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Evaluation of an Elementary School Wellness Concept in Rural East Tennessee

A Thesis

presented to

the Faculty of the Department of Family and Consumer Sciences

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Master of Science in Clinical Nutrition

by

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Keywords: rural, elementary schools, wellness policy

ABSTRACT

Evaluation of an Elementary School Wellness Concept in Rural East Tennessee

by

Audrey Taylor

Parents of elementary school children in the small, rural area of Unicoi County, TN were surveyed to determine their attitudes toward health, nutrition, and Unicoi County Schools' Wellness Policy. Elementary school classrooms were randomly chosen to receive surveys for the children's parents to return by mail. Data were compiled and analyzed using SPSS software. Over 99% of parents stated that nutrition education in schools was important, and 96% stated schools played an important role in their child's health. The assessment provided meaningful data and laid groundwork for future nutrition education programs. The research showed rural, lower-income parents are supportive of positive nutritional changes in schools.

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CHAPTER 1

INTRODUCTION

Obesity in the United States has risen to the forefront of national health concerns. The fattening of America has become prevalent in all age segments of the population. According to the American Academy of Pediatrics, a child who has a body mass index (BMI) at or above the 95th percentile on the Centers for Disease Control (CDC) growth charts for his or her age or sex is defined as overweight or obese. Children who have a BMI between the 85th and 95th percentiles are defined as being at great risk of becoming obese (1).

By being obese, children's risks are much higher for developing problems such as hypertension (high blood pressure), hypercholesterolemia (high cholesterol), type 2 diabetes mellitus, and coronary artery disease (CAD) (1). Not only do children suffer from these issues, but they may also have emotional problems that are related to the stigma of being obese. It is important for children, parents, and educators to work together to help decrease the likelihood that children will become obese.

Background

Both parents and schools have much influence on the dietary intake for children. Parents can either motivate or discourage their children in developing healthful eating behaviors that will affect them for the rest of their lives. A parent-school connection exists in which schools can target and educate families about proper nutrition. In addition, integration of nutrition topics into the school curricula could be a helpful way for children to hear repeatedly the benefits of sound nutrition and thus increase their nutrition knowledge (2).

Every school district in the U.S. was required by state and federal mandates, specifically the Child Nutrition and WIC Reauthorization Act of 2004 (1), to develop a wellness policy. As a result of these policies, schools implemented standards for what may or may not be sold in the cafeteria, in vending machines, at school fundraisers and served at parties in the classroom.

The American Dietetic Association's (ADA) position statement entitled "Position of the American Dietetic Association: Local Support for Nutrition Integrity in Schools" was developed to aid in guiding schools and school districts in making more sound nutrition available to children. The ADA was adamant in its support for schools to create overall school environments that promote access to healthful school meals and physical activity and provide learning experiences that enable students to develop lifelong eating habits (3).

Schools could be very helpful in addressing the issues of childhood overweight and obesity. Programs that target health promotion in young children and teenagers could focus on teaching them how to begin new eating and exercise behaviors. Programs that support nutrition integrity should be standing at the forefront of the effort to combat obesity in the United States. Nutrition integrity is defined as a level of performance that assures all foods and beverages available in schools are consistent with the Dietary Guidelines for Americans, and, when combined with nutrition education, physical activity, and a healthy school environment, contributes to enhanced learning and development of lifelong, healthful eating habits (3). By implementing the wellness policies and complying with them, the schools would be making progress toward a nutrition-friendly atmosphere that should support children in changing their eating patterns for the better as well as lowering the risk of children becoming obese (4).

Murphy identified the components that each wellness policy must contain in order to help schools become a catalyst for change as follows: 1) nutrition education; 2) physical activity; 3) nutrition guidelines for any food offered or made available on site; 4) school-based activities; and 5) planning ways to measure implementation. All school districts were required to develop and implement the policies prior to the beginning of the 2006-2007 school calendar year (4).

While children may show some understanding that sound nutrition and good health are intertwined, they may not know exactly how to make the connection between health and how and what they eat at school. Foods offered and served in a school are dependent upon the whole environment involving food availability, knowledge of the food service manager, nutrition information in the cafeteria and classroom, and publications for families about sound nutrition and physical activity (3). Other foods available to eat apart from the cafeteria may include vending machine items, party foods, and fundraising items. There have been no nutrition standards for these types of foods, which are known by the United States Department of Agriculture (USDA) as competitive foods. Competitive items are defined as any items that would compete with regular meals served in the cafeteria (3). According to the Centers for Disease Control's (CDC) School Health Policies and Programs Study (SHPPS), the most frequently purchased a la carte items (which could also compete with regular meals) were "fruits or vegetables, 100% fruit/vegetable juice, baked goods, and pizza, hamburgers, or sandwiches" (5).

Beverages such as juice drinks (not 100% juice), sodas, and sports drinks were part of the vending machine competitive items as well. Many schools relied heavily on pouring rights, or contracts with major companies that sell well-known beverages, for increased revenue. According to the SHPPS, 58.1% of elementary schools, 83.5% of middle or junior high schools,

and 98.3% of high schools offer the competitive beverages (5). The average intake of soft drinks per day by youth approximately doubled from 1977 to 1978 in one year, and again nearly 20 years later from 1994 to 1998. Daily consumption of soft drinks by boys increased from 5 to 13 ounces, and girls' consumption increased from 5 to 11 ounces in the same time period (1977-78, 1994-98). The proportion of young children who drank sodas increased from 34% to 58% among boys, and 36% to 63% among girls during the same time period of 1977-78 and 1994-98, respectively (6).

Aside from the problems associated with pouring rights, the issue of food being offered as a reward, for behaving well or for other reasons has been raised. When schools practiced their reward systems, it caused the classroom lessons to be undermined; children were less able to focus on the lessons. Also, children were encouraged to consume more than the recommended amounts from calorie dense foods in addition to learning that food was a reward (3). The increasing number of children with health problems related to over-consumption of these foods was a call for health professionals, school personnel, and parents to rethink their ideas about food and activity as it pertains to children (6).

Statement of the Problem

The purpose of this research was to survey parents of elementary school children in Unicoi County, TN to assess their attitudes/beliefs toward health and nutrition as well as attitudes about Unicoi County Schools' Wellness Policy.

Significance of the Problem

The prevalence of overweight and obesity in school-aged children has reached alarming proportions. When children are overweight this means that they have a body mass index (BMI) at or above the 95th percentile on CDC growth charts with a BMI between 25.0 and 29.9 (2).

According to data from the most recent National Health and Nutrition Examination Survey (NHANES 2003-2004), the prevalence of overweight in children has risen (5). Fifty percent more children had become overweight since 1991 (7). From the 1970s until the year 2000, the rising trend of overweight children ages 6 to 11 doubled. According to the Department of Health and Human Services (DHHS) the percentage of children 6 to 11 years old who were overweight (identified as being above the 95th percentile according to CDC growth charts with a BMI between 25.0 and 29.9) in 1999 was 13% (8). The prevalence of overweight in early adolescence, age 12 to 17, had increased three-fold from 1971 to 2004 (3). The NHANES survey specifically showed that prevalence of overweight has increased from 5.0% to 13.9% in children aged 2 to 5 years, from 6.5% to 18.8% in children aged 6 to 11 years, and from 5.0% to 17.4% in children aged 12 to 19 years old between 1971 and 2004 (5). Several factors were cited as contributing to the problem, such as the environment in which children were raised and social aspects such as television, mass media, and friends. Other reasons for overweight and obesity in this age group were sedentary activities, time limitations, and convenience. The lack of physical education requirements in schools also contributed greatly to weight gain (2). This is a serious problem as overweight negatively influences children's self-esteem and could contribute to poor quality of life (9).

According to Harper, the caloric intake of children increased by an average of 80 to 230 calories each day between 1989 and 1996, yet physical activity decreased. Children's eating habits changed as well when children were allowed to purchase competitive food items at school. In addition, the children's intake of competitive foods varied inversely with their intake of fruits and vegetables (1). Participation in physical activity declined as well. It was estimated that less than 10 % of children in elementary grades actively participated in physical education in 2004.

This was in stark contrast to the hours spent in front of the television, computer, or video games, where children spent an average of four hours per day (1).

As a result of the childhood obesity epidemic, many organizations wrote position statements, and lawmakers began to take notice. The attention by policy makers resulted in legislation directed toward preventing and treating obesity in children. Legislators aimed their policies toward schools, specifically addressing nutrition and/or physical activity (1). The Trust for America's Health (2006) suggested five ways to combat the obesity epidemic: 1) use preventive care; 2) make changes in food choices; 3) have better community design; 4) improve school environments regarding nutrition and physical education; and 5) promote better information and offer more support (10).

Question to be Addressed

This study sought to answer the question of how parents felt about the wellness policy and improved nutrition in Unicoi Elementary Schools.

Limitations

Limitations of this study included:

1. The number of surveys that were returned was a limitation because the assumption cannot be made that the surveys returned represented the population to whom the surveys were sent.
2. The study was confined to parents or guardians of elementary school children in Unicoi County, Tennessee.
3. Children were responsible for transporting the surveys home to their parents/legal guardians, thus the number of returned surveys may have been affected.

Assumption

1. Educational level of parents varied; therefore, interest in or ability to complete the surveys may have been affected.

Definition of Terms

Body Mass Index (BMI): A rough method of assessing nutritional status; correlates with risk of disease and death due to causes associated with obesity. $BMI = \text{body mass (kg)} / \text{stature (m}^2\text{)}$ (11).

Saturated fat: A type of fat found chiefly in foods that come from animals and certain vegetable oils that raise blood cholesterol levels and thus increase risk of atherosclerosis (11).

Atherosclerosis: Set in motion when cells lining the arteries are damaged as a result of high blood pressure, smoking, toxic substances in the environment, and other agents. Plaques develop and impede or eventually shut off blood flow (11).

Obese: Extremely fat; having a body mass index of 30 or higher (11).

Overweight: A state in which weight exceeds a standard based on height; having a BMI between 25.0 and 29.9 (12).

CHAPTER 2

LITERATURE REVIEW

For any child, having their parent(s) participate in their education is very important. Wilkinson and Schneck found teachers were constantly recruiting parents to get involved in school activities (13). A parent's attitude or perception of the child's progress at school influenced, at least to some degree, the child's performance in school (14). A parent can be influenced by his or her child's participation in school projects or by school policies. One study attempted to determine how parents were affected when involved in a health program that was also targeted towards their children (15).

Including Parents in a Nutrition and Exercise Program.

Hopper et al. found that the family unit was the main pathway for nutrition and health education to be received (15). An individual's initial attitudes and perceptions toward exercise and nutrition were developed at home. In their study, the authors combined components from earlier studies into a single program that would be "economical, effective, and easily adopted by the schools" (15). The project, 6 weeks in duration, incorporated a treatment component in the school that was effective at increasing understanding of different nutrition and fitness concepts in children. Family involvement was an important component in the study. Pamphlets that contained suggestions for performing physical activities together were sent home with the children every week. Rewards were provided for the families who completed the activities.

In a study of the effect of including parents in a school-based exercise and nutrition program for children, researchers enrolled 132 fifth and sixth grade students. Of the 132

children, 45 were randomly assigned to the school-and-home group, 43 were assigned to the school only treatment group, and 44 were randomly assigned to the control group. Forty-two parents were assigned to the school-and-home group (15).

The control group received no instruction in nutrition or physical activity. The school-and-home group and the school only group were given lessons in class about ways to begin healthy eating and physical activity. The participants in the school-and-home and school only groups were taught and participated in exercises in 40 minute sessions 3 times per week for a total of 6 weeks. The school-and-home group and school only groups were given nutrition lessons at school for 2 and one-half hours over a 6-week period. The students in these groups were in separate classrooms for the nutrition lessons, but all received the same material. During the instruction, students were taught how to talk about nutrition with their parents and how dietary changes could be incorporated (15).

Physical data were obtained from children and parents prior to the study and following the study. These included height, weight, and triceps skin fold measurements, the sit-and-reach flexibility test number of sit-ups per minute, and a timed one-mile run. The only difference in the programs for parents and children was that parents were given a step test instead of a one mile run. Interviewers recorded children's and parents' responses to a 24-hour diet recall, and a multiple choice test was administered to all subjects on knowledge of nutrition concepts (15).

A significant improvement was seen in the school-and-home and school only groups over the control group. When looking at single variables, the school-and-home group showed significantly higher scores than the control group in nutrition knowledge and flexibility from pretest to posttest. The subjects in the school only group did not show any significant difference

in nutrition knowledge. The authors concluded that “this provides some evidence that parental involvement can enhance the effects of a school based program” (15).

Parents involved in the program scored significantly higher on their posttest for sit-and-reach flexibility and number of sit ups per minute; additionally there was a significant decrease in saturated fat in their diets. The authors were unable to say that the parents’ improvements were a result of the intervention or as a result of confounding factors. The authors did conclude that there was improvement in total nutrition knowledge, while no increase in knowledge of exercise or fitness was observed (15).

Nutrition Education for Parents

According to a study by Crockett, Mullis, and Perry (16) there was evidence that programs that intervene on familial perceptions and habits relating to health behavior are more inclined to promote life-long changes. Lindsay et al. showed how vital parents were in preventing obesity while their children went through differing stages of development (17). Parents were good targets for nutrition interventions according to Crockett, Mullis, and Perry because they can positively influence their children (16). Lindsay et al. showed the value of nutrition information for researchers, legislators, and professionals, stating that they need the information to use better interventions and programs for education (17). Whenever parents can increase their understanding of nutrition and improve their attitudes and behaviors, then intervention programs primarily aimed at their children will also be of greater benefit (16). In the Lindsay et al. study, many factors were involved for parents to develop an environment at home that promoted healthy eating habits and exercise in children and teenagers. Factors included “nutrition knowledge; influence over food selection; meal structure; home eating

patterns; modeling of healthy eating practices; levels of physical activity; and modeling of sedentary habits” (17).

Golan and Crow stated that the home is the first place where attention needs to be given to obesity prevention. Parents influenced other family members by modeling and encouraging others to try new foods. Most all programs targeted at obesity prevention in children have shown that two generation programs were needed for a child’s outcome to be changed. Interventions for the whole family operated on the idea that support of parents, the way families functioned, and what the home environment was like determined the total outcome of obesity prevention (18).

Golan and Crow sought to report the long-term effects of a family centered approach to obesity prevention where parents were active in group sessions (parent-only group: POG) compared to a person-based intervention where children were the only participants in group sessions and family was not targeted (children-only group: COG). Sixty overweight/obese children were recruited initially for the study and were followed after a 7-year period. Children were assigned to the POG (where parents were the ones targeted for change) or to the COG where children were specifically targeted for change. In the POG, parents were the main persons who participated in group discussion sessions and attended 14 sessions where clinical dietitians provided services. In the COG, every child was given a diet prescription of 1500 calories per day and each session was delivered by a clinical dietitian (18).

After increments of 1, 2, and 7 years, weight and height of children were measured. The children in the POG showed a significantly greater reduction in overweight as compared to the ones who were in the COG ($p < 0.03$). By the end of the study, 35% of children in the POG were nonobese and 14% of children in the COG were nonobese. At each year’s follow-up,

significant changes were seen in obesity status. At the 1-year follow-up, children in the POG were significantly ($p<0.05$) less obese than children in the COG. At the 2-year follow-up, overweight was reduced by 15% in children in the POG, whereas an increase in overweight of 2.9% was seen in children involved in the COG ($p<0.01$). Finally, at the 7-year follow-up, there was significant weight loss seen in both the POG and COG. Overweight was reduced by 29% in the POG and 20.2% in the COG, respectively (18).

Golan and Crow concluded that targeting families (parents and children) in obesity prevention caused greater changes in weight than programs targeted at parents alone. The authors stated that parents should be the targets for weight loss programs because their involvement was critical to a healthy home environment where healthy eating practices and improvements in children's weight could be seen over a period of time. They concluded that programs should be health centered instead of being focused on weight alone to bring about the most change (18).

According to Lindsay et al, most programs developed to prevent overweight and obesity that included parents proved to be successful (17). The studies presented show that getting parents involved through their child's intervention program is possible but may be hard to do. Crockett, Mullis, and Perry concluded that there needs to be more evaluation research about what motivates parents to participate and how the intervention programs impact them (16).

Parent/Child Views

The United States is not the only country to experience childhood overweight and obesity. According to Hesketh et al. (19), nearly 25% of children in Australia were in the overweight or obese categories. Most studies involving programs and interventions have not researched participants' perceptions, and interventions were being targeted at both parents and

children. Hesketh and colleagues sought to study the perceptions that children and parents have about barriers to obesity-prevention programs and proper ways to implement these programs. The study was designed to include families in a wide range of socioeconomic status in Victoria, Australia. Children in the second and fifth grades were selected to represent the lower and upper elementary grades. All children in these grades participated, but in the government schools only one class per grade was chosen because of the large number of students (19).

The intervention for children included focus groups, selecting photographs of healthy and unhealthy food items in order of their nutritive value, and arranging photographs of active and sedentary exercises. Additionally, the children were shown and asked to discuss a picture of an overweight teen female playing basketball. Parents at two schools were selected because they were involved in “parent groups, a Parent’s Association and a weekly parent information and discussion session open to all parents”. Researchers found that it was difficult to involve parents who were in lower socioeconomic groups and ethnically diverse. Parents in these categories were much less involved in school activities. Focus groups were held for the parents as well; the researchers intended for the discussion to be exploratory, and themes emerged that were representative of the main points discussed by parents (19).

One hundred nineteen children and 17 parents were involved in the study. Several children had a difficult time distinguishing that foods were unhealthy due to preparation style yet were made from healthy items. For example, one child stated that French fries were good for him/her because they were made from a healthy vegetable, the potato. However, French fries were also unhealthy because they contained greater amounts of sodium and fat. Many different opinions arose as to which exercises were classified as sedentary. One child said that “some computer programmes teach you things so that’s healthy” (19).

Parents thought that their children knew what foods were considered healthy, but they also speculated that children did not really understand the ramifications of choosing unhealthy items. Parents thought that the messages on unhealthy eating were not as deeply ingrained in the children as other messages such as effects of smoking. They also stated they needed more information on how to teach their children to eat well because they felt inadequate discussing which snack foods were considered healthy versus unhealthy (19). In addition, parents expressed they wanted to have more practical ways to influence their children to choose healthy foods, exercise more, and “resist the demands of their children for unhealthy foods”. Another theme that emerged was while parents knew about good lifestyle choices, their actual practices contradicted what was known to be healthy. Adults were very aware of trying not to be too strict about what food their children ate, but differences were seen in how often they thought the children should be eating restricted items (19).

The children demonstrated that they knew what physical activities were available in the community and at school such as bicycle trails, parks, and the ocean, as well as stairs and sports equipment at school. Parents were also aware that these public places encouraged children to exercise. However, there were some barriers to change such as “car fumes, pollution, roads which were unsafe for child cyclists...lack of playground equipment”, etc. Children in the lower income status families said that it was harder to participate in after-school programs or to do exercise in general because of lack of money. Other barriers included frequent consumption of and access to fast food and unhealthy school menu choices (19). Children believed that any activity related to school was healthy, while parents confirmed this idea. Children thought that because schools offered unhealthy food items that they were not as bad as expected. Parents believed that children could eat unhealthy foods at school because they were only eating one

meal there and the poor choices could be counteracted if the rest of the meals eaten were healthier. They wanted the schools to have a part in being examples for the children for a balanced lifestyle, but parents recognized that they were the ones who had the biggest impact on their family. To prevent obesity, the parents perceived that they had a large role to play, and that both they and school teachers were role models for healthy behavior, especially because the children thought anything school-related was inherently good (19).

The researchers concluded that parents definitely influence their children in every way, prevention programs that target both parents and children are the most effective, and schools have a great opportunity to provide these programs. The authors stated that health and nutrition messages must be clear and consistent in order for children to adopt sound advice (19).

Parent Perceptions

Parents' opinions about a school's role in preventing overweight in students may differ from school administrators' opinions. A study was conducted by the authors (20) to evaluate parents' opinions about elementary schools' roles in preventing childhood overweight. The authors asked six specific questions concerning elementary schools: 1) Did parents support health education lessons that addressed topics on eating healthy? 2) Did parents support health lessons that addressed topics about exercise? 3) Did parents support food services that promoted prevention of overweight? 4) Did parents support exercise classes aimed at overweight prevention? 5) Did parents support policies that helped reduce the prevalence of overweight? 6) What character traits did parents possess that supported schools that tried to help prevent overweight versus parents who did not support schools? (20).

The authors found that over 95% of parents supported health education classes every week for students. One hundred percent of parents thought that physical education classes

should be offered every week. Parents provided opinions about how nutrition messages should be advertised, which consisted of strategically placing foods in areas where students would be more likely to see them; highlight healthy food choices on menus; and provide students the opportunity for taste tests (20).

There were three main components in the survey: 1) health education-healthy eating; 2) health education-physical activity; and 3) school food service. Parents ranked several items from the health education-healthy eating category as very important:

- 69.8% of parents surveyed stated teaching the benefits of healthy eating was very important.
- 66.3% of parents wanted children to be taught how to eat a healthy breakfast.
- 59.8% felt it was very important to teach students to accept different body sizes.
- 59.6% wanted children to be taught to eat more fruits and vegetables.
- 56.1% of parents felt it was very important for children to be taught how to choose healthy choices from each food group.

The second component consisted of the health education-physical activity category where parents felt it was very important to teach:

- Benefits of exercise (57.6%)
- The role of exercise in maintaining a healthy weight (54.7%)
- Ways to integrate more physical activity (54.4%)

The third component was school food service. Parents responded that it was very important that:

- Schools should not use food as a reward or punishment (72.6%).
- Students needed to have adequate amounts of time to eat meals at school (72.4%).
- School fundraising events should not include the sale of candy, chips, or sodas (64.1%).

- School meals needed a variety of foods (63.1%).
- Schools should offer choices of low fat or skim milk every day (52.9%) (20).

Fifty-one percent of parents in this study thought students should have access to healthy vending machine choices. Nearly 74% “favored or strongly favored restricting availability of unhealthy foods in machines”. The authors implicated that the sample of parents surveyed supported the elementary schools’ role in prevention of childhood overweight. In addition, they determined that parents would be likely to support the schools’ actions to help reduce the incidence of overweight (20).

Murphy and Polivka (21) reported that over nine million children older than 6 years of age were categorized as being obese. The authors studied parental perceptions of how schools should play a part in addressing the childhood obesity epidemic. Murphy and Polivka wanted to understand parents’ opinions about collecting BMI in schools. Authors targeted parents of children who were between 5 and 12 years old. Parents completed a 44-question survey, which revealed that approximately 94% of parents were familiar with the term BMI. Over 61% of parents thought that BMI would be helpful in providing information about their child’s weight. Approximately 80% of participants either strongly agreed or agreed that “BMI is appropriate for schools to use in weight screening” (21).

Parents stated that several factors contributed to obesity including inactivity, unhealthy eating practices, lack of parent control over children’s eating habits, and overeating. Overall, parents stated that school nurses should send letters to parents about their child’s BMI. Over 21% of parents decided that schools did not need to address the obesity problems at all. Parents once again supported classes on nutrition and physical education and eliminating vending machines (21).

Effectiveness of School Programs

Veugelers and Fitzgerald (9) studied how effective school programs were in helping prevent overweight and obesity, providing better diet quality, and increasing exercise in students. Their study, the 2003 Children's Lifestyle and School Performance Study (CLASS), was conducted for fifth grade students, their parents, and school principals. Nearly 97% of schools in a province of Nova Scotia participated. Schools completed a survey and distributed a separate questionnaire to parents of children in all fifth grade classes (9).

The authors compared overweight, diet, and exercise in schools that either had a nutrition program or did not. Seventy percent (exactly 70.3%) of fifth grade students did not attend a school with a nutrition program, while 26.0% attended schools including a nutrition program, and 2.6% of students attended a school that had a nutrition program coordinating with CDC nutritional guidelines. There was a minor error in percentages represented by the authors. The schools having a coordinated CDC program had fewer students who were overweight and/or obese. These students also had better scores for diet quality and were more physically active (9). Veugelers and Fitzgerald concluded that school-based nutrition and exercise programs would help: 1) enhance learning and health at critical developmental periods; 2) decrease the risk of chronic disease in children's adult years; and 3) help lay a foundation for healthy lifestyle practices early on (9).

Summary

In summary, the ADA has joined forces with schools to help them become agents for change in child nutrition by promoting school wellness policies. New programs developed in schools that target health promotion in young children and teenagers can focus on teaching them how to adopt new eating and exercise behaviors (3).

Health professionals, school personnel, and parents all play vital roles in children's health (6). Parent participation in childhood education is vital to the success of any student, and children may influence their parents as well through school based learning activities (12). Several studies have been conducted that sought to determine the effects of involving parents in child nutrition and exercise programs. One such study by Hopper et al. found that parents who were involved in their child's nutrition and exercise project scored significantly higher on a number of physical exercise tests and showed improvement in their total nutrition knowledge (15).

Crockett, Mullis, and Perry stated that when parents can increase their understanding of nutrition and improve their attitudes and behaviors, intervention programs aimed at their children will also be of greater benefit. Children's programs do benefit the parents in some way, but there has been little research to support this idea. Getting parents involved through their child's intervention program is possible but may be difficult to accomplish. More evaluation research was needed to study what motivates parents to participate and how the intervention programs impact them (16).

Golan and Crow found that targeting families instead of children alone in weight reduction programs was more successful. At each year of follow up in Golan and Crow's study, significant changes were seen in children's weight in both the POG and the COG, with children involved in the POG having greater weight reductions showing that having parents make changes intended for the whole family was more effective than holding children solely responsible for their weight and eating choices (18).

Murnan et al. found that parents were willing to support elementary schools in preventing childhood overweight. A sample of parents surveyed was very supportive of having health and

physical education classes for students each week. The majority of parents supported keeping vending machines in the schools to raise money as long as the food choices were healthy.

Parents felt it was very important for schools to include ways of teaching students how to choose healthy foods, eat more fruits and vegetables, and integrate physical activity (20).

Murphy and Polivka noted in their study that parents were supportive of receiving BMI reports on their children through a school nurse. Parents in this study were also supportive of schools that would offer nutrition and physical education classes and eliminate vending machines (21).

Veugelers and Fitzgerald studied the effectiveness of school programs in helping prevent overweight and obesity and found that schools having a coordinated program with the CDC had fewer overweight and obese students. The same students had better scores for diet quality and were more physically active compared to children in schools without a coordinated nutrition program (9).

CHAPTER 3

DESIGN AND METHODOLOGY

At the request of the Director of School Nutrition Programs in Unicoi County an assessment tool was developed and implemented. The purpose of the study was to assess parental attitudes toward the implementation of a new wellness policy in Unicoi County Schools. Unicoi County is a small rural county located in northeast Tennessee in the southern Appalachian mountains.

Subjects

Unicoi County has four elementary schools, with two schools representing the rural portion of the county (Temple Hill Elementary and Unicoi Elementary), and two schools representing the town of Erwin portion of the county (Rock Creek Elementary and Love Chapel Elementary). The intervention was conducted with parents of children attending these elementary schools. Subjects were randomly selected in all schools except Temple Hill where all parents were used. At Unicoi Elementary, 50% of parents were selected; at Rock Creek Elementary, 50% of parents were selected; and at Love Chapel Elementary 66.7% of parents were selected. The assessment consisted of having parents complete and return a short survey via an addressed and stamped envelope. Eight hundred ten surveys, informed consent documents, and letters of introduction were prepared for distribution.

Instrument

Included on the parent survey were questions asking how participants felt about general health and wellness, as well as the role of schools in their children's nutritional wellbeing

(Appendix A). Two questions invited the participants to record subjective information about what they thought should be included or deleted from school menus and how they felt about the focus on healthy foods in schools. One survey (either English or Spanish) was sent to each home via the elementary student hand carrying the survey (Appendix A & B).

Data Collection Procedure

To recruit parents for the intervention, elementary school classrooms were randomly chosen to receive surveys for the participants. Each packet contained an informed consent letter, a survey, and a stamped envelope addressed to the principle investigator. Teachers were asked to instruct the students to take the packet home and have the participants complete the instrument and return by mail to the principle investigator. The survey consisted of eight questions, and participants were allowed 2 weeks to complete and return the survey.

Data Analysis

Data from the surveys were evaluated using SPSS software; descriptive statistics were used to make judgments on how the parents responded to the first six questions. Answers to the last two subjective questions were listed but not analyzed due to high rate of variation in answers.

CHAPTER 4

RESULTS

The Sample

Eight hundred ten surveys were sent out, and a total of 184 parents participated in the study by returning surveys resulting in a 23% response rate. A deadline was given for participants to respond in a timely manner; however, any surveys received after the established deadline were also analyzed. The criterion for being involved in the study was being a parent or guardian of an elementary school-aged child from the four elementary schools in Unicoi County. No information was gathered about participant income, race, or education level.

Data Analysis

The survey included six yes/no questions and two short answer questions for participant comments or reactions. Data were analyzed using the SPSS software, and descriptive statistics and frequencies were obtained (Table 1).

Question	Yes (%)	No (%)
1. Do you think nutrition education is important in schools?	99.5	0.5
3. Do you feel your child's health is important?	100.0	0.0
4. Do you think it's important for schools to play a role in improving your child's health?	96.2	2.7
5. Do you know about the change in what is allowed in vending machines, at school parties, and fundraising activities?	88.6	11.4
6. Do you know that Unicoi County Schools has a new Wellness Policy?	73.9	25.5

Nutrition Education

Participants were asked to respond to regarding their belief that nutrition education was important in schools. Only one participant answered negatively (Appendix C, Table 2).

Healthy Foods

Participants were asked to respond to the importance of offering healthy foods in schools on a Likert scale from extremely important to extremely unimportant. Exactly 61.4% felt offering healthy foods was extremely important and over 34.3% felt it was important, resulting in a total of 95.7% of participants responding positively (Appendix C, Table 3).

Child's Health

This question asked if participants thought their child's health was important and shows that participants who responded (100% of the sample) had positive feelings about their child's health (Appendix C, Table 4).

Schools' Role

Participants were asked whether they thought the schools should play a role in improving the health of their child. Over 97% of participants answered positively to schools having a role in improving children's health (Appendix C, Table 5).

Unicoi County School System Changes

This question asked if participants were aware of changes in policy concerning what foods were allowed in vending machines, at school parties, and in fundraising activities. The majority of parents (88.6%) stated they were aware of changes, while 11.4% indicated they were not aware of the changes (Appendix C).

Wellness Policy

The last yes/no question asked if participants knew about the new Unicoi County Wellness Policy. Seventy-four percent were aware of the new Wellness Policy, while over 25% did not know about it.

Additional Comments

Participants were asked to share their feelings about the focus on healthy foods in schools. Because this question was open-ended and answers varied widely, data analysis was not completed. In general, participants commented on the following:

- Making healthy foods look more appealing.
- More involvement from parents.
- Parents need nutrition education.
- Policy goes overboard in restricting party foods.
- Vending machines should be allowed back in schools with healthy choices.
- Seminars or handouts with healthy recipe tips.
- Participants noted that the overweight children are the focus, and they believe that being healthy should remain at the center.
- Pleased that schools were taking an interest in health and nutrition.

A major theme from participant comments was that they were very pleased schools were taking an interest in nutrition education, but they also believed schools were a secondary source for nutrition education. Participants commented that the home was the primary place that their children should learn about healthy eating and exercise. A complete list of responses to this question can be found in Appendix D.

School Menus

Finally, participants were asked to list any food items they thought should be added to or deleted from the school menus. Data analysis was not completed for this question as well due to a wide variation in answers. Suggestions included:

- Adding more sandwiches and soups, fresh fruits and vegetables; finger foods such as carrot sticks and celery with peanut butter; vegetarian and organic choices; and more foods made from scratch.
- Menus needed more color.
- Having fewer servings of starchy vegetables per meal.
- Offering two entrée choices.
- Less fried/fatty meats by substituting them with baked or grilled non-breaded meats.

The major trend seen with suggestions on school menus was that parents wanted their children to be offered more fruits and vegetables, specifically vegetables that were not starchy. A complete list of responses to this question can be found in Appendix E.

CHAPTER 5

DISCUSSION, CONCLUSIONS, and RECOMMENDATIONS

Discussion

Generally parents are motivated to see their children have a healthy lifestyle. This motivation was seen in the subjects in this study who responded to the surveys because they took interest in what their children were doing. In their research, Hesketh et al. found that parents wanted more information on how to teach their children what foods were healthy and how to have a healthy lifestyle (17). Similarly, parents participating in this project were seeking more information to become updated on proper nutrition.

Hesketh et al. also found that parents were searching for ways to incorporate healthier foods into their child's life at home and at school. While they believed school has a proper place in educating their children, participants in this study stated that healthy lifestyles begin at home, reiterating the findings from Hesketh et al. (17).

When parents can increase their understanding of nutrition and improve their attitudes and behaviors, intervention programs primarily aimed at their children will also be of greater benefit (12). Other authors found that over 95% of parents supported health education classes every week for students, and 100% of parents supported offering physical education classes each week (18). Parents of the Unicoi County elementary school children also supported healthy vending machine options much like the parents in the Golan and Crow study. Even though this study was conducted in a rural southern Appalachian county where many families are low-income, this study demonstrated that participants embrace nutrition changes in schools. The vast majority of

participants were supportive of schools being involved in nutrition education as evidenced by over 97% of participants answering positively to survey questions on the topic.

Over 88% of participants were aware that changes were made in foods that were allowed in vending machines, at school parties, and in fundraising activities. A total of 95.7% of participants responded that offering healthy foods was either extremely important or important. The results also confirm that participants who responded to the survey felt their child's health was important.

As a service to the Unicoi County School System, the principle investigator provided assistance to the Supervisor of Nutrition Services, at her request, to evaluate menus to meet criteria for the Silver Award from the USDA. For several months early in the 2006-2007 school year, menus were evaluated to see if they were nutritionally balanced and provided adequate amounts of fruits, vegetables, whole grains, vitamins, and minerals (such as Vitamin C and iron). To meet criteria for the USDA Silver Award, menus had to include specific numbers of servings of orange and dark green fruits and vegetables, meats and meat substitutes, whole grains, and low fat milk each day or week. Menus were reviewed by the principle investigator, and recommendations were provided to the director who in turn could implement the recommendations in her effort to meet the award criteria.

In addition, nutrition education lessons were developed and implemented for all fourth grade classrooms at each elementary school in Unicoi County. Students were taught the nutrition lesson in a 30-minute session that included games and a tasting party of tropical fresh fruit. Each lesson focused on fruits, vegetables, and dairy foods as well as the importance of exercise. Overall, students were very receptive to the lessons and participated well in group discussion and games. No statistical data were collected for this service. This service was

designed to augment the research study and to enhance the school system's implementation of the Wellness Policy. It was not within the scope of the project to conduct and analyze an intervention.

Conclusions

Out of 810 surveys, 184 were returned resulting in a response rate of 23%. The vast majority (over 95%) of participants were supportive of the changes brought about by the new School Wellness Policy. The assessment provided meaningful data and laid groundwork for future nutrition education programs.

Participants stated they wanted to be involved in helping their children make better food choices. Participants were willing to make changes in their diet behavior at home. They gave ideas such as including recipe tips in newsletters or interesting cooking ideas their children would enjoy to make and eat. Nutrition education was needed according to those who responded for all parents. While participants felt schools played a role in aiding their children's nutrition, they realized they were the ones who made the most impact in their children having a healthy lifestyle. The participants who responded seemed aware of and more interested in healthy eating practices. Perhaps more research is needed to investigate the demographics of the participants to find out education level, race, and income.

Suggestions were made by the respondents as to what they thought should be included or deleted from school menus. Many were adamant that children needed more fresh fruits and vegetables and were aware of the imbalance in meals. Participants knew the importance of having meals include appropriate portions from each food group. Participants showed they were forward-thinking in nutrition concepts and recommendations by suggesting new foods for

children to try and sharing their opinions about the role schools have in nutrition education and promotion.

Recommendations

From participant responses it seems logical that one appropriate step as follow-up would be to conduct nutrition education for parents and teachers. Education could be conducted during PTA meetings or after school once a month. Incorporating handouts of recipes and tips in a newsletter format could also be accomplished by nutrition professionals to participants. It would be important for a Registered Dietitian to periodically re-evaluate the school menus and make revisions as necessary. Investigation about the demographics of the participants such as race, socioeconomic status, and education level would be helpful to find out underlying reasons why some participants were more interested in responding. Incentives should be offered for participants to reply to further studies conducted such as coupons or offers for families to see a free movie.

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APPENDICES

APPENDIX A

Parent Survey

Thank you for volunteering to fill out this survey. Please answer questions 1-6 by placing a check mark next to your answer. Write in answers for questions 7 & 8.

1. Do you think nutrition education is important in schools? Y N
2. How do you feel about offering healthy foods in schools? Is it:
 extremely important
 important
 somewhat important
 somewhat unimportant
 not important
 extremely unimportant
3. Do you feel your child's health is important? Y N
4. Do you think it is important for the schools to play a role in improving your child's health? Y N
5. Do you know about the change in what is allowed in vending machines, at school parties, and fundraising activities? Y N
6. Do you know that Unicoi County Schools has a new Wellness Policy? Y N
7. Please provide any additional comments on how you feel about the focus on healthy foods in schools.
8. Please list any foods you think should be added to or deleted from the school menus.

Thank you for taking this survey. If you want more information or a copy of the Wellness Policy, you may contact the Unicoi County Schools office.

APPENDIX B

Encuesta Paterna

Gracias por ofrecerse a llenar esta encuesta. Por favor responda las preguntas 1 a 6 colocando una marca junto a su respuesta. Escriba sus respuestas para las preguntas 7 y 8.

1. ¿Piensa usted que la educación acerca de la nutrición es importante en escuelas?
 Sí No

2. Piensa usted que ofrecer alimentos saludables en las escuelas es:
 muy importante
 importante
 algo importante
 poco importante
 no importante
 muy poco importante

3. ¿Piensa usted que la salud de su niño es importante?
 Sí No

4. ¿Usted piensa que es importante que las escuelas ejerzan un papel importante en mejorar la salud de su niño?
 Sí No

5. ¿Tiene conocimiento acerca de los cambios en los alimentos permitidos en las maquinas de ventas automáticas, fiestas escolares, y las actividades de recaudación de fondos en el Sistema Escolar del Condado de Unicoi?
 Sí No

6. ¿Sabe usted que las Escuelas del Condado de Unicoi tienen una nueva Política sobre Alimentos Saludables?
 Sí No

7. Por favor, indique cualquier comentario adicional acerca de como se siente usted acerca del enfoque en alimentos saludables en las escuelas.

8. Por favor, enumere cualquier alimento que usted piensa debe ser añadido o eliminado de los menús de las escuelas.

Gracias por llenar esta encuesta. Si usted desea mayor información o una copia de las Políticas de Salud, usted puede contactar a la oficina de las Escuelas del Condado de Unicoi.

APPENDIX C

Data Analysis

Table 2. Do You Think Nutrition Education is Important in Schools?		
	Frequency	Percent
Yes	183	99.5
No	1	0.5

Table 3. How Do You Feel About Offering Healthy Foods in Schools?		
	Frequency	Percent
Extremely Important	113	61.4
Important	63	34.3
Somewhat Important	7	3.8
Somewhat Unimportant	0	0
Not Important	1	0.5
Extremely Unimportant	0	0

Table 4. Do You Feel Your Child's Health is Important?		
	Frequency	Percent
Yes	100.0	100.0
No	0.0	0.0

Table 5. Do You Know About the Change in What is Allowed in Vending Machines, at School Parties, and Fundraising Activities?		
	Frequency	Percent
Yes	163	88.6
No	21	11.4

Table 6. Do You Know that Unicoi County Schools Has a New Wellness Policy?		
	Frequency	Percent
Yes	136	74.3
No	47	25.7

APPENDIX D

The Focus on Healthy Foods in Schools: Parent Comments

-In some ways they go overboard. Some schools tell the parents what they can and cannot send with their child for a snack.

-I agree with changes in vending machines since it is probably true that kids get enough unhealthy snacks on the outside. Since schools provide two out of three meals per day the importance of getting the required nutrition for any child is a must.

-Healthy foods should be more appealing to children. They don't like steaks and gravy, they like foods to be separate.

-It's extremely important for children to be given nutritious foods on daily basis. It is ridiculous for schools to police the foods parents send as well as stringent restrictions on parties for elementary students. The social ramifications of no parties may far out way any nutritious benefit it may have. It is an oxymoron for schools to say students cannot have junk food but are served corn dogs or pizza for lunch. Children need variety of fresh fruits & veggies, and if school wants to participate they will have to change menu.

-It is good to focus on healthy foods but not all parents teach children to try new foods. I have concerns about food allergies due to foods being mixed (such as spaghetti). My child likes foods separate.

-It is wonderful schools are providing healthier food! I wish bottled water was included on trays. Milks are the only drinks to choose from and water is an extra 50 cents.

-I feel it is very important to promote life long health and well being.

-It is important to offer/introduce healthy foods to young children. I have concerns that children aren't getting enough chances to try these foods by serving themselves. All grades serve themselves from the line (is this sanitary??) and children don't always take enough food items.

-The school system has gone to an extreme with the Wellness Policy! They have eliminated the occasional treat and think it is the 2 or 3 cupcakes a year at school that are making our children obese! I don't mind eliminating the soda machines, but saying no treats/rewards that involve food is a bit much. Our children are not getting fat at school—its home and inactivity in their daily lives which is a parent problem.

-It is important for schools to try to promote healthy eating but is it really worth it when most of the parents probably allow their kids to eat unhealthy at home? Many parents don't follow through with the healthy menus at home.

-Schools should promote healthy foods. I am very happy that the drink machines and snack machines were removed from our schools.

-It is important but I have high school age children who are more than capable of making their own decisions and I feel the vending machine policy is a little silly.

-Parent education should also come into play. Schools can only do so much with the students while they are here. If parents allow their children to sit for hours playing video games or watching TV, the school's wellness policy is only a stop-gap measure.

-I completely agree with all the changes. That is why I was shocked to see the children selling cookie dough.

-Good but its better that a child eat than eat healthy; if they don't like it they won't eat it.

-Healthy foods for students are a wonderful idea, as with any program it can be taken too far. I think children in the elementary school should still be able to celebrate their birthdays with a treat (store bought) for everyone.

-The system should be a little more flexible on some things, at the choice of each school's staff and parents.

-Important!

-Healthy food for kids is a very good thing but parents should be educated some way in order to better see the needs of children at home also. If a parent won't eat healthy a child won't. Educate parents as well as children!

-Stay focused on food and not overweight children. Children should not be focused on, may lower self-esteem.

-I think that teaching kids good eating habits starts at home. Parents pack the lunches not kids. I think by cutting out all junk food at parties and never having anything sweet is crazy. The 2 parties they have per year will not make them fat. Going home and sitting in front of the TV and eating chips will.

-It would be easier to send healthy homemade foods for parties, than prepackaged (which is normally junk).

-I am impressed with Unicoi County's strive for better health. It is important to focus on healthy foods as a part of a healthy lifestyle. The removal of vending items and not allowing 'typical' party snacks is extreme, however. School is a partner with me in educating my child and encouraging him/her to make healthy choices. Allowing desirable snacks during the brief before/after school time is not harmful in my opinion. I wonder if this is more of a control issue than a genuine concern for the health of our students.

-Healthier food options are a great idea.

-It is important but I feel that they are going a little too far in their efforts. They need to focus on other things as well.

-It is a wonderful change and I am very encouraged by schools taking responsibility for our children's health.

-School lunches are too starchy and high in fat. Children should have at least 45 minutes for lunch. In our school students barely get 15 minutes to consume their lunch.

-Younger children shouldn't necessarily be able to choose their foods. Desserts should be withheld until the child adequately consumes his/her food.

-If the schools introduce healthy snacks in a fun and creative way they (children) will be more willing to eat them.

-Young children are often picky eaters & don't like much of the food served at school. It would be great if they had a choice (tacos or chicken) because if my children don't like what's offered they won't eat. If they don't eat, they get tired, irritable, etc. and may be distracted from their studies.

-The school system has changed some of the things that are offered for lunches and the kids do not seem to like it. School lunches that were offered in the past were fine and the kids actually ate. Now my kids don't like what they get and are twice as hungry when they get home at 3 pm.

-School should supplement what is taught at home. I know there are some parents who do not follow a healthy plan at home. This generation is being raised by a generation that has been exposed to all the fast food choices. I would like to see the school offer seminars or send home handouts on good nutrition and tips for parents to prepare fun, healthy meals at home. A lot of parents may lack knowledge in what is healthy and what is not healthy according to the food pyramid.

-I think nutrition should be taught at home first.

-The parents need to be more involved at home on focusing on more healthy foods. Parents need educated on these needs.

-Parties should be an exception.

-I agree that healthier choices should be available, however, the Unicoi County policy is too stringent. Children should be allowed to have more parties/rewards.

-I am very pleased that vending machines have been taken out of the schools.

-A variety of healthy foods should be offered because sometimes a child will try something new that their friends are trying.

-Junk food and colas are too high in intake in our schools. Some parents do not purchase certain items in homes and have no control over their intake in school.

-I approve of healthier snacks and drinks in the schools, but I think we should allow vending machines back with the healthy snacks (yogurt raisins, granola bars, baked chips) and drinks (Gatorade, juice, flavored water). These items should be available and at the same time healthy.

-I am glad schools are serving healthy foods.

-I think it is good to have the schools serving healthy foods, especially since children don't always eat healthy foods at home. But if children don't like the food being served, they will not eat it. So is it better for them to eat less, or will they just bring unhealthy foods that they will eat from home?

-I agree with the new policy although I think if a child has a birthday they should be able to celebrate it on that day instead of waiting for one day for all birthdays that month to be celebrated.

-Snacks brought to school need to be healthy. Lunch and parties healthy also. Healthy adults usually start out as healthy kids. Start young and let good food be their only option. Exercise, keep gym in school (two times weekly). The wellness program is very well needed.

-I am a single parent and sometimes it is hard to fix a healthy supper every night of the week. So I think its very helpful for the school to participate in teaching my son healthy eating habits.

-Some focus more on what the children should eat than the environment. They definitely need more time to eat and not be rushed. Also, they need to not be yelled at while trying to eat.

-I think that the schools have made a change for the better within the last year.

-I think the school system is doing a wonderful job, however I believe the school sometimes go around the parent's wishes and take over that aspect of the parent's job (i.e. deciding what a child should eat at lunch during school).

-I think its extremely important in school and at home.

-I am glad that Unicoi Schools have changed to a wellness policy. I believe a lot of the teachers have been teaching our children the importance of good nutrition for a while now. Since everyone has come together on the subject just may make new eating habits with the help of the parents at home for our generations to come.

-I wish that meals were healthier. There are too many carbs. I don't think the combinations of foods are good. The snacks aren't the only thing that needs to be changed.

-I think that it is monumentally important for school AND parents to have a role in promoting healthy behaviors and habits for the children's wellbeing as well as to help end the problem of obesity in America.

-If we start now and show better, healthier choices of food or show more physical activity we will have healthier children.

-I feel that kindergarten and first grade students should have all items of a school lunch put on their tray. They should not be able to choose what they want. I think they would be more likely to try new foods if everything was placed on their tray.

-I believe it is a little strict.

-I know it is expensive and difficult to serve healthy food and also serve food the children will eat. There must be a way.

-I just feel nutrition is very important in all fields of education.

-They should NOT provide pizza, or French fries if they won't allow a simple cupcake to celebrate a birthday!

-I am all for healthy foods at school, but I think kids should be allowed to have treats/sweets for their parties.

-I have three children in school and two out of three didn't eat enough at school. It was provided to them but they do not eat it due to different reasons. One is too much play time at lunch and too much talking instead of eating. And both of the two have been sicker kids that I think they would have if they would have eaten better. I as a parent am not there to supervise.

-Although I believe our children should be eating healthy foods, I have seen a focus on "not being fat" a major issue. Children have enough about weight from other sources and school agenda should not be another.

-Despite all the above changes mentioned, the menus have continued to be full of fats, carbs and sugar. The school system should use more funding to purchase better, fresher foods.

-I feel the focus should mainly apply to the foods served by the school. Most items served are highly processed foods – poptarts, corn dogs, chicken nuggets, pizza...Most everything is a reheat and serve item. That should improve most. The focus should not be on the occasional holiday or class party and there should be healthy fruit and veggies allowed as snacks often. The classroom parties should have limits. I fully agree there. As the policy is now, and how our school has interpreted it, is extreme. We should be able to supply unlimited fruits, 100% juices,

vegetables and healthier options (pretzels, crackers) that type and not be forced to do individual servings. That is so cost prohibitive it is hard to do.

-There should be healthy foods offered to our children during school hours but I also think that if I say my child can have chocolate then he can. It is not the school's place to parent my child.

-Recipes would be a good idea to give out to the students maybe once or twice a month. The recipes should be easy and healthy. For instance, a muffin recipe or how to make an individual fruit salad. We do these things at home. They're fun!

-Although healthy foods are important, we need to remember that good food and occasional treats are only given at school for some students. Some sweets such as brownies, etc, are not going to hurt kids.

-I appreciate the fact that the school has turned to healthy foods but I do not think all sweets should be cut out especially during holiday parties.

-When the policy was first announced, the lunch menu did not seem to change much. Lately, however, I've noticed more fruits and vegetables on the menu. I think the new focus is great, but we still need to offer additional exercise at the middle and high school.

-I think sweets should be allowed for birthdays, (maybe a cupcake or cookie) like in the past when parents brought treats on special days.

-The changes are great. Though I do believe that there should be some healthy alternatives in the vending machines available.

-It is nice to see someone is trying to improve this. I am a very obese person and we were just offered one choice for lunch when I was in school.

-We need class time to share what size or serving size of each food is.

-This is an extremely important issue to me. I am a nursing student at ETSU. I am happy about the new interest in school nutrition and I love that Unicoi County offers free breakfasts for all public school students.

-I don't want my kids to be overweight.

-I would like to see the school lunches healthier.

-I feel the schools are on the right track to eating healthier, especially since they took all the junk foods out of the vending machines.

-At lunch children should be served a full tray by the cafeteria workers so they will get the full lunch for which they paid and so germs are not shared by everyone touching the serving utensils.

Also, I like the new wellness policy, but I think exceptions should be made for the two school parties a year. I'm glad no homemade foods are sent in, though.

-The focus is somewhat extreme.

-I am very pleased about the efforts being made to improve the nutrition for our children. Thank you for all your help in doing this.

-Vending machines are not fair for kids who don't have money. I think they should take out the vending machines because its not fair to all kids who might not have money for them. I don't like the new rules on parties. Kids should get to have fun. I think its more important for kids to eat than go hungry because they don't like the food. The food they get at school is not going to hurt them.

-I think the school should come up with some kind of snacks for the machines that are healthy so the kids have a snack and help the school.

-With obesity becoming almost commonplace it is vital that good nutrition and good habits are implemented early. With good choices, children will have a better chance of learning good nutrition habits that will last a lifetime.

-I'm very happy to see the change. Kids need healthy foods to fuel their growing bodies and minds.

-I think it is a good idea, the children just have what we put before them and it should be healthy.

-Offering more healthy foods in our schools is a very positive thing. I am glad that the schools are taking more interest.

-I'm glad the school is concerned for my kids' health, but the snack and drink machine also help pay for supplies for other things. I'm concerned for who or what classes it might impact. I think if my kid doesn't need a snack that's fine, but I should be able to send food on birthdays or holidays.

-Informing children about eating healthy is a good idea. Incorporating fruit and veggies into their daily routine (snack time) is important.

-The school lunches are full of carbs. I would like to see more choices for lunch-salads, baked chicken, baked fish, sandwiches, soups, etc. and more fresh fruit without syrup.

-I really don't think its necessary to limit their parties. I certainly do understand that some children do have a problem with their eating habits but I don't feel that my children should be penalized.

-I feel you should still be allowed to buy healthy snacks from a machine. Some children go a long time with no food after lunch.

-Looking over the menu, I see a green veggie listed each day, although I know all kids are not going to like this...the good foods are provided for them.

-Many children wouldn't know the importance of healthy foods and choices if not for school involvement.

-It's necessary.

-I do think it is important for the school to play a role in my child's health but ultimately it is up to us as a family.

-It is good to have choices of healthy foods, but there is a lot of food wasted because kids will not eat it.

-Teach the children to make more healthy decisions on their own.

-I would like to see a nutrition guide on the foods that are served.

-Policy seems too rigid!!

-Cutting out vending might help with out children's health. But have you ever checked the calories or fat in the food you prepare in school? Also all the preservatives? I think the schools are trying to make too many short cuts in the meals. I would rather my child eat a piece of cake than nothing at all, but fix something the kids eat.

-I think that if schools provide healthy meals and you provide healthy meals at home it helps children to eat better and make healthy choices when they get older.

-It is important to focus on healthy foods in schools, but the children need to be taught about eating healthy foods at home, too. Parents need to be taught.

-I feel that healthy foods are good; however, we need to make sure that some kids that don't get a lot of food except for school are full. This could be their only meal of the day.

-It is important to focus on healthy foods in schools. However, I also feel that it is important to offer a variety of healthy snacks in vending machines and throughout the school day. A break in the morning and afternoon to allow the opportunity for a healthy snack would be very beneficial.

-I feel like the small amount of food that the kids eat at school is not going to make them obese or not obese. This depends more on what they eat out of school. Now the exercise that they do in school will do them more good. The increased time is really good. The number one "beef" I have is the kids not being able to get extras or two of one thing. If they don't want one thing but

like another they cannot trade-that's not right. All people do not like everything. Trading should be allowed.

-I am happy that the school is finally taking an interest in nutrition education.

-I believe that well nourished children are more alert, and have more stamina than malnourished children. Too many sweets may cause a short lived high in energy followed by a big let down. This could cause a tired, sluggish child unable to cope with the tasks at hand.

-I think kids should be able to be kids and if they have a party they should be able to have cupcakes.

-I believe the school has a good balance of healthy and "fat" foods, such as pizza, etc because its really the portion size. But we need to watch portion sizes because I have seen and heard that it is even smaller than few years ago. Some kids that I hear at school say they are still hungry. As they say, kids learn better if they are not hungry. And I believe that if we had a regular PE teacher at all schools, it would make a difference in our kids' physical fitness. So I think we really need to focus on that, instead of worrying so much of everything they eat being extremely healthy.

-Good, but schools can't do it all. Parents need to continue at home or be educated about the importance. A treat once in a while at school will only make a school more attractive and fun.

-It's important to educate our children on eating healthy.

-Availability of healthy foods should be consistent with the new policy. Practice what is taught.

-It is truly a matter of life and death. I fear an epidemic of heart disease, obesity, and other weight/health related problems for this generation. It is past time that someone step up to the plate and teach children and their families that eating too much pre-packaged, low nutritive junk food is detrimental to these kids.

-Healthy foods are great. But junk food for snacks or added with healthy food is not a bad thing either.

-It's ironic to have such a pro-active wellness policy, but still have fundraisers that sell a three pound tub of cookie dough! The policy needs to be more uniform and across the board, so it doesn't come across as hypocritical!

-It isn't fair that during class parties students are only allowed one sweet item (i.e. cupcakes or cookies). If that is the case maybe limiting the number of parties should be enforced, not necessarily the food served.

-It makes sense to focus more on healthy foods. All aspects of school life should take that into consideration, even fundraisers!

-I feel the current policy is too restrictive-educating our children on how to make healthy choices while still enjoying the taste/texture of said choices will be much more beneficial to a life of healthy eating than banning foods from the schools. Weight Watchers is a great program the school system should use to update the current policy.

-Healthy food options should be included. However, I think that it is important to understand that the school's job is to educate and advise and encourage but they are not the parents.

-I think great strides are being made in the school meal menus, but I feel it is still too carbohydrate heavy.

-I also think that at party and school events, the kids should be able to choose cupcakes and candy.

-I agree that stressing healthy foods in the early grades is important; however, I disagree with removing the vending machines from the high school. I have always given my kids the options of many things. If they choose to use the vending machines I understand. That is what choices or decisions they have to make in life now and later down the road. It is part of life.

-It should be healthy but a good variety of foods that the child can choose from.

APPENDIX E

Additions To or Deletions From School Menus: Parent Opinions

- Finger foods are always easier to get kids to eat.
- Carrot and celery sticks, cheese sticks, and fruit wedges
- Serve spaghetti sauce and noodles separately.
- Serve broccoli and cheese separately.
- Drop deep fried and/or processed foods.
- Add more vegetables and fresh fruits.
- More vegetarian foods
- Add turkey
- Add bottled water.
- Add baked or grilled chicken instead of breaded or fried meats; roast with potatoes and carrots.
- Serve more chicken.
- Serve healthy but flavorful food. Use seasonings other than salt
- Add more fresh fruits and vegetables.
- Allow kids to drink soda if they wish.
- Replace starchy vegetables with more nutritious vegetable choices.
- More colorful vegetables are needed.
- Give a vegetarian option or at least cut down on the “weird” meat (i.e. country fried steak)
- Should try to switch to whole grains in the breads. Juice should be available as a beverage option during cold season.
- Need well thought out menus to be attractive for the children.
- Do not serve chicken sandwiches, Z-fries, and popcorn chicken within a few days.
- Students’ favorite foods should be considered.
- Add more steamed vegetables, less fried foods.
- There should be some kind of healthy dessert for each meal. There should be more water accessible with meals.
- Still offer ice cream at school.
- Anything organic or unprocessed without enriched flour would be better.
- Fat content and high sodium are two concerns.
- Food is fine as is.
- Reduce amounts of cheese.
- Add different vegetables and fruit.
- Need to have more wholesome foods made from scratch, not pre-packaged items.
- Delete fried foods. Add steamed and baked foods.
- I think chicken is good for them, just fixed in a few more different ways.
- Give the kids two extra snack breaks, with healthy snacks that the school can offer.
- Add granola bars, fruit, fruit juice, water bottles, crackers, something to keep them from being so hungry and things they will eat.

- I would like to see the frequency of the following lessened: corn, nacho chips, cheese, and pizza.
- Add variety of vegetables (not just two or three): wrap sandwiches, jello or pudding, other meats such as fish, turkey, and chicken (not nuggets or patties).
- Have salads daily and variety of meats to choose from.
- Serve more common “lunch” foods (such as sandwiches, soups, etc.) not adult type foods such as turkey and dressing, etc.
- Add juices and dried fruit.
- Offer two choices (such as hamburger or pizza) instead of only the one main course item.
- Have less carbs and more leafy greens, fruit, and white meat.
- Add breakfast bars, yogurt, oat meal and cream of wheat, less sugar.
- Pizza should be deleted because children usually eat a lot of pizza at home.
- Delete fried cheese sticks and allow home-baked goods.
- I think the cheese roll-up with marinara sauce is a good snack, but as a lunch main course, I don’t know.
- I think the menu is just fine.
- School parties should be fun and not so strict. What’s the big deal for a child to have a cupcake?
- Add cheese, wheat bread, apples, orange slices, carrots, and celery with peanut butter.
- Add more vegetables and fruit but delete cereals with lots of sugar and chocolate milk.
- Maybe fruit could be added; some children don’t eat much fruit because it seems boring. Maybe bring in fruit cocktail or some different way of serving would help them learn to appreciate it and that goes for vegetables, too.
- Add baked potatoes, baked chicken and more salads. Delete so many carbs (at one meal) such as pizza, carrots, corn, jello, fruit – don’t mix so many of these together.
- Add whole grains. Balance grains, meat, veggies, and fruit. Delete really fatty meats; only have one or two items on a tray with high saturated fats.
- I think offering the children a fresh fruit for a snack (to replace vending machine) would be great!
- We need more fresh fruits. We need less greasy foods like pizza. It should not be an everyday item on the lunch bar.
- I would like to see more fresh fruit available for lunches-grapes, bananas, and strawberries.
- Add hashbrowns (this was a child’s suggestion).
- Delete pizza, French fries, and fried foods. Add more salads and grilled or baked meats.
- Add more fruit such as apples, grapes and bananas. Pizza should be deleted or maybe not be on the menu every week.
- When they offer pizza, they have pizza, corn, carrots, and that’s it. The corn is loaded with sugar. More real protein is needed on the menu and real fruit.
- Please add more foods that aren’t so highly processed. I would love to see some healthier, less processed meals being served.
- The menu is ok as it is.
- I feel more variety should be added. Children may get tired of having the same foods over and over.

- Have some sweets especially for special events. This is something for kids to look forward to. Eating healthy at school is great but unless habits are carried over to the home, the problem will not be solved.
- Maybe 100% fruit juices in the vending machines should be added.
- I still do not know what Z-fries are but they don't sound healthy.
- Add a cookie or small piece of cake at least once a week as a treat.
- Add more vegetables for the kids to eat because they don't eat enough vegetables.
- Add fruit salad and more vegetables.
- Think about putting in a salad bar to offer kids an alternative choice if they do not like or do not want the lunch that is offered that day.
- Have fresh and canned vegetables and fruits, whole grain breads and light salad dressing. All foods should be baked and not fried.
- I think processed, nitrate loaded meats should be deleted and foods high in processed white sugar and flour should be also. Add more whole grain foods (pastas, sandwich bread, buns, rolls).
- Do not have as much fried and fat foods. Have more fiber and fresh fruits and vegetables.
- There should be a balance of foods.
- Give them food they will eat.
- For the most part everything is alright. If you deleted items some kids might not eat anything because they don't always like what's on the tray.
- Limit sugar filled choices. Include water and juices, eliminate sodas. Have more finger vegetables such as raw carrots, broccoli, etc. Some of this may already be in place.
- Delete pizza, tacos, and cheese sticks.
- Have more fruits.
- Add ice cream.
- The chicken nuggets are very greasy. Have more raw vegetables and fruit.
- The school seems to know what the children need, but please remember they're still kids (we all liked snacks).
- There is too much pizza (they have it 3 times a month), and there are too many carbs in one lunch setting.
- Offer more chicken instead of processed chicken bites.
- The school lunches in general are still really high in fat content. I don't know how we can fix this but it doesn't make sense to serve this food at lunch and then penalize them all the rest of the time.
- Substitute some of the carbs.
- I think the menu is fine, all meals are healthy or contain a good balanced meal.
- I feel what's on the menu is good.
- Have less fried foods. Have vending machines with natural fruit snacks and other healthy snacks (raisins, granola bars, etc.).
- Add fresh fruits and vegetables, but not as much pizza or offer vegetable pizza.
- We need more salads and fruit.
- Need a balance.

- Freshly made, grilled meats, unprocessed, would be nice. Take a survey of what is thrown away in the trash and how much is wasted. Maybe things would be different. The kids wouldn't want as much junk if they ate more lunch.
- Add fresh fruits, veggies, and yogurt.
- Need more fruits and veggies offered.
- I would like to see organic foods used in our school's menu.
- I wish more fresh fruit would be available to the kids at lunch. I do feel that the younger age students need a snack during the day as well. They get hungry.
- Add salads with low calorie dressing, and fruit bar daily. Need wheat pastas, etc. Have trail mix, nuts, granola bars, fruits, low fat/low calorie dry cereal in vending machines. Delete in moderation pizza (only one per week), fries, over-processed meats, and too many fried foods.
- Delete steak and gravy. Add more fresh fruits and vegetables.
- They should add more yogurt and more interesting nutritional drinks (smoothies). Fresh fruit and vegetables with dips should be available every day along with the regular menu.
- The majority of kids don't like soup beans.
- The few parties allowed should have homemade treats included.
- The current menus appear to be sufficient.
- I would like to see sugary cereals deleted from the breakfast menu. Adding as much fresh fruit and vegetables as possible would be great! Many kids are going to their morning classes on a sugar high.
- Delete corn dog nuggets, hot dogs, popcorn chicken, and Z-fries (both are horrible). Add grilled chicken sandwiches, peanut butter and jelly, turkey sandwich and more fresh fruit choices.
- Ice cream should be served as a dessert occasionally or sherbet. Pizza and barbecues should be replaced.
- The fried foods should be deleted.
- The menu needs to be reconsidered in its entirety. The menu is "okay" but not great.
- Fresh fruit and salad bar should be available EVERY day at every school; more grilled chicken breast meat that can be used as sandwiches, quesadillas, on top of salads, etc. Need whole wheat bread, buns, and rolls. Have ground turkey instead of ground beef; always have at least one green vegetable every day and 100% juices and flavored water should be added.
- Have more fresh fruits and vegetables. Processed meats should be eliminated. Tons of Styrofoam containers should be avoided.
- Chocolate milk at breakfast should be deleted. Children are eating chocolate cereal and putting chocolate milk on top of it.
- Peanut butter on celery could be a option. Have more carrot sticks or celery sticks and raisins.
- What I have seen on the school menu looks to be sufficient! I really don't see that there should be any changes after the ones they put into place this year.
- Have apples, watermelon, and strawberries.
- I think the meals are fine. I believe it is a good idea to add fruit and raw vegetables as extra items available to students.

VITA

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