Journal of Extension
www.joe.org

June 2012
Volume 50 Number 3
Article Number 3FEA4

Return to Current Issue

Jump Into Action

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Abstract: *Jump Into Action (JIA) is a school-based team-taught program to help fifth-grade students make healthy food choices and be more active. The JIA team (physical education teacher, classroom teacher, school nurse, and parent) work together to provide a supportive environment as students set goals to improve food choices and increase activity. Following the program, students demonstrated increased self efficacy and knowledge of health behaviors. Students also reported, 1) drinking less soda and sugar added drinks, 2) spending more time being physically active, and 3) consuming four servings of dairy products more frequently.*

Introduction

Sedentary lifestyles and poor food choices are key causal factors in the development of childhood overweight and obesity. According to the Youth Risk Behavior Survey (2009), more than two thirds of Missouri youth do not participate in sufficient amounts of moderate physical activity. Worse yet, the National Survey of Children's Health indicates 31% of Missouri youth are classified as either overweight or obese (2007).

Overweight children grow into overweight adults (Singh, Mulder, Twisk, van Mechelen, & Chinapaw, 2008). Therefore, effective strategies and support systems are needed to affect lifestyle habits that lead to overweight in children (Baranowski & Cerin, 2008; Borders, 2009; Carnethon, 2008). Jump Into Action (JIA) was designed to provide both the strategies and support to affect behaviors and environments that can help youth achieve a healthy weight.

JIA is a school-based and team-taught program to help fifth-grade students make healthy food choices and be more physically active. The program is implemented throughout the entire school year to maximize the time for students to change behaviors. The JIA classroom and physical education lessons are taught once a week for 8 weeks. Monthly check-ups are used to help reinforce the goals and behaviors throughout the school year. Parent "notes" and parent "information nights" bring family members into the program to provide support at home.

The team approach brings at least four adults (physical education teacher, classroom teacher, school nurse, and parent) together to serve as role models and provide support to students as they set goals to improve food choices and increase physical activity.

The specific roles for each team member are as follows.

- The physical education teacher uses physical activity lessons and pedometers to help students increase physical activity time.

The classroom teacher uses nutrition lessons and instructional materials to help students make better food choices.

- The school nurse uses a growth and development lesson to help students understand the rapid adolescent growth period.
- The parents provide support for students as they examine their physical activity and eating behaviors and set goals to improve their choices.

The program materials include:

- Teachers' guide
- Instructional materials (food label cards, food portion comparison cards, sugar packet pictures, fat cubes, and classroom posters)
- Student activity books and monthly goal checks
- Pedometers
- Parent notes

Objectives

The long term goal of JIA was to improve the health and reduce the obesity rate of Missouri youth. The short term goal was to educate children about choices and behaviors for a healthy weight in a supportive school and home environment.

The specific objectives of this project were to:

1. Increase physical activity,
2. Improve knowledge and attitudes toward physical activity,
3. Improve knowledge of health behaviors/nutrition,
4. Increase self-efficacy of health behaviors/nutrition, and
5. Increase engagement in healthy behaviors/nutrition.

Methods

University of Missouri State Extension specialists traveled throughout the State of Missouri and delivered JIA training to fifth grade classroom teachers, physical education teachers, and school nurses. Following JIA teacher training, the program was implemented in 154 schools reaching approximately 12,500 students over a 3-year funding period. Data was collected for a subsample (n=1228) pre and post program and analyzed.

The specific objectives were measured through the following evaluation activities.

Physical Activity

Four consecutive days of 24-hour pedometer (Walk4Life LS2505) step counts were recorded for a smaller subsample of students (n= 76) pre and post JIA intervention (15 wks). Pedometers were sealed and reopened each morning. A 24-hour pedometer step count was averaged for 4 days both pre and post intervention and compared using a repeated measures ANOVA. In addition, questions regarding physical activity levels, attitudes, and knowledge about physical activity were recorded pre and post intervention (n=1228).

Nutrition and Health Behaviors

The Children's Healthy Eating Attitude Test was administered pre and post (15 wks) JIA intervention to assess, 1) knowledge, 2) self efficacy, 3) behavior, and 4) goals regarding nutrition and health behaviors. Students answered fifteen additional questions about food choices and physical activity behaviors pre and post intervention. All statistical analyzes were computed using SPSS version 17.0.

Results

Physical Activity

Average pedometer step counts increased (9939 to 10,878) following the program, but the increase was not statistically significant ($p = 0.181$). Following the program, a significantly greater percentage of students indicated they could limit their total screen time to 2 hours or less a day and be physically active for at least 60 minutes a day.

Knowledge of Health Behaviors

Students who participated in JIA demonstrated an increased knowledge of health behaviors ($p < .05$). Specifically, after participating in the JIA program, significantly more students believed that health behaviors can affect one's growth and development, that the availability of food makes it easy to overeat, and that being physically active and having a healthy weight can help prevent one from developing type 2 diabetes.

Self-Efficacy

Students increased their self-efficacy on all indicators ($p < .05$), with the exception of reading food labels. Specifically, more students reported they could drink fewer sweetened drinks, eat or drink four daily servings from the milk group, eat five or more fruits and vegetables daily, limit their total screen time to 2 hours or less a day, be physically active for at least 60 minutes a day, and eat an appropriate amount of fiber-rich foods.

Engagement in Health Behaviors

Students reported a reduction in the frequency they drank soda and/or other sugar added drinks ($p < .05$). They also reported less screen time, increased physical activity, and more frequently consuming four servings of dairy products daily ($p < .05$). They did not report an increase in how frequently they consumed the recommended amounts of fruits and vegetables.

Goals

The degree to which students met their monthly goals did not fluctuate from month to month. There are two exceptions, however. Students reported meeting their monthly goal more often for consuming the recommended number of fruits and vegetables *(*$p < .05$) and meeting their physical activity goals ($p < .05$).

Discussion

The results of current project reported here support those of other recently developed fifth grade physical activity and nutrition based programs (Delcampo, Baca, Jimenez, Sanchez, & Delcampo, 2011; Jensen, Kattelman, Ren, & Wey, 2008). It appears that JIA may be an effective means to change the environment and thus youth behavior. Not only did students demonstrate an increased knowledge of health behaviors, they also adopted many of these behaviors. Specifically, students reported, 1) drinking less soda and sugar added drinks, 2) spending more time in physical activity, and 3) consuming four servings of dairy products more frequently.

The program encouraged consumption of four servings of dairy products (with approximately 300 mg per serving) to reach the RDI for calcium (1300 mg) for 9-13 year olds. The recommendation of three servings of dairy products (providing only 900 mg of calcium) assumes consumption of other dietary sources of calcium to reach 1300 mg. While many vegetables contain calcium, relatively large servings are needed to reach the calcium intake achieved with dairy products. Changes such as those achieved through the Jump Into Action program may result in significant health improvements and maintenance of a healthy weight. In addition,

small changes made early in life may also lead to healthier adult behavior.

Self efficacy plays an important role in how students behave, feel, and think. More students reported they could drink fewer sweetened drinks, eat or drink four daily servings from the milk group, eat five or more fruits and vegetables daily, limit their total screen time to 2 hours or less a day, be physically active for at least 60 minutes a day, and eat an appropriate amount of fiber-rich foods. These improvements in self efficacy may prove to be important determinants of health for these young people in the future.

Although the objective measure of physical activity (pedometer steps) was not significant post-program, students' knowledge and attitudes toward physical activity improved. The lack of significance is likely due to the small sub-sample size (n=76) as average steps increased by approximately 1,000 per day.

One limitation of the project was the lack of quantitative "teacher" data. For example, the number of lessons delivered, average time spent per lesson, total time spent on JIA curriculum, or teacher approval is not known. Future JIA research should include a more formal teacher evaluation to capture this information. Informally, teachers were surveyed and interviewed about the program. From this qualitative data, it appears that most teachers implemented JIA as it was designed and delivered the majority of lessons. In addition, many teachers reported that JIA was likely successful due to adequate teacher training, using a team approach, and spending an entire school year to help change behavior. Although qualitative and anecdotal, the majority of teachers' comments concerning the value of the program were overwhelmingly positive.

> A fifth grade classroom teacher said, "Thank you for implementing this much needed program. I feel it has helped to make many students aware of their bodies, health and ways to reach goals." A second said, "...this should be a mandatory program for all 5th graders."
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> One physical education teacher said, "This is a great program! I'm looking forward to doing this again next year! Another said, "We loved it! Thanks. The kids seemed very knowledgeable and interested in eating healthy and getting lots of exercise. Some of the 5th graders went nuts over the pedometers-they were moving constantly!"
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> A school nurse commented, "I have been impressed with the increased knowledge base and consumer awareness that our students now have regarding nutrition and exercise. They are themselves questioning why school lunches aren't healthier and are taking active roles in making informed choices." A second nurse said, "Jump into Action is a fabulous tool to educate our kids and to cause a positive big change in their lifestyle."

An additional vital component to the JIA program is parental involvement. Despite quantitative data documenting the degree to which teachers were able to engage parents in encouraging goal setting and related behavior changes, students were no doubt influenced by parental involvement and role modeling. Teachers reported that many parents helped students keep track of TV time, physical activities, and food choices. Students reported parents were buying juice with less sugar and looking more closely at food labels. Future JIA research needs to more thoroughly investigate parental involvement. Admittedly, this is a limitation of the current project.

Overweight and obesity in children is a serious health and social problem that schools cannot and should not be expected to address alone. Behavior change is more likely to be made and sustained when the change is made in a supportive environment. Schools using JIA provide a supportive environment where a "team" encourages youth to make food and physical activity choices for a healthy weight.

Acknowledgment

A team at Baylor College of Medicine Departments of Family and Community Medicine and Pediatrics, the Texas Diabetes Council and the Texas Department of Health developed the original Jump Into Action: A Non-Insulin Diabetes Mellitus Prevention Program for Elementary

Schools (Holcomb et al., 1998). The program was designed for fourth- and fifth-grade students and included a teacher's guide and student workbook. The curriculum was evaluated and determined to be effective in improving knowledge, self-efficacy and behaviors regarding type-2 diabetes prevention. In 2004, based on their recommendations, University of Missouri Extension created a new program with new materials. The reinvented program broadened its focus beyond type 2 diabetes prevention to promotion of healthy weight first. Since its inception in 2004, JIA has reached over 40,000 Missouri youth.

References

Baranowski, T., & Cerin, E. (2008). Pediatric obesity: Finding the causes and contexts. *Int J Pediatr Obes, 3*(4), 194-195.

Borders, M. J. (2009). Project hero: A goal-setting and healthy decision-making program. *J Sch Health, 79*(5), 239-243.

Carnethon, M. R. (2008). Diabetes prevention in US ethnic minorities: Role of the social environment. *J Am Diet Assoc, 108*(6), 942-944.

Centers for Disease Control. *Behavioral risk factor surveillance system*. 2009. Retrieved from: http://www.cdc.gov/healthyyouth/yrbs/pdf/obesity/mo_obesity_combo.pd

Delcampo, D., Baca, J., Jimenez, D., Sanchez, P., & Delcampo, R. (2011). Just Be It! Healthy and fit increases fifth graders' fruit and vegetable intake, physical activity, and nutrition knowledge. *Journal of Extension* [On-line], 49(1), Article 1R1B5. Available at: http://www.joe.org/joe/2011february/rb5.php

Holcomb, J. D., Lira, J., Kingery, P. M., Smith, D. W., Lane, D., & Goodway, J. (1998). Evaluation of Jump Into Action: a program to reduce the risk of non-insulin dependent diabetes mellitus in school children on the Texas-Mexico border. *J Sch Health, 68*(7), 282-288.

Jensen, B., Kattelman, K., Ren, C., & Wey, H. (2008). The efficacy of KidQuest: a nutrition and physical activity curriculum for 5th and 6th grade youth. *Journal of Extension* [On-line], 47(3), Article 3FEA4. Available at: http://www.joe.org/joe/2009june/a4.php

National Survey of Children's Health. 2007. Retrieved from: http://nschdata.org/Viewdocument.aspx?item=547

Singh, A. S., Mulder, C., Twisk, J. W., van Mechelen, W., & Chinapaw, M. J. (2008). Tracking of childhood overweight into adulthood: a systematic review of the literature. *Obes Rev, 9*(5), 474-488.
