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Effects of parent-only childhood obesity prevention programs on BMIz and body image in rural preteens

Galen Eldridge[a], Lynn Paul[b], Sandra J. Bailey[b], Carrie Benke Ashe[a], Jill Martz[a,1], Wesley Lynch[c,*]

[a] 4-Health Project, Montana State University Extension, Bozeman, MT 59717, USA
[b] Department of Health and Human Development, Montana State University, Bozeman, MT 59717, USA
[c] Department of Psychology, Montana State University, Bozeman, MT 59717, USA

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ABSTRACT

This experiment compared body image (BI) and BMI changes resulting from two parent-only obesity prevention interventions aimed at 8–12 year olds. Parents in the experimental intervention attended ten face-to-face educational sessions, while parents in the minimal (control) intervention received similar mailed information. Parent-child dyads ($N = 150$) were semi-randomly assigned to intervention groups. Children were assessed before, after, and 6 months following the interventions; children did not attend experimental intervention sessions. Child BI assessments included weight and size perception, weight management goals, body esteem, and appearance attitudes. Significant effects included small decreases in BMIz scores and overweight dissatisfaction, as well as improvements in aspects of body esteem and appearance attitudes. Some BI effects were gender-specific. Decreases in overweight dissatisfaction were greater following the experimental treatment. Neither treatment reduced body size misperception. Thus, parent-only obesity prevention interventions can reduce body weight and body image concerns among rural preteens.

Introduction

The prevalence of poor body image among both girls and boys is well established. Studies of 7–12 year olds found that 50–80% of girls and 35–55% of boys are dissatisfied with their bodies (Goncalves, Silva, Gomes, & Machado, 2012; Parkinson, Drewett, Le Couteur, Adamson, & Gateshead Millennium, 2012; Rolland, Farnill, & Griffiths, 1996; Wood, Becker, & Thompson, 1996). Recognizing that child body image is considered a multidimensional construct having behavioral, cognitive, emotional, and cultural aspects, we operationally defined "body image" in terms of variables derived from four previously validated assessment instruments (see "Body image measures" below for details). Among these, we defined the emotional aspect referred to as "body dissatisfaction" in terms of the numerical difference in figure ratings between perceived and ideal body sizes based on the Truby and Paxton (2002) Child Body Image Scale. Previous studies have found that body dissatisfaction is a risk factor not only for disordered eating behaviors and clinically diagnosable eating disorders but also for depression, lower health-related quality of life, lower psychosocial functioning, and suicidal ideation and behaviors (Chung & Joung, 2012; Stice, Hayward, Cameron, Killen, & Taylor, 2000; Wilson, Latner, & Hayashi, 2013).

Many programs have been created to try to prevent or reverse the development of body dissatisfaction in children and adolescents. The optimal age to participate in programs designed to promote positive body esteem is unclear and is likely to vary between countries, cultures, and possibly even specific communities (Fenton, Brooks, Spencer, & Morgan, 2010). Some researchers suggest that media literacy should begin in childhood before cultural ideals about appearance are internalized (Tiggemann, 2002). Others posit that young adolescents may possess inadequate insight, given that their abstract reasoning skills are still developing, which may limit their ability to benefit from these sorts of programs; these researchers suggest that prevention programs may be most effective around ages 15–16 (Stice, Shaw, & Marti, 2007).

* Corresponding author. Tel.: +1 406 994 3801/406 585 8622; fax: +1 406 994 3804.
E-mail addresses: galen.eldridge@montana.edu (G. Eldridge), lpaul@montana.edu (L. Paul), baileys@montana.edu (S.J. Bailey), carrie.benke@montana.edu (C.B. Ashe), jmartz@montana.edu, jill.martz@ag.tamu.edu (J. Martz), wlynch@montana.edu (W. Lynch).
[1] Current address: Department of Recreation, Park and Tourism Sciences, Texas A&M University, College Station, TX, USA.

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By the time children reach their teens, they may already have body image issues, which may be hard to reverse (Skemp-Arlt, 2006). Therefore, targeting preteens by giving them tools to maintain a positive body image before body dissatisfaction and changes in eating habits have begun may be the most successful approach (Skemp-Arlt, 2006). Parents can help children and adolescents maintain a healthy body image by modeling healthy and active lifestyles, rejecting the cultural messages around body shape perfection, emulating a positive body image, maintaining awareness toward body shape discrimination, acknowledging that a person's physical appearance says very little about their character and value, and talking about these issues with their children (Skemp-Arlt, 2006).

Prevention programs for obesity and eating disorders/body image issues have tended to adopt very different approaches to eating behavior and body weight (Neumark-Sztainer, 2003). For example, obesity prevention programs might emphasize dieting and weight loss, while eating disorder and body dissatisfaction prevention programs emphasize cessation of dieting and acceptance of one's current weight (Neumark-Sztainer, 2003). Obesity prevention programs may inadvertently serve to heighten awareness of body weight and increase body dissatisfaction among children and adolescents (O'Dea, 2004). Therefore, it seems prudent to include promotion of positive body image in obesity prevention programs, by employing an integrated approach to prevention, balancing the importance of healthy lifestyle habits, including a healthy, balanced diet with lifelong physical activity, and acceptance of the human body, including its height, weight, and shape (O'Dea, 2004).

Since parents play a large part in shaping the environment of preteens and body image is a critical issue in adolescent development, some healthy lifestyle programs for non-clinical child populations in this age group have included parents in family-based, home-based, or mother and daughter-based interventions (Niemeier, Hektner, & Enger, 2012). Body image is sometimes included as part of the curricula, which usually concentrate on nutrition and physical activity (Debar et al., 2012; Harter, 2012; Hystad, Steinsbekk, Odegard, Wichstrom, & Gudbrandsen, 2013; Olvera, Leung, Kellam, Smith, & Liu, 2013; Pinard et al., 2012; Ransdell, Detling, Taylor, Reel, & Shultz, 2004). Most studies including body image have not reported on preteen body image changes after the intervention (Debar et al., 2012; Harter, 2012; Hystad et al., 2013; Olvera et al., 2013). One family-based program, which did not include a control group, found that preteen body dissatisfaction significantly improved from baseline to 1 month, but not baseline to post-program at 3 months (Pinard et al., 2012). Another study of mothers and daughters, which also did not include a control group, found an increase in girls' perceived body attractiveness after the 12-week program (Ransdell et al., 2004).

Another less common type of program consists of *parent-only* classes. Parent-only programs can be effective in terms of decreased cost and healthy weight management for overweight youth (Golan & Crow, 2004; Golan, Kaufman, & Shahar, 2006; Golan, Weizman, Apter, & Fainaru, 1998; Golley, Magarey, Baur, Steinbeck, & Daniels, 2007; Janicke et al., 2008; Janicke et al., 2009; Munsch et al., 2008; Shelton et al., 2007). To our knowledge, only three child obesity prevention or management studies that included parent-only groups have assessed child body image variables and none of these addressed body image as part of the intervention (Beech et al., 2003; Estabrooks et al., 2009; Jansen, Mulkens, & Jansen, 2011). Jansen and colleagues found a main effect of time (pre-, post-, and 3-month follow-up of the 10-week program) for changes in preteen shape and weight concerns; the 7–13 year olds in both the parent-only intervention program and the wait-list control group significantly decreased their shape and weight concerns (Jansen et al., 2011). Another weight management study that included a parent-only intervention group found that after the 12-week program, girls in the global self-esteem control group had significantly more concern about weight and shape than either the girl-only or parent-only intervention groups, but there was no difference between groups in perceived or ideal body size post-intervention (Beech et al., 2003). In a third study, with three parent-only interventions, baseline scores were in the healthy range on a survey about weight dissatisfaction, body dissatisfaction, and unhealthy eating behaviors and there was no increase in scores after the program (Estabrooks et al., 2009). Although body image issues were assessed, none of these parent-only healthy lifestyle programs specifically addressed body image issues as part of the curricula. One study with parent-only and parent-child groups addressed body concept in the curriculum but did not measure changes in the 8–12 year old children's body image (Munsch et al., 2008).

One mother-only intervention program aimed specifically to discourage the development of body-related problems, rather than obesity prevention or management, among middle school girls (Corning, Gondoli, Bucchianeri, & Salafia, 2010). Results were mixed, with significantly lower body dissatisfaction for the intervention group compared to the wait-list control group after the 4-week program according to one body dissatisfaction measure, but no difference in scores for another body dissatisfaction measure (Corning et al., 2010; Garner, Olmstead, & Polivy, 1983).

As this brief overview suggests, there has been little research on whether integration of body image into a parent-centered childhood obesity prevention curriculum can positively influence child body image. To our knowledge the present study is the first to integrate body image topics into training and to assess changes in body image in a parent-only child obesity prevention or weight management program. Thus, the present study examined preteen body image-related results of the 4-Health Educational Program, a research and outreach project that aimed to promote healthy lifestyles and prevent childhood obesity development among rural Montana families. The specific goal of this experimental study was to evaluate the efficacy of a parent-only face-to-face (experimental) healthy lifestyles intervention to improve child body image, by assessing changes in BMI and several body image variables, as a function of gender and time of assessment, by comparing children in the Experimental group with those in a mailed information minimal intervention (Control) group.

Three main research questions were evaluated: (1) Do measures of body image improve significantly among 8–12 year old children whose parents participate in an 8-month, 10-session face-to-face child obesity prevention program addressing nutrition, physical activity, parenting, and body image? (2) Do measures of body image improve significantly among 8–12 year old children whose parents receive only mailed information (10 packets over 8 months) about nutrition physical activity, parenting, and body image? (3) Is there a significant difference in body image improvements of children whose parents participate in the above two treatment conditions?

Method

The background, rationale, and study design have been described in detail previously (Lynch et al., 2012). The following is a brief summary of methods relevant to the present report.

Research Design

USDA County Extension Agents (Agents), with a background in Family and Consumer Sciences and the 4-H Youth Development Program, delivered the face-to-face intervention during 10 ninety-minute face-to-face meetings, attended by parents only, over an 8-month period between late September and late April. In the following pages, we refer to this group as the Experimental