

Promoting Partnerships for Healthy Youth

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This campus-community partnership with Family and Consumer Sciences (FCS) educators was an excellent way to promote health in the community. The purpose of the project was to deliver a school-based health promotion program. The aim of the program was to increase nutrition knowledge, promote a healthy body mass index and encourage a healthy body image among children in grades four through seven, residing in a small rural community in southwest Virginia. Results describe the effectiveness of the program. Pre and post test data measured nutrition knowledge, body image, body mass index and triceps skin fold thickness. All partners expressed positive outcomes from the program.

In the past thirty years, the prevalence of overweight and obese children age 6-11 years increased from 6.5% to 18.8% and for children age 12-19 years, the increase was from 5.0% to 17.4% (Department of Health and Human Services, 2008). Overweight school age children present health care providers with a multitude of health problems attributed to obesity including hypertension, diabetes, depression, and low self-esteem. Childhood obesity can create a future decline in health and increases the burden of health care costs for the individual if the condition continues into adulthood (Harrell, Pearce, Markland, Wilson, Bradley & McMurray, 2003).

Atherosclerosis, the formation of cholesterol deposits on the inner surfaces of arteries, begins in the first twenty years of life. Postmortem atherosclerotic lesions have been found in subjects as young as six years of age (Harrell, Gansky, McMurray, Bangdiwala, Frauman & Bradley, 1998). This evidence supports the need for primary prevention, beginning in early childhood, to prevent debilitating illnesses later in life. In addition to the physical problems attributed to obesity, children may also experience psychological problems.

Being overweight in childhood is associated with unhealthy psychological conditions such as depression and low self-esteem. Research illustrates an overweight child may be perceived as lazy (Lynn-Garbe & Hoot, 2004/05). This negative stereotyping decreases a child's self-esteem which may result in lower perceived ability to be successful in school and poor school performance.

It is important to teach children the value of lifelong wellness and the practices that support a healthy lifestyle. Addressing childhood obesity in an appropriate manner is necessary and the school setting is an optimal site to enhance health education for children. However, determining the least expensive, most effective school-based intervention has yet to be determined.

School-Based Interventions

Since resources are limited, it is important to determine the effectiveness of school-based interventions before implementing them. However, it is difficult to compare the effectiveness of school-based interventions across studies because study samples include children of different ages and researchers use various intervention methods and outcome measures. Nevertheless, many authors have reviewed the effectiveness of school based interventions aimed at preventing and controlling childhood obesity (Doak, Visscher, Renders & Seidell, 2006; Dobbins, Lockett, Michel, Beyers, Feldman, Vohra, & Micucci, 2001; Peterson & Fox, 2007; Veugelers & Fitzgerald, 2005; Wofford, 2008).

A majority of the literature reviewed supported the effectiveness of school-based health interventions in reducing the body mass index (Doak et al., 2006; Peterson & Fox, 2007) and lowering the rates of overweight and obesity (Veugelers & Fitzgerald, 2005). Effective interventions targeted specific behaviors related to childhood obesity: diet, physical activity, and television viewing (Doak et al., 2006; Dobbins et al., 2001; Peterson & Fox, 2007). Furthermore, students attending schools with specific nutrition education programs were more active, reported healthier diets, and exhibited significantly lower rates of overweight and obesity than students attending schools without nutrition education programs (Veugelers & Fitzgerald, 2005). This evidence provides the support and justification for school-based nutrition education programs in our schools.

University-Community Partnerships

This university-community partnership provided an ideal opportunity for students to deliver a school-based health promotion intervention to children in the community. Universities should realize the value of engaging their students to carry out their mission and meet the needs of the community. Successful university-community partnerships provide a way for students to connect theory with practice, develop leadership skills, cultural competency and community awareness (Wilson, 2008).

Features of successful university-community partnerships include recognizing faculty members for their outreach efforts for purposes of tenure and promotion. If faculty members do not feel their efforts are valuable, their efforts will be temporary and partnerships will dwindle. The university must make a commitment to understanding the community and its culture. If students and faculty go into communities as “know-it-alls,” then, it becomes impossible to establish a successful partnership where all partners are considered equals. Effective university-community partnerships must provide for sustainability by mobilizing other partners to implement programs and provide funding. The key to sustainability is empowering local residents, grass roots organizations and local governments to carry on the work of the partnership in order to enhance the communities in which they live (Wilson, 2008).

The Program

Purpose

The purpose of this project was to evaluate the effectiveness of a school-based health education program, Healthy Weights for Healthy Kids (HWHK), aimed at increasing knowledge of nutrition, progress toward a healthy body mass index, and promotion of a healthy body image for children in grades four through seven. HWHK is a school-based health education program, developed by Cooperative Extension Specialists at Virginia Polytechnic Institute and State University, which focuses on promoting positive attitudes and behaviors related to food, drinks, physical activity, and body image (Serrano, 2003). The HWHK curriculum is guided by the Experiential Learning Model and includes six key topics: (1) Smart Foods, (2) Smart Choices, (3) Smart Drinks, (4) Smart Snacks, (5) Smart Activities and (6) Smart Image. The appropriate Virginia Standards of Learning (SOL) for English, health, and math were identified for each lesson (Serrano, 2003).

All students in grades four through seven were invited to participate in the program. Only those students with pre- and post-test data were included in the evaluation of the program. Fifty-six students, 22 boys and 34 girls were included in the program evaluation. The students ranged in ages from 9.3 to 15.8 years.

For one hour each week for six weeks, during physical education class, students received one of six lessons from the HWHK curriculum. Nursing faculty, a public health nurse, FCS educator or a nursing student delivered the lessons. Each lesson included important nutrition concepts, a physical activity, and a nutritious drink and snack.

One week prior to beginning the intervention and two weeks after the intervention, nutrition Knowledge and body image satisfaction were determined by Serrano's (2003), *What Do You Think* (WDYT) questionnaire, an evaluation tool developed specifically for evaluation of this curriculum. At the same time, physical measurements were obtained which included height, weight, waist circumference and triceps skin fold measurements. Children's body mass indices (BMI) were determined by the Center for Disease Control BMI calculator for children and converted to percentiles in order to categorize the participants as underweight, healthy weight, at risk of overweight, or overweight.

Evaluation

Nutrition Knowledge. In order to measure nutrition knowledge, seven items from the WDYT questionnaire were scored as correct or incorrect. Specifically, the items measured whether the student could identify a whole grain, a healthy snack and drink and sections from MyPyramid. Each question had one correct answer. The student nutrition score was determined by assigning one point for each correct answer and zero points for each incorrect answer. A student nutrition score could range from zero to seven. A score of seven indicated a perfect score. Pre- and post-test mean nutrition knowledge scores were determined for each grade.

Pretest knowledge scores were low for all grades, which indicated the children had minimal knowledge of MyPyramid including whole grains and healthy snacks and drinks prior to the intervention. Mean nutrition knowledge scores improved for all grades except the sixth grade. The fourth grade had the greatest improvement in mean knowledge scores ($M = 2.3$, $SD = 1.0$ at pretest and $M = 4.1$, $SD = .9$ at post-test) which indicates learning occurred with regard to nutrition knowledge.

Physical Measurements. Nursing students obtained the physical measurements which included height, and weight. Body Mass Index (BMI) was calculated from height and weight. Body Mass Index (BMI) and corresponding percentiles were determined for each child using the Center for Disease Control (CDC) BMI Calculator for children. Based on percentiles, from pre- to post-intervention there was an increase in the number of students with healthy weight status. Pre-intervention, 43% of the students were healthy weight. At post- intervention, 45% were healthy weight. The number of students that were overweight or at risk for overweight decreased from 55%, pre-intervention, to 53%, post- intervention. There was no change in the prevalence of underweight. Two percent of children were underweight.

Body Image. At pre-intervention, 39% of children were either unsure or unhappy about how their body looked. At post-intervention, 41% were either unsure or unhappy about how their body looked. The program emphasized the importance of respecting the uniqueness of individuals with regard to body size and shape. Participation in the program may have resulted in an increased awareness and personal dissatisfaction of body image for some of the children.

Discussion

This community project was implemented in a rural area. The project revealed many issues associated with rurality that should be addressed when planning health promotion programs aimed at preventing obesity. What resources are available for children and their

families in rural areas? Are playgrounds located in the area where families can take their children to play? If so, are they accessible? Do families need education regarding the preparation of healthy meals that are affordable? These are important questions that will guide the development of future interventions.

The small number of participants and the short intervention period are limitations of this project. Future program coordinators will want to invite more schools to participate and to plan for a longer follow up period post- program. Since the program is only six weeks in length, one suggestion would be to complete the post-test survey and physical measurements at six months post program and then again in one year. Increasing the duration of the program will provide greater support for its long term effectiveness.

Greater than 50% of the students were overweight or at risk for overweight validates the need for future health promotion programs. This program is an effective means of increasing the nutrition knowledge of students in 4th, 5th and 7th grades as evidenced by an increase in nutrition knowledge scores for these grades. In addition, there appears to be a move toward a healthy body mass index for the children who participated in the program.

Results of this project indicate that this program is an effective way to improve nutrition knowledge and move children toward a healthy body mass index; therefore, the results of this pilot project could provide evidence for future program developments or school policy changes related to health education for children in rural areas. Next steps would include collaboration with policy makers to increase resources, provide funding for FCS educators and promote policy changes that support obesity prevention efforts (Dobbins et al., 2001; Peterson & Fox, 2007; Wofford, 2008).

Implications for Student Learning

This partnership provided the opportunity for students, faculty and FCS educators to collaboratively engage in a significant learning experience. Strategies to develop effective campus-community partnerships included commitment of the faculty and the university, effective conflict resolution, mutual trust and respect, open communication, and utilizing the positive qualities of each partner. Students actively participated in the learning process by assisting FCS educators with the administration of pre- and post-tests, measuring height and weight and delivering a health promotion program. Before the project began, students learned how to measure height, weight, determine body mass index; and compute percentiles. Before delivering the intervention, students learned about My Pyramid, the five food groups, serving sizes, and label reading.

The success of university-community partnerships in improving community health clinical opportunities for baccalaureate nursing students has been documented (Hall-Long, 2004; Siegrist, 2004). These partnerships provide an effective way for students to learn how to do community assessments, provide health promotion education programs and develop skills related to interdisciplinary team work. Campus community partnerships can provide students with service learning opportunities and the development and implementation of community health programs.

In addition to learning nutrition concepts, students worked collaboratively with faculty members, a Baccalaureate prepared nurse from the Health Department, Family and Consumer Science educators and a physical education teacher. The students demonstrated effective communication skills and positive group interactions. This program provided an opportunity for the nursing students to meet their clinical requirements and course objectives. With additional

funding, we hope to follow this group of students into their high school years and observe how their self esteem, nutrition knowledge and body mass index has changed over time. In the meantime, we hope to partner with FCS educators to offer this program to other area schools.

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