."

"For the purpose of this interview, I would like to use a pseudonym. That way, your real name will not be included on the audio-recoding or in the written transcript. What would you like to be called today?"

"I will also be jotting down a few items to help keep myself organized during the interview."

"I will now be turning on the recorder to begin the interview. Do you have any questions before we get started?"

"Warm-up" Questions:

1. How long have you worked as a food service manager?

2. How long have you been employed by WCSD?

3. During this time at WCSD, were you always in this position?

4. How long have you been at this particular school?

Part 1

"My first few questions are about the Student Wellness Policy in general."

1. **Can you tell me how you first learned about the Student Wellness Policy?**

Follow-up list:

□ What did you think about it?

□ What most surprised you, if anything, about the policy?

2. **What are people at your school saying about the policy?**

Follow-up list:

□ In general, what have you heard from students?

□ In general, what have you heard from teachers?

□ Without using names, are there individuals who strongly support the policy?

Probes:

- *How do they show it?*

- *To what degree do they influence others?*

3. **If you had questions about the policy, how would you find answers to those questions?**

Follow-up list:

□ Without using names, is there a person you feel has an understanding of the policy that could offer assistance?

□ Can you provide me an example of the support or assistance you received?

4. **What is your school's policy regarding food allergies?**

Follow-up list:

□ Where can people find it?

5. **What has been your experience with recess before lunch?**

Follow-up list:

□ If you've had challenges, how have you overcome them?

Part 2

"My next questions are about the changes you've experienced since the Student Wellness Policy was put into place."

6. **How has your job changed since the policy was introduced?**

□ Have any of these changes been particularly positive or negative?

Probes:

- *Can you give me an example?*

- *Was anything particularly challenging?*

- *I am curious about how you overcame this challenge?*

□ How were you prepared for these changes?

Probes:

- *Please describe any training, resources, or support you received?*

- *Who provided it?*

□ Is there a wellness team at your school to assist in coordinating all aspects of the wellness policy?

Probes:

- *Are you a part of this team?*

"Now I would like to ask you some questions about the school nutrition program."

7. How has the policy affected your cafeteria environment?

Follow-up list:

□ How has the policy changed the amount of time kids have to eat?

Probes:

- *About how much time do kids have to sit and eat?*

8. For schools with a la carte service:

How has the Student Wellness Policy impacted the a la carte program?

Follow-up list:

□ How has it changed the kinds of foods that are available?

□ How has it changed serving sizes?

□ How has it affected participation in the a la carte program?

□ How has it affected your revenues from the a la carte program?

9. For schools participating in the School Breakfast Program:

How has the Student Wellness Policy affected participation in School Breakfast?

Follow-up list:

□ How has it affected your revenues from the School Breakfast Program?

10. For schools participating in the School Lunch Program:

How has the Student Wellness Policy affected participation in School Lunch?

Follow-up list:

□ How has it affected your revenues from School Lunch?

□ Describe any other changes you've noticed around the school.

11. **Given your experience as a school food service manager, how could the policy be improved?**

Follow-up list:

□ In your opinion, how would this make it better?

□ What do you like most about the policy?

□ What do you like least about the policy?

12. **Would you describe the policy as being a high or low priority for the school? Why?**

Probes:

- *Please provide me an example that demonstrates this.*

"Thank you again for your generosity in sharing your time, insights and experiences with me. If you have any questions you can contact the researchers – their contact information is on the information sheet provided to you. Your school principal will receive a report of the research findings when the study has been completed."

Appendix C

Principal Interview Guide

Principal Interview Guide

Read script as follows…

> *"I would like to thank you for agreeing to participate in this interview about the District's Student Wellness Policy. Our goal is to learn about the experiences and opinions of school employees. Your answers will help us better understand how to make changes in schools to promote students' health. This interview won't take any more than 45 minutes"*
>
> *"For the purpose of this interview, I would like to use a pseudonym. That way, your real name will not be included on the audio-recordings or in the written transcript. What would you like to be called today?"*
>
> *"I will be jotting down a few items throughout the interview to help keep myself organized."*
>
> *"I will now be turning on the recorder to begin the interview. Do you have any questions before we get started?"*

"Warm-up" Questions:

1. How long have you worked as principal?

2. How long have you been employed here at the WCSD?

3. During this time were you always in this position?

4. How long have you been at this particular school?

Part 1

"My first few questions are about how you implemented the Student Wellness Policy."

1. **What new responsibilities have you taken on due to the policy?**

Follow-up list:

□ How did you manage your time to accomplish these new tasks?

□ How have your responsibilities changed from when the policy was first approved?

□ What's good about taking on these new responsibilities?

□ What is the most challenging part of being responsible for the Wellness Policy at your school?

Probes:

- *How are you dealing with this challenge?*

2. **Initially, what resources were provided to you regarding the policy?**

Follow-up list:

□ For example, were you provided with any printed materials?

Probes:

- *What do you remember about them?*

□ Did you receive any training?

Probes:

- *What was the training like?*

- *Who provided it?*

□ If you had questions, where did you go for answers?

Probes:

- *Could you contact a person?*

- *Refer to printed material?*

- *Visit a web site?*

3. **Currently, what types of resources are provided to you?**

Follow-up list:

□ Do you receive ongoing communication about the policy?

□ If you have questions about the policy, where do you go to find answers to those questions?

Probes:

- *Without using names, is there a person you feel has an understanding of the policy that could offer assistance?*

- *Can you provide me with an example of the support or assistance you received?*

4. **To what degree are others at your school involved in the implementation and oversight of the policy?**

Follow-up list:

□ Without using names, how many people are helping you, and what are their positions?

Probes:

- *How do you work together?*

- *How do you share the responsibilities?*

- *How do you make decisions?*

5. **Tell me about anything that helped you to implement the Wellness Policy that you haven't mentioned already.**

Follow-up list:

□ Without using names, are there individuals who strongly support the policy?

Probes:

- *How do they show it?*

- *To what degree do they influence others?*

6. **We talked about some things that helped you implement the policy. Tell me about anything that made implementing the policy challenging, that you haven't already mentioned.**

Follow-up list:

□ Again, without using names, are there individuals who strongly oppose the policy?

Probes:

- *How do they show it?*

- *To what degree do they influence others?*

7. **How do you feel about overseeing the implementation of the Student Wellness Policy at your school?**

Follow-up list:

□ What kind of reaction did you get from colleagues?

Probes:

- *How did you deal with this?*

Part 2

"You have provided me with wonderful insight into the process of implementing the Student Wellness Policy. Now I would like to ask you some more specific questions."

8. **Tell me about your policy related to food allergies.**

Follow-up list:

□ Where can school employees find it?

9. **According to the policy, guidelines must be followed for revenues from sales such as field trips, fundraisers, and school stores. Does your school have formal guidelines in place?**

Follow-up list:

□ Where can school employees find them?

10. **How has the school environment changed as a result of the policy?**

Follow-up list:

□ How has the school schedule changed?

□ In general, how have foods and beverages available to students changed?

Probes:

- *Have you noticed a change in portion sizes?*

□ How does your school incorporate physical activity into each day?

Probes:

- *Has it changed since the policy was approved?*

11. **As designated in the policy, schools are to establish goals to promote student wellness. Have you established any goals related to physical activity?**

Probes:

- *Can you describe them for me?*

12. **Have you established any goals related to nutrition education?**

Probes:

- *Can you describe them for me?*

13. **Have you established any other goals to promote student wellness?**

Probes:

- *Can you describe them for me?*

14. **Would you describe the policy as being a high or low priority for the school? Why?**

Follow-up list:

□ Please provide me an example that demonstrates this.

15. **Is there anything else you'd like to tell me?**

"In preparation for school observations can we get a copy of the school schedule and campus map? In addition, could you mark where foods and beverages are sold outside of the cafeteria, and when those venues are open."

"Thank you again for your generosity in sharing your time, insights and experiences with me. If you have any questions you can contact the researchers – their contact information is on the information sheet provided to you. You will receive a report of the research findings when the study has been completed."