

A Systematic Review of Adolescent Self-Management and Weight Loss

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ABSTRACT

Introduction: The aim of this review is to evaluate self-management interventions among overweight and obese adolescents to direct future research and practice.

Methods: Studies published between 2008 and 2014 were identified by electronic database searches. The Jadad Scoring of Quality Reports of Randomized Clinical Trials was used to evaluate the quality of the studies with subsequent reviews.

Results: Out of 69 studies, 10 randomized controlled trials were reviewed after all inclusion and exclusion criteria were met. Quality scores ranged from 7 to 11 out of 13 ($M = 9.2$, $SD = 1.13$). For the majority of studies,

self-management strategies for weight loss were found to be significant for a mix of behavioral, psychological, anthropometric, and metabolic outcomes.

Discussion: Findings indicated that interventions were most successful when incorporating family members. Self-management interventions that include a combination of appropriate diet, physical activity, and behavioral strategies with a family component are recommended. *J Pediatr Health Care.* (2016) ■, ■-■.

KEY WORDS

Self-management, weight loss, adolescent, review

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The prevalence of overweight and obese adolescents in the United States is currently 34.5% (Ogden, Carroll, Kit, & Flegal, 2014) and costs the country more than \$3 billion annually (Centers for Disease Control and Prevention [CDC], 2010a). Unmanaged overweight and obese adolescents are at high risk of developing hyperlipidemia (CDC, 2010b), glucose intolerance, insulin resistance (Kelly et al., 2004; Krekoulia et al., 2007), hypertension (Ostchega et al., 2009), and type 2 diabetes (Hannon, Rao, & Arslanian, 2005). Additionally, half of all obese children become obese adults (Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014; Serdula et al., 1993). Self-management (SM) strategies such as health-promoting thoughts, goals, plans, and taking action have been found to be effective in chronic diseases of adolescents, such as diabetes, hypertension, and hyperlipidemia. Although studies have been conducted on SM interventions for weight loss among adolescents, no recent review has been performed

to synthesize the information, thus providing direction to future research and assisting in practice improvement.

Learning skills to self-manage weight and weight loss can help in establishing the positive healthy patterns necessary to have an impact on overweight and obesity. These skills include adequate physical activity (PA) and healthy nutritional choices. If continued through adulthood, these habits can greatly minimize the risk of adult obesity and chronic illness. Past reviews of weight control studies found that family involvement is generally associated with better weight loss outcomes (Berry et al., 2004; McLean, Griffin, Toney, & Hardeman, 2003; World Health Organization, 2000). Other reviews have focused on effectiveness of interventions of weight loss (e.g. group and behavioral) but did not include or report on SM strategies (Nguyen, Kornman, & Baur, 2011; Stuart, Broome, Smith, & Weaver, 2005).

The review by Stuart and colleagues (2005) of adolescent weight loss identified infrequent parental participation, attrition rates as high as 45%, and the lack of conceptual frameworks to guide studies. This review was limited by the paucity of reports on outcome measurements and results. The weight management review by Nguyen and colleagues (2011) evaluated only electronic interventions until 2010. Overall, they found poor quality study designs, with most lacking evaluation of intervention effectiveness. Whitlock and colleagues (2010) evaluated weight loss management of children and adolescents 4 to 18 years of age. The authors concluded that the behavioral studies reviewed had improved in quality during the past 10 years. However, these articles were limited to the years 2005 to 2008. The present review focuses on diverse adolescent weight loss SM methods in a variety of study settings and extends beyond the results of the previous reviews by including studies from the years 2008 to 2014.

With the continued prevalence of overweight and obese adolescents, a review of effectiveness of interventions to combat this epidemic is needed. The objectives of this systematic review were to (a) provide a comparative evaluation of SM interventions in the treatment of weight loss in overweight and obese adolescents 10 to 18 years of age, and (b) discuss implications to direct future research and practice.

Learning skills to self-manage weight and weight loss can help in establishing the positive healthy patterns necessary to have an impact on overweight and obesity.

METHODS

Search Strategy

Studies were retrieved from MEDLINE, PsychINFO, Scopus, and CINAHL electronic databases. Articles published between 2008 and 2014 were included in this review. Hand searches in bibliographic references were also conducted. Key words in various combinations were used to locate appropriate studies, including “SM,” “obesity,” “overweight,” “weight loss,” “weight management,” “adolescent,” and “intervention.” Titles and abstracts were screened for relevance using the following selection criteria: interventions aimed at weight loss or weight maintenance without restriction to study setting. Adolescents aged 10 to 18 years were selected because overweight and obesity were most prevalent in this group compared with the preadolescent age (Ogden et al., 2014).

Inclusion and Exclusion Criteria

The search was limited to peer-reviewed articles, published in English, and randomized controlled trials. The following types of studies were excluded: those that used surgical or drug interventions, nonresearch articles, qualitative studies, dissertations, and systematic, integrative, and meta-analysis reviews. Because SM has been defined as health-promoting thoughts, goals, plans, and actions (Dishman et al., 2005), intervention studies incorporate definitional elements of SM in chronic conditions (e.g., teaching problem-solving skills, making decisions, taking appropriate actions, carrying out a behavior to reach a desired goal, and setting short-term action plans; D’Zurilla, 1986; Lorig et al., 1994).

All authors reviewed the accuracy of the screening process, based on the inclusion and exclusion criteria. If it was not clear from the abstract alone whether the study met inclusion criteria, the team reviewed the full article. After duplicate studies were removed, articles selected were also subjected to a full-text assessment. Four authors then independently evaluated the quality of each study.

Instrument for Evaluating Study Quality

The Oxford Quality Scoring System, also known as the Jadad Scoring System (Jadad et al., 1996), was used to assess the quality of each study. The 11-item instrument, developed for randomized controlled trials, was selected for its ease of use, reliability, and external validity (Jadad et al., 1996). A maximum of 13 points are possible. The first three items relate directly to the control of bias (Jadad et al., 1996) and address randomization, blinding methods, and withdrawals/dropouts. A study was awarded one point for each question if it was described as a randomized study, as a double-blind study, and if it described withdrawals/dropouts, for a total of three points. An additional point was awarded if randomization and blinding were

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