

Effects of the COPE Cognitive Behavioral Skills Building TEEN Program on the Healthy Lifestyle Behaviors and Mental Health of Appalachian Early Adolescents

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ABSTRACT

Introduction: Appalachian adolescents have a high prevalence of obesity and mental health problems that exceed national rates, with the two conditions often co-existing. The purpose of this study was to evaluate the feasibility and preliminary efficacy of a 15-session cognitive-behavioral skills building intervention (COPE [Creating Opportunities for Personal Empowerment] Healthy Lifestyles TEEN [Thinking, Emotions, Exercise, and Nutrition]

Program) on healthy lifestyle behaviors, physical health, and mental health of rural early adolescents.

Methods: A pre- and posttest pre-experimental design was used with follow-up immediately after the intervention.

Results: Results support improvement in the students' anxiety, depression, disruptive behavior, and self-concept scores after the COPE intervention compared with baseline. Additionally, healthy lifestyle behavior scores improved before the intervention compared with after the intervention.

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Discussion: COPE is a promising intervention that improves mental health and healthy lifestyle behaviors and can be integrated routinely into school-based settings. *J Pediatr Health Care.* (2016) 30, 65-72.

KEY WORDS

Appalachian early adolescence, school-based intervention, physical and mental health outcomes, obesity, healthy lifestyle behaviors

Two major public health conditions in disadvantaged early adolescents ages 11 to 13 years, overweight/obesity and mental health disorders, are the antecedents for the development of an array of unfavorable health and academic outcomes (Franks et al., 2010; l'Allemand-Jander, 2010; Institute of Medicine, 2012; Ma, Flanders, Ward, & Jemal, 2011). Appalachian adolescents have a higher prevalence of obesity (38%) compared with national averages (32%). In addition, the prevalence of mental health problems among these teens (19%) exceeds the national prevalence rate (13%; Costello, Farmer, Angold, Burns, & Erkanli, 1997; Costello, Mustilo, Erkanli, Keeler, & Angold, 2003). Furthermore, these two conditions often co-exist (Polaha, Dalton III, & Allen, 2011; Smith & Holloman, 2011). Even with the high prevalence of these problems and the substantial time youth spend in learning environments, few school-based health promotion interventions targeting obesity and mental health conditions studies have been conducted to improve outcomes in high-risk teens.

The prevalence of obesity and mental health disorders is even higher in minority youth from lower socioeconomic status families (Steinberg, Sidora-Arcoleo, Serebrisky, & Feldman, 2012). Several previous studies have established the short-term benefits of healthy nutrition and physical activity (PA) interventions on the consumption of fruit and vegetables, musculoskeletal health, body mass index (BMI), and self-concept in children and early teens (Sallis & Glanz, 2009; Marcus et al., 2006). A literature search on school-based healthy lifestyle interventions for early adolescence specifying the key words obesity, early adolescence, school-based intervention, mental health, and healthy behaviors found 11 studies that evaluated the effects of nutritional education, physical activity, or a combination of the two interventions. Youth ranged in age from 5 to 18 years, and study intervention duration ranged from 4 weeks to 24 months (Branscum & Sharma, 2012; Brown & Summerbell, 2009; Cardoso da Silveira, De Aguiar Carrazedo Taddei, Guerra, & Cuce Nobre, 2013; Frenn, Malin, & Bansal, 2003; Friedrich, Schuch, & Wagner, 2012; Gortmaker et al., 1999; Harris, Kuramoto, Schulzer, & Retallack, 2009; Johnston et al., 2013; Kater, Rohwer, & Londre, 2002; Shaya, Gbarayor, & Wang, 2008; Van Lippevelde et al.,

2012). The results of this evidence review revealed that nutrition alone is the least effective intervention, followed by PA alone, with the combination of nutrition and PA yielding the greatest benefits. However, these studies did not target simultaneous improvements in healthy lifestyle behaviors and mental health. Including mental health promotion as part of healthy lifestyle interventions is important because findings from prior research indicate that overweight youth frequently have issues with depression, anxiety, and poor self-concept (Au, 2012). Further, adolescents who are depressed often perceive healthy lifestyle behaviors as being more difficult to engage in than those who are not depressed (Melnyk, Small, Morrison-Beedy, et al., 2006).

From this evidence review, it can be concluded that there are limited published intervention studies for teens in school settings that simultaneously target improvement of healthy lifestyle behaviors, overweight/obesity, and mental health. Key findings from this review identified positive outcomes in some studies; however, methodological flaws resulted in several threats to internal validity, such as instrument variation, limited randomized controlled trial (RCTs), lack of objective measures, inattention to intervention fidelity, measurement error, short-term follow-up, nonsustained effects, and lack of manualized intervention protocols.

Melnyk and colleagues (2013) conducted an RCT with 14- to 16-year-old high school adolescents ($n = 779$) that concurrently focused on healthy lifestyle behaviors, physical health, and mental health. The study tested the efficacy of the COPE (Creating Opportunities for Personal Empowerment) Healthy Lifestyles TEEN (Thinking, Emotions, Exercise, Nutrition) Program. The 15-week cognitive-behavioral skills-building (CBSB) program was compared with an attention control group (Healthy Teens) that taught 15 weekly health topics unrelated to COPE (e.g., motor vehicle safety and skin care). Immediately after the intervention, adolescents who received the COPE intervention had a significantly greater number of steps per day, lower BMI, and higher social skills and academic performance compared with their peers in Healthy Teens. Additionally, teens in the COPE group with extremely elevated depression scores at baseline had

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