

# Marshall NEP: Effectiveness of Interns in Changing the Dietary Behaviors during K-2nd Formative Years



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## Introduction

One of the most common chronic childhood diseases is obesity affecting more than 17 percent of US children. Most alarming is obesity among children 6 to 11 years old, which has almost tripled since 1980.<sup>1</sup> In WV 28% of 6-11 year olds are obese. School-based nutrition education programs have the potential to impact childhood obesity rates by promoting changes in young children's dietary and physical activity behaviors. Few studies have assessed the effectiveness of early school-based nutrition programs in impacting K-2nd grade students' nutrition knowledge and behaviors. As nutrition professionals, dietetic interns and registered dietitians are uniquely prepared to educate today's youth about healthy eating and the importance of physical activity.



## Nutrition Education Program

An age appropriate nutrition education program was implemented in kindergarten, first grade, and second-grade classrooms in a two county region of Southern West Virginia. Ten dietetic interns and 2 registered dietitians taught 9 nutrition lessons over a 9-week span. The scripted lessons included food tasting experiences and activities related to food safety, healthy food choices, and the benefits of increased physical activity. Each lesson was delivered as a part of the normal class curriculum. Classroom teachers were provided with extension activities, bulletin boards ideas/materials, and parent nutrition newsletters which could be utilized to further promote healthy behaviors.

## Methods

The sample consisted of kindergarten, first grade, and second grade students in 12 public elementary schools participating in the nutrition education program and their teachers. To participate in the program, schools were required to have at least 50% of students qualifying for free or reduced lunches.

Following the nine week intervention, a mixed method research approach was utilized to assess the effectiveness of the nutrition education program. Measures included pre and post testing of student knowledge, as well as a teacher observation and behavior survey and teacher focus groups.

Student knowledge and behaviors were assessed using a 13-item questionnaire. The questionnaire was separated into two sections: 4 questions pertaining to knowledge and 9 related to hygiene practices, food choices and physical activity patterns. Pretest questionnaires were delivered to classroom teachers and implemented by the teachers prior to the 9-week intervention. Posttests were delivered and implemented after the intervention. Teachers read the questions aloud and assisted students in marking their answers.

A 35-item questionnaire was distributed to teachers in order to gain insight into the effectiveness of the program in improving students' nutrition related attitudes and behaviors as well as changes in the teachers' own nutrition behaviors and modeling practices. Quantitative and qualitative data were collected along with demographic information. In order to better understand teachers' perceptions of the program, focus groups were conducted in a few participating schools

## Results

Eight hundred forty-two K-2<sup>nd</sup> grade students completed the post-test. A comparison of results indicated that children among schools where the curriculum was delivered by interns saw the most change in food related behaviors such as trying new foods, increasing fruit and vegetable intake, and practicing food safety.

Sixty-two teachers (46%) completed and returned the teacher observation and behavior survey. Results from the survey were overwhelmingly positive. Nearly every teacher reported observing positive health behavior changes in students after participation in the nutrition education program. Teachers responded that the students discussed changes openly in class. Teachers' reported improvements in their own health behaviors as well. All respondents (100%) indicated they had changed or were already practicing at least one key healthy behavior such as making healthy meal/snack choices, eating breakfast, trying new foods, practicing hand washing and food safety behaviors, and engaging in regular physical activity. The majority indicated that they continued to discuss nutrition and model some of the behaviors after the program ended.

Eleven teachers from three schools participated in focus groups. The focus groups revealed that teachers perceived the students improved willingness to try new foods, increased fruit and vegetable intake, and their new enthusiasm for health as major benefits of the program. Many stated that children in their classrooms had limited experiences trying new foods at home due to economic constraints. They indicated that children were hesitant to try new foods initially but gained excitement as the lessons progressed. One teacher indicated that prior to the program, "approximately 80% of children would not have touched a piece of fruit; now, an overwhelming majority do." Focus groups also revealed that teachers felt the pre/post measure was too difficult for K-2<sup>nd</sup> graders to complete alone.

## Discussion

Promoting healthy behaviors among young children is extremely important as habits developed during early years are likely to carry over into adulthood. Both the qualitative and quantitative data indicated that the nutrition education program successfully provided K-2<sup>nd</sup> grade students with knowledge and skills to make healthier choices and improved teachers modeling behaviors as well.

The results suggest that school based nutrition programs targeting K-2<sup>nd</sup> graders may be more effective in changing children's behaviors related to food choices and food safety when dietetic interns deliver the lessons. While the lesson plans presented by interns and registered dietitians were the same and there were no significant differences in demographics, the students in schools where interns taught the lesson saw the most change in food related behaviors. One plausible cause may be the impact of academics. The interns were continuously observed and receiving feedback on their presentation styles. With this extra feedback, the interns effectiveness may have improved. Age may also have played a role in the interns' effectiveness. The average age of the interns was younger than the registered dietitians. The students may have responded more readily to younger presenters. Regardless of the cause for the differences, further research is need to explore the theory that interns may be more effective in delivering K-2<sup>nd</sup> grade nutrition lessons.

Researchers plan to continue to monitor the success of the program. More age appropriate tools are being developed to better assess nutrition knowledge, attitudes, and behaviors in young children with limited attention spans and reading capabilities.

## References

1.Ogden, C.L., Carroll, M.D., Curtin, L.R., Lamb, M.M., & Flegal, K.M. (2010). Prevalence of high body mass index in US children and adolescents, 2007-2008. *Journal of the American Medical Association*, 303, 242-249. doi: 10.1001/jama.2009.2012

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