A QUALITATIVE CONTENT ANALYSIS OF LOCAL SCHOOL WELLNESS POLICIES FOR OHIO SCHOOLS

A Thesis

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By

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ABSTRACT

Nutrition plays a significant role in the growth and development of children and adolescents. The lack of proper nutrition in children and adolescents has lead to alarmingly high rates of childhood obesity. School wellness policies can help in the fight against childhood obesity by addressing goals for nutrition education, foods served on campus, and school-based activities.

School wellness policies were randomly selected from all school districts in the state of Ohio. Policies were obtained from district’s websites and saved into a qualitative data sorting program. Policies were read to develop overall themes and sub themes. Text segments were tagged with corresponding theme or sub theme.

Overall, 43 policies were used for analysis. General overall themes included food service, competitive foods, nutrition education, and school-based activities. Policies varied from highly original to exact template use and varied in depth and breadth of content. Five policies did not address nutrition education, while over half did not include school-based activities. Sub themes most commonly addressed were vending machines, free and reduced-price meals, and classroom education. While concession stands, a la carte items, and product advertisement were addressed in the least amount of policies.

Original, specific, and personalized wellness policies should be developed to ensure policies meet the needs of each individual school district.
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Chapter 1

Introduction

Nutrition plays a significant role in the growth and development of children and adolescents (1). Children who receive adequate nourishment are more likely to have an increased attention span and improved academic performance, while those children who receive inadequate nourishment are more likely to have health and academic problems, including obesity (2-4). These children and adolescent’s dietary behaviors are shaped by many influences. Environment, parental influence, knowledge, and schools all have an affect on the types of food children eat (5). The public has taken notice of the inadequate diets of school-aged children and has lobbied for legislation to regulate what children are receiving in schools.

In 2004, Congress passed the Child Nutrition and WIC Reauthorization Act. The law was to improve the quality of food in schools and expand the availability of school meals by requiring school districts to adopt wellness policies by July 2006. These policies had to include goals for nutrition education and physical activity, nutrition
guidelines for all foods available on the school campus, address other school-based activities, establish a plan for measuring implementation of the policy, and involve parents, students, and school representatives (6).

The rationale for mandating districts to develop and implement wellness policies was the troubling state of children’s health. Children’s diets lack essential nutrients such as protein, iron, calcium, and vitamin A (7), while being excessive in total energy, fat, saturated fat, and sodium (7-11). These poor dietary behaviors, as well as a decrease in physical activity, has resulted in over 9 million children aged 6-19 being overweight or obese, which has tripled since 1980 (12).

School systems are the ideal location to help in the fight of this unsettling trend. Reaching over 95% of 5-17 year olds, no other institution has as much continuous contact as school systems do (13). By promoting healthy lifestyle behaviors and providing health education, school districts can help prevent childhood obesity before it begins. However, school districts are notorious for selling food items with little or no nutritional value. These items include a la carte options, vending machines, and foods sold in student stores and are available to students of all ages (14). One survey found that 43% of elementary schools, 74% of middle schools, and 98% of high schools offered children food and beverages via vending machines and snack bars (15). The availability of these competitive food choices has shown to negatively impact children’s food choices (16), while participation in meal programs, such as the National School Lunch Program (NSLP), has shown to positively benefit children (17).
The NSLP is a federally assisted meal program that provides school-aged children nutritious lunches. Meals provided meet the Dietary Guidelines for Americans, containing 30% or fewer calories from fat, 10% or fewer calories from saturated fat, and provide at least 1/3 of the RDA for protein, vitamin A, vitamin C, calcium, and iron (18). Data from the Continuing Survey of Food Intakes for Individuals (CFSII) showed that participants in the NSLP had on average a higher intake of nutrients both at lunch and over a 24 hour period (19). Even with this data, school districts continue to sell items that provide little or no nutrients.

Even though nutritious meals are offered through the NSLP, children still are not meeting their dietary needs. A study by the CDC found that only 21% of school aged children were meeting the recommended number of servings for fruit and vegetables (20). Another study found that of the children examined, none had intakes consistent with Food Guide Pyramid recommendations (21). Although these children are consuming some fruits and vegetables, the quality of these foods can be questioned. One study found that of all the vegetable servings children 2-19 years old consumed, 46% were fried potatoes (22). Hopefully, through initiatives implemented by wellness policies, children can learn the importance of consuming nutrient dense foods as opposed to nutrient poor ones.

Poor dietary habits and a lack of physical activity have led to millions of US children being overweight or obese. School districts are the ideal location to educate students on the importance of healthy lifestyle behaviors. The need for wellness policies to initiate improved health education and interventions was seen by Congress and resulted in the Nutrition and WIC Reauthorization Act. This act required school districts
to develop and implement goals for nutrition education and nutrition guidelines for all foods served. The hope is that these wellness policies will result in an expanded availability of nutritious meals to more children and an improvement of the quality of food in schools.

Therefore, the purpose of this study is to assess the content and quality of wellness policies of school districts in the state of Ohio.

Study Objectives

1. Examine the contents of school wellness policies from the state of Ohio
2. Assess the breadth and depth of policies to see if required components are addressed
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Chapter 2

Review of Literature

Background of School Wellness Policies

Research has shown that school-aged children suffer from both under and over nutrition. Children’s diets lack protein, iron, calcium, vitamin A (7), folate, vitamin E and magnesium (8;23;24) while being excessive in energy, total fat, saturated fat, and sodium (7-11). A nation wide study of 6-18 year olds found that children had a considerable risk of inadequacy for vitamin E, folate, and magnesium. Furthermore, the 1994-96 Continuing Survey of Food Intakes for Individuals (CFSII) showed that only 2% of school aged children met the Food Guide Pyramid serving recommendations for all five groups and that fat and sweets contributed to 20% of their daily calories (25). Vadiveloo et al (10) also found that elementary children’s diets were excessive in saturated fat and sodium, as well as having inadequate amounts of fiber. These poor dietary habits during childhood are associated with iron deficiency anemia, eating disorders, and dental caries, as well as increasing the risk of cardiovascular disease, certain cancers, stroke, diabetes and hypertension during adulthood (8;26). Because eating behaviors are shoed during childhood and adolescence, the school environment has the ability to shape these habits that will persist through adulthood (5). Meals and snacks
eaten at school provide one third to one half of a child’s daily intake and play a vital role in developing life long dietary behaviors (27). To stimulate a healthy nutrition environment within schools, federal legislation now requires school systems to develop targeted wellness policies. Successful policies are ones that link nutrition education, child nutrition services, a healthy school environment and community partnerships.

One rationale behind wellness policies is to ‘reduce health and learning problems among school children’ (7). Undernourished children have commonly been shown to have reduced attention, exhibit more disruptive behaviors, which can cause them to suffer academically (2). These impacts on performance have resulted in lower standardized test scores, which makes poor nutrition an issue for the school administration. Similarly, overnourished children also perform poorly. In a study of 106 children 5-18 years old, severely overweight children (those above the 95th percentile for weight), were four times more likely to experience “impaired school functioning” compared to healthy children (4). These data support the impact of nutritional status on academic performance, which underscores the potential role of an effectively crafted and implemented wellness policy to supporting higher attendance and fostering the academic mission of the school system through diet and physical activity (28).

Schools reach 95% of 5-17 year olds. No other institution has as much continuous contact during these vital years as schools do. For this reason, school systems are the ideal location to promote healthy lifestyle behaviors. Currently, six states do not require health education in their curriculum. With childhood obesity rates at an all time high, schools need to promote healthy living by promoting proper nutrition and physical activity (13). Two main determinates in rising rates of childhood obesity and disease are
poor nutrition habits and a sedentary lifestyle (29). As a result, more and more groups are beginning to push for reform in school health education programs. For example, in a position paper by the American Dietetic Association (ADA), they state that ‘schools and communities have a shared responsibility to provide all students with the access to high-quality foods and school-based nutrition services as part of a total education program’ (30).

In 2004, Congress passed the Child Nutrition and WIC Reauthorization Act. Part of this act required that nearly all of the 15,000 public school districts develop and implement local school wellness policies (28). The law specifically required the wellness policies must (6):

- Include goals for nutrition education, physical activity, and other school-based activities
- Include nutrition guidelines for all foods available on the school campus
- Establish a plan for measuring implementation of the policy
- Involve parents, students, representatives of the school food authority, the school board, school administrators, and the public in development of the policy

Other than these specific requirements, the law is vague, giving little guidance or information on specific target areas that should be addressed. School districts were
required to implement local wellness policies by July 2006; however, Action for Healthy
Kids (28) reported that by 2008 only 68% of districts met minimal requirements and that
1/3 of districts were not in compliance of the law.

**Current State of Food in Schools**

Currently, the United States Department of Agriculture (USDA) offers a National
School Lunch Program (NSLP) and a School Breakfast Program (SBP) to provide
school-aged children nutritious meals. Both the NSLP and SBP are federally assisted
meal programs that over 100,000 public and non-profit private schools participate in
nationwide (31). The programs are subsidized with cash reimbursement and/or
commodities. The level of federal subsidy depends on the income level of the child
eating the meal. Meals are provided to children either free, at a reduced priced, or at full
price (32). Meals are nutritionally balanced, meeting the Dietary Guidelines for
Americans. School lunches must contain 30% or fewer calories from fat, 10% or fewer
calories from saturated fat and provide at least 1/3 of the RDA for protein, vitamin A,
vitamin C, calcium and iron (18).

The goals of the NSLP are to serve meals that will meet nutritional requirements,
make meals available to all children, operate in an accountable manner and provide
financial support to programs infrastructure. Gleason and Suitor (33) found that children
who participate in the NSLP have lower intakes of calories from total fat and saturated fat
compared who those who did not participate. Data from the Continuing Survey of Food
Intakes for Individuals (CFSII) showed that participants in the NSLP had on average a
higher intake of nutrients both at lunch and over a 24 hour period (19). These children also consumed less added sugar and were more likely to consume vegetables, milk and meat.

Although both federally assisted meal programs provide children with nutritious meals, schools continue to sell items with little or no nutritional value. Competitive foods are those foods sold in addition to school meal programs. They include a la carte options, vending machines, and food sold in student stores (14). There are no federal guidelines regarding these items, and there for are often low in nutritional value (34). In a report to Congress, the USDA stated that ‘Competitive foods undermine the substantial Federal investment in the program to provide healthful meals for the Nation’s children’ (35). The USDA also argued that competitive foods have the potential to decrease participation in federal meal programs.

Competitive foods are beginning to be more readily available to students at a younger age. One survey found that 43% of elementary schools, 74% of middle schools, and 98% of high schools had food and beverages available in vending machines and snack bars (15). Snack bars and vending machines that were once thought to be only in high schools are now available to children in elementary school. At this young age, food preferences are easily influenced and poor dietary habits begin to develop. This increased availability in food choices has shown to negatively impact food choices (16); however, participation in meal programs has shown to have a positive benefit on a child’s diet (17).
Current Lifestyle Habits of School Aged Children

The lifestyle habits of children today are considerably different than in past generations. With the increase in technology came increase screen time; including television, video games, and computers. Increased screen time has been linked to a higher BMI in children (36), as well as in adulthood (37). Popular children foods have become more energy dense including fast food, cereal, potatoes and soft drinks (38). While past generations worried about childhood underconsumption and nutrient deficiencies, today we are faced with the problems of overconsumption and decreased physical activity (8).

Diet

During the 1970’s, children ate 17% of meals outside of the home, contributing approximately 2% to their total caloric intake. By the mid 1990’s, children ate 30% of meals outside of the home, accounting for 10% of total caloric intake (38). This increase in eating out has also come with an increase in consuming more sugar and snacks (22). Analyses of the CSFII have also presented a decline in breakfast eating and an increase in portion sizes since 1971.

A study done by the Centers for Disease Control and Prevention found that only 21% of school aged children eat the recommended number of fruit and vegetable servings daily (20). Even though 1/5 of children are meeting these recommendations, the quality of the fruits and vegetables consumed could be questioned. Of all the vegetable servings
children 2-19 years old consumed, 46% were fried potatoes (22). This shows that children need to be urged to consume nutrient dense fruits and vegetables as opposed to nutrient poor ones.

Knol et al (21) also found that children do not meet recommended dietary needs; furthermore, none of the children had intakes consistent with the Food Guide Pyramid recommendations. Even children that consumed the least amount of calories could have benefited from a reduction in added sugars and discretionary fats.

To help improve the dietary habits of children, numerous school-based interventions have been performed. Studies commonly include nutrition education as part of the intervention. Abood et al (39) examined the effect of minimal education on teenagers. The intervention included a commercially available power point that was given twice for thirty minutes over a week. Results showed a positive impact on nutrition knowledge and behavioral interventions such as intention to maintain a healthy weight, eat fewer fried and sweet foods, and limit television.

Frenn et al (40) also studied the effects of a minimal educational intervention on teenagers. Four classroom interventions were performed to control fat intake and physical activity on low income, culturally diverse middle school students. Results showed the experimental group had a significant reduction in fat consumption. These two studies show that even minimal interventions have a positive effect on the health of children.

Foster et al (41) took a different approach to school-based interventions and examined the effects a School Nutrition Policy Initiative would have on the prevention of overweight and obesity in children grades four through sixth. The School Nutrition
Policy Initiative included school self-assessment, nutrition education, nutrition policy, social marketing and parent outreach. After a two year period, a 50% reduction in the incidence of overweight was observed. Also, significantly fewer children in the intervention (7.5%) became overweight compared to 14.9% from the control group. Foster et al determined that the School Nutrition Policy Initiative was effective in prevention overweight in the children studied.

**Ramifications of Lifestyle Behaviors**

Children that develop poor dietary and physical activity behaviors are at a high risk of becoming overweight or obese. Childhood obesity has significantly increased over the past two decades (42). The Center for Disease Control and Prevention estimates that 16% (over 9 million) children aged 6-19 are overweight or obese. That number has tripled since 1980 (12). With childhood obesity comes many consequences.

Behaviors learned in childhood will continue through adulthood. Those children who develop poor dietary and physical activity behaviors are at risk of having the same poor behaviors in adulthood. Hancox et al (37) studied childhood television viewing and adult health (as increased television watching is linked to decreased activity). Children with higher weekend television viewing had higher BMI, lower cardiovascular fitness, higher cigarette smoking, and higher serum cholesterol in adulthood than those who watched less television. This studied showed that poor physical activity behaviors in children are tracked into adulthood.
As with behaviors, individuals who are overweight or obese as children are at risk of staying overweight as adults (43). Wang et al found that of the adolescents studied with a BMI in the 85th to 95th percentile, 67% became obese adults and adolescents with a BMI over the 95th percentile, 86% became obese adults (44). The risk of persistent obesity in adulthood is increased with age of onset, degree of obesity, and presence of parental obesity (45). In a systematic review by Sigh et al persistence of overweight was greater with increasing level of overweight (46). As children gain more weight they are setting themselves up for an obese adulthood.

With obesity comes chronic disease and complications. Endocrine, cardiovascular, gastrointestinal, and respiratory complications are all commonly seen in obese children as well as adults (47). Morbidity and mortality increase as obese children become obese adults as childhood obesity is a precursor to chronic disease (48). Cardiovascular disease, high cholesterol, hypertension, dyslipidemia, and type 2 diabetes are all conditions seen in adults who were obese as children (49).

**Conclusion**

Millions of US children are overweight or obese. Changes in dietary habits and physical activity have led to an unfortunate childhood obesity epidemic. Interventions need to be put in place to prevent these overweight and obese children from becoming obese adults. Perhaps the ideal location for prevention are school systems. Schools have the most continuous contact during these vital years. In order to ensure schools are providing children with healthy meals, opportunities for physical activity, and health education, school wellness policies need to be developed. Wellness policies link
nutrition education, child nutrition services, a healthy school environment, and community partnerships to ensure children receive the attention they need to live a healthy life.
Chapter 3

Methods

Overall Description of Project

The purpose of this study is to assess the content and quality of wellness policies of school districts in the state of Ohio. A random selection of school wellness policies from the state of Ohio were obtained from school district websites. In all, 43 policies were obtained for analysis. Each policy was downloaded and imported into a qualitative data sorting program for analysis. Common themes in the policies were developed and included food service operations, free and reduced price lunches, vending machines, and competitive foods. The data found in this study will identify which school districts in Ohio have wellness policies that meet minimum requirements.

Study Objectives

1. Examine the contents of school wellness policies from the state of Ohio
2. Assess the breadth and depth of policies to determine if required components are addressed and which components are missing

Selection of schools for participation

To select a random group of wellness policies from across the state a list of all school districts in Ohio was developed. The list contained the school district name, county or counties serviced by the school district and a hyperlink to the district’s website.
The districts were than grouped by Ohio Action for Healthy Kids (OAFHK) zones based on county location. After grouping into the 10 Action for Healthy Kids zones, each school district was randomly assigned a number. The list of school districts were then sorted in ascending order by OAFHK zones and random digit. The first 13 schools in each zone were selected to acquire a random sample of school districts from across the state. The list was further examined to limit the number of school districts to a single school district from the same city. This will serve to increase the diversity of school districts represented in the following analyses.

**Collection of School Wellness Policies**

Due to the exploratory nature of this study, the school wellness policies were collected from the school district websites. Wellness policies were obtained online from each district’s website. Policies were either found under the district’s school board page or by typing ‘wellness policy’ into the search box. If the policy could not be found by manual navigation or site search tools, an online Google search was performed using the school districts name and ‘wellness policy.’ If the search yielded no results, it was assumed the policy was not available online.

For the policies found, the web links were recorded for future recovery. The search and retrieval process was performed for school districts within each zone until five policies from each zone were collected. Three of the ten zones did not result in the total of five policies being available online. For these zones, two zones had three policies and one zone had four policies available online. In total, 43 wellness policies were obtained for analysis.
Data preparation

The content of each wellness policy was copied and pasted into a word processor document. All policies that related to food and nutrition were also copied and pasted into Microsoft Word. Each policy was titled and saved based on the name of the school district. These files were then imported and saved into text editor files in Ethnograph (v5, Qualis Research) for analysis.

Data Analysis

During open coding, two researchers read over policies to develop overall themes on nutrition. An initial list of code words was derived from recurring themes in the policies. Code word definitions were drafted to include the meaning of text segments. Text segments were highlighted and tagged with the corresponding code words using Ethnograph. Following open coding, axial coding was used to identify sub themes within the original overall themes. Each sub theme was assigned a code word. Text segments were again highlighted and tagged with the corresponding code word. The final step, content analysis, allowed the use of text segments to describe sub themes.
Chapter 4

A Qualitative Content Analysis of Local School Wellness Policies for Ohio Schools

Abstract

BACKGROUND:
Nutrition plays a significant role in the growth and development of children and adolescents. The lack of proper nutrition in children and adolescents has lead to alarmingly high rates of childhood obesity. School wellness policies can help in the fight against childhood obesity by addressing goals for nutrition education, foods served on campus, and school-based activities.

METHODS:
School wellness policies were randomly selected from all school districts in the state of Ohio. Policies were obtained from district’s websites and analyzed to identify the dominant themes of policy content of the verbatim transcripts.

RESULTS:
Overall, 43 policies were used for analysis. General overall themes included food service, competitive foods, nutrition education, and school-based activities. Policies varied from highly original to exact template use and varied in depth and breadth of content. Five policies did not address nutrition education, while over half did not include
school-based activities. Sub themes most commonly addressed were vending machines, free and reduced-price meals, and classroom education. While concession stands, a la carte items, and product advertisement were addressed in the least amount of policies.

**CONCLUSION:**

Original, specific, and personalized wellness policies should be developed to ensure policies meet the needs of each individual school district.

**Introduction**

Nutrition plays a significant role in the physical and intellectual growth and development of children and adolescents (1). Children and adolescents who receive adequate nourishment are more likely to have an increased attention span and improved academic performance, while those children who receive inadequate nourishment are more likely to have difficulty concentrating on task while also exhibiting disruptive behaviors in the classroom (2-4). These negative impacts on academic performance have resulted in lower standardized test scores, having an impact not only on each individual child, but the district as a whole (4). Participation in school programs, such as the School Breakfast Program, has also been shown to improve academic performance as well as decrease absences (50). School administrators can recognize the link of nutrition and academic performance and develop policies that ensure students receive proper nourishment while at school.

The environment in which children live in today has contributed to the recent increase in the rates of childhood obesity (51;52). These factors include the reduction in physical activity and poor dietary habits. The dietary behaviors of children and adolescents are shaped by many influences; environment, parental influence, knowledge,
and schools all have an affect on the types of food children eat. At a younger age, children are establishing poor eating patterns that carry later into life (5). These lifelong dietary habits contribute to adult obesity, diabetes, hypertension, and cardiovascular diseases (43;45;47). School based obesity prevention programs focus on increasing nutrition and physical activity knowledge. Effective programs teach students the knowledge they need to live healthier lives.

To improve the health status of children and adolescents, the quality of food in schools and expand the availability of school meals, Congress passed the Child Nutrition and WIC Reauthorization Act in 2004. The law required school districts to adopt wellness policies by July 2006. These policies had to include goals for nutrition education and physical activity, nutrition guidelines for all foods available on the school campus, address other school-based activities, establish a plan for measuring implementation of the policy, and involve parents, students, and school representatives (6). Other than these specific requirements, the law is vague, giving little guidance or information on specific target areas that should be addressed.

The school wellness policies have the potential to establish a healthy environment for children and adolescents. Each policy is to be drafted by a school wellness committee that addresses the specific needs of the school with regards to the current environment. Thus, the content of the policies is critical for facilitating a school environment that promotes healthy lifestyles. Therefore, the purpose of this study was to examine the contents of school wellness policies from the state of Ohio.
Methods

Overall Description of Project

The purpose of this study was to assess the nutrition-related content and quality of school wellness policies for school districts across the state of Ohio. School wellness policies from a random sample of Ohio school districts were obtained from school district websites. Each policy was downloaded and imported into a qualitative data sorting program for analysis. A qualitative content analysis of the common themes was performed to assess the depth, breadth and inclusivity of the policies.

Selection of schools for inclusion

To obtain a random sample of school wellness policies from across the state, a list of all school districts in Ohio was first obtained from the State Department of Education. These data included school district name, county location and website homepage. Each school district was assigned a random number using SPSS (version 17, SPSS Inc, Chicago). To ensure a representation from across the state, the districts were then grouped by the ten Ohio Action for Healthy Kids (OAFHK) zones based on county. The list of school districts was then sorted in ascending order by OAFHK zone and the assigned random digit. The first 13 schools in each zone were selected to acquire a random sample of school districts from across the state. The list was further examined to limit the number of school districts to a single school district from the same city, to increase diversity of school districts and limit the representation of a single metropolitan area in the analyses.
Collection of School Wellness Policies

Because of the exploratory nature of this study, school wellness policies were obtained online from each district’s website. Policies were either found under the district’s school board page or by searching the site for ‘wellness policy’ using available search boxes. If the policy could not be found by manual navigation or site search tools, a Google search was performed using the school districts name and ‘wellness policy.’ If the search yielded no results, it was assumed the policy was not available online.

The search and retrieval process was performed for school districts within each zone until five policies from each zone were collected. Of the ten OAFHK zones, three of zones did not produce five available online policies; two zones had three policies and one zone had four policies available online. In total, 43 wellness policies were obtained for analysis.

Data preparation

The content of each wellness policy was copied and pasted into a word processor document. All policies that related to food and nutrition were also copied and pasted into Microsoft Word. These files were then imported and saved into text editor files in Ethnograph (v5, Qualis Research, Denver) for analysis. Each verbatim district wellness policy file was printed with line numbers and analyzed by two trained investigators.

Data Analysis

During open coding, two researchers reviewed the policies to identify the dominant themes regarding nutrition (53). An initial list of parent code words was derived from recurring themes in the policies (Figure 1). Code word definitions were drafted to include the meaning of text segments, which were highlighted and tagged with
the corresponding code words using Ethnograph. Following open coding, axial coding
was used to identify subthemes (child codes). All text segments from each parent code
were reviewed to develop sub themes for each corresponding parent code. Each sub
theme was assigned a code word and tagged in Ethnograph.

The child code words were reviewed from the text in order to identify common
themes and unique phrases. Memo narratives were then developed that described the
major themes. During this step, the interrelationships between the dominant themes were
identified. The final step, content analysis, allowed the use of quotations from text
segments to describe sub themes.

Results

Data were examined from 43 school wellness policies from across Ohio. Four
dominant content themes developed from the analyses: food service; competitive foods;
education; and school-based activities. The food service domain included all information
pertaining to the school food service operation, including free and reduced-priced meals.
Competitive foods included all foods served outside of the food service operation. The
education domain included all education dealing with nutrition or overall health. School-
based activities reflected any content addressing any activities during or after school
hours that involved food. For each domain, numerous subthemes developed and will be
explained below (Table 1).

Of the 43 school districts that were assessed, 59.5% adopted policies from
templates with little or no changes. An additional 26.2% also used templates, however
made significant changes. The remaining 14.3% of districts developed their own school
wellness policies. The use of templates was a reoccurring trend seen within each domain.
Food Service

Of the 43 policies, 88.7% addressed federal and state guidelines, stating that ‘the food service operation shall comply with all federal and state regulations.’ Many also included their own requirements of the quality of the food served. One policy stated: “All meals served through the district cafeterias will be appealing and attractive, be served in a clean and pleasant setting, meet at minimum, nutrition requirements established by local, state and federal statutes and regulations, offer a variety of fruits and vegetables, serve only low-fat, 2% and 1% milk and nutritionally-equivalent non-dairy alternatives and ensure that half of the served grains are whole grain.”

Free and reduced priced meals were also addressed in 88.4% of the policies. The focus was on the quality of meals served and the promotion of participation for students meeting specified eligibility criteria. The school food service eating environment was addressed by discussing the time of day meals are served, time allotted to students to eat and the physical appearance of the eating facilities. Advertising and marketing of food products to students was discussed in 16.3% of policies, specifically encouraging the promotion of fruits, vegetables, whole grains, and low-fat dairy products. Policies stated that the school would accommodate a student’s special needs, with one policy stating: “A registered dietitian or other qualified health professional is consulted as needed for special diets and Individualized Education Plans.”

Food safety principals, including Hazard Analysis and Critical Control Points (HACCP), access to food preparation area, and training, were included in 58.1% of policies. The food service staff was addressed in policies by commenting on specific training/credentials needed, opportunities for professional development, and appropriate
interaction with students. One policy stated, ‘Food service staff shall be qualified and educated in the school meal program and standards. The district will require and encourage ongoing professional development for all nutritional professionals.’ Additional staff roles were defined for the financial advisor regarding overall finances, surplus funds, budgeting and pricing.

Evaluation procedures appeared in 74% of policies. This included evaluation pertaining to both the food service operation and the wellness policies. With regards to wellness policy evaluation, policies also addressed who was responsible for evaluation. ‘This group shall be composed of the District Wellness Coordinator, Cafeteria personnel, Physical Education and Health instructors, interested teachers, building administrators, at least two students, county Health Department Representative, and at least three parents.’ This same policy also addressed how often evaluation should occur: ‘this group shall meet at least two times per school year.’

Evaluation specific to the food service operation was usually designated to the Superintendent or building principal. He/she was ‘charged with operational responsibility for measuring and evaluating the District’s implementation and progress under this policy.’ Some policies also discussed how often evaluation should occur, ranging from every year to every five years.

**Nutrition Education**

The primary source of nutrition education addressed in the school wellness policies was specific to the classroom setting. Guidelines discussed included specific topics covered, integration into other course curriculum, and information that is age appropriate. Commonly, the educational policies involved topics such as fruit,
vegetables, whole grain products, and low-fat and fat-free dairy products. As well as addressing nutrition curriculum content, policies also discussed the staff that would provide the education. Standards were established regarding the qualifications for “certified, highly qualified teachers.” One policy indicated that “The district may provide professional development opportunities that better enable the faculty to teach nutrition education.”

Policies addressed the role of nutrition education in the food service operation in 46.5% of policies, including educational posters, food service staff participating in education, nutrition information of competitive foods, and making the cafeteria a support environment. One school district showed support of a healthy nutrition environment by stating: “The school cafeteria shall serve as a learning lab by allowing students to apply the knowledge, attitudes, and skills taught in the classroom when making choices at mealtimes.” Another policy indicated that “[n]utrition education is offered in the school dining room as well as in the classroom and is coordinated between teachers and foodservice staff.”

Districts that addressed the overall health of staff and students included opportunities such as health screenings, health fairs, and insurance information sessions. This was included in 20.9% of policies. An example of overall health:

“…demonstrate support for health services that contribute to positive healthy choices by providing healthy screenings, healthy care planning, hosting healthy clinics, and supporting parents as they enroll in health insurance programs for which their children qualify.”
Material sent home to parents and material that parents have access to at home was considered home education and was included in 32.6% of policies. This included take home material, website information, and newsletters. One district stated: “Healthy hints about nutrition and healthy life styles shall be part of the school website and school newsletters that are sent to parents and community members”

Along with home education, information on snacks was addressed in 16.3% of policies. This information was either sent to parents, teachers, or after school professionals. One policy indicated:

“The school shall prepare and distribute to staff, parents, and after-school program personnel a list of snack items that comply with the current USDA Dietary Guidelines for Americans”

**Competitive Foods**

Policies addressed overall guidelines for all competitive foods in 46.5% of policies. These guidelines included information on nutrition requirements and when these foods could be sold. In a more detailed guideline, one policy stated:

“All soft drinks containing caloric sweeteners: sport drinks, iced teas; fruit-based drinks that contain less than 50% real fruits juice or that contain additional caloric sweeteners; beverages containing caffeine, excluding low-fat or fat-free chocolate milk may not exceed a 12 ounce serving size.”

Guidelines specific for a la carte items were addressed in 14% of policies. These also included specific nutrition requirements and times for the sale of these items. One policy stated:
“Ensure that ala carte offerings meet nutrition standards established by the U.S. Department of Agriculture, the Ohio Dept. of Education, Office for Safety, Health and Nutrition, and all other federal, state, and local authorities.”

Vending machine items were included in 88.4% policies. Nutrition requirements, times items could be sold, and information on revenue were included. In one policy, the timing of sale was specifically addressed, “Vending machines offering foods or beverages which do not meet the nutritional standards established by the district may not be operated during the school lunch period.” Another policy addressed the nutrition requirements: “Establish guidelines for all foods and vending available on the school campus during the school day with the objective of promoting student health and reducing childhood obesity.” Lastly, a policy addressed revenue by stating: ‘The district’s share of the revenues is managed by the Treasurer in accordance with relevant Board policies and administrative guidelines.’

Other School-Based Activities:

Overall requirements for school-based activities were addressed in 23.3% of policies. This most often included nutritional requirements of food served. One policy stated:

“Foods or snacks served during school activities shall make a positive contribution to students’ diet and health. At least one food during these school activities shall have emphasis on meeting healthy dietary guidelines.”

School parties and celebrations that occurred in the classroom were included in 32.6% of policies. The frequency of celebrations and the food served during the celebration was included in policies. The following policy addressed food quality:
“Lists of healthy food choices shall be created for teachers and parents when planning class parties…foods brought into the classroom by parents shall be approved by classroom teachers in advance.”

Only 7% of policies addressed the role of food served during sporting events. One policy even addressed the role nutrition has on athletes: “Athletic coaches shall promote the benefits of a balanced diet that includes fruits, vegetables, whole grain products, and low-fat or fat-free dairy products to their athletes.”

Fund-raising events that occurred during school were included in 30.2% of policies. The time of day items could be sold and the nutritional quality of items were included. One policy stated:

“The Evergreen Wellness Coordinator will assist organizations with identification of alternate food items as well as alternate pricing structures that serve as incentives for more nutritional food choices.”

The use of food for rewards or punishment was included in 23.3% of the policies. One district addressed this issue by stating:

“Schools should limit the use of foods or beverages as rewards for academic performance or good behavior and should not withhold food or beverage as a punishment.”

Lastly, foods consumed at snack time, either during or after school, were addressed in 18.6% of the policies. This typically included foods to encourage:

“Snacks served during the school day or in after-school programs will make a positive contribution to the children’s diet and health and will emphasize fruits and vegetables.”
Discussion

School wellness policies in the state of Ohio presented a wide range of information across the broad domains assessed. Policies ranged from highly original to exact template use, and varied in depth and breadth of content. Strengths included specific guidelines for food served and nutrition education components, while areas that require further development were originality of policies and inclusion of wellness policy evaluation.

The majority of statements in the food service policies were very similar, making it evident that templates were used for the greater part of this section. The policy titled ‘Food Service’ was identical or similar in 71% of the policies. The school districts that developed their own policies commonly augmented the template information with policies that were tailored to fit the needs of their district.

The ‘Free and Reduced Price Meals’ policies were also very similar or identical in 71% of the policies. Because of the importance of this issue, these policies should directly address the needs of each district. For children who have limited access to nutritious meals at home, the school lunch program provides them with nutrients that they would otherwise not be receiving. Participants in the school lunch program have been found to have higher intakes of certain vitamins, higher dietary fiber, and lower added sugar. Although participants in the school lunch program have improved intakes of dietary fiber and added sugar, they also have higher intakes of fat than non-participants (32). Crepinsek et al (54) examined 130 school districts to determine the quality of
school lunches. Meals served were not consistent with the Dietary Guidelines, as less than 1/3 of meals met the recommendation for fat; many were too high in sodium and inadequate for fiber.

Similarly, competitive foods draw away from the participation and sales of the school lunch program, as these foods are often more attractive to students (55). However, Fox et al (56) found that students that participate in the school lunch program were significantly less likely to consume competitive foods. Even though school lunch participants consumed less competitive foods, the leading choices were low in nutrients and energy-dense. Listing specific requirements for competitive foods can limit the intake of non-nutritious foods in students. Few policies examined from the current study addressed specific strategies to ensure nutritional adequacy of school meals or to limit access to competitive foods (for example timing of sales).

Some policies stated that competitive foods, such as vending machines, may not be sold during school lunch hours. Neumark-Sztainer et al (57) found that when school wellness policies stated vending machines would be turned off during lunch, there was a decrease in the overall consumption of soft drinks. They also found that policies that decreased the access to high fat and high sugar foods were associated with fewer purchases of these foods in high school students.

Another approach in decreasing the sale of competitive foods is nutrition education. Proper nutrition education learned in the classroom can help impact the choices made in the cafeteria. Abood et al (39) reported that even minimal nutrition education resulted in decreased consumption of fried and sweet foods in high school students. Policies that address both classroom education and competitive food guidelines
can help students understand the importance of proper nutrition. Many policies in this analysis did address the importance of reinforcing the information learned from the classroom in the cafeteria but did not exhibit specific guidelines to establish standards/mechanisms to achieve this goal. Not only can classroom nutrition education influence choices made in the cafeteria, but on food brought for parties and snacks. Modeling proper nutrition practices during the daily activities and events can reinforce nutrition education taught in the classroom. Some policies did address educating students and parents on healthy foods appropriate of parties and snacks.

The requirements of the Child Nutrition and WIC Reauthorization Act stated all policies should include goals for nutrition education and physical activity, nutrition guidelines for all food served on campus, establish a plan for measuring implementation, and involve a number of parties. The policies in this study did not meet all of these criteria. Most policies did include goals for nutrition education; however, the majority were taken from a template. Regarding guidelines for all food served on campus, the majority of policies met this criterion by stating ‘all food will meet federal, state, and local guidelines.’ This is an area were policies did not specifically address the needs of their student body. As for establishing a plan for measuring implementation, districts may have developed a plan, but they did not include this in their wellness policy. Most policies did address measures for their food service operation, but did not touch on their wellness policies.

Those districts that did not rely on templates took the extra time to address issues specific to their student’s needs. These districts addressed specific nutrition requirements, timing of sales, emphasized student health, and linked guidelines to local
wellness policy goals. They also discussed most, if not all, of the subcategories in our study. The statements made were originally developed and not copied and pasted from a template. Other districts should model after these policies to incorporate originality into their own policies. Policies should be customized to fit districts specific needs.

One limitation of this study is the use of only online policies. The policies obtained from online may not have been the most recent and up to date version of the district’s wellness policy. Also, many districts did not have their policies available online, therefore making them ineligible for our analysis. The use of only online wellness policies was done to eliminate the need to contact schools in order to reduce the burden on school administrators.

Further study should be focused on assessing if districts are properly implementing and evaluating their school wellness policy. As the next steps after development are implementation and evaluation, these two areas are key in determining if wellness policies are meeting the needs of the district. Education should also be provided to districts to ensure proper development, implementation, and evaluation of policies.
<table>
<thead>
<tr>
<th>Food Service</th>
<th>Competitive Foods</th>
<th>Education</th>
<th>School-based Activities</th>
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</thead>
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<td>Environment</td>
<td>Information</td>
<td>Classroom</td>
<td>Requirements</td>
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<td>A la carte</td>
<td>Point of Sale/</td>
<td>Sports</td>
</tr>
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<td>Lunches/ Breakfasts</td>
<td>Vending Machines</td>
<td>Food Service</td>
<td>Parties</td>
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<td>Health Education</td>
<td>Fundraisers</td>
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<td>Staff</td>
<td>Rewards</td>
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<td>Special Dietary Needs</td>
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<td>Take Home Material</td>
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</tr>
<tr>
<td>Finances</td>
<td></td>
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<tr>
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<td>Evaluation</td>
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<tr>
<td>Advertising</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidelines</td>
<td></td>
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**Figure 4.1: Code words developed for content analysis of school wellness policies**
<table>
<thead>
<tr>
<th>Domain</th>
<th>Category</th>
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<th>Number of SWPs</th>
<th>% of SWPs</th>
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<td>Fundraisers</td>
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<td>Vending machines</td>
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<td>Snacks</td>
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<td>7</td>
<td>16.3%</td>
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<tr>
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<td></td>
<td>Special dietary needs</td>
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<td>16.3%</td>
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Table 4.1: Frequency of themes occurring within the 43 school wellness policies
Chapter 5

Conclusions and Implications

Many trends were seen during this analysis. The use of templates, abstract concepts, immeasurable goals, and no implementation plan were seen throughout the policies. Although many policies lacked originality and specificity to the specific school environment, some districts did show their genuine interest for student health by developing detailed, meaningful policies. These policies should serve as guidelines for districts that simply adapted templates as their wellness policies.

Template use was apparent from the analysis of the policies. By reading each policy, it was evident that districts had access to three different templates. This consistency in wording of information shows templates were adopted with little or no tailoring. As part of the Child Nutrition and WIC Reauthorization Act, districts were required to ‘involve parents, students, representatives of the school food authority, the school board, school administrators, and the public in development of the policy.’ The use of templates shows that many districts may have not fulfilled this part of the law. The formed committee should have assessed the needs of the districts, resulting in a personalized policy that fit their district. However, with the adaptation of templates, there was little or no assessment of needs which resulted in a policy that does not meet the needs of the district.
The templates used by many districts included areas of information that were not fully developed. Areas such as competitive foods and school-based activities contained little information. When competitive foods were addressed, many policies stated that foods shall ‘comply with the current USDA Dietary Guidelines for Americans.’ When vending machine policies were included, they addressed the financial issues rather than timing of sales and quality of food. These policies should be as detailed as possible and address the quality of foods being served. One district that did not use a template stated that competitive ‘foods and beverages sold individually should include low-fat and non-fat milk, fruits, and non-fried vegetables.’ This statement specifically addresses types of food that should be sold, but still does not include the number of foods to be offered.

Policies that addressed school-based activities were vague in the content and evaluation of these specific policies. Those districts using templates typically included a global section labeled ‘Other School Based Activities.’ This section addressed the eating environment and timing of school lunch rather than parties, fundraising, and concession stands. Few policies included goals for other school-based activities. Those that did included goals for parties, sporting events, fundraisers, and snacks. One district that made their policy highly personalized included in their fundraising policy, ‘The Wellness Coordinator will assist organizations with identification of alternate food items as well as alternate pricing structures that serve as incentives for more nutrition food choices.’

As well as not having fully developed policies, many districts had abstract concepts and immeasurable goals. Policies stated they would include ‘healthy options’ or ‘limit’ the number of parties each year. These vague statements can not be measured and or open to interpretation. For a policy to be effective, all statements should be
measurable to ensure that all aspects are being implemented. When evaluation of the policy occurs, statements such as ‘include healthy options’ could be interpreted differently by each individual. Although many districts included abstract concepts, some did include specific, measurable goals. One policy stated ‘schools shall limit the number of celebrations involving food served during the school day to no more than two per month.’ This statement is specific and can be measured.

Those districts that have vague statements and underdeveloped concepts can look at other policies for direction. The well developed policies can provide examples of how to make policies suitable for their own needs. Also, providing a training or in-service on improving and personalizing school wellness policies could help districts develop policies that reflect the specific needs of their students.

Another area of the law is to establish a plan for measuring implementation of the policy. Very few policies included information on implementation and evaluation with regards to who is responsible and how often they will evaluate. Only one policy actually listed each individual involved in the evaluation process, the rest included little or no information on this process. A future area of study is to assess the districts’ implementation and evaluation processes. This should include an examination to determine if policies are being implemented, how evaluation occurs, and who is involved or accountable for areas of concern. This is an important step after development of the policy. An extraordinary policy means nothing if it is not being implemented and evaluated.

The school wellness policies in this analysis did not meet all the requirements set by the Child Nutrition and WIC Reauthorization Act. Policies fell short on including
goals for other school-based activities and establishing a plan for measuring implementation. As the next steps after development are implementation and evaluation, future study should be focused on assessing if districts are fulfilling these steps in the school wellness policy process. Also, further education on the development, implementation, and evaluation of school wellness policies should be provided to school districts to improve the quality and effectiveness of the policies. Lastly, federal or local policies and legislation can help to improve the enforcement of wellness policies to ensure all children go to school in a healthy supportive environment.

The lack of proper nutrition in children and adolescents has lead to alarmingly high rates of childhood obesity. In response to this epidemic, Congress required all districts to develop school wellness policies. This analysis showed few wellness policies in the state of Ohio addressed all areas required by law. However, many districts relied on templates in the development of their policies. Future work should focus on assessing if districts are implementing and evaluating their wellness policies.
References Cited


