

5-2019

Eat Better Move More: Educational Program Teaching Healthy Eating Habits to Low-Socioeconomic Elementary School Students

Megan March

Follow this and additional works at: <https://scholarworks.uark.edu/nursuht>

Part of the [Other Nursing Commons](#), and the [Public Health and Community Nursing Commons](#)

Recommended Citation

March, Megan, "Eat Better Move More: Educational Program Teaching Healthy Eating Habits to Low-Socioeconomic Elementary School Students" (2019). *The Eleanor Mann School of Nursing Undergraduate Honors Theses*. 89.
<https://scholarworks.uark.edu/nursuht/89>

This Thesis is brought to you for free and open access by the The Eleanor Mann School of Nursing at ScholarWorks@UARK. It has been accepted for inclusion in The Eleanor Mann School of Nursing Undergraduate Honors Theses by an authorized administrator of ScholarWorks@UARK. For more information, please contact ccmiddle@uark.edu.

Eat Better, Move More: Educational Program Teaching Healthy Eating Habits to Low-Socioeconomic Elementary School Students

An honors research project submitted in partial fulfillment of the requirements of the degree of Bachelor of Science of Nursing

By
Megan March

May 2019
University of Arkansas

This research was supported by a University of Arkansas Honors College Research Grant and an Honors College Travel Grant

Key Words

Obesity, healthy habits, attitudes, knowledge, ethnic minority, nutrition, exercise, students, school

Abstract

Obesity is a growing problem and has shown no signs of improvement over the past decade, with an estimated one in five children between the ages of six and seventeen are overweight. This problem is even more prevalent in ethnic minorities and socioeconomically disadvantaged families. The purpose of this study was to examine the effects of the EBMM program nutrition module on 4th and 5th grade student's food choices. The study was conducted at an elementary school in Northwest Arkansas. A convenience sample of 4th and 5th grade students was chosen to participate in the study. Nursing students created education modules on healthy habits, nutrition, exercise, and sleep as part of an Eat Better Move More initiative. The modules were then taught by the classroom teacher. A Pre-test was given prior to the first module and a post test was given after each educational session, in addition to content knowledge quizzes after each of the four sessions. The results indicated that nutrition education increased healthy food choices for snacks, while healthy choices at school are lacking for children. Knowledge of healthy food choices improved in the student group after the nutrition module. Further studies should be conducted on available food choices offered in the school settings, as this is a main nutrition source for many students.

Introduction

Background and Significance

Obesity is a growing problem and has shown no signs of improvement over the past decade. An estimated one in five children between the ages of six and seventeen are overweight (Haghani, Shahnazi, & Hassanzadeh, 2017). In minority households, the problem is even more prevalent (Berger-Jenkins et al., 2014; Llargues et al., 2017). Children from ethnic minorities and socioeconomically disadvantage families are at an increased risk of being overweight and obese, with much of this attributed to food insecurity (Bryars, Mouttapa, McMahan, & Tanjasin, 2012). This is caused by an increased consumption of fast food, low-nutrient-density snack foods,

sweetened beverages, increased screen time, decreased physical activity, and lack of sleep (Bryars et al., 2012; Felso, Lohner, Hoolody, Erhardt, & Molnar, 2017).

This study is significant because few obesity prevention/ intervention school-based studies that target a young population of ethnic minorities residing in underserved communities have been conducted (Bryars et al., 2012). Children spend a great deal of their time in a school setting, thus making school-based interventions on nutrition, sleep, healthy habits, and exercise very impactful.

Purpose of the Study

The purpose of this study was to examine the effects of the Eat Better Move More (EBMM) program nutrition module on 4th and 5th grade student's food choices.

Research Questions

To accomplish the purpose of this study it was necessary to answer the following research question:

1. Do 4th and 5th grade students increase healthy behaviors related to nutrition after participation in the EBMM program nutrition module?

Literature Review

Obesity continues to be a growing problem in the United States. Obesity is even more prevalent in children from ethnic minorities and socioeconomically disadvantaged families, with much of this attributed to food insecurity (Bryars, Mouttapa, McMahan, & Tanjasin, 2012). Without resources or knowledge of foods, obesity is rising and becoming the social norm. This is attributed to a lack of knowledge of healthy foods, an increased consumption of low-nutrient-density food, an increase in screen time, and a decrease in physical activity. (Bryars et al., 2012). In the future of the child's life, obesity has several risk factors including

cardiovascular disease, glucose intolerance, and insulin intolerance. There are few obesity prevention/intervention school-based studies that target a young population of ethnic minorities residing in underserved communities (Bryars et al., 2012). Children spend a majority of their time in the school setting, and thus can be greatly impacted through school-based interventions on nutrition and healthy lifestyles.

While there have been many studies concerning weight loss for school aged children, there continues to be negative feelings surrounding the process. It is often difficult to have children stay on track with diet and exercise, and often times they will become stressed and return to unhealthy habits. Dieting and exercise at a young age can be a delicate process as children are easily influenced and may develop a negative body image. Targeting younger children and giving them tools they can use to live a healthy lifestyle will help erase the cycle of reverting back to unhealthy foods following a diet. The challenge is to maintain the interest level of children by presenting the information in a fun and exciting way. Several studies implemented in elementary schools have shown no physical change although they did demonstrate an increase in healthy choice behavioral intentions, knowledge, attitudes and behaviors (Story et al., 2003; Davis et al., 2002; Caballero et al., 2003). Davis (2002) found that while there were no significant signs of physical change, the study was promising and needs replication. An increase in knowledge concerning healthy lifestyles, specifically on nutrition, may benefit the lives of the children by increasing healthy choices made. The children demonstrated increase in knowledge and a more positive feeling about being healthy which may lead to physical changes in the future.

Other studies have been more successful in their results. Davis (2002) and Llargues (2016) completed studies that focused on curriculum that could be delivered in the classroom by

the teacher in several different subjects, such as in math, science, and language, and used mechanisms such as posters, food tables, games, crafts, and cooking workshops. These studies aimed to help students learn specific nutritional information such as how to plan a healthy meal, set goals for improvement, which resulted in improved knowledge and attitude towards healthy living. Other studies taught nutrition and exercise in the classroom setting and using questionnaires to ask students about their knowledge and habits related to nutrition and physical activity. Both studies demonstrated that education using age-appropriate methods such as animations, role-play, and interactive sessions were beneficial in increasing knowledge. One study saw a change in nutritional behavior and exercise, while the other study saw both a change in behavior and knowledge towards nutrition and exercise (Berger-Jenkins et al., 2014; Haghani, Shahnazi, & Hassanzedah, 2017). Llargues's study demonstrated a decrease in BMI in the intervention group which was still true four years after the study completed, demonstrating that school-based interventions can have a lasting effect on children (Llargues et al., 2016).

Karczewski and DeCator's (2016) research cautions that while intervention is effective in children, the amount of effectiveness varies across ethnicities. There are often barriers involved when working with ethnic minorities, such as cost and resource availability. Certain studies should be tailored specifically for children of ethnicity, as this can improve the success of interventions. One study used ethnicity to its advantage in a story immersion health videogame. The characters inside the game were programmed to look like the Hispanic and African American participants (Karczewski, Carter, & DeCator 2016). After answering questions related to the videogame and health information, the study results noted higher scores were achieved by the Hispanic and African American children. Having children connect with some part of the implementation makes them more likely to continue with healthy habits they have learned.

There have been numerous studies that have assessed a variety of interventions concerning nutrition and obesity in school age children. However, children of ethnic minority and low socioeconomic status are often not addressed in these studies. These factors often have a large roll in obesity, and it would be beneficial to take these factors into account when creating a program for children. Research has shown that school-based interventions in regard to obesity are effective since students spend so much of their time in a school setting. Programs that can be incorporated into the classroom are even more beneficial as it allows teachers to cover required topics and adapt to known student needs (Davis et al., 2002; Llargues et al., 2016). Obesity prevention measures should begin at a young age, as this is when children are most accepting of change and most influenced. If the groundworks for healthy living are set early, children are more likely to remain healthy throughout their life.

Methodology

Research Design and Methods

The purpose of this study was to examine the effects of the EBMM program nutrition module on 4th and 5th grade student's food choices. Students in this study were from a single elementary school, with a high number of children at the school receiving free or reduced nutrition services. One research question was considered to assess the impact of the Eat Better Move More nutrition education module. The question was: Do 4th and 5th grade students increase healthy behaviors related to nutrition after participation in the EBMM program nutrition module? The study used a quasi-experimental design using a single group pretest/posttest. The nutrition module was taught by the classroom teacher and took approximately 30 minutes. The following topics were covered in the module: the five main food groups, how to create a balanced meal, nutrients found in foods, foods to avoid, high sugar foods, portions, and healthy snack options. This research

was reviewed and approved by the University of Arkansas Institutional Review Board. All students in the class were offered education, only students with signed consent forms were included in the study results. Consent to participate was obtained from all parents/caregivers prior to the Eat Better Move More education sessions. The 4th and 5th graders received EBMM education four times throughout the course of a year. Each session lasted approximately 30 minutes and focused on a specific topic; healthy habits, nutrition, exercise, and sleep. Education packets that focused on these topics were created by nursing students involved in the EBMM project. These packets were then given to teachers at the selected elementary school to use during a chosen class period. Additional materials such as *MyPlate* handouts, portion size examples, and vials of sugar representing different foods were also provided. Pre and post tests were given to the students before and after the education series. Additionally, after each education session the students were given a short quiz that covered that day's topic (healthy habits, nutrition, exercise, or sleep).

Research Site and Participants

The research site of this study was a single elementary school in Northwest Arkansas. The selected school has a diverse socioeconomic and ethnic population including Latinos and Marshallese. A convenience sample of one class of 4th and 5th grade students were chosen to participate in the study. There were twelve male and twelve female students in the study. The participants were 41% Hispanic, 3.6% Caucasian, 8.3% Marshallese, 4.7% Filipino, and 41.7% biracial. Of the participants, 17% belonged to a single parent home.

Instruments

A pretest and posttest were provided for the students to fill out before and after the education on nutrition was taught (Appendix A). The researcher developed questionnaire

covered topics such as food eaten for breakfast, lunch, dinner and snack choices. For breakfast and lunch, the students filled out what they ate and indicated if they ate the school breakfast or lunch or ate food from home. The students were asked to write down what they ate for an after-school snack. For dinner, the students were asked to write down if they ate at home or at a restaurant and what they had. The questions for the pre and posttest were the same and answers were compared afterwards. The questions and format were reviewed for face validity by a fourth and fifth grade teacher to ensure face validity.

Data Collection

The questionnaires took the students approximately five to ten minutes to complete. Data collection occurred at the end of all teaching sessions for both 4th and 5th grade students. The questionnaires were collected from the teachers of the classrooms. There were some delays in data collection due to teachers falling behind the planned EBMM module schedule or being sick.

Results

Once all data was collected, comparisons were made between the pre and posttests. The questions analyzed were; “what did you eat for breakfast?”, “what did you eat for lunch?”, “what did you eat for dinner?”, “did you eat a snack after school/what did you eat if so?”, and if they ate the food provided by the school or not (Appendix A). Data was analyzed using mean, median, and mode.

For the pre-test, 74% of students ate their breakfast at school, and 76.4% of those ate dessert for breakfast. Of the students, 82.6% ate the school lunch. Thirteen of those students had pizza, four had fruit, and three had chips. Four students brought lunch from home, and all four students brought a sandwich. In regard to an afterschool snack, 65% of students reported having one, with 60% of the snacks being a dessert or chips and 26.6% being fruit. For dinner, 73.9% of

students ate at home. The most common foods eaten for dinner were chicken, rice, Mexican, and fast food. Two students did not eat dinner.

For the post test, 66.6% of students ate breakfast at school, and 93.7% of those ate dessert for breakfast. Of the students, 83.8% ate the school lunch. Twelve students ate spaghetti, eight had breadsticks, nine ate fruit, and four ate vegetables. The rate on afterschool snacks increased to 75% of students, with 38.8% having dessert or chips and 61% having fruit. For dinner, 83.3% of students ate at home. The most common foods eaten for dinner were chicken, rice, and pizza. Two students did not eat dinner.

The results showed that the majority of students ate breakfast and lunch at school and ate the food provided by the school. Students indicated that the intake of high sugar foods consumed for breakfast remained high after the nutrition module, which could be due to the breakfast food provided by the school. The majority of students reported eating a cinnamon roll or brownie for breakfast at school. The food eaten for lunch and dinner remained relatively similar. The food consumed for lunch still lacked dense nutritional value (pizza, spaghetti, breadsticks, chips), as the school continued to provide the same food choices. There was no change in food eaten for dinner which included chicken, rice, pizza, and fast food. There was a 21.2% decrease in unhealthy after school snacks, with less students eating candy, dessert, or chips as a snack

(Figure 1). More students reported choosing a healthy snack such as fruit in the posttest.

Results: 4th and 5th Grade Nutrition

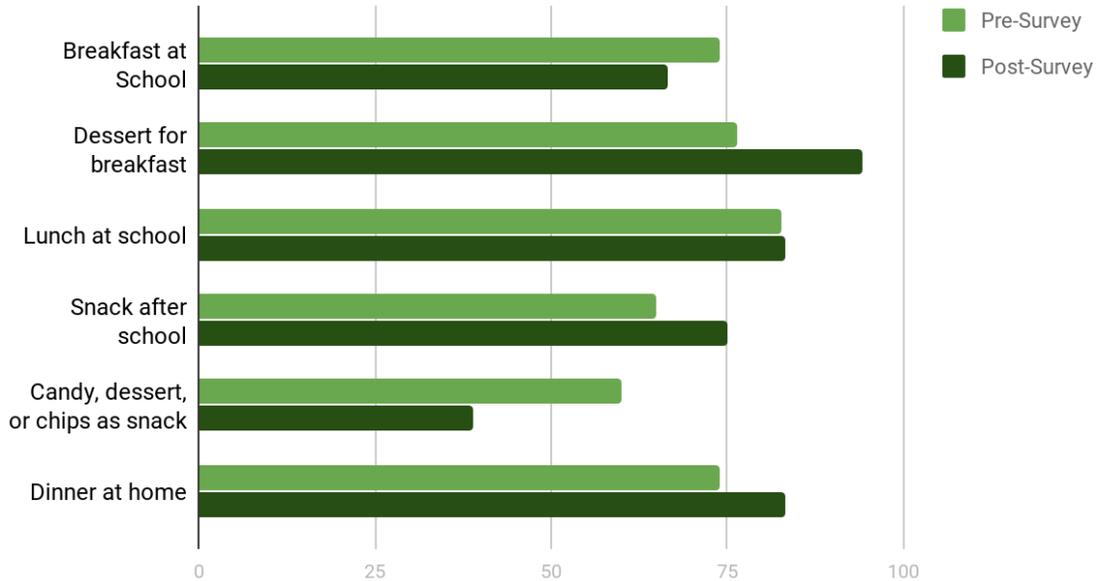


Figure 1: Bar graph representing nutrition of 4th and 5th graders pre and post education

Discussion

The results from this study indicated that there are several factors that impact food choices for elementary aged students. For example, the food provided for the students at school did not offer healthy food choices. This created a barrier for students to choose healthier options. The percentage of food choices for dinner did not change. A factor that is a barrier for school age children for dinner is parents prepare and choose the food at home. There was however a change in the consumption of unhealthy snacks after school, showing that when presented with options the students chose a healthier snack after the nutrition module. There were also concerns raised about students having adequate food consumption, as two students wrote that they did not eat dinner. The teacher who taught the module was notified and safe guards are now in place for

student referrals to the counselors. Results demonstrated that knowledge and choice of healthy snacks did improve in the student group after the nutrition module.

Limitations

The study had several limitations, which should be considered. First, the study was only conducted at a single location with one 4th grade class and one 5th grade class, making the sample size of the study small. The convenience sample limits the representation of the population. Additionally, the students may not have been truthful in their answers or may have not taken the quizzes seriously. Due to the self-reported nature of the data the students may have been influenced by feelings or attitudes. Some students may have put what they knew was a good answer, but not a truthful answer, feeling pressured to respond with a healthy food. This may have created a survey bias, as the answers may not have shown a true representation of the population.

Conclusion

The *EBMM* nutrition module did increase the knowledge and choice of healthy snacks in the students who participated in the program. When presented with an option, the student chose a healthier food, as seen with the change in snack choice. An unexpected finding was that school breakfasts and lunches need to be assessed and offer children more nutritious options, as many students eat the food provided by their school. Children cannot choose a healthy option if they are not presented with options that are nutritious.

In the future, studies need to be conducted on a larger scale in regard to nutrition in elementary school setting. Researchers should discuss breakfast and lunch options with school administrators, as this could make an impact on the health of elementary aged students. Additionally, students who are not receiving dinner should be referred to support services to

ensure they have adequate food available outside of the school setting. A safe reporting system is needed in all schools to assist students in meeting their basic needs.

The results from this study can be used to better inform school administrators, teachers, and counselors concerning healthy food knowledge for the study population. Future studies are required to continue to explore the educational needs of 4th and 5th grade ethnic minority and low socioeconomic status students concerning nutrition and health behaviors.

References

- Berger-Jenkins, E., Rausch, J., Okah, E., Tsao, D., Nieto, A., Lyda, E., . . . McCord, M. (2014). Evaluation of a coordinated school-based obesity prevention program in a Hispanic community: Choosing healthy and active lifestyles for kids/healthy schools healthy families. *American Journal of Health Education, 45*(5), 261-270. doi: 10.1080/19325037.2014.932724
- Bryars, T., Mouttapa, M., McMahan, S., & Park Tanjasiri, S. (2012). Results of a school-based obesity prevention program targeting early childhood students. *Californian Journal of Health Promotion, 10*(1), 91-102.
- Caballero, B., Clay, T., Davis, S. M., Ethelbah, B., Rock, B. H., Lohman, T., . . . Stevens, J. (2003). Pathways: a school-based, randomized controlled trial for the prevention of obesity in American Indian schoolchildren. *The American Journal of Clinical Nutrition, 78*(5), 1030–1038.
- Davis, S. P., Davis, M., Northington, L., Moll, G., & Kolar, K. (2002). Childhood obesity reduction by school based programs. *ABNF Journal, 13*(6), 145-149.
- Haghani, S., Shahnazi, H., & Hassanzadeh, A. (2017). Effects of tailored health education program on overweight elementary school students' obesity-related lifestyle: A school-based interventional study. *Oman Medical Journal, 32*(2), 140-147.
- Karczewski, S. A., Carter, J. S., & DeCator, D. D. (2016). The role of ethnicity in school-based obesity intervention for school-aged children: A pilot evaluation. *Journal of School Health, 86*(11), 778-786.
- Llargués, E., Recasens, M. A., Manresa, J., Jensen, B. B., Franco, R., Nadal, A., . . . Castell, C. (2017). Four-year outcomes of an educational intervention in healthy habits in schoolchildren: The avall 3 trial. *European Journal of Public Health, 27*(1), 42-47.

Lu, A. S., Thompson, D., Baranowski, J., Buday, R., & Baranowski, T. (2012). Story Immersion in a health videogame for childhood obesity prevention. *Games for Health Journal*, *1*(1), 37–44. doi: 10.1089/g4h.2011.0011

Story, M., Sherwood, N. E., Himes, J. H., Davis, M., Jacobs, D. R., Cartwright, Y., ... Rochon, J. (2003). An after-school obesity prevention program for African-American girls: The Minnesota GEMS pilot study. *Ethnicity and Disease*, *13*

Appendix A

Sample Questions:

1. What did you eat for breakfast this morning- List what you ate beside the line that matches where you ate breakfast. Example: Ate at home- 2 frozen pancakes and glass of juice
 - I skipped breakfast this morning
 - I ate breakfast at school this morning
 - I ate breakfast at home this morning
2. What did you eat for lunch today- List what you ate beside the line that matches what you ate for lunch. Example: Ate school lunch: 1 piece of pizza and cookie with milk
 - I skipped lunch today
 - I ate the school lunch
 - I brought lunch from home
3. Did you eat a snack yesterday between school and evening meal (dinner or supper)?
 - Yes
 - No
4. If you ate a snack yesterday, what did you eat? Example: 2 apples
5. What did you eat for your evening meal last night (dinner or supper)? List what you ate beside the line that matches where you ate dinner.
 - I did not eat a meal last night
 - I ate at home last night
 - I ate food from a restaurant last night- fast food, take out, sit down meal