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THE HEALTHY MONDAY CAMPAIGN:
HEALTH AWARENESS IN ELEMENTARY SCHOOLS

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Sciences
College of Agriculture
at the University of Kentucky

By

Sheena Pravin Patel

Lexington, KY

Director: Kelly Webber Ph.D, MPH RD, LD, Professor

Lexington, Kentucky

2011

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ABSTRACT OF THESIS

THE HEALTHY MONDAY CAMPAIGN: HEALTH AWARENESS IN ELEMENTARY SCHOOLS

Childhood obesity is a major public health concern for Americans. Many school-based health interventions and campaigns have been in place in the elementary school setting to help lower the rates of childhood obesity and to make students aware of their health. This study focuses on the implementation of the Healthy Monday campaign to fourth and fifth grade students in two Kentucky elementary schools. Particularly the focal points of the campaign consist of nutrition and physical activity. The campaign highlights two spin-off campaigns from the Healthy Monday campaign titled the Monday Mile and Meatless Monday. This study looks at the effectiveness of the overall health campaign to the fourth and fifth grade students, their parents, and teachers in the two schools. Pre and post surveys were developed in order to test four components of the health campaign: campaign awareness, attitudes, nutrition knowledge, and behavior change. This study shows that the health campaign increased student's awareness, nutrition knowledge, and behavior change. Also the parent and teacher population showed significant increase in campaign awareness and behavior change. Overall, the health campaign created awareness among all three populations.

KEY WORDS: health campaign, childhood obesity, awareness, nutrition, physical activity

Sheena Pravin Patel

September 28, 2011

THE HEALTHY MONDAY CAMPAIGN:
HEALTH AWARENESS IN ELEMENTARY SCHOOLS

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Chapter 1: Introduction

Childhood obesity has become a key health concern for Americans. According to the Centers for Disease Control and Prevention, childhood obesity has tripled in the past thirty years [1]. Two main populations seem to have the biggest influence on children's view of health—parents and peers [2, 3]. The schools system also plays a crucial role in the way children view health as a big part of their week-day is spent there. The “normalcy” of a sedentary lifestyle and an over-consumption of calorie dense foods presented to children have exacerbated the childhood obesity epidemic [4]. Elementary schools across the nation are thus trying to help reduce the rates of obesity and increase physical activity levels among their students through various health campaigns and interventions.

In 2005, three universities—Columbia Mailman School of Public Health, Johns Hopkins Bloomberg School of Public Health, and Maxwell School at Syracuse developed a public health initiative titled “Healthy Monday.” The overall goal of the campaigns is “to end chronic preventable disease in the U.S. by offering people and organizations a weekly prompt to start and sustain healthy behaviors, intentions, actions and initiatives [5]. The campaign focuses on three components—frequency, repetition, and urgency of actions which help people ease into a healthy mindset each Monday [6].

The Healthy Monday campaign designated Monday as the day that “all health breaks loose.” This campaign gives 52 opportunities a year, or 52 Mondays a year, to encourage healthy lifestyle changes [7]. The Healthy Monday Campaign is a day to focus on wellness, to get people excited about their well-being, and to spread the word on health. Monday is the day to set goals, refocus, and recommit [8]. The Healthy Monday

campaign uses Monday “to move healthy products or services, raise funds, reduce health care costs, sustain awareness and drive disease management and behavior change programs” [5]. The campaign includes a variety of Monday themed activities and other spin-off campaigns which focus on everything from nutrition and physical activity to preventative screenings and smoke cessation [8].

Why Monday? Research from Johns Hopkins University shows that Monday has special significance with health. Specifically, Monday is viewed as a fresh start and a chance to set healthy intentions for the next 6 days of the week, it is the “New Year” of the week [9]. People are also more likely to start diets or exercise regimes on Monday than any other day [9].

The Healthy Monday campaign has spread nationwide and includes a number of followers including various government and non-profit organizations, businesses, schools, and universities and partnerships with the American Cancer Society, the American Diabetes Association, and the American Heart Association [9]. The Northern Kentucky Health Department also partnered with the Healthy Monday campaign to launch the crusade into Northern Kentucky Elementary Schools with program components which speak directly to children. This will be the focus of this research. Two spin-off campaigns from the Healthy Monday campaign were the focus of the campaign which included the Meatless Monday Campaign and the Monday Mile Campaign, both geared at improving the health of students, parents, and teachers in the two participating schools. Meatless Monday refers to encouraging people to eat meatless once during the week, while the Monday Mile refers to encouraging people to walk at least one mile per week—particularly on Mondays.

The Healthy Monday campaign was intended to teach children about the importance of health at a young age, which can have a huge impact on their current health behaviors and their future lifestyles. Healthy Monday anticipated to teaching children that it is *cool* to be healthy and that it is also easy and fun. It is important to let children have their own opinions on health, but it is also important to lead them in the right direction through awareness. In the Northern Kentucky school district the Healthy Monday Program was used and was intended to encourage nutrition and physical activity through Healthy Monday program materials and components. These resources were anticipated to foster healthier behaviors in schools among teachers, students, and parents. *Simply, awareness is help; The Healthy Monday campaign will raise awareness to elementary school students, parents, and teachers to help encourage the components of a healthy lifestyle.*

Chapter 2: Literature Review

Childhood Obesity

Childhood obesity among children 6 to 11 years of age has increased from 6.5% in 1980 to 19.6% in 2008[10]. With the rise of overweight and obese children comes the rise of other health complications, co-morbidities, and psychosocial problems. Increased childhood obesity is related to increased adulthood obesity[4] . According to the Office of the Surgeon General, *overweight* adolescents have a 70% chance of becoming overweight or obese adults [11].

Kentucky Statistics

The state of Kentucky is ranked as the third highest in childhood obesity[12]. With the efforts of the Healthy Monday campaign geared towards children in Northern Kentucky, there are hopes of reducing the number of obese and overweight children in the state and to ultimately increase awareness about the importance of nutrition and physical activity. Kentucky is considered a “southern” state—statistics show that eight of the ten states with the highest rates of obese and overweight children are in the South [13]. In the state of Kentucky, 1 out of 3 children are considered overweight or obese [14]. Statistics indicate that Kentucky children are not getting enough physical activity at home or school; Kentucky ranks 50th in the nation for inactivity [15, 16]. Kentucky pediatric offices are now seeing children with diseases that are normally seen in adulthood including Type 2 diabetes, hypertension, heart disease, and arthritis, which partners with being overweight, obese, inactive, or consuming a poor diet [14].

Chronic Diseases Associated with Obesity

Chronic diseases are diseases of long duration and generally slow progression—heart disease, stroke, cancer, chronic respiratory disease, and diabetes are the leading cause of mortality in the world [17]. Of these chronic diseases, cardiovascular disease and diabetes are a few *preventable* chronic diseases Americans are diagnosed with annually—all co-morbidities associated with obesity. Both heart disease and diabetes can be prevented, delayed or improved through lifestyle modifications to diet and exercise habits [18, 19]. A new report from the World Health Organization, WHO, points out that “*preventing* chronic disease could save 36 million people by 2015” [20].

Cardiovascular risk factors including hypertension, high cholesterol, and abnormal glucose tolerance or diabetes are associated with being overweight or obese [21]. One study looking at obesity and additional health factors showed 70% of obese children had at least one additional cardiovascular risk factor and 30% had two or more risk factors [21]. The Healthy Monday Campaign is geared toward helping people reduce their risk for developing chronic preventable diseases or helping those who are already at high risk—simply it is helping to save lives.

It is found that 25.8 million children and adults in the United States have diabetes or 8.3% of the population [22]. This is a huge number and it is growing—it is estimated that 7.0 million people are undiagnosed with diabetes, while 79 million people are said to have pre-diabetes [22]. More so, it is estimated that 15% of new diabetes cases among children and adolescents are type 2 diabetes compared to thirty years ago when type 2 diabetes in children was less prevalent [21]. Spreading health awareness

through health campaigns such as Healthy Monday can help to lower alarming health statistics.

Physical Activity

Low Physical activity levels (and poor diet) during childhood can have a significant influence on chronic disease occurrence later on in life [23]. Data supports that young children are adopting sedentary behaviors within and outside of schools hours which is directly related to obesity and other health related diseases [24]. The Centers for Disease Control and Prevention recommend 60 minutes of moderate to vigorous physical activity per day for school-aged children, however it is a known fact that many children fall short of this recommendation [25]. Having a positive experience and attitude toward physical activity at a young age can help to lay the foundation of being physically active throughout life [25]. In the United States, it is seen that children become less active as they get older, which in turn, adds to childhood obesity and poor lifestyle statistics[25]. The Healthy Monday campaign highlights physical activity to encourage children to carry the healthy habit into their lifestyle.

Nutrition

The Healthy Monday campaign in this research focused on the key phrase “One day a week, cut out meat.” The benefits of eating meatless one day a week are significant. Research from the Healthy Monday campaign shows that cutting out meat in the diet one day a week can reduce saturated fat intake by 15% [26]. The new USDA Dietary Guidelines for Americans focuses on reducing meat and increasing fruits and vegetables, which supports the Meatless Monday campaign. On average Americans

consume 8 oz of meat per day which is 45% more than the USDA recommends [26].

Vegetarians have lower rates of high blood pressure, heart disease, stroke, Type 2 diabetes, and some cancers including breast, colorectal and prostate cancers [27].

Reducing meat in the diet by one week can help to lower the risk for these diseases.

Eating meatless one day a week can help to control body weight, encourage intake of healthier nutrients, and help to prevent certain diseases in the long run [27].

Health campaigns/Interventions

The CDC states that for “maximum population impact” there are certain strategies that should impact a health campaign or intervention. Specifically stating that the focus should be on “strategies that alter the food and physical activity environments in a place where persons live, learn, work, play, and pray” [21]. The following health campaigns: “*GreatFun2Run*”, “*Smart Bodies*”, “*I Feel Good*”!, and “*Healthy Buddies*” are significant in that they are health awareness programs which have been campaigned to elementary school-aged children in an environment which children “live, learn, work, and play” as deemed a place for the greatest impact. These campaigns also hold similar characteristics and goals as the health campaign being researched in this study.

Campaigns:

“*GreatFun2Run*”

From the International Journal of Behavioral Nutrition and Physical Activity in 2009 an article titled *Effect of a school-based intervention to promote healthy lifestyles in 7-11 year old children*, studied the health campaign, GreatFun2Run. This program was a school based intervention which promoted healthy lifestyles in children. In particular

physical activity, fruit and vegetable consumption, body composition, knowledge, and psychological variables were measured [28]. A total of 8 schools (589 children ages 7-11) were included in this non-randomized study; of those 8 schools 4 were classified as intervention schools and 4 were control schools [28].

The GreatFun2Run intervention lasted over a 10 month period. Five tools for campaigning were used in the intervention including CD-rom learning tools, interactive website and computer programs; scheduled physical activity events, and a summer activity planner [28]. In this research the primary outcomes were classified as physical activity and fruit and vegetable consumption while secondary outcomes were classified as BMI, waist circumference, estimated body fat, knowledge, and psychological variables. Both primary and secondary outcomes were measured three times during the intervention—at baseline, at midpoint, at the end of the intervention [28]. Before data collection, each student had to receive parental consent to participate in the study.

After a ten month period, it was seen that the “GreatFun2Run” program was beneficial. Compared to the children in the control schools, the intervention schools improved in several areas. Intervention schools increased their total time in moderate-to-vigorous physical activity and increased their daily steps [28]. The significant increase in physical activity is shown to be beneficial. It is well known that leading an active lifestyle can help prevent certain disease, keep weight and BMI in healthy ranges, and help to prevent hypertension, high cholesterol and triglyceride levels. It is concluded from this intervention that indeed positive changes in children’s physical activity and health behaviors was seen [28].

“Smart Bodies”

From the journal *Appetite: Eating and Drinking*, in 2008 an article titled *“Smart Bodies” school wellness program increased children’s knowledge of healthy nutrition practices and self-efficacy to consume fruit and vegetables* the effectiveness of the Smart Bodies health campaign was discussed. Smart Bodies, is a wellness program which was offered to children specifically to increase their knowledge of healthy nutritional practices, improve psychological variables associated with eating fruit and vegetables, and help develop preferences for fruits and vegetables [29]. A randomized controlled intervention was given in 14 different low income urban public elementary schools over a 12-week period [29]. In this intervention, specific curriculum was developed which emphasized the consumption of fruits and vegetables and general nutrition information. Two measurements were taken to test the effectiveness of the campaign. Pre and post questionnaires were administered at baseline and after the 12-week intervention period [29]. From the program it was seen that there was a greater increase of overall knowledge of nutrition from pre to post test results. The questionnaires which were administered to children included questions about fruit and vegetable preferences, psychosocial measures related to fruit and vegetable consumption, and lastly knowledge [29]. The campaign was concluded to have a “significant impact on student’s nutrition knowledge, self-efficacy to consume fruit and vegetables, and lastly food preferences” [29]. This is significant to note because it is important to teach children healthy behaviors and in turn to have them practice healthy behaviors. It is known that learning healthy behaviors at a young age is likely to stick with a person throughout their life. The

“Smart Bodies” campaign had a positive impact on children’s knowledge of nutrition [29].

“I Feel Good”

From the Journal of School Nursing in 2008, an article titled *“I feel Good!” A Weekly Wellness Radio Broadcast for Elementary School Children* discussed the effectiveness of a radio broadcast focusing on health. This health intervention was a very unique way to approach children and teach them about healthy behaviors. This radio broadcast program was developed based on the Health Belief Model [30]. The purpose of this program was to “develop an innovative health education program that was consistent with health education standards”[30]. The radiobroadcast intervention took place over a 9 month period with radio broadcasting 3 times per month. Pre and post test surveys were given at the start and end of the radio broadcast intervention. It was seen that children scored significantly higher on the post-test compared to the pre-tests[30]. The radio broadcast health intervention proved to be effective in teaching children about health.

“Healthy Buddies”

From the American Academy of Pediatrics, an article titled *“Healthy Buddies: A Novel, Peer-Led Health Promotion Program for the Prevention of Obesity and Eating Disorders in Children Elementary Schools”* discussed the effectiveness of the program intervention. The objectives of this study were to “design and test a health promotion program for children that were based on peer teaching from older to younger schoolchildren” [2] . In this pilot study, older students (in grades 4th through 7th grade)

were given instruction from an intervention teacher and were then paired with a younger peer or “buddy” (kindergarten through 3rd grade) for the whole school year. The older children acted as “teachers” for the youngsters and educated them on three components of healthy living: nutrition, physical activity, and a healthy body image [2]. Each week older students would teach their “buddies” a 30 minute lesson on healthy living. From the three health components, questionnaires were developed and given to children before and after the peer intervention. Results of the study showed “that there was an increase in health knowledge, behavior, and attitude in students who received peer teaching” [2]. BMI and weight increased less in the intervention students (4th through 7th grade “teachers”) who had a “healthy buddy” [2]. This is significant to note because student-led curriculum in this case, improved knowledge in the older children and their “buddies” [2]. This intervention program improved and increased health knowledge in elementary school-aged children. It was concluded that “student-led teaching” can be an effective and efficient way to implement a healthy life style for children [2].

Effectiveness/Commitment:

The four health interventions mentioned above all show great effectiveness. It is important to promote health and wellness to young children since it is more likely to then be reinforced in their lives and to stick with them into adulthood. When promoting wellness to elementary school aged children it is important to design specific experimental activities which can help children satisfy their developmental tasks[31] . Psychologist Erik Erikson who was known for studying the stages in a person psychological development, noted that the primary task for middle childhood was a drive to fulfill a sense of “personal industry” [31] “Personal industry,” for children meaning a

way for them to implement new-founded physical competencies they have learned [31]. An intervention technique specific to children that has proved to be effective based on psychological needs of children, includes an activity where children help to purchase and prepare tasty nutritional snacks (a hands-on activity) [31]. This is indeed a good way for children to practice what they learn, in hopes of carrying the learned habit into their adulthood. Hands-on activities during an intervention are proven to stick with the child and help them learn in an active manner.

Each of the campaigns mentioned: “*GreatFun2Run*”, “*Smart Bodies*”, “*I Feel Good*”!, and “*Healthy Buddies*” all produced positive changes in children from increased physical activity to creating a positive impact on children’s nutrition and health knowledge. Each intervention was also campaigned to children in a very unique manner which grabbed children’s attention. “GreatFun2Run” used a wide variety of technology approaches to reach children including CD-rom learning tools, websites, and computer program. “Smart Bodies” focused on fruit and vegetable consumption by using specifically developed curriculum to present to students. “I Feel Good” was a weekly radio broadcast which was delivered to children focusing on various health topics. Lastly, “Healthy Buddies” used peer teaching to increase health knowledge in children. The Healthy Monday Campaign also uses unique aspects to approach children on the topic of healthy behaviors. The campaign in this study holds similar attributes as the campaigns mentioned.

Chapter 3: Research Purpose

The purpose of this research was twofold: one, to determine the awareness level of the Healthy Monday campaign among a group of elementary school children, their parents and teachers and two, to assess campaign effectiveness on the same population.

The impact of the Healthy Monday campaign was measured in four domains: campaign awareness, attitudes, nutrition knowledge, and behavior. The specific objectives of this research were to:

1. Determine to what extent the study population changed their perception of Meatless Monday and the Monday Mile (attitude).
2. Compare the numbers of people who had heard of Meatless Monday and Monday Mile before and after the Healthy Monday campaign (awareness).
3. Examine behavior changes related to the Healthy Monday campaign through pre and post test surveys (behavior).
4. Measure change in nutrition knowledge through pre and post test surveys (knowledge).

Chapter 4: Methodology

This research study was specifically designed to test the effectiveness of the Healthy Monday campaign in two Northern Kentucky public elementary schools. The health campaign was geared towards children, teachers, and parents. The degree of awareness and the effectiveness the campaign raised in children, teachers, and parents was specifically studied through pre and post surveys. Each pre survey was distributed and collected from students, parents, and teachers in the two elementary schools in August 2010. Each follow-up or post survey was distributed and collected from students, parents, and teachers in the same two elementary schools in December 2010.

Sample Selection

Two Northern Kentucky elementary schools were chosen to participate in the study based on compliance from school officials. Only fourth and fifth grade children were chosen to participate due to the following: one, they are easier to work with at this age, two, they can read to complete the survey, and three, they are independent enough to take the pre and post survey and follow directions.

Data Collection

Before any data collection took place Institutional Review Board (IRB) approval was granted by the University of Kentucky IRB committee. Consent forms were signed by all participants. All adults in the study signed consent forms and parents signed consent forms for their children. Children were also read aloud an assent script by the researcher before the survey was distributed which described the study and highlighted

that the survey was voluntary, the students would not be impacted if they chose not to participate, and lastly they could stop at any time during the survey.

Pre and post test surveys were given to students, parents, and teachers. Pre-test surveys were given in August 2010 before the new school year at a school-wide orientation. Students and parents were given a hard copy pre test survey at a back to school parent and child orientation in the gymnasium of each school. Consent forms were signed by the parent before they received a pre survey and a consent form was also signed by the parent for their child. The assent script was read to each child before a pre survey was distributed. The teacher population received a hard copy pre-test survey during a back to school orientation for teachers which was held in each school's cafeteria. Consent forms also were signed by teachers before surveys were distributed. The post surveys were given in December 2010, four months after the campaign had been in effect. Post surveys for children were given directly in the classrooms, post surveys for parents were sent home with the children and to be returned in a given time frame, and post surveys for teachers were sent to each teacher via school email to be completed through an online survey link.

NOTE: (For completing the initial pre-test survey students received a Healthy Monday t-shirt which was provided by the Northern Kentucky Health Department. Parents and teachers who completed the post-test survey were included in a raffle for grocery or gas vouchers provided by the school and local Health Department.

Surveys

The pre/post surveys were created from program materials and components of the Healthy Monday campaign by the lead researcher with input from the staff of the Northern Kentucky Health Department. The same surveys were used for both pre and post survey data collection. The survey included questions from the following domains: campaign awareness, attitudes, nutrition knowledge, and behavior. The student survey however contained additional questions from the nutrition knowledge and attitude domain.

Statistical Analysis

De-identified data were entered and controlled in Microsoft Excel 2007 program. Data were analyzed in SAS 9.2 (Statistical Analysis Software version 9.2) using chi-squared tests and independent sample t-tests. Specifically chi-squared tests were used to compare pre and post results for all questions along with the demographics data of each population sampled. A p-value of .05 or less is considered to be significant. The independent sample t-test was used to compare pre age mean versus post age mean for all populations.

Chapter 5: Results

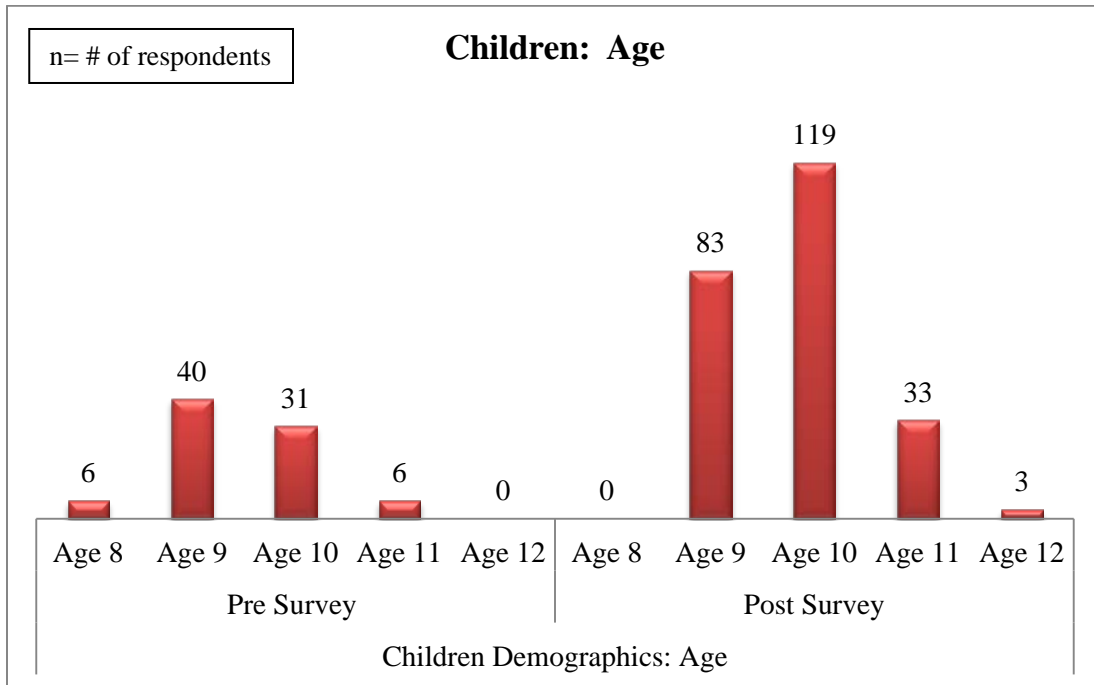
The total sample size consisted of 92 student respondents in the pre survey and 248 student respondents in the post survey, 90 parent respondents in the pre survey and 93 parent respondents in the post survey, and lastly 68 teacher respondents in the pre survey and 53 teacher respondents in the post survey in two Northern Kentucky Elementary Schools. These two elementary schools consist of low-income families in an urban inner city setting. The students were fourth and fifth grade students enrolled in each school for the 2010-2011 school year. The parents surveyed consisted of one parent or guardian of the fourth and fifth grade students. The teacher population surveyed consisted of all teachers from the two Elementary Schools. A further breakdown of each population surveyed is explained along with the awareness quotient of each group from the health campaign.

Children Demographics

The number of children that took part in the study at the start of the study (pre-test) and at the end of the study (post-test) are 92 students and 248 students respectively. The age range for the student population is 8-12 years of age. Further, for the pre-test students surveyed 7.2% were 8 years of age, 48.2% were 9 years of age, 37.4% were 10 years of age, 7.2% were 11 years of age, and lastly there were no children at the age of 12 at the start of the study. The mean age for the pre survey was 9.3 with a standard deviation of 0.62. The age-breakdown of the students at the end of the study during the post test survey changed compared to the pre-test survey. There were no students at the age of 8, 34.9% of students were 9 years of age, 50% of students were 10 years of age, 13.9% were 11 years of age, and lastly 1.3% of students were 12 years of age at the time

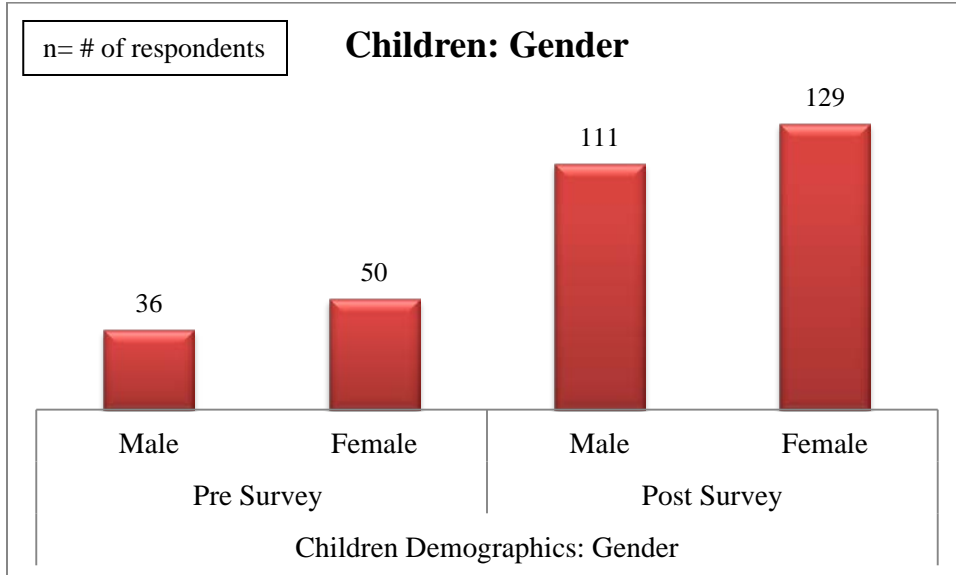
the post-test surveys were administered. The mean age for the post survey was 9.6 with a standard deviation of 0.50. An independent sample t-test shows a p-value of <0.001.

Table 1a: Children Age



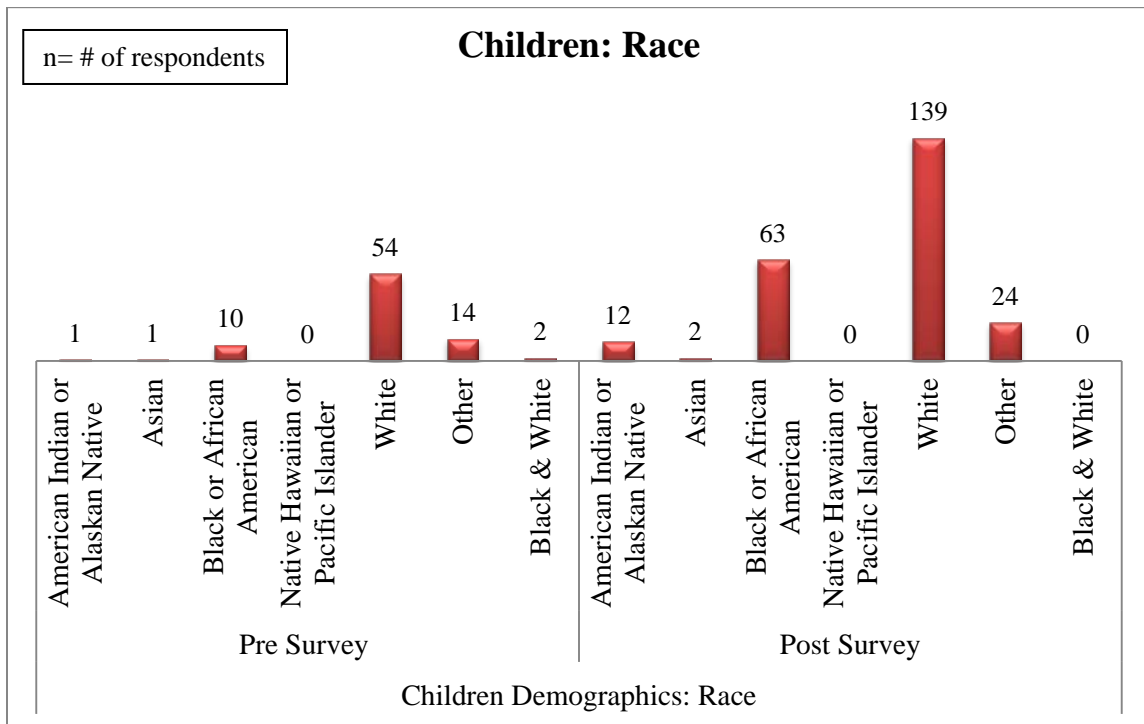
The students in the age range above consisted of fourth and fifth graders at both elementary schools. The pre-test surveys included 52.3% of fourth grade students and 47.7% of fifth grade students. Of the students taking the survey 57% were in the fourth grade and 43% in the fifth grade. The chi-squared p-value associated with changes in grade in the pre and post survey is 0.46. Of the students that took part in the study 41.9% were male and 58.1% of students were female in the pre-test surveys. During the post-test surveys 46.3% of students were male and 53.8% of students were female. The chi-squared value for gender differences is a p-value of 0.20.

Table 1b: Children Gender



The majority of the students that took part in this study indicated their race as being “white” for both the pre and post surveys. The racial breakdown of students that took part in the pre survey includes the following: 1.2% American Indian or Alaska Native, 1.2% Asian, 12.2% Black or African American, 0% Native Hawaiian or Other Pacific Islander, 65.9% white, 17.1% indicated “other”, and lastly 2.4% indicated themselves as being both black and white. Similarly, the post survey racial breakdown includes: 5% American Indian or Alaskan Native, 0.8% Asian, 26.3% Black or African American, 0% Native Hawaiian or Other Pacific Islander, 57.9% white, and 10% indicated “other”. The chi-square of racial differences between pre and post survey is a p-value of .01.

Table 1c: Children Race



Campaign Awareness

At the start of the campaign students were asked about the Monday Mile (Have you heard of the Monday Mile?), before the campaign 9.9% said “yes” compared to the end of the campaign, 93.9% said “yes” with a chi-squared p-value of <0.001. Students were also asked about the Meatless Monday Campaign (Have you heard of Meatless Monday?), before the campaign 18.7% said “yes” compared to the end of the campaign, 68.1% said “yes” with a chi-squared p-value of <0.001.

Table 1d: Monday Mile Campaign Awareness

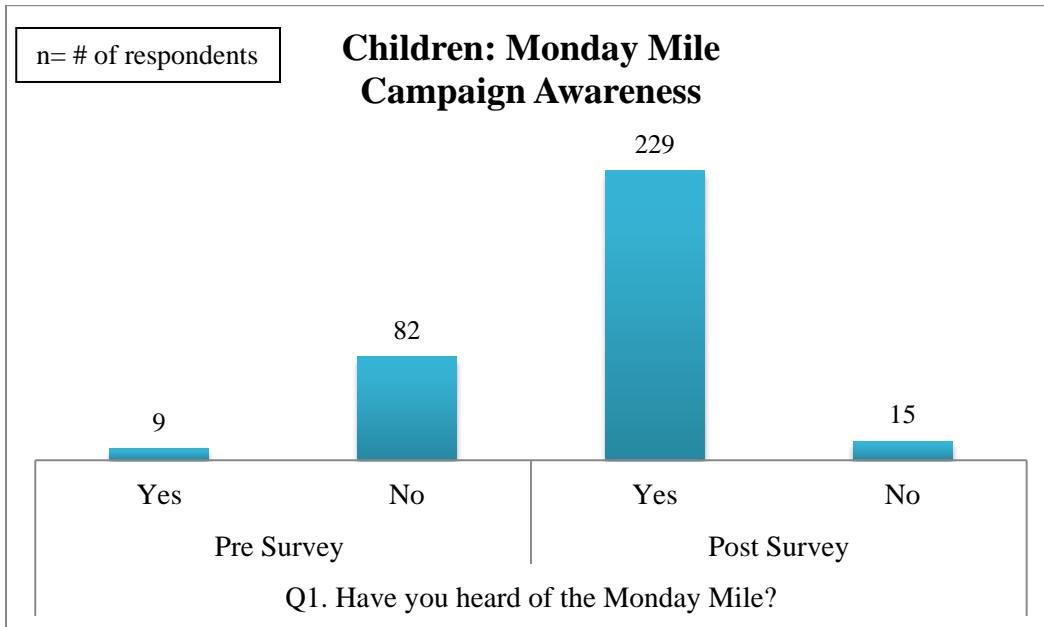
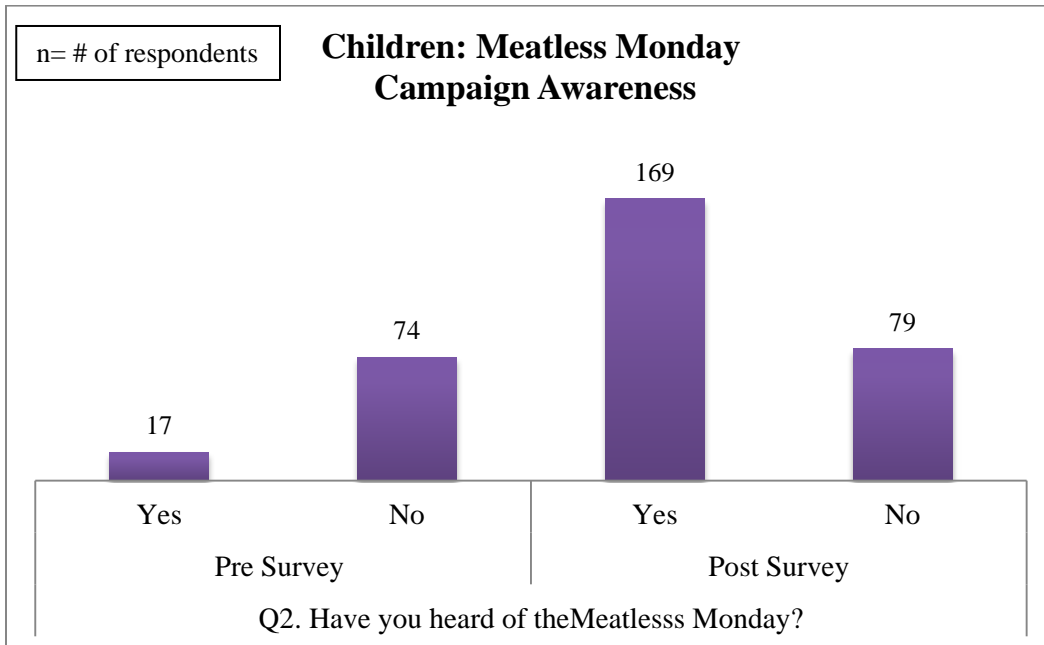


Table 1e: Meatless Monday Campaign Awareness



In the post survey results of the two campaigns, awareness of the Monday Mile campaign was significant. This is indicated when comparing the post survey results of the following questions: 1) “Have you heard of the Monday Mile?” and 2) “Have you heard of Meatless Monday?”. Regarding the Monday Mile campaign, 93.9% of students answered “yes” and 6.2% answered “no” at the end of the campaign resulting in a chi-squared p-value of 0.04 between the pre and post survey. Regarding the Meatless Monday Campaign 68.1% of students answered “yes” and 31.9% of students answered “no” at the end of the campaign resulting in a chi-squared p-value of 0.27 between the pre and post survey.

Behavior

Students were asked questions about executing the two campaigns into their lives. One being, “Do you walk A Monday Mile?” and the second “Do you eat meatless one day a week?” Regarding walking a Monday Mile, 19.8% of students said “yes” before the campaign and 86.0% of students said “yes” at the end of the campaign, with a chi-squared p-value of <0.001. Regarding eating meatless one day a week, 42.5% of students said “yes” before the campaign and 69.0% after the campaign with a chi-squared p-value of <0.001

In the post survey results of the two campaigns, the Monday Mile campaign created more of a behavior change. This is indicated in the following questions: 1) “Do you walk a Monday Mile?”; at the end of the survey 86% of students answered “yes” and 14% answered “no” with a p-value of <0.00; 2) “Do you eat meat-less one a week?”; at the end of the campaign 69% of students answered “yes” and 31% of students answered “no”, with a p-value of .13.

Table 1f: Monday Mile Behavior

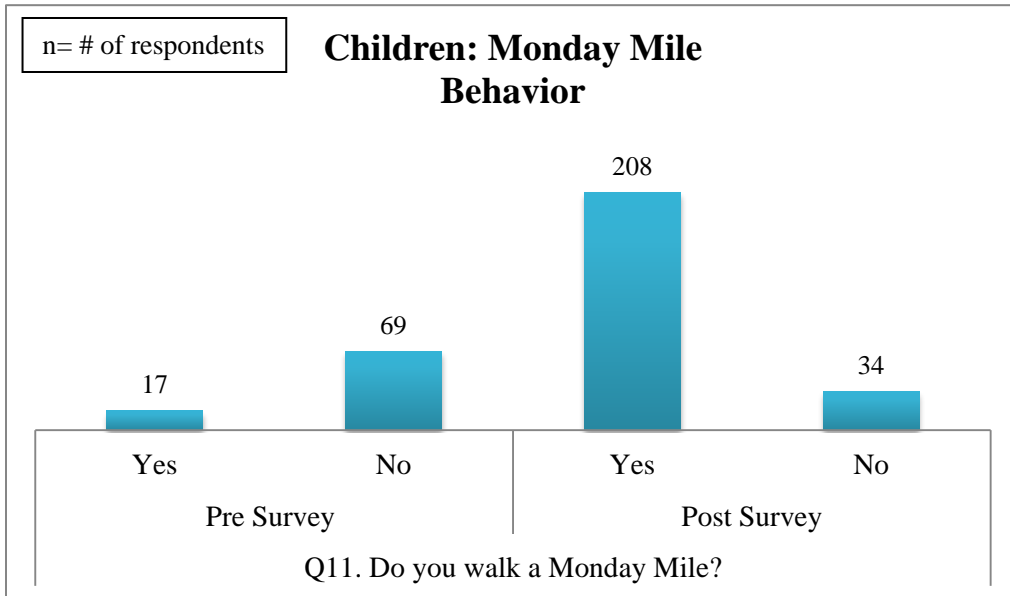


Table 1g: Meatless Monday Behavior



Nutrition Knowledge

Students also were asked educational questions: “How many steps are in a mile?” and “What is a good substitute for meat?”. A total of 27.9% of students correctly

answered the “steps in a mile” question before the campaign and 49.2% answered the question correctly after the campaign, with a chi-squared p-value of 0.00. A total of 36.8% answered the question about meat substitutes correctly before the campaign, and 27.2% answered the questions correctly after the campaign, resulting in a chi-squared p-value of 0.03.

Table 1h: Monday Mile Nutrition Knowledge

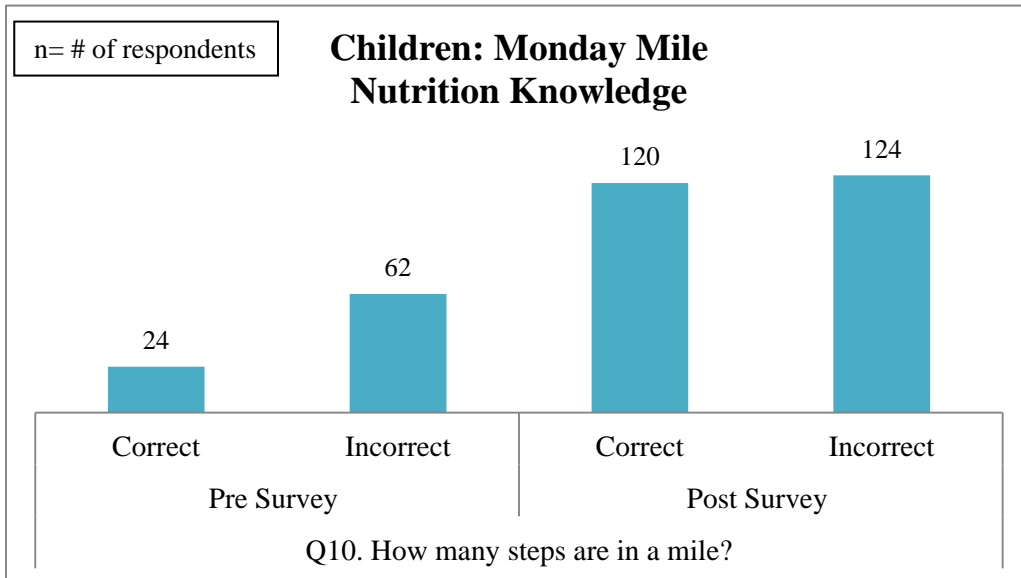
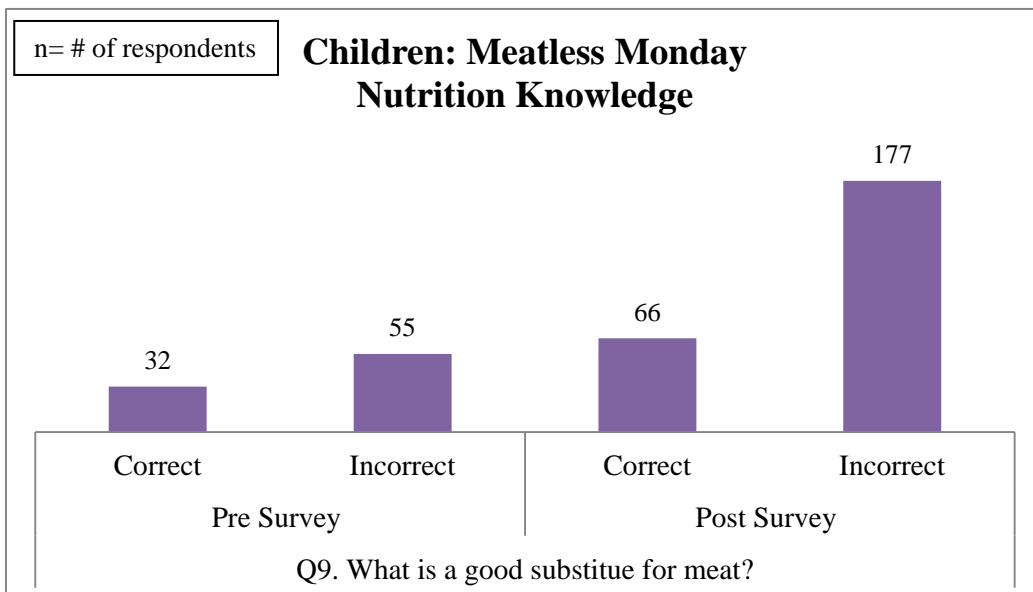


Table 1i: Meatless Monday Nutrition Knowledge



Other findings from the data include the knowledge already held before the campaign and knowledge gained after the campaign. Before the campaign students were aware of the statement “Going meatless one day a week is better for your body, your health, and your planet,” which was asked as a true or false question. Before the campaign 79.1% of students answered this correctly and after the campaign, 85.0 % answered the question correctly, giving a chi-squared p- value of 0.20.

Attitudes

Finally, student’s perception of the importance of health was researched. Students were to rate the importance of health (“Health is very important to me”) on a 5-point Likert-scale (strongly disagree, disagree, neither agree or disagree, agree, or strongly agree). In the pre-test survey 38.9% of students ranked the importance of health in the “strongly agree” category, compared to 51.4% during the post survey at the end of the health campaign (the significant chi-squared p-value is .04).

Table 1j: Health Attitude Pre Survey

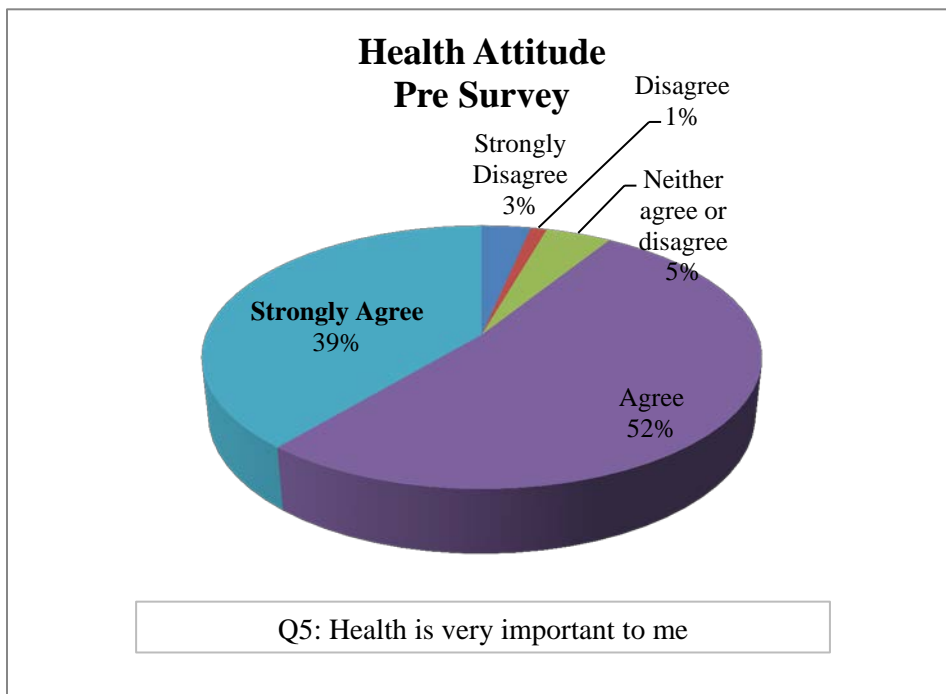
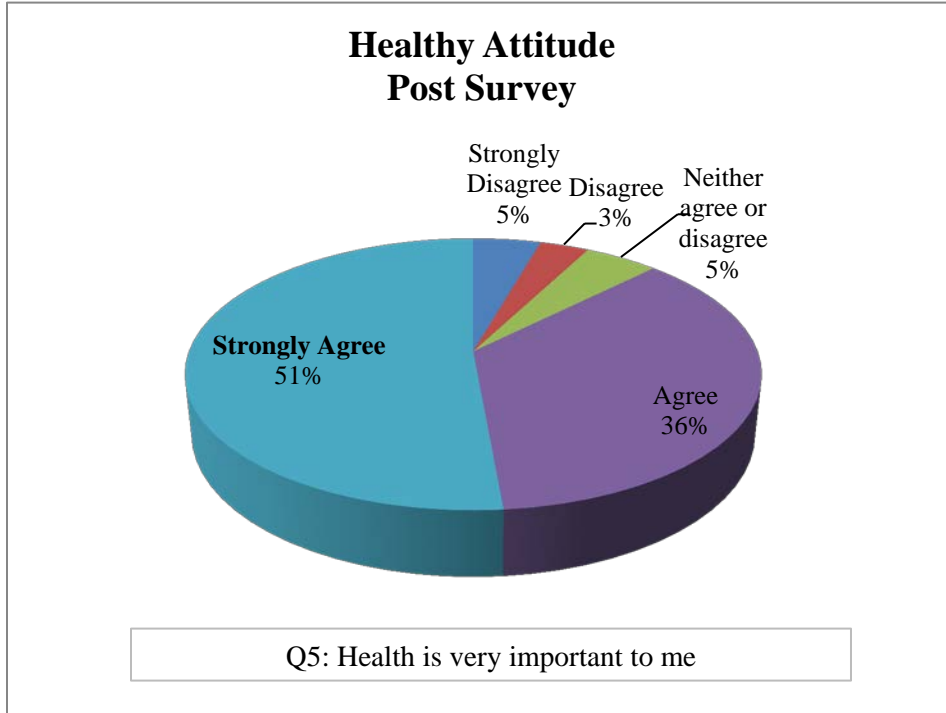


Table 1k: Health Attitude Post Survey



Gender Differences

The answers of males and females were compared to each other to determine if the campaign was more or less effective for one gender. In the child group, males and females had a differential increase in knowledge concerning steps in a mile. A total of 25% of males answered the question correctly before the campaign and 56.5% correct after the campaign; 26.7% of females answered the question correctly before the campaign and 43.8% after the campaign. The resulting chi-squared p-value for males is .00 and the chi-squared p-value for females is .21. In the attitude domain two questions were significant (“Health is very important to me” and “It is cool to be healthy”) where students were to rate each question on a 5-point likert scale. When comparing the question about the importance of health 42.9% of males ranked the importance of health

in the “strongly agree” before the campaign and 46.8% after the campaign while females ranked the importance of health in the “strongly agree” category at 35.4% before the campaign and 54.7% after the campaign. The resulting chi-squared p-value for males is .94 and the chi-squared p-value for females is .04. When comparing male and female responses for the question “It is cool to be healthy” health attitudes differed between male and female responses. At the start of the campaign 44.4% males ranked their attitude towards health as “strongly agree” and 43.6% at the end of the campaign. Females ranked 28.6% of their answers in the “strongly agree” category before the campaign and 51.9% at the end of the campaign for this question. The resulting chi-squared p-value for males is .92 and the chi-squared p-value for females is .03.

To see if males and females were different between pre and post surveys, chi-squared tests were performed. Particularly, two values were compared, first comparing male pre survey responses against female pre survey responses and secondly, comparing male post survey responses against female post survey responses. Male and female responses were mostly similar for both the pre and post surveys. However, for pre survey responses, four questions were significantly different between male and female responses. A majority of these questions fell into the attitude domain which includes the following questions: first “How often do you try and eat healthy?” which has a resulting chi-squared p-value of .00 (a majority of female responses fell into the “often” and “always” categories than compared to male responses in these two domains); second, “It is cool to be healthy” resulted in a chi-squared p-value of .00 (a majority of female responses fell into the “agree” and “strongly agree” categories than compared to male responses in these two categories); and third, “Do you believe your health behaviors can

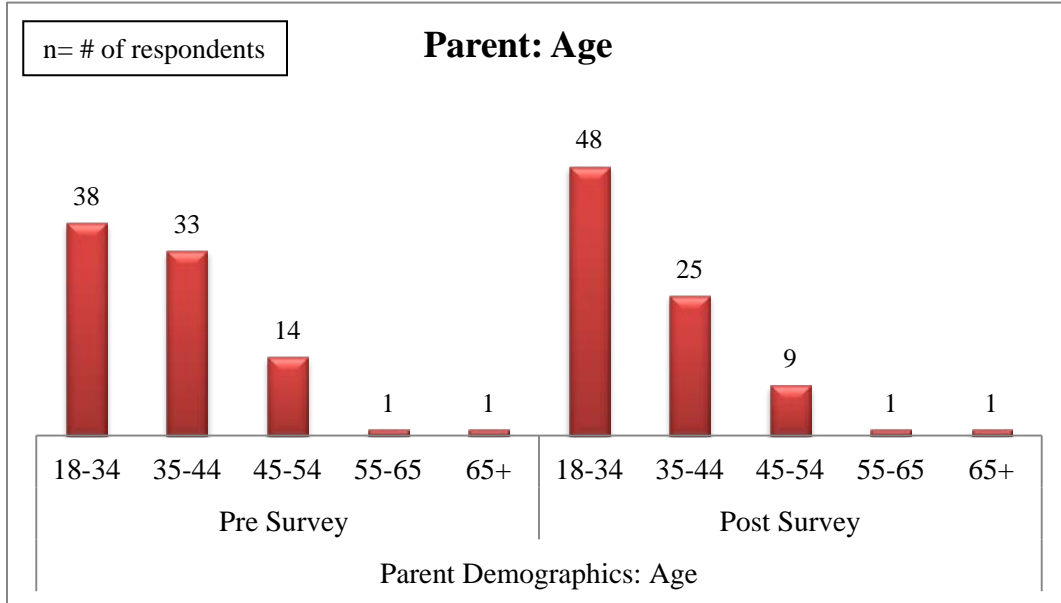
impact the environment?” resulted in a chi-squared p-value of .00 (a majority of females answered yes compared to males). The last question which was significant in pre survey results fell into the knowledge domain being, “How many steps are in one mile?”, which has a resulting chi-squared p-value of .00 (a majority of males answered the question correctly compared to females). When comparing post survey results, only one question was significantly different between male and female responses which included the question “how many steps are in one mile?” which fell in the knowledge domain. The chi-squared p-value for this question is .04, again, with a majority of males answering the question correctly compared to females.

Parents

Demographics

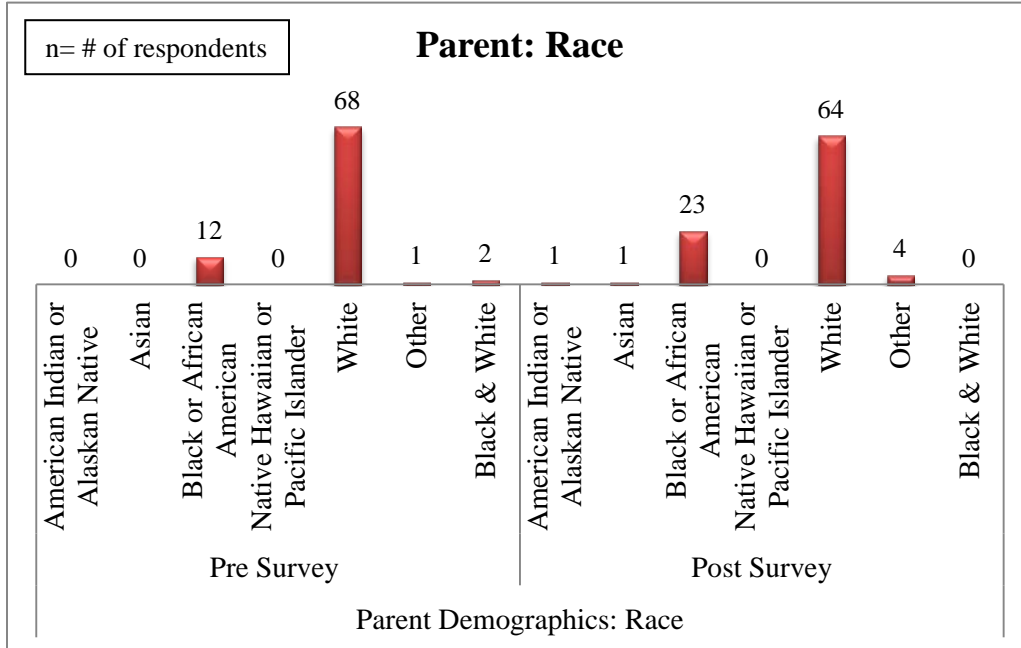
The total number of parents that took part in the study at the start of the study (pre-test) and at the end of the study (post-test) include 90 parents and 93 parents respectively. The age range for the parent population is broken into 5 categories including 18-34, 35-44, 45-54, 55-65, and 65 and older. For both the pre and post test survey the majority of the parents fell into the 18-34 age range specifically 43.7% and 57.1%. Further, for the pre-test parents surveyed 38% fell into the 35-44 age range, 16.1% in the 45-54 age range, and 1.2% in both the 55-64 and 65 and older age range. The age range breakdown of parents at the end of the study during the post test includes 29.8% fell into the 35-44 age range, 10.7% in the 45-54 age range, and 1.2% in both the 55-64 and 65 and older age range. The chi-squared p-value is 0.51 of the pre and post survey age range for parents.

Table 2a: Parent Age



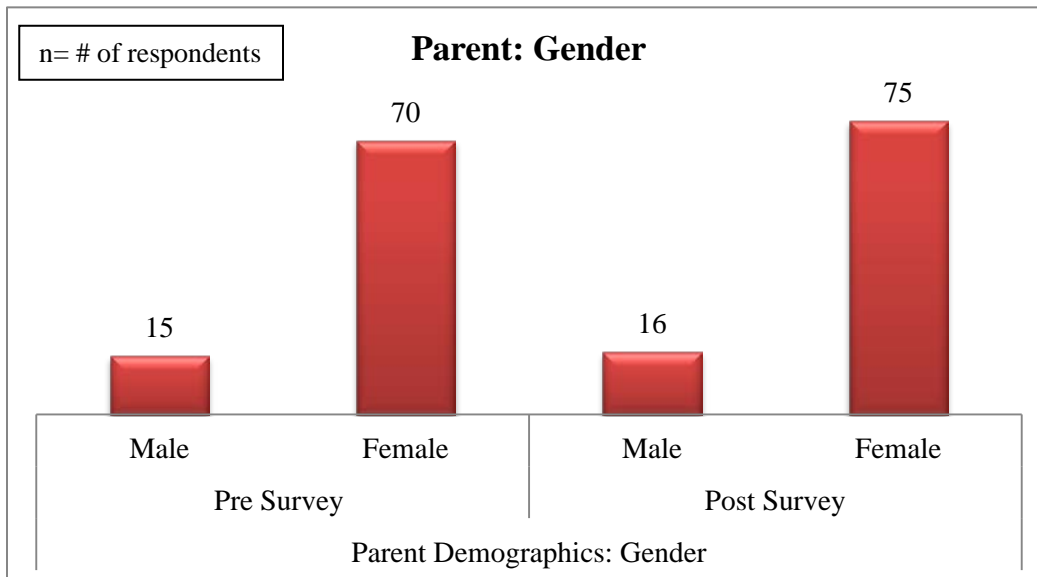
The majority of the parents that took part in this study indicated their race as being “white” for both the pre and post test surveys (81.9% and 68.8%). The racial breakdown of parents that took part in the pre-test survey includes the following: 0% American Indian or Alaskan Native, 0% Asian, 0% Native Hawaiian or Other Pacific Islander, 14.5% black, 1.2% other, and 2.4% both black and white. Similarly, the post-test racial breakdown includes: 1.1% American Indian or Alaskan Native, 1.1% Asian, 24.7% black, 4.3% other, and 0% both black and white. The chi-square p-value is 0.01 of racial differences.

Table 2b: Parent Race



Of the parents that took part in the study, 17.6% were male and 82.4% were female in the pre surveys. During the post-test surveys 17.6% of parents were male and 82.4% of students were female. The chi-squared p-value is 0.99 for gender differences.

Table 2c: Parent Gender



Campaign Awareness

At the start of the campaign parents were asked about the Monday Mile (Have you heard of the Monday Mile?), before the campaign 10% said “yes” compared to the end of the campaign, 59.8% said “yes” with a chi-squared p-value of <0.001. Parents were also asked about the Meatless Monday Campaign (Have you heard of Meatless Monday?), before the campaign 20% said “yes” compared to the end of the campaign, 63% said “yes” with a chi-squared p-value of <0.001.

Table 2d: Monday Mile Campaign Awareness

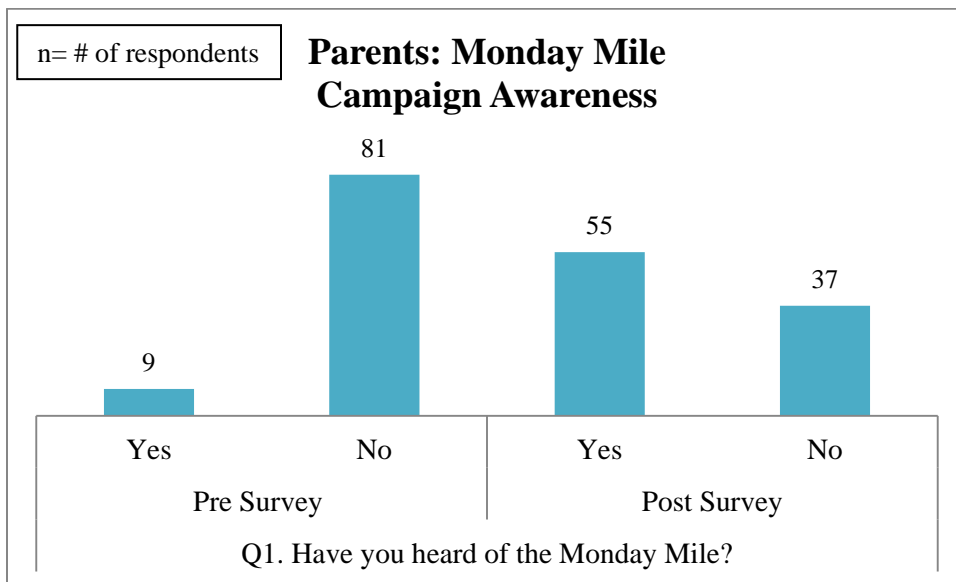
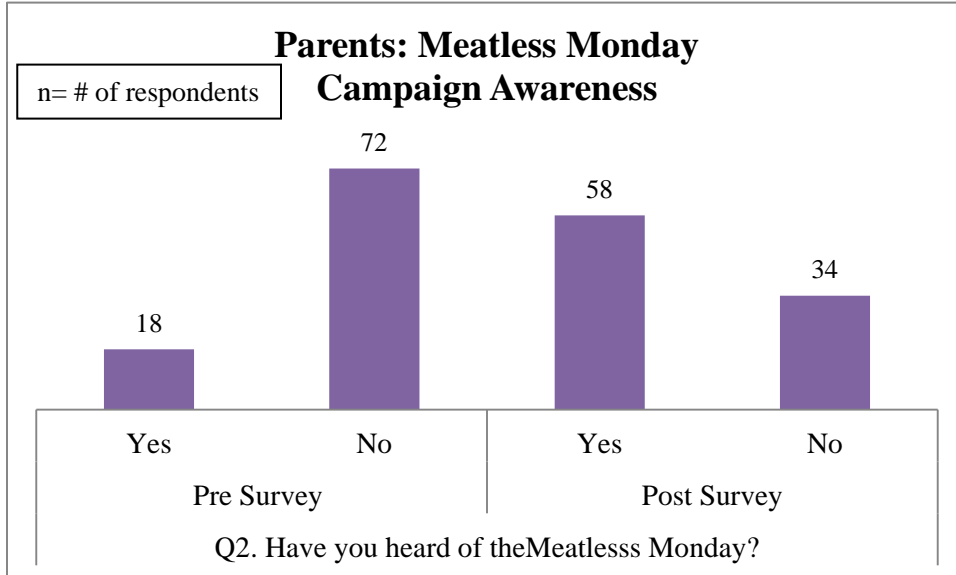


Table 2e: Meatless Monday Campaign Awareness



Behavior

Parents were asked two questions about implementing the two campaigns in their lives. One being, “Do you walk A Monday Mile?” and the second “Do you eat meatless one day A week?” Before the campaign 13.8% of parents said “yes” to walking a Monday Mile and 32.2% saying “yes” at the end of the campaign, with a chi-squared p-value of 0.00. Before the campaign 46.1% of parents said “yes” to eating meatless one day per week compared to 65.2% answering “yes” after the campaign, with a chi-squared p-value of 0.01.

Table 2f: Monday Mile Behavior

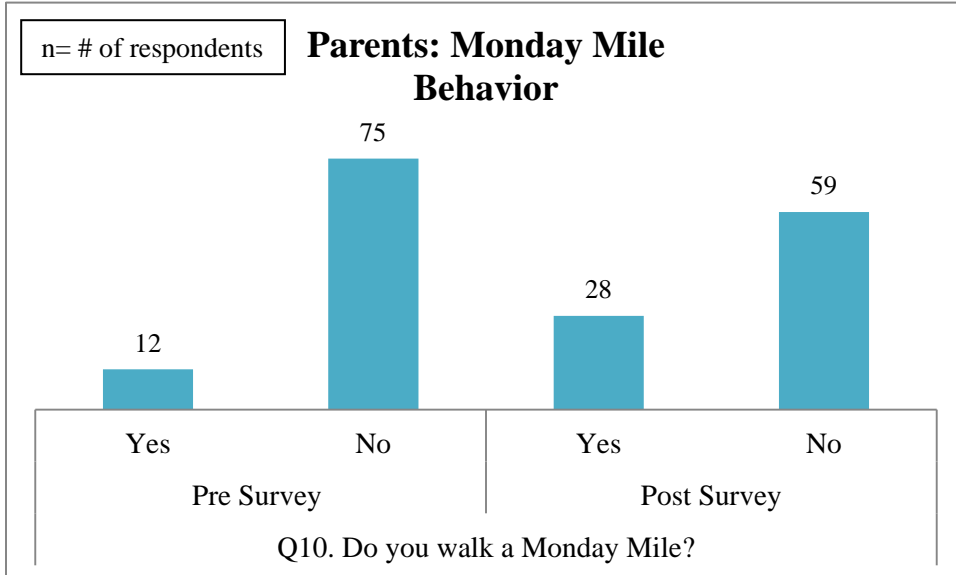
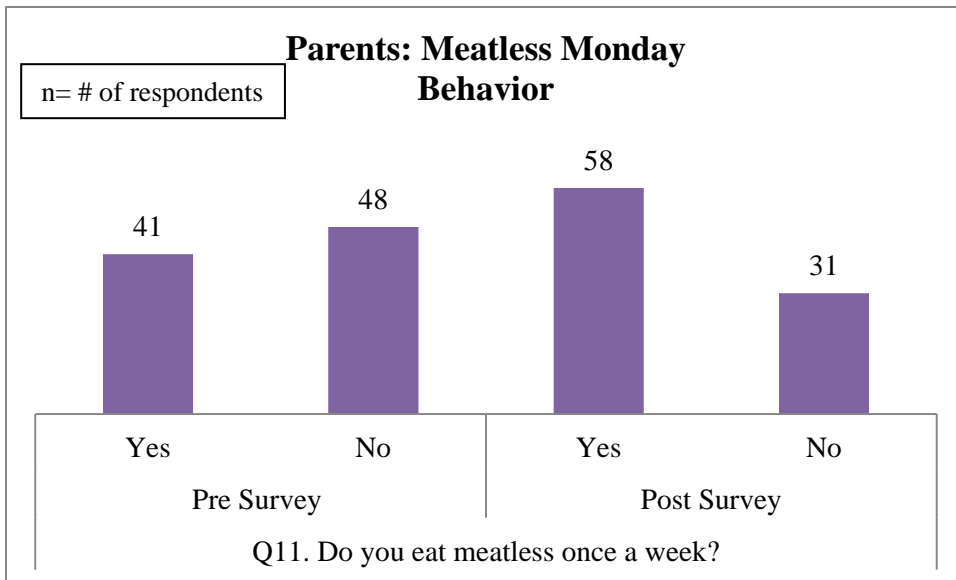


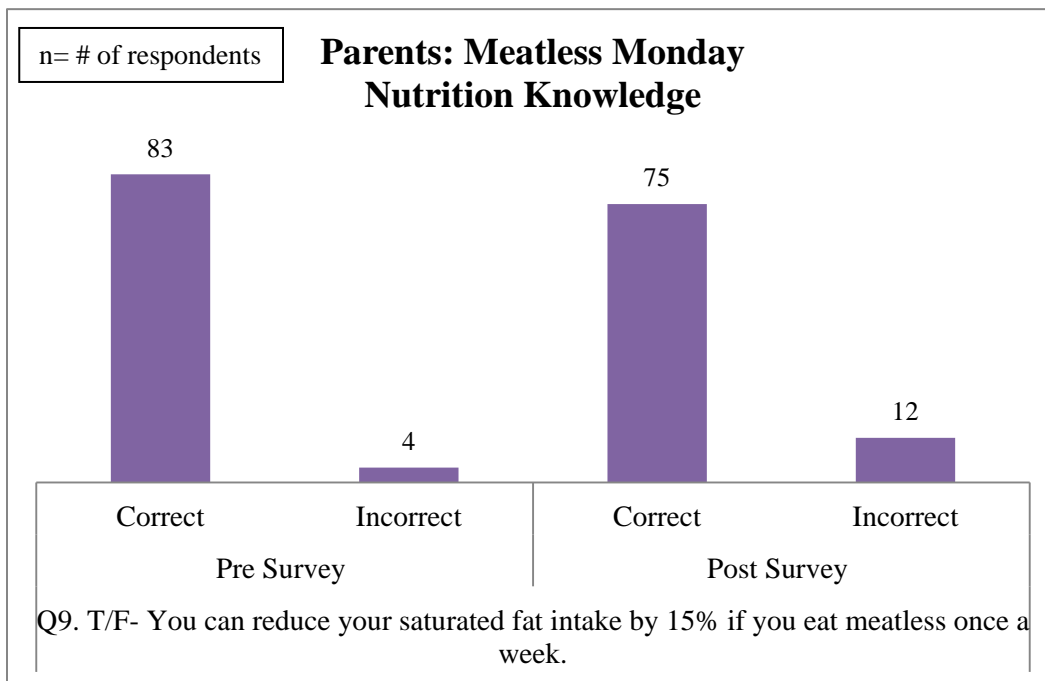
Table 2g: Meatless Monday Behavior



Nutrition Knowledge

Parents were also asked nutritional related questions: “True or False: You can reduce your saturated fat intake by 15% if you eat meatless one day a week”. A total of 95.4% correctly answered the question before the campaign, however after the campaign the percentage dropped and 86.2% correctly answered the question giving a chi-squared p-value of 0.04.

Table 2h: Meatless Monday Nutrition Knowledge



Attitudes

Two questions on the survey regarded attitudes towards health. One was in regards to the importance of health and the other in regards to health behaviors. The question concerning importance of health (“Health is very important to me.”) was answered on a 5-point Likert Scale (strongly disagree, disagree, neither agree or disagree, agree, or strongly agree). In the pre-test survey 48.9% of parents ranked the importance of health in the “strongly agree” category, compared to 54.9% of parents “strongly

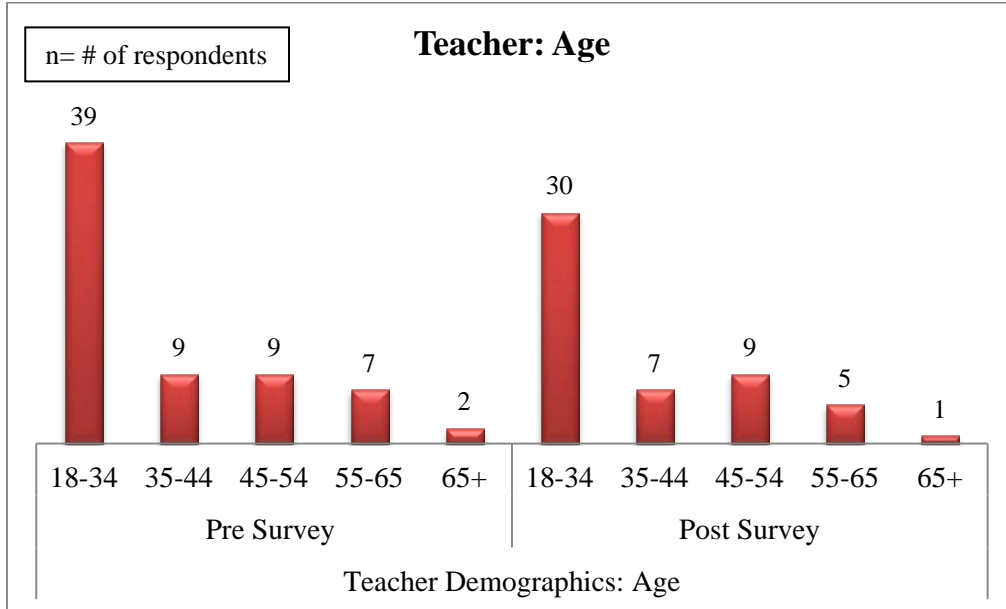
agreeing” at the end of the campaign resulting in a chi-squared p-value of 0.62. The question concerning health behaviors, (“Do you believe that your health behaviors can impact the environment?”) was asked as a yes or no question. A total of 92.1% said yes at the pre survey and at the end of the campaign 87.0% said yes resulting in a chi-squared p-value of 0.26. Both of these questions did not show to be of any significance in change on the attitudes of parents towards health.

Teachers

Demographics

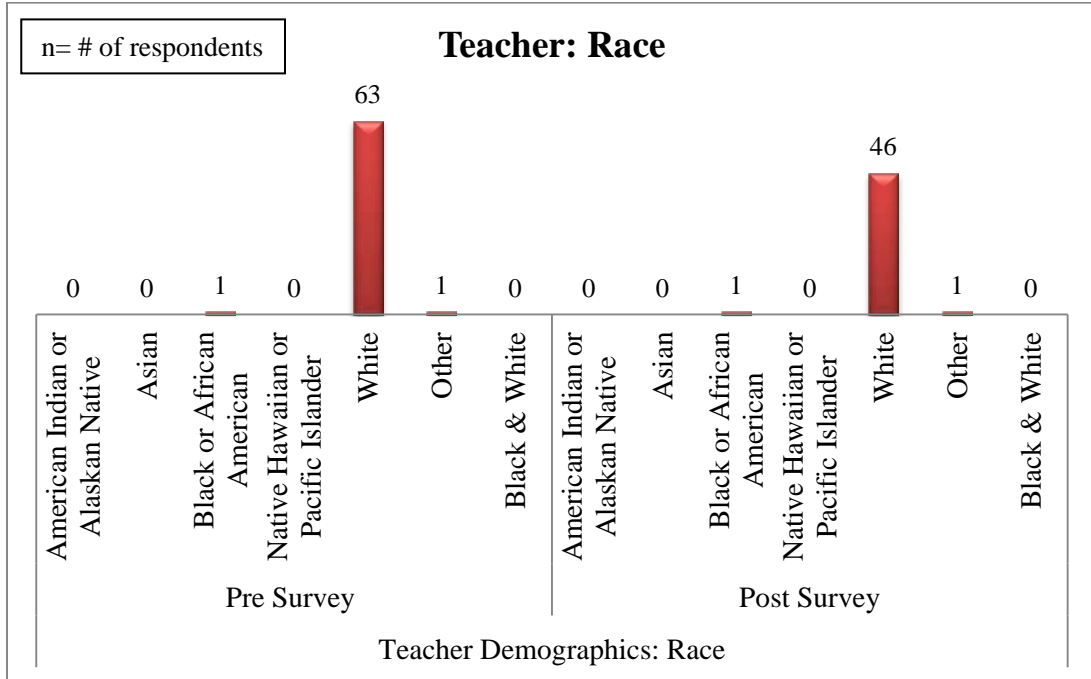
The total number of teachers that took part in the study at the start of the study (pre-test) and at the end of the study (post-test) include 68 teachers and 53 teachers respectively. The age range for the teacher population at both schools is broken into five categories: 18-34, 35-44, 45-54, 55-65, and 65 and older. For both the pre and post test survey the majority of the teachers fell into the age range of 18-34, specifically 59.1% and 57.7% respectively. Further, for the pre-test teachers surveyed 13.6% fell into the age range of 35-44, 13.6% in the 45-54 age range, 10.6% in the 55-65 age range, and lastly 3% in the 65 years and older age range. The age range breakdown of teachers at the end of the study during the post test includes 13.5% in the 35-44 age range, 17.3% in the 45-54 age range, 9.6 in the 55-65 age range, and 1.9% in the 65 and older age range. The chi-squared p-value is 0.98 of the pre and post survey age range for teachers.

Table 3a: Teacher Age



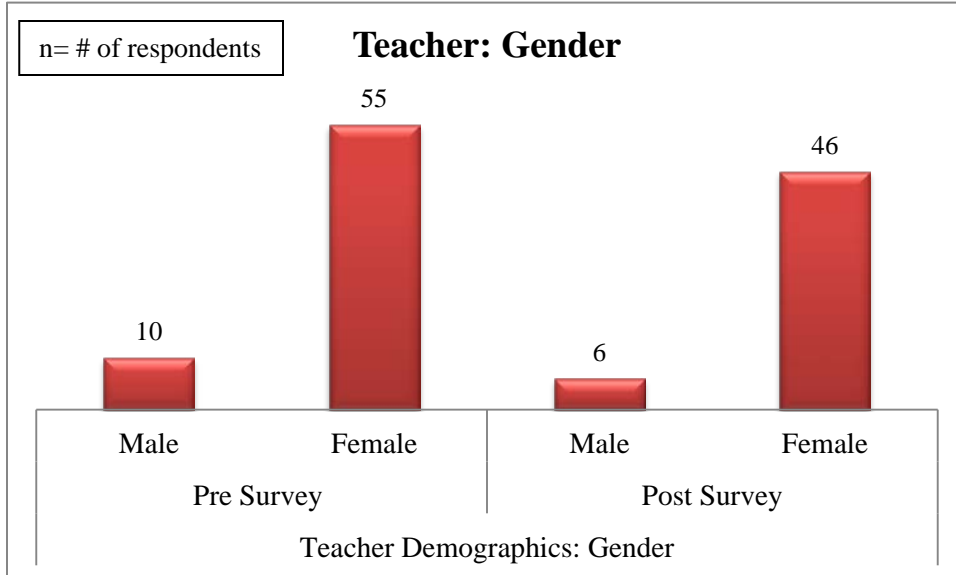
The majority of teachers that took part in this study indicated their race as being “white” for both the pre and post test survey (specifically 97.9% and 95.9% for pre and post test respectively). The racial breakdown of teachers that took part in the pre-test survey includes the following: 1.5% Black or African American, 1.5% Other, 0% American Indian or Alaskan Native, 0% Asian, and 0% Native Hawaiian or Other Pacific Islander. Similarly, the post test survey racial breakdown includes 2.1% Black or African American, 2.1% Other and 0% for Indian or Alaskan Native, Asian, and Native Hawaiian or Other Pacific Islander. The chi-square p-value is 0.95 of racial differences in pre and post surveys.

Table 3b: Teacher Race



Of the teachers surveyed a majority of teachers were female. Specifically 84.6% female and 15.4% male in the pre-test survey and 88.5% female and 11.5% male in the post test survey. The chi-squared p-value is 0.55 for gender differences in pre and post surveys.

Table 3c: Teacher Gender



Campaign Awareness

Three areas in the awareness domain were shown to be significant for teachers. At the start of the campaign teachers were asked about the Monday Mile (Have you heard of the Monday Mile?), before the campaign 11.8% said “yes” compared to the end of the campaign, 96.2% said “yes”, with a chi-squared p-value of <0.001. Teachers were also asked about the Meatless Monday Campaign (Have you heard of Meatless Monday?), before the campaign 50.7% said “yes” compared to the end of the campaign, 98.1% said “yes”, with a chi-squared p-value of <0.001.

Table 3d: Monday Mile Campaign Awareness

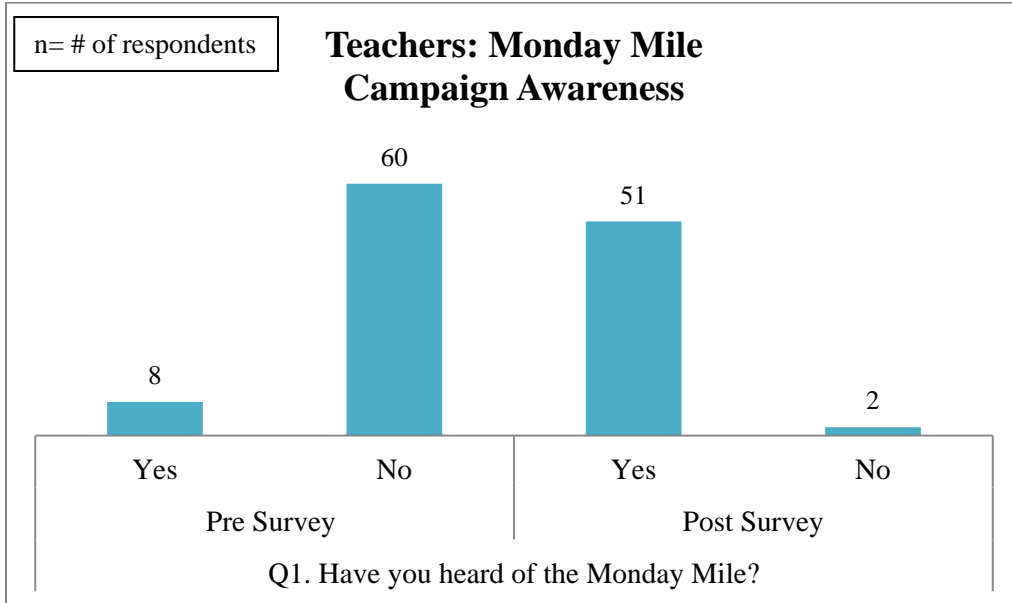
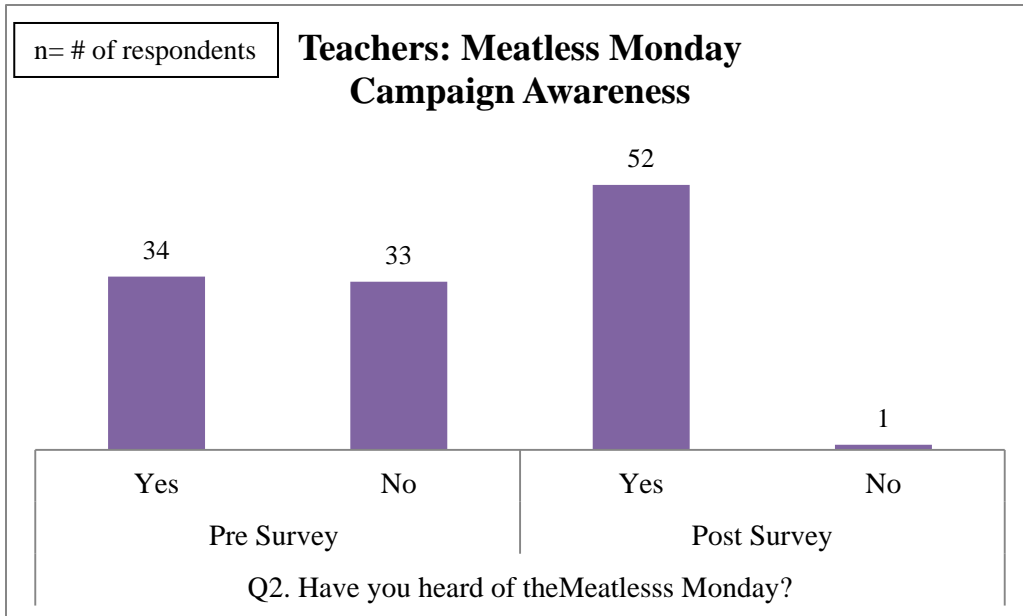


Table 3e: Meatless Monday Campaign Awareness

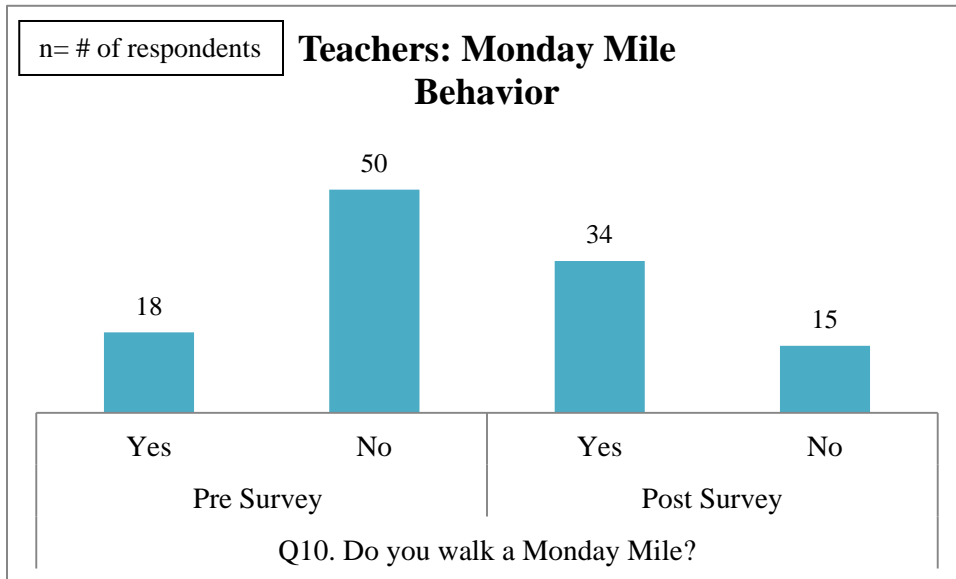


Behavior

Teachers were asked about applying the campaigns into their lives. One showed significance, “Do you walk a Monday Mile?”. Before the campaign 26.5% of teachers

said “yes” compared to 69.4% at the end of the campaign. Indicating a significant chi-squared p-value of <0.001.

Table 3f: Monday Mile Behavior



Nutrition Knowledge

Teachers were also asked three nutritional knowledge related questions. The first being, “What is a good substitute for meat?” A total of 91.2% correctly answered the question before the campaign and 92.3% after the campaign, giving a chi-squared p-value of 0.85. Second, “How many steps are in one mile?” A total of 41.2% correctly answered the question before the campaign and 63.5% after the campaign, giving a chi-squared p-value of 0.04. Lastly, True or False: You can reduce your saturated fat intake by 15% if you eat meatless one day a week.” A total of 89.7% correctly answered the question before the campaign and 98.1% after the campaign, giving a chi-squared p-value of 0.07.

Attitudes

Two questions on the survey regarded attitudes towards health. One was in regards to the importance of health and the other in regards to health behaviors. The

question concerning the importance of health (“health is very important to me”) was answered on a 5-point Likert Scale (strongly disagree, disagree, neither agree or disagree, agree, or strongly agree). In the pre-test survey 45.6% of parents ranked the importance of health in the “strongly agree” category, compared to 42.3% of teachers “strongly agreeing” at the end of the campaign resulting in a chi-squared p-value of 0.73. The question concerning health behaviors (“Do you believe that your health behaviors can impact the environment?”) was asked as a yes or no question. A total of 95.6% said yes at the pre survey and at the end of the campaign 94.2% said yes resulting in a chi-squared p-value 0.74.

Chapter 6: Discussion

The aim of this study was to measure the effectiveness of the Healthy Monday campaign in two Northern Kentucky elementary schools to the student, parent, and teacher population. The effectiveness of the campaign was measured through pre and post surveys which measured four areas: awareness, nutrition knowledge, attitudes, and behavior. Four assumptions (A) are to be noted for the four months of the campaign in schools 1 and 2.

A1: Schools 1 and 2 served a meatless meal in the school cafeteria each Monday of the campaign.

A2: Teachers of schools 1 and 2 walked a Monday Mile with their fourth and fifth grade students each Monday of the campaign.

A3: Schools 1 and 2 announced Healthy Monday messages containing nutrition knowledge each Monday of the Campaign.

A4: Schools 1 and 2 advertised the Healthy Monday program materials and components (Monday Mile maps, fact sheets, parent news-letters, and posters) throughout the four month campaign period.

Survey

Each question on the surveys correlated with the campaign materials and messages. For example, the same question was asked to students and adults regarding how many steps are in a mile. In reality, this number may differ between the two populations, however the campaigns message was that there are 2,000 steps in a mile. Another question asked about a good substitute for meat. The campaign stressed that

beans are a good substitute for meat which was depicted through Healthy Monday animations of jumping beans and messages that beans are a good substitute for meat. The campaigns definition of “meat” was not only red meat but also included poultry. The definition of “health” was not identified on the survey, however the Healthy Monday campaign focused on chronic or long-term health. This was assumed to be the definition of health when survey questions were developed.

Children

A majority of the students that took part in the surveys were fourth grade, white female students. It is important to note that the number of students that took part in the pre versus post survey differed greatly. A larger number of students participated in the post survey than the pre survey. Even though parents/guardians signed consent forms, not all of these fourth and fifth grade students stopped by the Healthy Monday booth at the schools orientation to take the pre survey. The post survey response rate was much higher due to the fact that surveys were given directly in the classroom to each student present who had consents forms completed. The assent scrip was also read during the post survey administration.

Over a four month period, there was an increase in campaign awareness, nutrition knowledge, and behavior in the entire student population. Children were aware of both the Monday Mile and Meatless Monday health campaigns at the end of the four month campaign period. However, the Monday Mile campaign created more of an awareness as more children knew about Monday Mile. There was a significant change in behavior after the Healthy Monday campaign. A significant number of children are actually walking a mile on Monday and eating meatless once day a week. Although both campaigns created

a behavior change, more children are walking a Monday mile than eating meatless meals. The Monday Mile campaign has created a behavior change in some of the student population.

There was a significant increase in nutrition knowledge gained by students after the campaign. Of the three questions on the surveys dealing with nutrition knowledge, students learned most about the number of steps that are in a mile. The knowledge component of this question is linked to the Monday Mile campaign, which again caused the most awareness and behavior change, and now the majority of nutrition knowledge of the students. It is also important to note that when comparing males and females, the majority of males answered this question correctly at the end of the campaign. The second question asked about going meatless and the effects this has on the environment. The pre test results did not significantly differ from the post results. The majority of children answered this question correctly, thus showing there was no additional knowledge increase from this question. The third question dealing with nutrition knowledge asked about meat substitutes. Results indicated a significant chi-squared value; however after further analyzing the results, this question did not prove to have an effect on the children's knowledge. Specifically, when asking "what is a good substitute for meat" it was assumed by the researcher that the definition of meat was that of the campaigns. The campaign defined meat being red meat and poultry. Fish on the other hand was campaigned as non-meat or a better substitute for meat. One of the potential answers for students to choose from was "turkey", which a majority of children answered as being the correct answer. This question was problematic since the number of children that chose this answer greatly increased from pre to post survey. However, it seems as if

the children did not get the messages about what constitutes as a meat versus non meat by definition of the campaign since the correct answer was “beans.” The majority of students did not choose this as an answer. In further research it may be appropriate for this question to be re-worded to include the campaign definition of meat for clarification. The fact that students chose the incorrect answer to this question also supports that the Meatless Monday campaign was not executed affectively since this information was one of the key messages for campaign.

Before the campaign, as indicated from the pre survey results children already held positive attitudes about their health. Of the three questions regarding attitudes towards health, there was no significant change of answers from pre to post survey. In the first question, “How often do you try and eat healthy” the majority answer for pre and post survey was “sometimes.” The campaign did not have a direct effect on the way children were eating. The second question, “It is cool to be healthy” the majority of students answered either “agree” or “strongly agree,” the two highest ratings. This shows that the students already had the perception of health as being “cool” and the campaign did not affect the student’s perceptions. However, when comparing the two genders, the female population increased their perception of health as being cool from pre to post survey more than the male population. For the last question, “Health is very important to me” a majority of student answers fell into the “agree” and “strongly agree” categories which again are the two highest ratings. The campaign did not directly influence students view on the importance of health. However, when comparing the two genders, the female population increased their view on the importance of health from pre to post survey more than the male population.

The Healthy Monday campaign affected both the male and female population. When comparing male and female responses for both pre and post surveys against one another, it was seen that male and female children had similar responses in pre and post surveys. However, the female population again, had a higher attitude towards health than the male population in the pre surveys. The male children were more knowledgeable in the question “How many steps are in one mile?” both before and after the campaign than compared to the female population. One reason for this could be the fact that stereotypes show males are generally more apt with numbers than females, and that females are generally stereotyped as being more nurturing than males. Overall, when comparing male and female responses to see if they were different for pre survey results, it was seen that both genders were similar in their responses to the questions in the following domains: awareness, knowledge, and behavior. When comparing male and female responses to see if they differed in pre and post survey responses, it was seen that on a majority of questions both genders were similar in their responses in all four domain: awareness, attitude, knowledge, and behavior.

Parents

The majority of parents that took part in the study were white female mothers/guardians in the 18-34 age range. The Healthy Monday campaigning increased awareness and behavior change in the parent/guardian population. This is of interest because the campaign was not directly geared towards the parents/guardians. The parent population was also not exposed to the campaign as much as the students and teachers. It is assumed that the parent population was exposed to the campaign through parent newsletters, family nights, and through their children. It is important to indicate that there was

no statistical analysis between male and female responses in the parent population due to the fact that there was not enough variation between the two genders; female responses dominated.

Parents were aware of both the Monday Mile and Meatless Monday after the four month campaign. Both the campaigns created the same level of awareness. Parents knew about the Monday Mile and Meatless Monday campaigns. There was also a significant change in behavior of the parents after the Healthy Monday campaign. Interestingly enough, the Meatless Monday campaign created more of a behavior change than the Monday Mile campaign. More parents were eating meatless one day a week rather than walking a mile on Monday. This is interesting to note, since the Monday Mile campaign created more of a behavior change in students. The reason behind this could be that adults are more aware of what they are eating since they are the ones preparing meals. Adults have more control over what they are eating and when they decide to eat meatless than children do. The Meatless Monday campaign may have also been more effectively campaigned to parents. Specifically through parent newsletters, family nights, and Meatless Monday materials parents were given. A big part of the Meatless Monday campaign is the preparation of meatless meals. This component of the campaign may have spoken more directly to parents than children as the parents/guardians are traditionally the ones providing food for their children.

Nutrition knowledge among the parent population did not show any significant findings. Three questions dealt with nutrition knowledge on the parent surveys. One question showed to have some significance being, "True or False: You can reduce your saturated fat intake by 15% if you eat meatless one day a week." The correct answer is

true. A majority of parents answered the question correctly for both the pre and post survey questions, however a majority of parents answered the question correctly in the pre survey compared to the post survey. There are many reasons for this. One being, that the same parent did not take the pre and post survey. This can skew data tremendously. The other two questions measuring nutrition knowledge did not show any significance. On both questions a majority of parents answered the questions correctly. This shows that the campaign did not impact nutrition knowledge of parents.

In regards to parent's attitudes towards health, there was also no significant impact from the health campaign. Parents already held a high view-point of health before the campaign. Two questions specifically looked at health attitudes. One being, "How often do you try and eat healthy" and "Health is very important to me." Both of these questions were asked on a 5 point scale. The majority of pre survey answers fell in the two highest categories of the scale being "often" in regards to eating healthy and "strongly agree" regarding the importance of health at the start of the campaign. There was no immediate impact on the way parents viewed their health after the Healthy Monday campaign.

Teachers

The majority of teachers that took part in the study were white females in the 18-34 age range. The Healthy Monday campaign increased awareness and behavior change in the teacher population. It is of interest that there were no other areas of significance, since the teacher population was exposed to the campaign at the same level as the children. The teachers also had a major role in the execution of the campaign. It is important to note that male and female responses were not compared in the teacher

population due to the fact that there was not enough variation between the two genders; female responses dominated.

Teachers were aware of both the Monday Mile and Meatless Monday after the Healthy Monday Campaign. It is important to note that the majority of the teacher population was already aware of the Meatless Monday campaign before the campaign had taken place. In certain parts of Northern Kentucky the Meatless Monday had been adopted by several local restaurants before the campaign took place in the school setting which could be a reason for this. The teacher population had a significant change in behavior regarding participation of walking a Monday Mile. This supports the assumption that teachers walked a Monday Mile with their students. As mentioned earlier a majority of teachers already knew about the Meatless Monday campaign, in addition a majority of teachers were already eating meatless one day a week before the campaign. There was no significance in data indicating behavior change regarding the Meatless Monday campaign. The Healthy Monday campaign did not have an effect on the teacher's behavior change.

Nutrition knowledge within the teacher population did not show significance. Three questions on the survey were designated to knowledge. Two questions to note: "True or False: You can reduce your saturated fat intake by 15% if you eat meatless one day a week" and "What is a good substitute for meat," did not significantly differ from pre to post survey answers. The majority of teachers answered both of these questions correctly on both the pre and post survey. The third question, "How many steps are in a mile," also did not show significance; however there was a slight percent increase in the

number of teachers that responded to the question correctly from pre to post survey. The Healthy Monday campaign did not have an effect on teacher's nutrition knowledge.

Regarding teachers attitudes towards health, there was again no significant impact from the health campaign. Teachers already held a high view-point of health before the campaign (just as the students and parent populations) in regards to the two questions. One being, "How often do you try and eat healthy" and "Health is very important to me." Both of these questions were asked on a 5 point scale. The majority of pre and post survey answers fell in the second highest category of the scale being "often" in regards to eating healthy and "agree" regarding the importance of health. Both of these questions did not show any significance, therefore there was no immediate impact on health behaviors of teachers from the Healthy Monday campaign.

Awareness

The Healthy Monday campaign created awareness in all three populations. One of the goals of the campaign was to increase awareness to help encourage the components of a healthier lifestyle. All three populations are aware of the two campaigns that were highlighted in the study (Monday Mile and Meatless Monday). Students, parents and teacher are now "in the know." Simply, by incorporating the messages from these two campaigns into everyday lifestyle, health is surely to be the outcome.

This study had a number of strengths. One major strength of the study was the creativity of the health campaign. The campaign materials and components spoke directly to the children with creative animations and eye-catching visuals which helped to grab attention. The large sample size is also comparable to other similar studies testing health campaigns or interventions in elementary schools students. The four month time period

of the campaign is also viewed as a strength as it was long enough to test awareness, attitudes, knowledge, and behavior changes of the three populations being researched.

The 4-H Model

The Healthy Monday campaign falls parallel with the concepts of non-formal education and experimental learning both which are used in teaching 4-H youth around the country. The 4-H program is the nation's largest youth development program, whose motto is "learn by doing" [32]. Non-formal education is youth driven; it focuses on turning the learning over to the children and allowing them to decide what they want to learn and how they want to learn it [33]. The experimental learning model emphasizes children to reflect on their experience and apply the learned concept to other settings[33].

The foundation of 4-H began to developed in the late 1800's when researchers saw that adults in farming communities did not readily accept new agricultural discoveries that were being developed [32]. Researchers soon found that young people were open to new thinking and would "experiment" and accept new ideas more readily than adults [32]. Then, children would continue to share their experiences and newly learned knowledge with adults [32]. From this discovery, the informal and experimental learning concepts of the 4-H program took off. With children being empowered with knowledge and new ideas, a simple concept was formed; children teaching adults.

In this study, The Healthy Monday campaign was specifically designed to impact children. The ultimate outcome is that children will learn from this campaign and apply what they have learned to their everyday lifestyles. Similar to the 4-H model, the campaign allowed children to "learn by doing" or participate in healthy activities which are components to a healthy lifestyle in hopes of spreading their newly learned

knowledge. The Healthy Monday campaign used strategies of informal learning and experimental learning to get through to children. Ultimately, if children adopt the concepts of the health campaign, they can spread the message and teach others the benefits of a healthy lifestyle. Since children were most affected by the campaign, they can now spread what they have learned to their parents. Empowering children with the Healthy Monday campaign can help spread knowledge not only to other children, but also to adults.

Limitations

There are several limiting factors to note which may have affected the outcomes of the health campaign. Student, parent, and teachers were self-reporting on the survey which creates some bias. When completing the pre survey at the start of the study many students viewed the survey as a test and became nervous which could have affected initial pre survey answers and results. Mentioned earlier, different parents taking the pre and post survey could also skew results of the study. One major limitation to the study was the distance of the schools and the location of the researcher. This inhibited the researcher to check if the campaigns were effectively being carried out along with not being able to collect some surveys in a timely manner due to inconvenience of the researcher and schools.

The validity and reliability of the survey is a weakness to the study. The questions on the survey had not been tested prior to the campaign and the survey had not been previously used in any other study.

Chapter 7: Conclusion

This pilot health campaign in two Northern Kentucky elementary schools appeared to raise awareness in the student, parent, and teacher population. The first step to behavior change is awareness. The fourth and fifth grade students were most affected by the campaign. Along with raising awareness in the student population, knowledge and behavior components were also impacted. The success of this campaign in elementary school students could potentially be built upon in elementary schools across the state and the nation. Teaching children the importance of health at a young age can help children carry those healthy learned habits into their future.

Future studies should be examined over a much longer period and perhaps follow students long-term to test the effectiveness of the health campaign over a longer period. Child, parent, and teacher interviews would also add to the study. Consulting with school principals and cafeteria workers to ensure the campaign is being effectively carried out (i.e. meatless meals being served, healthy messages being announced and walking a mile on Mondays) would also be beneficial and provide more concrete information about the execution of the health campaign.

Appendix A: Student Pre and Post Survey



Healthy Monday Pre-test Survey

Children

Check all that apply:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> 4 th grade student | <input type="checkbox"/> Male |
| <input type="checkbox"/> 5 th grade student | <input type="checkbox"/> Female |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> 8 years old |
| <input type="checkbox"/> Asian | <input type="checkbox"/> 9 years old |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> 10 years old |
| <input type="checkbox"/> Native Hawaiian or Other Pacific Islander | <input type="checkbox"/> 11 years old |
| <input type="checkbox"/> White | <input type="checkbox"/> 12 years old |
| <input type="checkbox"/> Other | |

Directions: Fill in the circle next to the correct answer. Below is the correct way to fill in the circle.

- True
 - False
1. Have you heard of the Monday Mile?
 - Yes
 - No
 2. Have you heard of Meatless Monday?
 - Yes
 - No
 3. How often do you try to eat healthy?
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always
 4. It is cool to be healthy
 - Strongly Disagree
 - Disagree
 - Neither agree or disagree
 - Agree
 - Strongly Agree

5. Health is very important to me
- Strongly Disagree
 - Disagree
 - Neither agree or disagree
 - Agree
 - Strongly Agree
6. Do you believe that your health behaviors can impact the environment?
- Yes
 - No
7. Going meatless one day a week is better for your body, your health, and your planet?
- True
 - False
8. Circle the meat shown below.



Apple



Steak



Fish



Eggplant

9. What is a good substitute for meat?
- Beans
 - Turkey
 - Pasta
 - Bread
10. How many steps are in one mile?
- 10,000
 - 500
 - 2,000
 - 10
11. Do you walk a Monday Mile?
- Yes
 - No
12. Do you eat meat-less once a week?
- Yes
 - No

Appendix B: Parent Pre and Post Survey



Healthy Monday Survey *Parents*

Check all that apply:

- 18-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65 years old and Over

- Male
- Female

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other

Directions: Fill in the circle next to the correct answer. Below is the correct way to fill in the circle.

- True
- False

1. Have you heard of the Monday Mile?
 - Yes
 - No

2. Have you heard of Meatless Monday?
 - Yes
 - No

3. How often do you try and eat healthy?
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always

4. Health is very important to me
- Strongly Disagree
 - Disagree
 - Neither agree or disagree
 - Agree
 - Strongly Agree

5. Circle the meat shown below.



Apple



Steak



Fish



Eggplant

6. Do you believe that your health behaviors can impact the environment?
- Yes
 - No
7. What is a good substitute for meat?
- Beans
 - Turkey
 - Pasta
 - Bread
8. How many steps are in one mile?
- 10,000
 - 500
 - 2,000
 - 10
9. You can reduce your saturated fat intake by 15% if you eat meatless one day a week.
- True
 - False
10. Do you walk a Monday Mile?
- Yes
 - No
11. Do you eat meat-less once a week?
- Yes
 - No

Appendix C: Teacher Pre and Post Survey



Healthy Monday Survey *Teachers*

Check all that apply:

- 18-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65 years old and Over

- Male
- Female

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other

Directions: Fill in the circle next to the correct answer. Below is the correct way to fill in the circle.

- True
- False

1. Have you heard of the Monday Mile?
 - Yes
 - No

2. Have you heard of Meatless Monday?
 - Yes
 - No

3. How often do you try and eat healthy?
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always

4. Health is very important to me
- Strongly Disagree
 - Disagree
 - Neither agree or disagree
 - Agree
 - Strongly Agree

5. Circle the meat shown below.



Apple



Steak



Fish



Eggplant

6. Do you believe that your health behaviors can impact the environment?
- Yes
 - No
7. What is a good substitute for meat?
- Beans
 - Turkey
 - Pasta
 - Bread
8. How many steps are in one mile?
- 10,000
 - 500
 - 2,000
 - 10
9. You can reduce your saturated fat intake by 15% if you eat meatless one day a week.
- True
 - False
10. Do you walk a Monday Mile?
- Yes
 - No
11. Do you eat meat-less once a week?
- Yes
 - No

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