

Healthy Foods, Healthy Moves

An interactive workshop designed to encourage children to improve overall wellness by adopting healthy, sustainable habits. This is a pilot investigation of the effectiveness of an interactive workshop as a means of patient education.

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Abstract

According to the National Institute for Children's Health Quality, Mississippi ranks 51 (1 being the best) in overall prevalence of obesity. The likelihood of developing diseases such as diabetes, heart disease and stroke, increases with increasing levels of obesity (NHLBI, 2011). The goal of *Healthy Foods, Healthy Moves* is to encourage children and adolescents susceptible to these risks, to make the lifestyle changes necessary to reduce this risk. *Healthy Foods, Healthy Moves* aims to encourage children to improve overall wellness by adopting healthy, sustainable habits. According to the American Academy of Family Physicians, "very small changes can improve your health considerably". Therefore, the intention of the project is to help individuals identify areas of improvement in accordance to their current lifestyle. The project proposes that individuals who are willing to identify these areas and augment them will have better outcomes concerning long-term maintenance of weight and BMI. *Healthy Foods, Healthy Moves* also acts as a pilot to investigate the effectiveness of interactive workshop as a means of patient education. Although there was a very limited sample size (n=5) it can be said that participants did identify areas of improvement for their health. Additionally, interactive workshops are indeed an effective means to augment patient education.

Keywords:

Obesity, diabetes, children, adolescents, health, weight, BMI, patient education

Introduction

As consumers in the United States, big name snack companies and beverage producers often capture our attention. Attractive advertising and the infamous “dollar menu” weigh on our minds as we try to find convenient meal options that fit into our busy lifestyles.

I have always been interested in nutrition, wellness and education. I believe that knowledge and empowerment are two very necessary tools that facilitate positive health outcomes. This interest coupled with a desire to work in a pediatric setting brought me to the decision to target pediatric patients at risk for developing obesity and related diseases. The prevalence of overweight and obese children in the state of Mississippi has increased since 2003 (National Initiative for Children’s Healthcare Quality, 2007). This mirrors a national trend and thus raises great alarm across the nation. Subsequently, many health questions are posed. The biggest question: What is the most effective means to get patients to adopt healthy habits? I chose to attempt to answer this question in the implementation of “*Healthy Foods, Healthy Moves*”.

Background

According to the Center for Disease Control and Prevention, in the past three decades, childhood obesity has more than doubled. Additionally, adolescent obesity has increased fourfold. The development of type II diabetes mellitus (DM), cardiovascular disease and other disease becomes increasingly more likely for these obese patients. “In a population-based sample of 5- to 17-year-olds, 70% of obese youth had at least one risk factor for cardiovascular disease” (Adolescents and school health, 2014). It is evident that cardiovascular complications and diabetes seem to be two of the greatest threats to obese patients. Diabetes management is a huge sector of primary care. Therefore, it is important to address diabetes type II, as it is closely associated with obesity.

Patients with DM face major complications. The death risk for those with diabetes is double that of persons without diabetes (National diabetes fact sheet, 2011). Additionally, there are great costs associated with DM. “Medical expenses for people with diabetes are more than two times higher than for people without diabetes” (National diabetes fact sheet, 2011).

Estimated total spending related to diabetes is \$174 billion dollars. These dollars go to direct medical costs as well as disability secondary to diabetes, work loss and premature mortality.

According to the Centers for Disease Control and Prevention, “Healthy lifestyle habits, including healthy eating and physical activity, can lower the risk of becoming obese and developing related diseases”. Thus, *Healthy Foods, Healthy Moves* is an appropriate project. The intention of the project is to help individuals identify areas of improvement in accordance to their current lifestyle. The project proposes that individuals who are willing to identify these areas and augment them will have better outcomes concerning long-term maintenance of weight and BMI. *Healthy Foods, Healthy Moves* seeks to commission individuals to exchange less healthy choices for healthier ones using demonstrations, counseling and literature. Information regarding reading nutrition labels and body mass indices in particular will be shared with patients with the hopes of offering insights and encouraging healthy lifestyle changes.

Healthy Foods, Healthy Moves also serves as a pilot investigation of the effectiveness of interactive workshop as a means of patient education. “For individuals to realize the benefits of health education also requires a high level of engagement,” (Adams, 2010). Therefore, this interactive workshop would serve as a basis for using this style of patient engagement as a form of education.

Methodology

Fifty-eight patients, ages 8-15 years, and their families were invited to *Healthy Foods, Healthy Moves* via United States Postal Services.

Pretest

I created a pretest to distribute to participants. The pretest contained eight questions, which aimed to assess patient ability to interpret a nutrition label. The questions also aimed to assess patient knowledge surrounding body mass index (see appendix 1).

Four of the questions required the participant to use a nutrition label and determine the number of calories, cups, service size etc. Three of the questions aimed to gauge patient knowledge on the topic of body mass index. One question aimed to assess patient knowledge base concerning living a healthy lifestyle.

I administered the surveys to the participants of *Healthy Foods, Healthy Moves* with the assistance from another scholar. The participants were instructed to answer to the best extent of their knowledge. They were also offered assistance in reading and comprehending the questions as necessary. Five participants were given pretests within one testing period prior to the workshop.

Posttest

The posttest was designed to assess how well the workshop prepared the participants to correctly answer the same questions concerning nutrition labels and body mass index. The same eight questions were distributed along with the same nutrition label (see appendix 1).

Again, I administered the surveys to the participants of *Healthy Foods, Healthy Moves* with the assistance from another scholar. The participants again were instructed to answer to the best extent of their knowledge. Like before, they were offered assistance in reading and

comprehending the questions as necessary. Five participants were given posttests within one testing period following the workshop.

Results

Pretest

Five pretests were collected prior to the workshop, all of which were completed. 20% of those who completed the survey were female. 80% were male. All participants were between eight and fifteen years of age.

There were four questions regarding nutrition labels. Because five pretests were completed, there was a potential for 20 correct responses for this topic. The number of correct responses for questions concerning comprehension of nutrition label reading was 5 (out of 20 possible correct responses). There was a potential for 15 correct responses for topics surrounding body mass index. One correct response was given.

The average number of responses for the question surrounding healthy living was 2.2.

Posttest

Five posttests were collected prior to the workshop, all of which were completed. Again, 20% of those who completed the survey were female and 80% were male. All participants were between eight and fifteen years of age.

There were four questions regarding nutrition labels. Because five pretests were completed, there was a potential for 20 correct responses for this topic. This value does not reflect a change in correct responses. Five correct answers were still reported. However it is notable that one question (question 3) saw a decrease in the correct number of responses

compared to the pretest. A different question (question 4) saw an increase in the correct number of responses compared to the pretest (see appendix 2, figure 1).

Two correct responses were given on topics related to BMI (a potential for 15). The average number of responses for the question surrounding healthy living increased from 2.2 in the pretest to 2.4 (see appendix 2, figure 3).

Discussion

The participant pretest/posttest found an overall increase in the number of correct responses following the workshop. The topics that saw a net improvement in response were those concerning body mass index and healthy living. It would have been helpful, however, to include a basic multiplication problem on the pretest and posttest to determine that all participants did indeed have a sound understanding of the mathematical principle of multiplication first. At this point, there is no way to determine the basis of incorrect responses to question one and two (see appendix). It could be that participants did not understand the concept of multiplying serving size by the nutrition facts listed or it could be that participants were not particularly prepared to multiply values. It is important to note however that participants scored the best on questions that required qualitative answers.

Interactive workshops are an effective means to increase patient knowledge on certain topics. There were a number of questions raised by this project. For example, will patients recall the information over time? Although fun and informative, will patients take the information and apply them to their daily lives? Questions regarding potential to use the information presented in the workshop should have ideally been included in the posttests to gauge workshop effectiveness at the presentation of long-term patient knowledge. Additionally, Literature was given to each participant concerning the topics covered at the workshop. Each participant was given a poster to

remind them of the three biggest themes of the workshop. Included on the poster was a miniature tracking log to help encourage those participants to track their changes (see appendix 3)

Another question posed- will habits actually change? Ideally, a longitudinal survey would be in place to determine if patients begin to include healthier habits in their day-to-day living. Is a workshop sustainable? Is this workshop representative? Five participants is certainly not a representative of an entire patient population. This workshop can however, serve as a pilot model that can be improved upon in the future.

Healthy Foods, Healthy Moves is a strong project because it targets a very relevant current health issue. A weakness is the very small sample size of participants. Limitations included clinic hours of operation, which prevented a presentation during a more opportune time of day. With all these in mind it can be said that interactive workshops are an effective means to increase patient short-term knowledge on certain topics, based on this project there is no way to determine whether this information will be remembered or maintained or used over any given period. Further investigation is required to answer the question: what is the most effective means to get patients to adopt healthier habits?

Recommendations

What is the most effective means to get patients to adopt healthier habits? This seems to be the ultimate question. Based on the *Healthy Foods, Healthy Moves* project, the following recommendations are made:

Patient education is essential. Providers should therefore continue patient education on a one to one basis as a means of providing professional and medical opinion. The level of influence at the individual level should not be ignored. A group setting though, is a great way to offer this advice to large bodies of patients with similar conditions. Perhaps the method of

inviting participants though can be altered based on the patient population. Of the 58 invitations for *Healthy Foods, Healthy Moves* via U.S. postal mail, 5 participants attended. Electronic invitations should be considered in the future. Additionally, the time of day should strongly be considered before setting a time for the workshop. For the convenience of the clinic and staff, the workshop was held at two o'clock pm. This is not an ideal time for working parents and should therefore be adjusted in the future.

Patient engagement is critical to compliance. Interaction during *Healthy Foods, Healthy Moves* was evident and patients seemed eager to participate in activities. For long-term maintenance of health, tools such as tracking logs can be used to elicit the involvement of patients. Participants were given a poster that included a small tracking log to track their healthy changes. This was distributed in the hopes that patients are engaged and begin new habits and eventually sustain them. Of course, the ideal follow-up would take place in the clinic, but logs are a useful tool to encourage patient engagement.

Ideas and resource guides for patients seeking more information are ideal. At the end of the workshop, participants were given colorful literature to be used as a tool at home (see appendix 3). It is certainly important to offer this information so that frequently asked questions can be easily addressed at home. Thus, it is recommended that literature in the form of text, video or other forms of media could be useful to patients. Digital media, such as MP3 or video could be used or provided via the World Wide Web as a sound source of medical information surrounding certain health topics. Yes, some resources such as these exist already. In these cases, encouraging patient use of these tools, or pointing out simple, informative tools most useful for individual patients may be a means to increase the use of these resources. It is anticipated that

because the tools given to the pediatric patients following the *Healthy Foods, Healthy Moves* workshop was attractive and easy to use, they will be useful to the patient and family.

Consider other methods of patient engagement and education such as motivational interviewing during patient encounters and during interactive workshops. Motivational interviewing (MI) is a form of cooperative dialogue designed to increase an individual's motivation to make a lifestyle change. "MI appears to hold substantial promise for health behavior change. It is consistent with the call [...] for more patient-centered approaches in health care..." (Britt, et. al, 2003). This style of interview can be used both on a one to one basis as well as in a group setting in a workshop environment therefore offering the opportunity for group support for improving positive health outcomes.

Encourage patient education opportunities in-group settings. Consider offering interactive workshops at regular intervals throughout the year. Cover topics such as diabetes management, weight loss strategies, healthy eating on a budget. One important recommendation is surveying patients to identify the most needed topics.

One of the questions posed by the project, "will habits actually change?" Ideally, a longitudinal survey would be in place to determine if patients begin to include healthier habits in their day-to-day living. Although challenging to maintain high levels of participation in such a survey, valuable information would be provided.

Conclusion

Childhood and adolescent obesity is prevalent in the United States. It is greatly prevalent in the state of Mississippi and largely an item among community health centers. Complications secondary to obesity become a significant issue such that methods of encouraging healthier lifestyles through patient engagement and education become important.

Healthy Foods, Healthy Moves did indeed provide relevant nutrition and wellness information to a pediatric population reflecting that overall, interactive workshops are an effective means to provide patient education.

Further investigation is required to ultimately answer the question: what is the most effective means to get patients to adopt healthier habits? Nevertheless, addressing these concerns directly and aggressively offers the best chance at improvement.

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Appendix 1: Pretests/Posttest Survey & Corresponding Nutrition Label

1. If you eat the entire container, how many calories will you eat?
2. How many total cups are in the container?
3. How many cups should eat in one setting?
4. Name one item on the label that we should try to minimize.
5. To calculate your BMI you would use _____ and _____
6. What is a healthy BMI?
7. What is your BMI?
8. Name as many ways as you can to be a little healthier each day.

| Nutrition Facts | | | |
|--|-----------|-----------------------------|---------|
| Serving Size 1/2 cup (114g) | | | |
| Servings Per Container 4 | | | |
| Amount Per Serving | | | |
| Calories 90 | | Calories from Fat 30 | |
| | | % Daily Value* | |
| Total Fat 3g | | | 5% |
| Saturated Fat 0g | | | 0% |
| Cholesterol 0mg | | | 0% |
| Sodium 300mg | | | 13% |
| Total Carbohydrate 13g | | | 4% |
| Dietary Fiber 3g | | | 12% |
| Sugars 3g | | | |
| Protein 3g | | | |
| Vitamin A 270% | • | Vitamin C 10% | |
| Calcium 2% | • | Iron 4% | |
| *Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs: | | | |
| | Calories | 2,000 | 2,500 |
| Total Fat | Less than | 65g | 80g |
| Sat Fat | Less than | 20g | 30g |
| Cholesterol | Less than | 300mg | 300mg |
| Sodium | Less than | 2,400mg | 2,400mg |
| Total Carbohydrate | | 300g | 375g |
| Dietary Fiber | | 25g | 30g |

Appendix 2: Pretests & Posttests Results Graphs

Figure 1: Change in Response Accuracy by Question Number

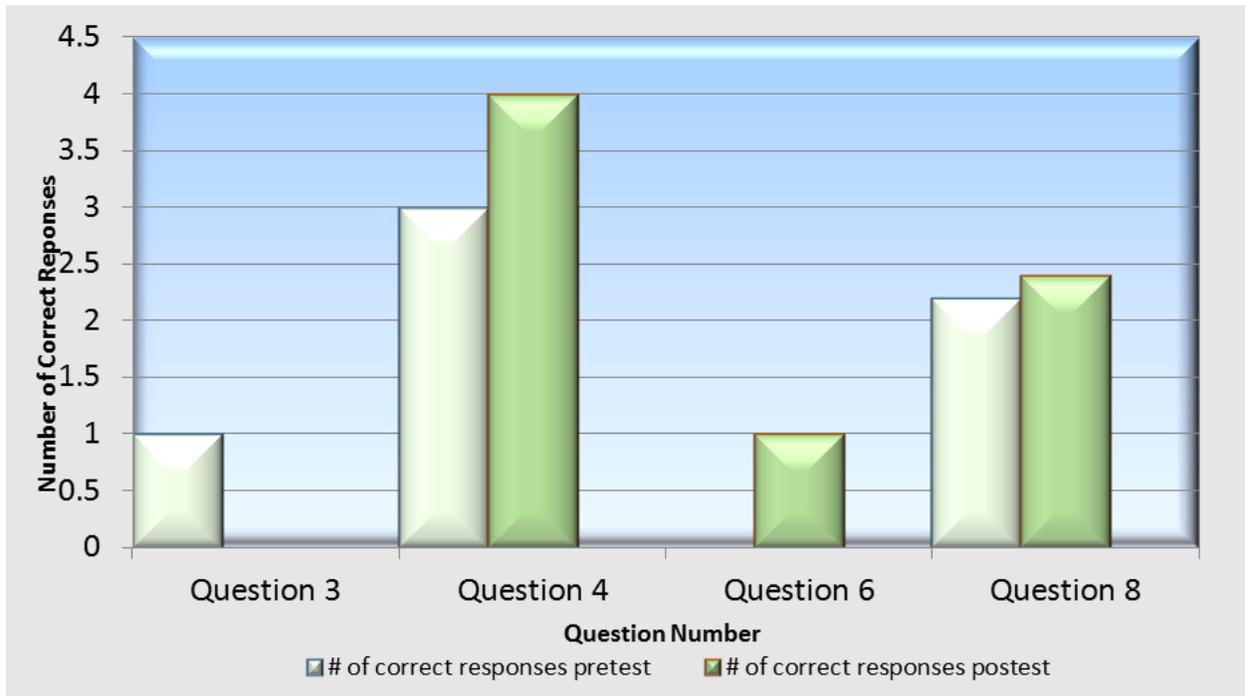


Figure 2: Pretest vs. Posttest, Nutrition Labels

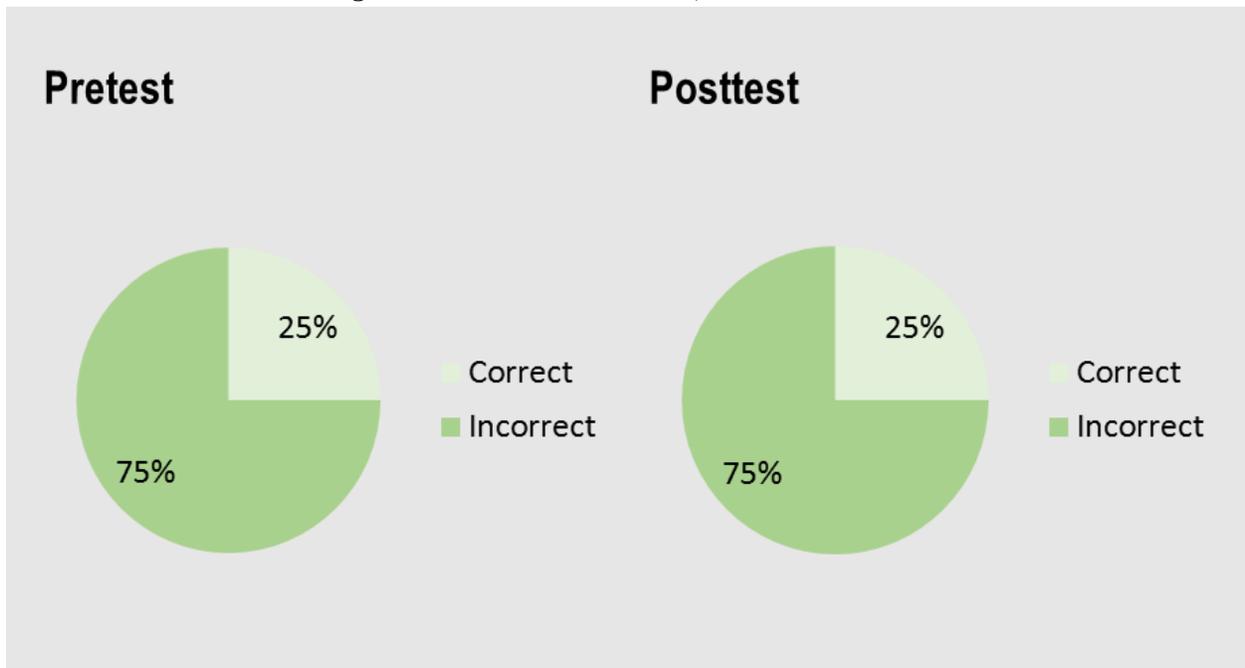


Figure 3: Pretest vs. Posttests, Body Mass Index

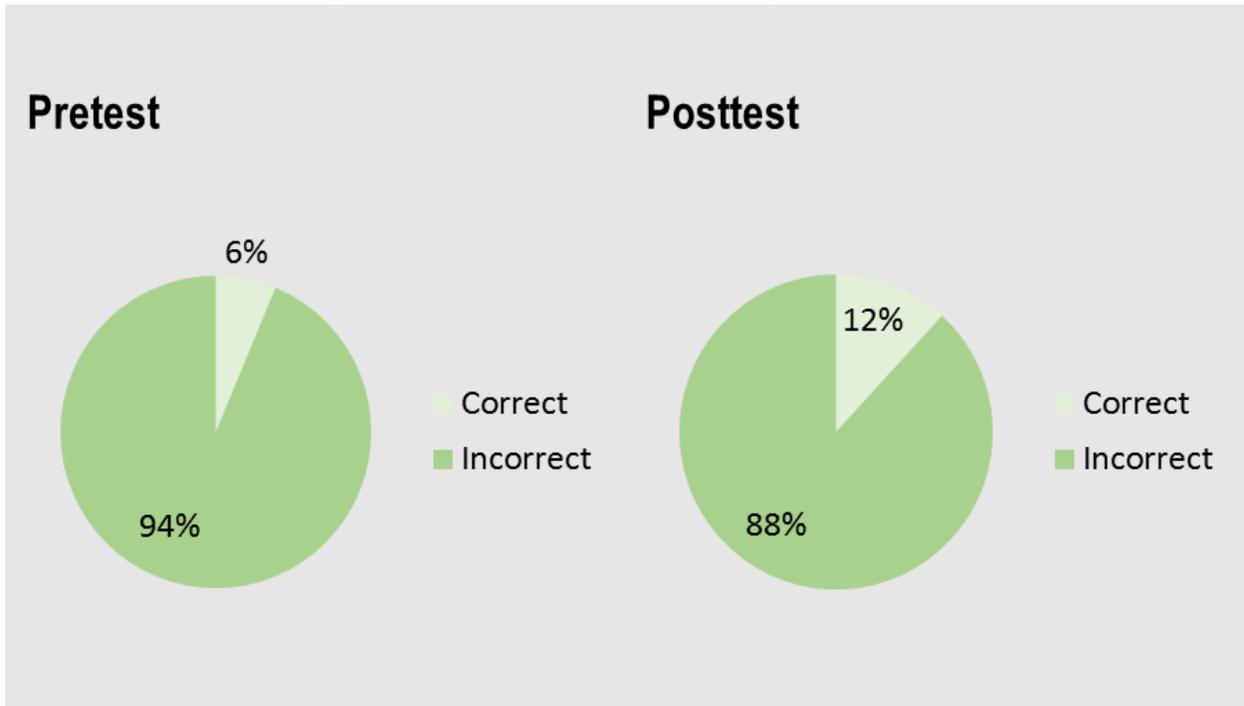
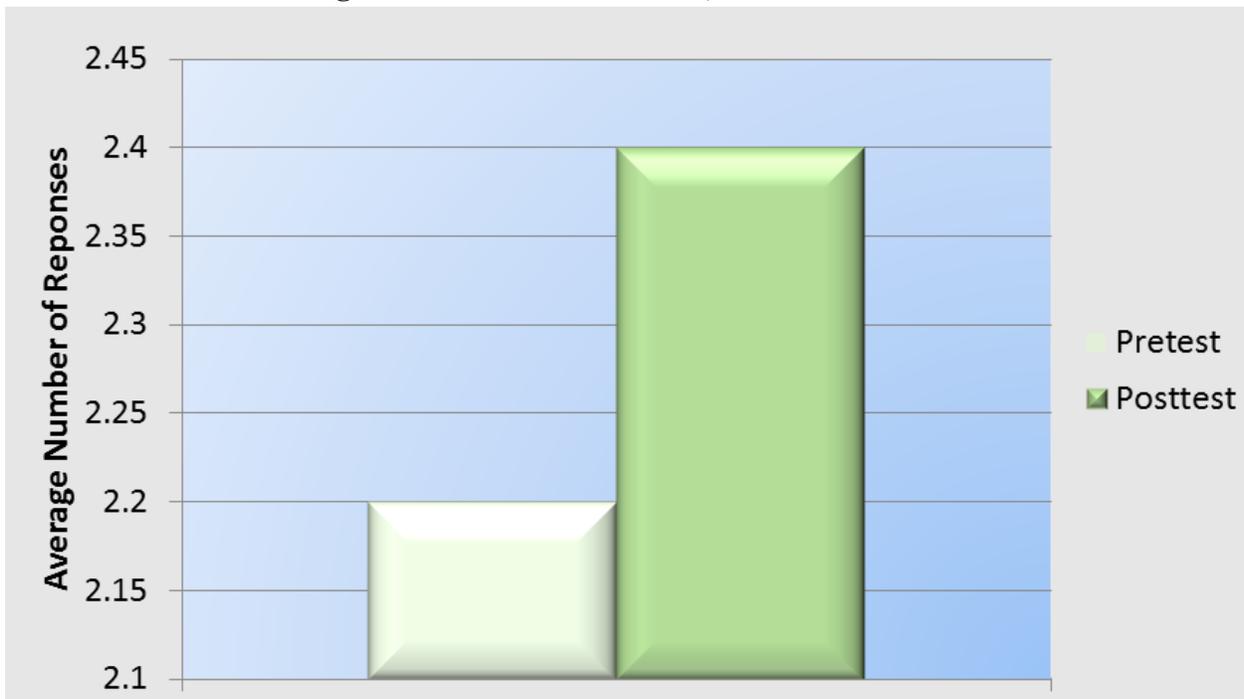


Figure 4: Pretests vs. Posttest, Wellness/Health



Appendix 3: Poster Provided to Participants

This is the poster created for the participants of *Healthy Foods, Healthy Moves*. The three themes of the workshop: “How much food matters, rethink your drink and a little play goes a long way” are reiterated. A small tracking log is included to encourage small, daily changes to health behavior.

How much



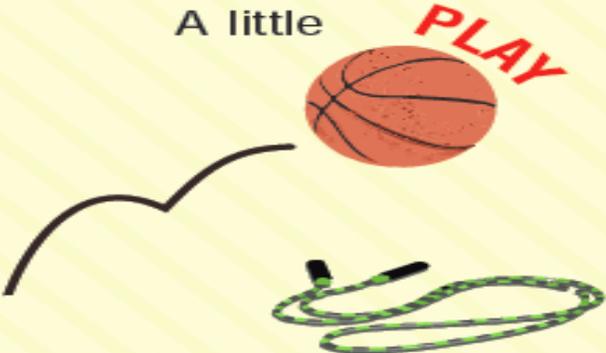
FOOD
matters

Rethink



your **DRINK**

A little **PLAY**



goes a long way

Tracking Change

Check a box if you made a change that day.

| | S | M | T | W | TH | F | S |
|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Food | <input type="checkbox"/> |
| Drink | <input type="checkbox"/> |
| Play | <input type="checkbox"/> |

My Goal: _____

Small Changes 4 Life

For more info go to www.choosemyplate.gov/KIDS