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ELEMENTARY SCHOOL TEACHERS' BELIEFS AND BEHAVIORS
TOWARD FOODS ALLOWED IN THE CLASSROOM

By Jennifer Leigh Varner

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of
the requirements of the Sally McDonnell Barksdale Honors College.

Oxford
May 2013

Approved by

Advisor: Dr. Laurel Lambert

Reader: Dr. Yunhee Chang

Reader: Dr. Ann Monroe

Reader: Dr. Mark Loftin

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ABSTRACT

JENNIFER LEIGH VARNER: Elementary School Teachers' Practices and Perspectives
Toward Foods Allowed in the Classroom
(Under the direction of Dr. Laurel Lambert)

The Mississippi Healthy Students Act passed in 2007, with the intention of addressing childhood obesity and improving the school nutrition environment. While policies target foods offered through school meals and vending, foods allowed in the classroom have not been addressed. The purpose of this research was to investigate elementary teachers' practices of allowing foods of low nutritional value in the classroom for special occasions, as rewards for academic achievement and as incentives for good behavior. During fall of 2012, 277 teachers from 10 public schools completed surveys. Descriptive statistics were used to calculate percentage of agreement and disagreement to questions regarding teachers' perspective toward foods allowed in the classroom. Results showed that 63.0% of teachers always or often allow foods of low nutritional value for special occasions, with 27.7% allowing for rewards, and 25.8% allowing for incentives. Interestingly a large percentage of teachers stated they have autonomy on deciding what foods they allow in the classroom for special occasions (91.3%), rewards (89.8%), and incentives (88.7%). The majority of teachers do not believe that allowing foods of low nutritional value for special occasions (53.5%), rewards (64%) or incentives (61.6%) impacts the overall school nutrition environment. Discussions should ensue as to how the lack of policies regarding foods of low nutritional value allowed in the classroom can possibly impact childhood obesity or the quality of the school nutrition environment.

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CHAPTER 1: INTRODUCTION

The rise in childhood obesity, which has almost tripled since 1980, has so alarmed public health officials that many are calling it an epidemic (Carroll & Ogden, 2010). According to a report compiled by the POWER (Preventing Obesity with Every Resource) initiative guided by the Mississippi Department of Education's Office of Healthy Schools (OHS), this issue is even more urgent in Mississippi where the obesity rate is the nation's highest (Center for Mississippi Health Policy, 2009). This is limiting many children's ability to live healthy productive lives and excel in school.

The OHS under the Mississippi Department of Education is committed to supporting academic achievement through school health programs that ensure every child has the opportunity to be fit, healthy and ready to succeed. The Mississippi Healthy Students Act (Senate Bill 2369) and the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108-265) require each local school to establish a local school wellness policy. This law places the responsibility of developing a school wellness policy at the local level, so the individuals needs of each school can be addressed most effectively.

There is a list of minimum requirements set by federal and state regulations that each school must meet. However, the OHS also developed a document called "Local School Wellness Policy Guide for Development" that states the required policies along with the provided optional policy statements (OHS, 2008). One such optional policy statement that is pertinent to the school classroom environment is, "Add nutritious and appealing options (such as fruits, vegetables, nuts, trail mix, beef jerky, reduced-fat milk,

reduced-fat yogurt, reduced-fat cheese, 100% juice, and water) whenever foods/beverages are sold or otherwise offered at school, including vending machines, school stores, concession stands at sporting and academic events, parties, celebrations, social events, and other school functions. ”

Only one previous study could be found identifying food-related beliefs, eating behaviors, and classroom food practices of middle school teachers (Kubik, Lytle, Hannan, Story, & Perry, 2002). There are still many unanswered questions such as “What are teachers’ current practices regarding the use of low nutritional value (LNV) foods in the classroom? Do teachers’ beliefs support their current behaviors? And is the Theory of Planned Behavior (TPB), which has been known to be helpful in understanding individuals’ attitudes and behaviors towards their actions, useful for determining behavioral, normative, and control beliefs held by teachers regarding the use of LNV foods as a reward, incentive, or celebration in the classroom?”

The purpose of this study was to use the TPB to examine elementary school teachers’ beliefs and behaviors towards the types of foods allowed in the classroom for celebrations, rewards, and incentives.

Thus, the results presented in this study contribute to the greater collection of work previously completed in school health and childhood nutrition research with the goal of investigating teachers’ beliefs and behavioral intentions towards their classroom food practices. This study increased understanding of the classroom food practices and behavior of teachers in today’s school environment. This study highlights the progress Mississippi has made in addressing childhood obesity in the school nutrition environment

through laws and regulations. However, this study also serves as an indicator that there is much more room for improvement.

CHAPTER 2: LITERAURE REVIEW

Overview

According to data collected from the National Health and Nutrition Examination Survey (NHANES, 2007-2008), approximately 17% (or 12.5 million) of children and adolescents in the United States ages 2 to 19 years are obese (Carroll & Ogden, 2010). As of 2009, Mississippi had the highest rate of obesity for both children and adults in the United States, which marks the fifth year in a row that Mississippi has topped this list, according to a report compiled by the POWER Initiative (Center for Mississippi Health Policy, 2009). More recently, the Child and Youth Prevalence of Obesity Surveys (CAYPOS) found that 23.9% of Mississippi children are classified as obese and 18.5% are classified as overweight. In elementary schools specifically, 24.1% of Mississippi students were classified as obese and 17.7% were classified as overweight (Kolbo et al., 2012).

Health risks associated with childhood obesity are numerous, especially in the context of the school environment. Recent studies have shown correlations with overweight students and depression, increased likeliness to miss school, and lower academic achievement in school (Center for Mississippi Health Policy, 2009). In addition, obesity increases students' risk for chronic diseases such as cardiovascular disease, type 2 diabetes, and high blood pressure into adulthood, which are all major determinants of our nation's escalating healthcare costs (Center for Mississippi Health

Policy, 2009). In addition to chronic diseases and a decreased ability to learn, studies have also shown that poor nutrition and limited physical activity can also negatively affect students' physical, social, and emotional health (Agron, Berends, Ellis, & Gonzalez, 2010).

Impact of School Food Environment

Since the passage of the Child Nutrition Act of 1946 (Public Law 79–396) and the School Breakfast Program (Public Law 89-642) in 1966, school meals have played a significant role in the nutrition of the students who participate. Research indicates that students who participate in the National School Lunch Program (NSLP) have greater nutritional intakes compared to those who do not participate (Food and Research Action Center National School Lunch Program [FRAC NSLP], 2013).

Today, over 53 million children attend school in the United States, with over 31 million participating in the NSLP alone. More than 100,000 public and nonprofit private schools participate in the NSLP and provide low-cost or free meals that meet federal nutrition standards (Bhatia, Jones, & Reicker, 2011). School districts that choose to take part in the NSLP receive cash reimbursements and commodity foods for the meals they serve. In return, they must serve meals that meet the federal nutrition requirements. Most recently, those requirements have been revised with the passage of public law 111-296, titled “Healthy Hunger-Free Kids Act of 2010.”

With school-age youth consuming nearly half of their daily nourishment in the school setting (Briefel, Wilson, & Gleason, 2009), the school setting provides a unique opportunity to improve and influence students' eating patterns and ultimately contribute

to lifetime health habits. Thus, this is a good place to start in addressing the youth obesity epidemic.

In addressing eating patterns in the school setting, a study was conducted to determine how nutrition education in the school environment affects students' attitudes, beliefs, and behaviors in regards to fruit and vegetable consumption. In the intervention group, teachers were able to positively influence student attitudes toward fruit and vegetables. However, there were no significant changes in fruit and vegetable consumption among the intervention or control group. Regardless, researchers concluded by saying that teachers play a valuable role in imparting healthy eating messages to students (Prelip, Slusser, Thai, Kinsler, & Erausquin, 2011).

In looking at the impact of the school food environment, Wordell, Daratha, Mandal, Bindler, & Butkus (2012) examined the relationship between an altered school environment and the food choices of middle school students both in and outside of school. Research was designed to alter the school nutrition environment by exposing students to healthier foods and beverages in school. They found that students in the intervention group consumed more milk outside of school and were less likely to consume juice and sweet pastries in school compared to the control group. These findings show that healthful modifications in the school food environment are associated with positive food behaviors in students and that modifying the school food environment could provide a long-term solution to the youth obesity problem.

Examining long term effects of changing the school nutrition environment, a study in the Northeastern part of the United States sought to examine the longitudinal effects of a school-based program on students' fruit and vegetable consumption. Based

on Bandura's social learning theory, the school-wide study included classrooms, the lunchroom, and family components to promote fruit and vegetable consumption by delivering consistent information across multiple settings. After the first year, students in the experimental group consumed more fruits and vegetables compared with the students in the control group. However, after year two, students in the experimental group consumed more fruit, but not more vegetables compared with students in the control group. Thus, this study showed that the school environment can play a positive role in students' beliefs and behaviors regarding nutrition. However, there are still those challenges associated with implementing changes toward healthy eating habits (Hoffman, Franko, Thompson, Power, & Stallings, 2010).

In Minnesota, researchers investigated whether a cafeteria-based intervention alone would increase the fruit and vegetable consumption of students. This study, which was also guided by the constructs of social cognitive theory, chose to focus only on environmental components in the school lunchroom. The intervention took place during two consecutive school years and consisted of daily happenings such as increasing opportunities during school lunch to eat a variety of fruits and vegetables, seeing role models eating fruits and vegetables, and instituting social support in the form of special events and support from foodservice staff in order to increase students' fruit and vegetable consumption. The intervention also included special events such as kick-offs, samplings, challenge weeks, and theater production. The study found that students in the intervention group significantly increased their fruit intake. However, the increase was not as large as seen with interventions that include classroom activities and family

involvement. The authors of this study concluded that environmental interventions alone may have limited impact (Perry et al., 2004).

In 2007, a study was conducted in Canada to determine if the eating behaviors of teachers were determinants of intended classroom food practices and the school food environment. Participants included teachers who were in their final year of undergraduate studies and had student taught a minimum of 22 weeks. The study found that most prospective teachers (93%) believed that a healthy school food environment was important, yet only one-third reported healthy classroom food practices. Researchers concluded that “knowledge, attitudes, and food behaviors of prospective teachers may be barriers to promoting healthy foods habits to their future students. Teachers would benefit from policies and programs that support healthy classroom practices and from required nutrition education in their teacher training curriculum” (Rossiter, Glanville, Taylor, & Blum, 2007).

A recent study titled “Would Students Prefer to Eat Healthier Foods at School” sought to understand students’ perceptions of the school food environment, their food preferences, and their consumption behaviors during the school day. Findings showed that the majority of seventh and ninth grade students did not perceive the foods offered in the school setting to be healthy. Additionally, students responded that fresh fruit was the most important item to be able to buy at school, followed by sports drinks, green salad, and other vegetables. Less than one-third of students rated soda, candy, French fries, and chips as important. While students want healthy options to be available, consumption of healthy options is found to be alarmingly low. Researchers concluded by saying that school officials and policy makers should work together to shape the school food

environment to ensure that the foods and beverages made available at school reflect their desires for healthy choices in order to facilitate the consumption of healthier items (Gosliner, Madsen, Woodward-Lopez, & Crawford, 2011).

National School Nutrition Policies

The implementation of school nutrition policies can play a role in childhood obesity prevention (Agron, Berends, Ellis, & Gonzalez, 2010). Congress recognized the role that schools play in promoting student health and impacting childhood obesity. In response to this, they passed the Child Nutrition and Women, Infant, and Children Reauthorization Act of 2004, Section 204 of Public Law 108-265, which mandates that each local educational agency (LEA) participating in the NSLP develops and implements a wellness policy. At a minimum, the school wellness policies must include: goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness; nutrition guidelines for all foods available on each school campus during the school day with the objectives of promoting student health and reducing childhood obesity; an assurance that guidelines for reimbursable school meals will not be less restrictive than federal regulations; a plan for measuring implementation of the local school wellness policy, including the designation of staff responsible for policy implementation; and involvement from parents, students, representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy.

In December 2010, Congress strengthened this legislation with the passing of the public law titled Healthy, Hunger-Free Kids Act (Public law 111-296). This law

strengthens nutrition guidelines, increases access to meal programs, and increases monitoring and integrity of these meal programs. Under this law, USDA has the authority to set nutritional standards for competitive foods sold during the school day; provide additional funding to schools that meet updated nutritional standards; support local farm to school networks to facilitate the use of more local foods; improve the nutrition quality of commodity foods; expand access to drinking water; and mandate that nutrition promotion and education will be included in school wellness policies. For the first time in over 30 years, this act gives the USDA the opportunity to make real reforms to the school lunch and breakfast programs by improving the critical nutrition and hunger safety net for millions of students (United States Department of Agriculture [USDA], 2013).

Several organizations have conducted analyses of school wellness policy adoption. Action for Healthy Kids (AFHK) and the School Nutrition Association (SNA) found that the majority of school districts have indeed adopted the school wellness policies as the law requires and that the policies they have adopted do include most but not all of the components required by the law.

A study was conducted in Los Angeles involving 399 12th graders in two high schools to determine if implementation of nutrition policies and students' perceptions of the policies had an impact on their food and beverage consumption. The nutrition policies implemented prohibited sodas and "junk" foods on school grounds. Researchers found that those students who viewed the nutrition policies as having an impact decreased their consumption of sodas and junk food at school but not at home.

Researchers concluded that simply restricting access to unhealthy foods in schools may

not be enough to improve students' overall dietary behavior (Vecchiarelli, Takayanagi, & Neumann, 2006).

Mississippi School Nutrition Policies

In keeping in line with federal regulations, in 2007, the Mississippi legislature passed the Mississippi Healthy Students Act (Senate Bill 2369) to support the relationship between student health and student academic achievement by increasing the amount of physical activity and nutrition education required in schools. These recommendations go above and beyond the standards set by the USDA National School Lunch Program. Specifically, the Mississippi Healthy Students Act requires that each local school district's school wellness policy includes regulations in the following areas: a) healthy food and beverage choices, b) healthy food preparation, c) marketing of healthy food choices to students and staff, d) food preparation ingredients and products, e) minimum and maximum time allotment for students and staff lunch and breakfast periods, f) the availability of food items during the lunch and breakfast periods and g) methods to increase participation in the Child Nutrition School Breakfast and Lunch programs (MHSA, 2007).

The MHSA requires recommendations for local school wellness policies be made by a school health council. Thus, the Mississippi Office of Healthy Schools has created a guide for developing local school wellness policies to support local schools in their development to meet both state and federal requirements (OHS, 2008). The guide contains both minimum requirements established by federal legislation and optional policy statements to adopt as is appropriate to meet the individual needs of each school.

One optional policy statement included in the school wellness policy development guide that is of particular interest in addressing the school nutrition environment is: "add nutritious and appealing options whenever foods/beverages are sold or otherwise offered at school, including vending machines, school stores, concession stands at sporting and academic events, parties, celebrations, social events, and other school functions."

School nutrition programs play a key role in influencing students' lifetime habits. Thus, nutrition provided to students in the school environment has been one of the primary targets included in school wellness policies.

USDA Policies on Competitive Foods

As an addition to meals provided by the NSLP, competitive foods have become increasingly widespread impacting students' nutritional intake at school. The USDA defines competitive foods as "foods offered at school, other than meals served through USDA's school meal programs- school lunch, school breakfast, and after-school snack programs." These are the foods that "compete" with the regular meal pattern lunch (Hearst, Lytle, Pasch, & Heitzler, 2009). The USDA recognizes two categories of competitive foods: foods of minimal nutritional value (FMNV) and all other foods offered for individual sale. Foods of minimal nutritional value as outlined in Appendix B of 7 CFR Part 210 of the regulations for the NSLP include soda water, water ices, chewing gum, certain candies, hard candy, jellies and gums, marshmallow candies, fondant, licorice, spun candy, and candy-coated popcorn (US Government Printing Office [GPO], 2012). All other foods offered for individual sale range from second servings of foods that are part of the reimbursable school meal to foods that students

purchase in addition to a reimbursable school meal, such as a la carte sales and other foods and beverages purchased outside school meals from vending machines, school stores, and snack bars.

Mississippi Policies on Competitive Foods

The Mississippi State Board Policy on competitive foods was established to ensure that students are not in the position of having to decide between non-nutritious foods immediately before or during the meal service period. This policy establishes that no food items will be sold on the school campus for one hour before the beginning of any meal services period. In addition, the school food service shall serve only those foods which are components of the approved federal meal patterns being served, milk products, and such additional foods as necessary to meet the caloric requirement of the age group being served. With the exception of water and milk products, a student may purchase individual components of the meal only if the full meal is purchased (Mississippi Department of Education [MDE], 2007).

Impact of Competitive Foods

In the past two decades, interest in understanding how competitive foods may impact students' nutrition has grown. Similarly, encouraging schools to offer more healthful options in a la carte and vending has also grown. Traditionally, foods available through a la carte are high in fat, sugar, and calories (Hearst, Lytle, Pasch, & Heitzler, 2009). The U.S. Government Accountability Office conducted a study on competitive foods and found that nearly nine out of every ten schools sold competitive foods to

students in the school year 2003-2004 through one of the following venues: a la carte in cafeteria lines, vending machines, and/or school stores (US Government Accountability Office [GAO], 2005).

Cullen and Zakeri (2004) conducted a longitudinal study on fourth and fifth graders that showed as students transitioned from elementary school to middle school and gained access to school snack bars, they decreased their consumption of fruits by 33 percent, vegetables by 42 percent, and milk by 35 percent. Likewise, the study found that students increased their consumption of sweetened beverages and high-fat vegetables, such as French fries and tater tots. Another study among seventh graders in Minnesota schools also found that the availability of a la carte programs and snack food vending was associated with lower intakes of fruits and vegetables. In addition, this study revealed that a la carte availability was positively associated with intakes of total and saturated fat (Kubik, Lytle, Hannan, Perry, & Story, 2003).

Small changes in school food policies can affect student consumption of competitive foods. A cross sectional study with over 1000 high-school students from 20 schools observed that when school food policies limit access to foods high in fats and sugars, student purchases of these foods were reduced. For example, in schools where soft drink machines were turned off during the lunch period, students purchased 0.5 percent fewer soft drinks per week compared to students' purchases in schools where soft drink machines were left on during lunch (Neumark-Sztainer, Hannan, Story, & Fulkerson, 2005).

Food Practices Other than Competitive Foods

Food offerings outside of competitive foods have shown to significantly impact students' nutritional intake as well. Specifically, foods offered within the classroom are typically free and usually come with teachers' approval, making them even more competitive than most other competitive foods. Researchers have correlated the number of food offerings or food practices to higher body mass index (BMI) in students. In a study conducted by Kubik, Lytle, and Story (2005), 3088 eighth-grade students' BMIs increased by 0.10 BMI units for every additional food practice permitted in their school. The most prevalent food practices identified were the use of food as incentives and rewards and the use of food for classroom fundraising. These results suggest that regular exposure to common food practices in school increases risk for weight gain among students. The researchers concluded by saying that opportunities for eating during the school day extend well beyond the school lunchroom and that urgent attention needs to be placed on school nutrition policies to consistently promote and support healthy eating habits.

Current Research on Food in Classroom

Currently, there is limited research on teacher's beliefs and behaviors towards offering food as rewards, as incentives, and for celebrations in the classroom. One study conducted in 1999-2000, examined classroom food practices and eating behaviors of middle school teachers in 16 schools in the upper Midwest. Researchers found that candy was the most frequently used food item, followed by cookies/doughnuts, sweetened drinks, and pizza for rewards, incentives, and celebrations in the classroom.

They also found that most teachers did not model healthy eating behavior at school. They concluded that teachers play a critical role in any effort aimed at improving the integrity of the school food environment. “Thus, school and health professionals should continue to advocate for development and effective implementation of policies and programs that support both students and teachers.” (Kubik, Lytle, Hannan, Story, & Perry, 2002).

Additionally, another study sought to examine food as a reward in elementary schools, but it did not address teachers’ beliefs and behaviors toward the offering of food in the classroom specifically. Results showed that food continues to be used as a reward in the classroom, despite national recommendations against this harmful practice. In this study, teachers in 42.1% and 40.7% of schools responded that food was not used as a reward for academic achievement or as incentive for good student behavior, which shows that a large majority still use food as reward and incentive in the classroom. Results also showed that teachers in the South and Northeast were more likely to report that food was used a reward than were teachers in the West and the Midwest, suggesting that it may be part of the cultural climate. The authors of this study concluded that although the educational merits of not using food as a reward is still debatable, the health consequences are documented. They strongly urged that formal district policies be strengthened in order to improve the elementary school food environment by reducing the prevalence of food-based rewards in the classroom (Turner, Chriqui, & Chaloupka, 2012).

Theory of Planned Behavior

In understanding individuals' attitudes and behaviors towards their actions, the theory of planned behavior (TPB) has been successfully used with teachers for explaining intentions and social influences. TPB states that an individual's behavior is directly determined by behavioral intention, which is determined by three influential factors: attitude toward performing the behavior, subjective norm associated with the behavior, and perceived control over the behavior.

- Attitude is determined by the individual's beliefs about a behavior and the evaluations of those behavioral outcomes. Thus, an individual who holds strong beliefs that a positive outcome will result from performing a behavior will have a positive attitude toward the behavior.
- An individual's subjective norms are determined by his or her normative beliefs, that is, whether people who are important (referred to as "referents") to them approve or disapprove of performing the behavior. This is coupled with an individual's motivation to comply with these important referent individuals. Thus, an individual who believes that referents think he or she should perform a behavior and is motivated to meet that referent's expectations will hold a positive subjective norm.
- Perceived control is determined by control beliefs concerning the presence or absence of facilitators and barriers to behavioral performance. This is coupled with an individual's perceived power to facilitate or inhibit the behavior.

According to this theory, if people evaluate a recommended behavior as positive (attitude), and if they think people important to them want them to do it (subjective

norm), the result is a higher intention (motivation), and they are more likely to perform the behavior (Glanz, Rimer, & Viswanath, 2008).

Several studies have been conducted using the TPB. One such study examined physical education teachers' intentions, attitudes, subjective norm, and perceived behavioral control in administering fitness tests effectively. This study examined 195 physical education teachers across 35 states using the Teachers' Intentions to Administer Fitness Tests Effectively (TIAPFTE) questionnaire. The study found that perceived behavioral control was the best predictor for intention followed by attitude. The subjective norm did not accurately predict teachers' intentions to administer fitness tests effectively. Overall, this study found that the Theory of Planned Behavior variables are good predictors of intention (Stewart-Stanec, 2009).

Another study in South Africa was conducted to determine the influence of teachers' attitudes, subjective norms, and perceived behavioral control on their intention to employ interactive simulations in their classrooms. Researchers found that the perceived usefulness and the teaching compatibility of the interactive simulations, in addition to the teachers' general technology proficiency, have a significant impact on the teachers' attitudes towards using simulations in their classrooms. They also discovered that the expectations of teachers' coworkers contributed significantly to the subjective norm of these teachers. Ultimately, they found that the influence of behavioral intention on the actual use of the simulations predicted 70.83% of behavior (Kriek & Stols, 2010).

In Taiwan, 200 high school teachers were surveyed to determine the factors affecting knowledge-sharing behaviors using the Theory of Planned Behavior. Knowledge sharing includes the activities through which "personal, grouping, or

organizational knowledge is distributed to others.” Previous studies have found that if employees are willing to share knowledge, organizations will benefit from not only growth and innovation, but also profit and productivity. This study found that attitudes have the most significant influence on knowledge-sharing behaviors of teachers, followed by perceived behavioral control. They concluded that the constructs of the Theory of Planned Behavior can adequately be used to explain behavior (Chen, 2011). For the purpose of this study, the Theory of Planned Behavior was only used for item development and not for weighted outcomes.

Purpose

Thus, the purpose in conducting this research was to use the Theory of Planned Behavior to examine elementary school teachers’ beliefs and behaviors towards providing food for rewards, incentives, and celebrations in the classroom as outlined in the Office of Healthy Schools: Local School Wellness Policy.

CHAPTER 3: METHODOLOGY

Development

A survey instrument was developed for measuring teachers' behavioral attitudes, subjective norms, and behavioral control towards offering LNV foods in the classroom. Items were developed guided by the Theory of Planned Behavior constructs, review of research literature, and expertise of researchers in the child nutrition and education fields. A total of 46 items were used to measure teachers' behavioral intentions. Items included were: 3 measuring behavioral beliefs, 15 measuring behavioral outcomes, 12 measuring normative beliefs, 4 measuring motivation to comply, 6 measuring control beliefs, 3 measuring perceived power, and 3 measuring actual behavior. Forty-three of the items used a 5-point Likert-type scale with 1 being strongly disagree to 5 being strongly agree. The 3 behavior items used a 4-point Likert-type scale with 1 being never to 4 being always. Five additional items were included on the survey, two regarding demographics and three regarding the school wellness policy.

Prior to the study, the survey was pilot tested using a convenient sample of elementary school teachers from a university graduate course. Participants were asked to evaluate the survey instrument for clarity of instruction, readability, and content of items. Participants' input resulted in some rewording of items and rearrangement of item placement in survey. This survey was revised and resubmitted to participants for one

final review and consensus on changes. Participants from the university graduate course were excluded in the data collection.

Sample Collection

Three elementary schools from two different counties and four elementary schools from another county in northwest Mississippi were recruited to participate in the study. The ten schools that participated were chosen in order to have a comparable number of teachers in each grade. Elementary school teacher was defined by each school district.

Data Collection

An email was sent to three elementary school principals in each of the three school districts notifying them that the researcher would be contacting them within one week about participating in the survey instrument. A follow-up phone call took place one week later to discuss and gain approval to distribute the survey to elementary school teachers. Upon receiving approval from the principal, an email was sent thanking the principal and confirming participation.

Researchers then visited each school. Surveys were distributed to schools in County 1 and County 2 during teacher in-service days in August 2012. Researchers were also available to explain the purpose of the survey and research methodology and to answer any possible questions. In County 3, the teacher in-service day was cancelled. Therefore, surveys were distributed to four schools in October 2012 and then collected one week later. As an incentive, all teachers participating were eligible to win one of three \$25 Wal-Mart cards.

The study was approved by the university's institutional review board (IRB) prior to data collection.

Data Analysis

Data were analyzed using SPSS (version 16.0.1 SPSS, Inc, Chicago, IL, 2007). Descriptive statistics were employed identifying factors that statistically explained differences among variables. After encoding the data in SPSS, the data were screened for usage. Missing values, outliers, normality, and linearity were analyzed.

The sum of the products of each behavioral beliefs and its outcome evaluation were used as the predictor of the attitude as behavior and similarly for subjective norm and perceived behavioral control. SPSS version 12.0 was used to compute all the statistics for the study.

CHAPTER 4: RESULTS

Demographic Characteristics

Demographic information is presented in Table 1 and Table 2. Elementary teachers from the 'Other' category included special education, music, speech, physical education, librarian, gifted, English language learner, Spanish, media center, and guidance counselor. The combined category included teachers responsible for two or more grades in the same classroom. The majority of teachers surveyed taught second through fifth grade. The largest category for years taught was greater than 21 years. With the exception of 6th grade, teachers in grades Pre-K through 5th completing surveys were comparable in numbers, ranging from 26 to 36.

Table 1

Number of teachers in respective grade

| Grade | Number | Percent |
|-----------------|--------|---------|
| Pre-K | 29 | 10.10 |
| 1 st | 26 | 9.39 |
| 2 nd | 37 | 13.36 |
| 3 rd | 37 | 13.36 |
| 4 th | 35 | 12.64 |
| 5 th | 36 | 13.00 |
| 6 th | 4 | 1.44 |
| Combined | 28 | 10.11 |
| Other | 38 | 13.72 |

Table 2

Total number of years teachers have been teaching

| Total Years Teaching | Frequency of Teachers | Percent of Teachers |
|----------------------|-----------------------|---------------------|
| Less than 1 year | 21 | 7.58 |
| 1-5 years | 52 | 18.77 |
| 6-10 years | 51 | 18.41 |
| 11-15 years | 54 | 19.49 |
| 16-20 years | 34 | 12.27 |
| Over 21 years | 59 | 21.30 |

Out of 277 teachers, 183 (67.53%) reported that their school has a School Wellness Policy (SWP). The Mississippi Legislature Senate Bill 2369, referred to as the Mississippi Healthy Students (MHS) Act, requires that each school establish its own SWP and a School Health Council for the implementation and evaluation of the SWP. Although this is a requirement for Mississippi schools, only 115 (42.44%) teachers reported that their school had a health council. Forty (14.76%) teachers said their school didn't have a health council and the remaining 116 (42.80%) teachers said they did not know. Additionally, while the federal law, the Healthy Hunger-Free Kids Act (Public Law 111-296) mandates that a teacher representative of the school health council be a physical education teacher, the MHS Act specifies, at a minimum, that any public schoolteacher may be a member. In this study, 20 teachers said that they were members of their local school health council. Of those 20 teachers, half had been teaching for five years or less.

Teachers were asked if there were policies and procedures in place regarding the types of food permitted in the classroom. Of the 277 teachers that responded, 39.48% reported policies and procedures have been established for the types of foods allowed in

the classroom for birthday parties or other special occasions such as holidays; rewarding students' academic achievement (38.52%); and influencing students' behavior (37.17%).

Behaviors

Out of 277 teachers, the majority of teachers (63%) said that they presently always or often allow students to eat LNV foods in the classroom for special occasions. However, a lesser number of teachers (27.68%) said they presently always or often allow LNV foods in the classroom for rewarding students' academic achievement and 25.83% always or often allow for influencing students' behavior. Furthermore, 6.59% said they never allowed LNV foods for special occasions, 18.82% said they never allowed LNV foods for academic achievement, and 29.52% said they never allow LNV foods for influencing students' behavior.

Table 3

Percentage of teachers that allow the use of LNV food in classroom

| Independent Variables | Special Occasions | Rewards | Incentives |
|-----------------------|-------------------|---------|------------|
| Always | 40.29 | 8.86 | 9.59 |
| Often | 22.71 | 18.82 | 16.24 |
| Some | 30.40 | 53.51 | 44.65 |
| Never | 6.59 | 18.82 | 29.52 |

Behavioral Beliefs and Evaluation of Behavioral Outcomes

The majority of teachers (89.17%) reported they agreed or strongly agreed that they should allow students to eat LNV foods in the classroom for special occasions. However, fewer teachers (52.92%) reported that it is acceptable for rewarding students'

academic achievements and even fewer teachers (39.78%) reported that it is acceptable for influencing students' behaviors.

Out of 277 teachers, the majority agreed or strongly agreed that offering LNV foods in the classroom is a common teaching practice for special occasions (71.64%), rewarding achievement (61.82%), and influencing behavior (61.54%). Fewer teachers agreed (21 %) that offering LNV foods for special occasions promoted poor eating habits compared to allowing LNV foods for academic achievement (30.62%), and influencing behavior (28.58%). It was also noted that about one-third of teachers believed there was no impact on eating habits, either positively or negatively, due to the offering of LNV foods for parties (32.12%), academic achievement (32.47%), or influencing behavior (33.33%). Teachers did report that using foods of LNV promotes positive student behavior for special occasions (36.16%), rewarding students' academic achievement (47.24%), and influencing students' behavior (46.13%).

While a larger percentage of teachers (60.07%) responded that allowing foods of LNV in the classroom for special occasions is the right decision, a smaller percentage of teachers agreed that using foods of LNV for rewarding students' academic achievements (26.37%) and for influencing students' behavior (26.28%) is the right decision. Regarding whether allowing LNV foods in the classroom is the right decision, it was noted that a similar percentage of teachers reported that they had no opinion for special occasions (29.30%), academic achievement (41.03%), and influencing behavior (38.69%). Additionally, less than one-fourth of teachers agreed that the presence of LNV foods for special occasions (22.71%) for rewarding academic achievement (28.0%), and for influencing students' behavior (26.81%) hinders the overall healthy school nutrition

environment. Table 4 identifies teachers' agreement in allowing LNV foods in the classroom for the following reasons.

Table 4*Percent of teachers' agreement towards allowing LNV foods in the classroom*

| Behavioral Beliefs | Special Occasions | Rewards | Incentives |
|---|-------------------|---------|------------|
| Is the right decision | | | |
| Strongly Agree/Agree | 60.07 | 26.37 | 26.28 |
| Neither Agree or Disagree | 29.39 | 41.03 | 38.69 |
| Strongly disagree/disagree | 10.63 | 32.60 | 35.03 |
| Is common teaching practice | | | |
| Strongly Agree/Agree | 71.64 | 61.82 | 61.54 |
| Neither Agree or Disagree | 18.18 | 21.82 | 21.61 |
| Strongly Disagree/Disagree | 10.18 | 16.36 | 16.85 |
| Promotes poor eating habits | | | |
| Strongly Agree/Agree | 21.53 | 30.62 | 28.58 |
| Neither Agree or Disagree | 32.12 | 32.47 | 33.33 |
| Strongly Disagree/Disagree | 46.35 | 36.90 | 38.10 |
| Promotes good behavior | | | |
| Strongly Agree/Agree | 36.16 | 47.24 | 46.13 |
| Neither Agree or Disagree | 40.22 | 29.89 | 29.89 |
| Strongly Disagree/Disagree | 23.62 | 22.88 | 23.99 |
| Hinders healthy school environment | | | |
| Strongly Agree/Agree | 22.71 | 28.00 | 26.81 |
| Neither Agree or Disagree | 30.77 | 35.64 | 34.78 |
| Strongly Disagree/Disagree | 46.52 | 36.00 | 38.41 |

Normative Beliefs

Out of 277 teachers, 137 (49.45%) agreed that their principal thinks they should allow LNV foods in the classroom for special occasions. Fewer teachers (23.35%) agreed or strongly agreed that their principal thinks they should use LNV foods as a reward for good grades, and even fewer teachers (20.8%) agreed or strongly agreed that their principals think they should allow LNV foods for influencing good behavior. It was also noted that the majority of teachers responded that they had no opinion on what their principal believed about allowing LNV foods in the classroom for rewarding students' academic achievement (49.27%) and for influencing students' behaviors (48.54%).

Most teachers (69.21%) reported that they agreed the majority of other teachers think they should allow LNV foods in the classroom for special occasions. However, fewer teachers said that they agreed the majority of other teachers think they should allow LNV foods in the classroom for rewarding academic achievement (50.18%) and for influencing student behavior (46.71%). Two hundred and twenty teachers (79.43%) agreed and strongly agreed that the parents of their students think they should allow LNV foods in the classroom for special occasions. The majority of teachers also said that they agreed their parents of their students think they should allow LNV foods for rewarding academic achievement (58.4%) and for influencing good behavior (52.19%). As anticipated, most teachers reported that they agreed their students think they should allow LNV foods in the classroom for special occasions (92.78%), for rewarding academic achievement (87.23%), and for influencing good behavior (83.58%). Table 5 identifies teachers' agreement towards allowing LNV foods in the classroom based on normative referents' beliefs.

Table 5*Percent of teachers' agreement towards normative referents' beliefs*

| Normative referents | Special Occasions | Rewards | Incentives |
|-----------------------------------|-------------------|---------|------------|
| Principal | | | |
| Strongly Agree/Agree | 49.45 | 23.35 | 20.80 |
| Neither Agree or Disagree | 33.94 | 49.27 | 48.54 |
| Strongly disagree/disagree | 16.60 | 27.37 | 30.66 |
| Majority of other teachers | | | |
| Strongly Agree/Agree | 69.21 | 50.18 | 46.71 |
| Neither Agree or Disagree | 20.29 | 29.45 | 29.93 |
| Strongly disagree/disagree | 10.50 | 20.37 | 23.36 |
| Students' parents | | | |
| Strongly Agree/Agree | 79.43 | 58.40 | 52.19 |
| Neither Agree or Disagree | 14.44 | 25.91 | 20.20 |
| Strongly disagree/disagree | 6.14 | 15.69 | 18.61 |
| Students | | | |
| Strongly Agree/Agree | 92.78 | 87.23 | 83.58 |
| Neither Agree or Disagree | 3.61 | 6.20 | 9.49 |
| Strongly disagree/disagree | 3.61 | 6.57 | 6.93 |

Perceived Power

A majority of teachers (74.73%) said their principal allows them to decide what foods they choose to use in the classroom for special occasions. Teachers believe they have less authority on foods allowed in the classroom for rewarding academic achievements (65.69%) and influencing good student behavior (64.24%).

Motivation to Comply

It appears that principals may be the most influential referent for teachers regarding foods being offered in the classroom. Out of 277 teachers, 171 (63.10%) said their decision on what foods to allow students to eat in the classroom is influenced by what they think their principal believes they should do. Fewer (23.89%) teachers said their decision is influenced by what the majority of other teachers think with 39.71% responding other teachers have no influence. Teachers also indicated that their students (35.56%) had little influence. One hundred and eleven (41.11%) teachers said their decision is influenced by what the majority of their students' parents think and 73 (27.04%) teachers said their decision is based on what their students think.

Control Beliefs

In reporting control beliefs, the majority of teachers reported that it is important to them that their principals allows them to decide what foods they allow their students to eat in the classroom for special occasions (74.35%), for rewarding academic achievement (69.51%), and for influencing students' behaviors (67.66%). Just under one-fourth of teachers responded that they didn't care either way for special occasions (21.61%), for academic achievement (24.16%), and for influencing students' behavior (25.65%).

CHAPTER 5: DISCUSSION

Participants

Of the twenty teachers who reported that they were members of their local school health council, half of those teachers had been teaching for five years or less. This may indicate that new teachers are more likely to join the school health council than teachers who have been teaching for a longer period of time.

When prospective teachers were surveyed on their attitudes toward the school food environment, they agreed that healthy foods should be promoted and offered through the school lunch program. It was suggested that by limiting access to vending machines and other food offerings students' consumption of healthy foods would increase. However, when asked about types of foods should be allowed for school fundraisers, teachers were uncertain if foods high in fat and sugar should be limited (Rossitier, Glanville, Taylor, & Blun, 2007). It may be that early education regarding the impact that offering foods of LNV in the school nutrition environment needs to begin early in a teacher's career.

The federal, state, and department of child nutrition require that school health councils be developed. Only two of the 10 schools had all teachers report that there was a health council present at their school. With almost 15% of teachers reporting that their school didn't have one, these findings may indicate that schools need to be more proactive in informing teachers of policies and procedures in place or that schools need to form a school health council.

Also, since only about one-third of teachers reported policies and procedures that have been established regarding the types of food allowed in the classroom for special occasions, rewards, and incentives, investigations should be made on how to assist schools in implementation and evaluation of school wellness policies. Previous research has shown that potential benefits of a policy will remain unrealized unless effective policy implementation and evaluation occurs (Agron, Berends, Ellis, & Gonzalez, 2010). Research focusing on school staff compliance with these policies and procedures may be beneficial. Currently, along with the mandated school wellness policies, Mississippi only has one optional policy statement regarding food allowed in the classroom for special occasions, rewards, and incentives, included in the Local School Wellness Policy: Guide for Development. This leaves ample opportunity for improvement in the development of future policies that may affect the school nutrition environment.

Evaluations of Behavioral Outcomes

Based on the research in this study, teachers find that offering foods of LNV for special occasions is more acceptable than offering it for academic achievement or good behavior. While teachers may not see a concern in offering LNV food for special occasions, previous research shows that primarily low-nutrient, energy-dense items constitute the majority of foods offered during classroom celebrations, contributing between 20% and 35% of students' total daily estimated energy needs (Isoldi & Rodriguez, 2012). Additionally, Isoldi and Rodriguez (2012) found that an abundance of low-nutrient, energy-dense foods offered during classroom celebrations items will lead children to associate these items with celebrations in general, even beyond the school

environment. So, while the prevalence of offering LNV foods for classroom celebrations may be commonplace, teachers need to be well informed on the consequences of this practice.

Since 78.47% of teachers reported that they believe offering LNV foods in the classroom does not promote students' poor eating habits or hinder the overall healthy school nutrition environment, teachers may be not see the harm in or be ambivalent towards classroom food practices. Other results show that many teachers believe that offering LNV food is beneficial in accomplishing the desired outcome, and that there are no long-term detrimental effects. Teachers' beliefs regarding the effectiveness of offering LNV foods in the classroom in achieving the intended outcome may be a hindrance to changing their current attitudes. However, types of foods offered in the school environment could negatively impact students overall health. One study found a 10% increase in students' BMI for every food practice (such as incentives and rewards) permitted in their school (Kubik, Lytle, & Story, 2005). Furthermore, based on the fact that about one-third of teachers had no opinion on whether the offering of LNV foods was the right decision, this may indicate that the type of foods allowed in the classroom is not a high priority for teachers compared to their other responsibilities. If teachers are uninformed on the role a healthy school nutrition environment can play in students' health, they may lack the directive to improve the types of foods allowed in their classroom.

Normative Beliefs and Motivation to Comply

Normative beliefs are the “beliefs about the extent to which other people who are important to them think they should or should not perform particular behaviors.”

Normative beliefs are primarily studied for two reasons. First, they assist in predicting intention and behavior. Second, they provide specific information about where intervention efforts should be focused (Trafimow, n.d.)

Findings show that almost 50% of teachers believe their principal thinks they should allow foods of LNV in their classroom for special occasions. However, there were almost 35% who neither agreed nor disagreed in knowing what their principal believes on what foods should be offered. A higher percentage of teachers neither agreed nor disagreed on knowing what their principal thinks regarding foods they should offer for rewards and incentives. Perhaps principals need to more clearly indicate their opinion on offering LNV food in the classroom for special occasions, but specifically for rewards and incentives. It has been shown that for the most part principals are unfamiliar with the contents of their Local School Wellness Policy. Principals should see their Local Wellness Policy as a tool to guide and improve their school environment as a whole, benefitting not only students but all individuals affiliated with the school (Belansky et al, 2009). In order to better lead their schools towards a healthier future, principals must first be fully informed on the details of such policies and clearly see its potential benefits. Additionally, it is important that principals recognize the critical role that they play in shaping the school food environment. Teaching children about nutrition and its relationship to academic achievement is certainly important, but action exhibited by

school administrators, such as through the implementation of policies and practices, is equally, if not more, important (Shahid, 2003).

Findings on perceived power indicate that most teachers believe their principal allows them to decide what is allowed in the classroom for special occasions, academic achievement, and influencing behavior. If teachers believe the authority lies in their hands (regardless of whether it does or not), they most likely will continue to allow foods of their choice in the classroom. A significant positive correlation exists between perceived behavioral control and actual behavior. Chen (2011) found that when teachers are vested in a change and they perceive they have control over that change, they are more likely to establish the desired behavior.

Change is also influenced by teachers' motivation to comply. This study showed that teachers' decisions on what foods to allow in their classroom are most influenced by their principal followed by parents, students, and other teachers. This may indicate that principals could lead the way in changing the landscape of the school food environment. The decisions school administrators make regarding the school health environment may ultimately influence students' eating behaviors and be crucial to the overall learning environment (Shahid, 2003). However, it was found that very little is actually being done to promote healthy eating practices in schools, and that most principals are not thoroughly convinced that educating students on the importance of a healthy lifestyle is influential (Shahid, 2003).

In this study, the majority of teachers responded that their principal allows them to decide what foods can be offered in their classroom, even though one-third of teachers reported there are policies and procedures that have been established regarding the type

of food allowed in the classroom. This may indicate that while there are policies and procedures in place regarding the school nutrition environment, school administration may not actively be enforcing these policies.

Based on teachers' normative beliefs regarding parents, approximately 80% of teachers believe parents would like them to allow foods of LNV for special occasions and were second after principals in influencing their decision. Establishing a good parent-teacher relationship is critical to shaping students' healthy eating habits. Parental involvement in school-based nutrition intervention has been shown to increase children's dietary knowledge and health behaviors in general and decrease children's BMI and fat intake (Van Lippevelde et al, 2012). Additional research on a school-based health education program designed to increase students' fruit and vegetable intake was also found to be successful when parents, teachers, and students worked together. (Blom-Hoffman, Wilcox, Dunn, Leff, & Power, 2008). Ultimately, it is crucial that teachers and parents work together in order to have a greater impact on the student's overall well-being.

This is especially true since parents are generally the ones providing the snacks for classroom celebrations. Thus, parents need to be more informed specifically on what to bring for these occasions (Isoldi & Rodriguez, 2012). One study looked at what types of items parents brought to the classroom for celebrations when no guidance was given. Foods reported during these classroom celebrations were primarily low-nutrient, energy-dense items such as chocolate layer cake, vanilla ice cream, fruit punch, Dorito's, cheese puffs, and potato chips (Isoldi & Rodriguez, 2012). The researchers concluded that the

local school wellness policy should also be aimed at guiding parents in what foods should be provided for special occasions.

To a lesser extent, teachers reported that they were influenced by what they think other teachers believe they should do. This might indicate that teachers may simply do what other teachers are doing, because they desire to follow common practice and not set themselves apart. Expectations of colleagues do have a significant impact on subjective norm, which directly affects behavioral intention according to the Theory of Planned Behavior (Kriek & Stols, 2010). Chen (2011) also found a correlation between subjective norms and behavioral intentions, when he found that superiors' and colleagues' approval of certain practices affects their actual behavior.

Students were the least influential determinant on teachers' behavior. The majority of teachers believed that their students thought they should offer foods of LNV in the classroom for special occasions, academic achievement, and influencing behavior, but only 27% agreed that students influence their decisions. Since teachers agree that offering students foods of LNV is effective in achieving the desired outcomes and that their students think they should, there seems to be no motivation to change this practice. However, research has shown that teachers can change students' perception towards foods of LNV. Changing students' attitudes and the culture surrounding LNV foods could potentially lead to students choosing healthier foods over low-nutrient, energy-dense foods. One study investigated how students might be influenced by their teacher in selecting a healthier food item. When students received both tangible (a game) and non-tangible (praise) rewards by teachers for selecting the healthy food item over the non-healthy food item, children were much more likely to select a healthy food choice in the

future (Grubliauskiene, Verhoeven, & Dewitte, 2012). Thus, teachers can have a significant effect on students' health-related decisions.

Control beliefs

Results show that it is important to teachers that they have the authority to make the decision on what foods are allowed in their classroom, whether it is for special occasions, academic achievement, or influencing behavior. Control beliefs are important in influencing actual behavior. In classroom management, teachers are often led to deal with an array of issues. Much research has been conducted on addressing teachers' classroom management skills regarding students' disciplinary behavior. One such study found that training teachers adequately on how to effectively manage their classrooms may result in the prevention of disciplinary problems in elementary grades (Reglin, Akpo-Sanni, Losike-Sedimo, 2012). Classroom management also encompasses how students are rewarded for behavior and achievement. Providing teachers guidance and resources for using healthy food options or non-food item as rewards can result in desired outcomes. Teachers need to be informed and believe that they can have a tremendous impact in establishing a healthier school environment simply by controlling what foods they allow in the classroom and use for rewards and incentives..

Behavior

Findings show that the majority of teachers always or often allow LNV foods in the classroom for special occasions and that it is common practice. However, when asked if foods of LNV should be allowed for special occasions, the percent of agreement

was much higher. It appears that there may be other influencing factors that impact teachers' decision for allowing or not allowing foods of LNV for special occasions.

In addressing behavioral beliefs, the majority of teachers agreed that offering foods of LNV in their classroom for special occasions is the right thing to do with the majority disagreeing or having no opinion that it promotes poor eating habits or hinders the school nutrition environment. Additionally teachers did not view offering foods of LNV for special occasions as promoting good behavior and may see it as expected of them. Therefore teachers may not have any reason to be motivated or perceive a need to change their behavior in allowing foods of LNV for special occasions. It is interesting that less than the majority of teachers agreed that offering foods of LNV for rewards and incentives is the right thing to do but agreed in the majority that it is common practice and promotes positive behavior. It may be the culture, lack of knowledge on healthy rewards or incentives that could be offered, or beliefs that alternative rewards and incentives will not achieve the desired outcome are influencing their behavior.

CHAPTER 6: CONCLUSION

The purpose of this study was to use the TPB to examine elementary school teachers' beliefs and behaviors towards the types of foods allowed in the classroom for celebrations, rewards, and incentives. By using the concepts presented in the TPB, teachers' behavioral beliefs, normative beliefs, and control beliefs were measured in addressing LNV foods offered in the classroom. Understanding teachers' practices of foods offered in the classroom will assist in examining the school food environment and can ultimately help to understand the potential impact school food environments have on reducing obesity.

The findings from this study support previous studies showing that school food offerings are a widespread practice, and that serious attention needs to be given to this issue, particularly to the offering of food in the classroom. Findings in this study indicate that the use of LNV food as celebration, reward, and incentive is a common classroom practice among elementary school teachers in northwest Mississippi. This study identified that offering LNV food in the classroom is more common and accepted for special occasions such as birthday parties and holidays. Behavioral beliefs also indicated that teachers see no need to change their practices, which may be attributed to the cultural climate of the region. Since results show that the majority of teachers approve of offering LNV food in the classroom for special occasions, perhaps teachers and administration

could look into offering healthy alternatives or non-food alternatives for school celebrations.

Additionally, findings suggest that teachers may have the desire to restrict LNV foods in the classroom as a reward or incentive, but may not know any other way to motivate or encourage students. Perhaps, teachers need to be trained on the value and implications of intrinsic motivation and various ways to implement this in the classroom.

Teachers play an important role in the school food environment. If teachers are to be positive role models for their students, school administration needs to continue to work for policies that support both students and teachers. Administration also needs to fully inform their teachers on policies and programs in place as well as the harmful effects of regularly offering low nutritional value foods in the classroom. Ultimately, offering food within the classroom is still within the teachers' domain. By identifying beliefs that most impact teachers' decisions on what foods are allowed in the classroom, education can be targeted towards those beliefs to bring about desired results. Education regarding the negative impact that offering foods of LNV has on the school nutrition environment could begin early in a teacher's career. Educating teachers early on the role that they play in the school nutrition environment can potentially have a significant role in ultimately changing the cultural climate of a school nutrition environment over time.

Since students' parents are the second most influential determinant on teachers' beliefs, it is also imperative that parents are involved in this process of changing the school food environment. The school wellness policy should be aimed at guiding parents in what foods to provide for classroom celebrations. Ultimately, it is crucial that teachers

and parents work together in order to have a greater impact on the students' overall well-being.

Further studies should aim to better understand exactly what teachers believe about offering LNV foods in the classroom. Specifically, investigating principals' and parents' beliefs, since they are the most influential on shaping teachers' beliefs, may have a tremendous positive impact on the school nutrition environment.

Overall, it is evident that offering LNV food in the classroom for special occasions, rewards, and incentives is a commonplace practice in northwest Mississippi that is largely attributed to the culture. In order for lasting change to occur, it would be helpful to look at changing the culture. Although change never happens easily, it is necessary in reshaping the culture of the school nutrition environment, which could ultimately play a large part in the long-term solution to the present obesity epidemic.

Limitations

One limitation of this study is that only a small percentage of elementary teachers were surveyed in north Mississippi. A larger population would likely have given a more accurate depiction of teachers' beliefs and subsequent behaviors. Additional demographics of schools, such as the socioeconomic status, were not obtained, which might have been helpful in understanding the cultural climate of the school. Actual school wellness policies and existence of school health councils were not collected. The terms "special occasions," "rewards," "incentives," and "LNV foods" may have been interpreted differently from teacher to teacher.

APPENDICES

Appendix A

Survey Instrument

Teachers' Beliefs and Behaviors towards Offering Food in the Classroom

Please place a “✓” in the box that best describes your agreement with the statements.

| I believe I should allow students to eat foods of low nutrition value (i. e. sweetened drinks, candy, cookies, salty snacks, etc.) in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|--|----------------|-------|---------------------------|----------|-------------------|
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' academic achievements. | | | | | |
| influencing students' behaviors. | | | | | |
| anytime I believe it is appropriate. | | | | | |

| Allowing students to eat foods of low nutritional value in my classroom for birthday parties or special occasions like holidays: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|---|----------------|-------|---------------------------|----------|-------------------|
| is the right decision. | | | | | |
| is a common teaching practice. | | | | | |
| hinders students from eating a healthy diet. | | | | | |
| encourages poor eating habits. | | | | | |
| promotes positive student behavior. | | | | | |
| hinders an overall healthy school nutrition environment. | | | | | |

| Using foods of low nutritional value in my classroom for rewarding students' academic achievements: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|--|----------------|-------|---------------------------|----------|-------------------|
| is the right decision. | | | | | |
| is a common teaching practice. | | | | | |
| hinders students from eating a healthy diet. | | | | | |
| encourages poor eating habits. | | | | | |
| promotes positive student behavior. | | | | | |
| hinders an overall healthy school nutrition environment. | | | | | |

| Using foods of low nutritional value in my classroom for influencing students' behavior: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|---|----------------|-------|---------------------------|----------|-------------------|
| is the right decision. | | | | | |
| is a common teaching practice. | | | | | |

| | | | | | |
|---|----------------|-------|---------------------------|----------|-------------------|
| hinders students from eating a healthy diet. | | | | | |
| encourages poor eating habits. | | | | | |
| promotes positive student behavior. | | | | | |
| hinders an overall healthy school nutrition environment. | | | | | |
| I believe my principal thinks I should allow foods of low nutritional value in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' academic achievements. | | | | | |
| influencing students' behaviors. | | | | | |
| anytime I believe it is appropriate. | | | | | |

| | | | | | |
|---|----------------|-------|---------------------------|----------|-------------------|
| I believe the majority of other teachers at my school think I should allow foods of low nutritional value in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' academic achievements. | | | | | |
| influencing students' behaviors | | | | | |
| anytime I believe it is appropriate. | | | | | |

| | | | | | |
|--|----------------|-------|---------------------------|----------|-------------------|
| I believe the majority of my students' parents think I should allow foods of low nutritional value in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' achievements. | | | | | |
| influencing students' behaviors. | | | | | |
| any time I believe it is appropriate. | | | | | |

| | | | | | |
|---|----------------|-------|---------------------------|----------|-------------------|
| I believe the majority of my students think I should allow foods of low nutritional value in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' achievements. | | | | | |
| influencing students' behaviors. | | | | | |
| anytime I believe it is appropriate. | | | | | |

| | | | | | |
|---|----------------|-------|---------------------------|----------|-------------------|
| My administration allows me to decide what foods I allow students to eat in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
| birthday parties or special occasions like | | | | | |

| | | | | | |
|--------------------------------------|--|--|--|--|--|
| holidays. | | | | | |
| rewarding students' achievements. | | | | | |
| influencing students' behaviors. | | | | | |
| anytime I believe it is appropriate. | | | | | |

| It is important to me that my administration allows me to decide what foods I allow students to eat in my classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|--|----------------|-------|---------------------------|----------|-------------------|
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' achievements. | | | | | |
| influencing students' behaviors. | | | | | |
| anytime I believe it is appropriate. | | | | | |

| My decision on what foods to allow students to eat in my classroom is influenced by what I think: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|---|----------------|-------|---------------------------|----------|-------------------|
| my principal believes I should do. | | | | | |
| the majority other teachers believe I should do. | | | | | |
| the majority of my students' parents believe I should do. | | | | | |
| the majority of my students believe I should do. | | | | | |

| There are policies and procedures in place regarding the types of foods allowed in the classroom for: | Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |
|---|----------------|-------|---------------------------|----------|-------------------|
| birthday parties or special occasions like holidays. | | | | | |
| rewarding students' achievements. | | | | | |
| influencing students' behavior. | | | | | |
| when I believe it is appropriate. | | | | | |

| | Always | Often | Some | Never |
|---|--------|-------|------|-------|
| <u>Presently</u> I allow students to eat foods of low nutrition value for birthday parties or special occasions like holidays. | | | | |
| <u>Presently</u> I allow students to eat foods of low nutrition value for rewarding students' academic achievements. | | | | |
| <u>Presently</u> I allow students to eat foods of low nutrition value for influencing students' behavior. | | | | |

Please place a "✓" to indicate your answer.

What grade do you teach?

Pre-k _____

1st _____

2nd _____

3rd _____

4th _____

5th _____

6th _____

Combination (i. e. 2/3 split) _____

Other (i. e. 7th, Art, Music) please write in grade _____

How many total years have you taught?

Less than 1 _____ 1-5 _____ 6-10 _____ 11-15 _____ 16-20 _____ Over
21 _____

Does your school have a School Wellness Policy? Yes___ No___ I don't
know ___

Does your school have a Health (Wellness) Council? Yes___ No___ I don't
know ___

If yes, are you a member of the Health Council? Yes___ No___ I don't
know ___

APPENDIX B

Principal Letter

July, 2012

Dear Principal ____:

We are conducting a survey to collect input from elementary school teachers on their beliefs towards allowing or not allowing foods with low nutritional value to be consumed in their classrooms. It is our hope that the results of this study will provide valuable feedback from teachers when schools are developing their School Wellness Policies regarding the school nutrition environment. We are including teachers from nine different schools in three counties and asking for their help in gathering this information by completing a survey that will take **approximately 5-7 minutes**.

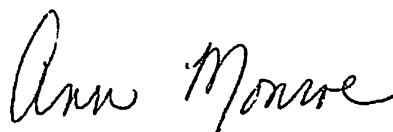
We are asking for your support and assistance in gathering this information by allowing us 20 minutes of time during one of the in-service days provided to teachers during the fall semester to disperse and collect the surveys. Results of the survey will be reported collectively from teachers in the nine schools. All survey data will be entered into an Excel data base. Confidentiality is maintained and no individual responses can be identified. You will receive a copy of the Executive Summary to share with your teachers once the study is completed.

This study will be reviewed and approved by The University of Mississippi's Institutional Review Board (IRB) prior to teachers completing the survey. The IRB is responsible for ensuring that this study fulfills the human research subject protections obligations required by state and federal law and University policies. If you or participants have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482. Your help is critical to the success of the study and greatly appreciated.

Sincerely,



Laurel Lambert, PhD, RD.
School of Applied Sciences
The University of Mississippi
662-915-7807



Ann Monroe, Ed. D
School of Education
The University of Mississippi
662-915-5250

Jennifer Varner, Honor Student
Sally McDonnell Barksdale Honors College

APPENDIX C

Teacher Letter

October, 2012

Dear Participant:

We are conducting a survey to collect input from elementary school teachers on their beliefs towards allowing or not allowing foods with low nutritional value to be consumed in their classrooms. It is our hope that the results of this study will provide valuable feedback from teachers when schools are developing their School Wellness Policies regarding the school nutrition environment.

We are including teachers from nine different schools in three school districts and asking for their help in gathering this information by completing a survey that will take **approximately 5-7 minutes**. When you have completed the survey, please return it to your front office personnel. Once all surveys are collected and analyzed, results will be reported collectively from teachers in all nine schools. All survey data will be entered into an Excel data base. Confidentiality is maintained and no individual responses can be identified. Your principal will receive a copy of the Executive Summary to share with you once the study is completed.

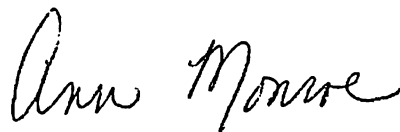
This study was approved by The University of Mississippi's Institutional Review Board (IRB). The IRB is responsible for ensuring that this study fulfills the human research subject protections obligations required by state and federal law and University policies. If participants have any questions, concerns, or reports regarding their rights as a participant of research, please contact the IRB at (662) 915-7482.

Your help is critical to the success of the study. To show our appreciation you will find a ticket in your envelope. Please take and keep the ticket. On Friday we will be holding a drawing and teachers with the winning tickets will be given a \$25. 00 Wal-Mart card.

Sincerely,



Laurel Lambert, PhD, RD.
School of Applied Sciences
The University of Mississippi
662-915-7807



Ann Monroe, Ed. D
School of Education
The University of Mississippi
662-915-5250

Jennifer Varner, Honor Student
Sally McDonnell Barksdale Honor College

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