



Empower U: Effectiveness of an Adolescent Outreach and Prevention Program With Sixth-Grade Boys and Girls: A Pilot Study

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Sixth graders are at a prime age to modify behaviors and beliefs regarding exercise, nutrition, body image, and smoking. Empower U was created to change knowledge, beliefs, and behaviors regarding these topics. This pilot study utilized pre/post assessments of 58 sixth graders from a private middle school in the midsouth. Results showed a significant increase in self-esteem as well as in exercise and nutrition knowledge and beliefs at posttest and a significant increase in body image as well as in self-reported exercise and nutrition behaviors at the 1-month follow-up. Empower U provides nurses with an effective educational program that may be useful in positively impacting health behaviors.

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PREADOLESCENT BOYS AND girls may benefit from innovative education about exercise, nutrition, body image, and smoking to help them establish healthy lifestyle patterns that will continue throughout their lives. Research has demonstrated that increasing children's physical activity has important implications for preventing obesity

later in life, reducing coronary heart disease (CHD), and decreasing risk of depression while enhancing body image (Cohen, Mansoor, Langut, & Lorber, 2007; Dishman et al., 2006; Duncan, Al-Nakeeb, & Nevill, 2009; Janz et al., 2002; Thomas, Cooper, Williams, Baker, & Davies, 2007). Girls who are physically active perform better academically and have higher self-esteem and self-worth compared with their more sedentary counterparts (DeBate, Gabriel, Zwald, Huberty, & Zhang, 2009). Furthermore, increased nutrition knowledge has been shown to impact food choices and behaviors in preadolescents (Fahlman, Dake, McCaughtry, & Martin, 2008). Children as young as 6

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years have attempted to diet to achieve a thinner body; this dissatisfaction with physical appearance may be associated with later development of low self-esteem in the preadolescent years (Dohnt & Tiggemann, 2006). In addition, in 2006, approximately 6% of middle school-aged children were smokers (Centers for Disease Control and Prevention [CDC], 2009a, 2009b). The leading cause of preventable death in the United States is cigarette smoking, with almost all first uses of smoking occurring before age 18 years (CDC, 2007).

Empower U is a preadolescent outreach and prevention program designed to improve four key health-related behaviors: exercise, nutrition, body image, and smoking behaviors. Empower U was adapted from the GirlForce community-based program (Vanderbilt University Medical Center, 1998, 2003), with permission from the GirlForce creator, for use in this study. In the GirlForce program, girls in a private southeastern middle school were tested on the four key health-related behaviors 1 week before, 1 week after, and 1 month following the 1-day program consisting of four 25-minute sessions, each addressing a different health behavior. Significant improvements in the areas of body image and physical activity were found in this unpublished study of the GirlForce intervention (Bonhert, Dyer, & McDonald, 2001), suggesting that brief group-based interventions may be effective during preadolescence. In contrast, the Empower U program includes both male and female preadolescents and consists of 45-minute educational and participatory interventions on the four health behaviors, with one area being covered each week over a 4-week period.

Review of the Literature

The need for children to get more exercise and to increase physical activity is evident in the literature today. A cross-sectional study of fatness, physical activity, and television viewing during the adiposity rebound period in 467 children, 4 to 6 years old, demonstrated that minutes spent watching television and performing vigorous physical activity were the variables most associated with body fatness (Janz et al., 2002). Janz et al. suggested that increasing vigorous physical activity during the years of the adiposity rebound period may play a role in reducing obesity later in life. Thomas et al. (2007) found a significant, inverse relationship between aerobic fitness and fatness in 12- and 13-year-old school children and that fatness was an independent predictor of triglyceride levels and blood pressure, which are CHD risk factors.

Exercise and increased physical activity are beneficial not only for reducing fatness and CHD risk factors but also for improving psychological well-being (Marsh & Redmayne, 1994). Duncan et al. (2009) studied 34 boys and 34 girls, aged 10 to 11 years, and showed that a 6-week circuit-based training intervention significantly improved body image

scores and decreased body mass index compared with the control group immediately postintervention; however, these results were not sustained at the 6-week postintervention evaluation. Burgess, Grogan, and Burwitz (2006) studied 50 adolescent (13–14 years) females and found that participation in a 6-week aerobic dance intervention significantly reduced body dissatisfaction and improved positive body image perceptions; these results were also not sustained at follow-up. Duncan et al. (2009) suggest that the lack of sustainable results may be because of a single exercise intervention rather than combined interventions including nutrition and exercise. Another possible explanation for the lack of sustainable results may be because of the rapid physical changes that are occurring during preadolescence.

Other aspects besides exercise may affect the health of preadolescents, including nutrition. Studies show that although education may increase knowledge about better food choices, the impact on changes in behavior is unclear. Allen, Taylor, and Kuiper (2007) found that food choices were influenced by nutrition education in 10 adolescents. Self-reported postintervention food choices were significantly healthier compared with preintervention choices (Allen et al., 2007); however, self-reported food choices may not reflect actual behavior change. A pilot study of the impact of the Michigan Model Nutrition Curriculum on nutrition knowledge, efficacy expectations, and eating behaviors of 576 middle school students showed that the intervention group had significantly more nutritional knowledge post-intervention than preintervention but, again, no reported change in behavior (Fahlman et al., 2008).

Exercise, nutrition, and body image frequently interconnect; therefore, the three variables are often studied simultaneously. A study of eighty-four 10–12-year-olds receiving an 8-week physical activity and nutrition intervention found that participants in the intervention group did not have significant improvement regarding their negative self-perceptions of body dissatisfaction, drive for thinness, and weight concerns (Gehrman, Hovell, Sallis, & Keating, 2006). However, another study by Huang, Norman, Zabinski, Calfas, and Patrick (2007) examined the relationship of body image and self-esteem after a behavioral intervention, which targeted physical activity, sedentary activity, and dietary behaviors of 657 adolescents. The findings suggest that girls in the intervention group who had a weight reduction or a weight maintenance experienced improvements in body image satisfaction compared with ones who had weight gain, even though there were no overall intervention effects on self-esteem or body image (Huang et al., 2007).

A study by DeBate et al. (2009) focused on the short-term effects of The Girls on the Run and The Girls on Track programs. The results of those developmentally focused youth programs showed statistically significant changes in self-esteem, body size satisfaction, and physical activity frequency, with commitment to physical activity approaching significance (DeBate et al., 2009). Melnyk et al. (2009) conducted a pilot study with Hispanic adolescents to

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