

# Evaluation of a School-Based Program Designed to Improve Body Image Satisfaction, Global Self-Esteem, and Eating Attitudes and Behaviors: A Replication Study

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Accepted 11 November 2003

**Abstract: Objective:** *The purpose of the current study was to evaluate the effectiveness of a life-skills promotion program designed to improve body image satisfaction and global self-esteem, while reducing negative eating attitudes and behaviors and feelings of perfectionism, all of which have been identified as predisposing factors to disordered eating.* **Method:** *A total of 258 girls with a mean age of 11.8 years (intervention group = 182 and control group = 76) completed questionnaires before, and 1 week after, the six-session school-based program, and again 6 and 12 months later.* **Results:** *The intervention was successful in improving body image satisfaction and global self-esteem and in reducing dieting attitude scores at postintervention only. The gains were not maintained at the 12-month follow-up.* **Discussion:** *The need to assess the influence of health promotion programs on predisposing risk factors, compared with problem-based outcome measures, is discussed.* © 2004 by Wiley Periodicals, Inc. *Int J Eat Disord* 36: 1–11, 2004.

**Key words:** *body image; eating attitudes; behaviors; young adolescent girls; health promotion*

## INTRODUCTION

The increased prevalence of disordered eating among preadolescents and young adolescents, especially girls (see Ricciardelli & McCabe, 2001, for a review), has led to

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Gail L. McVey was supported by an Ontario Mental Health Foundation Post-Doctoral Fellowship.

Parts of this manuscript were presented at the 111th Annual Convention of the American Psychological Association, Toronto, Ontario, August, 2003.

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Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20006

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the development of health promotion programs designed to alter some of the predisposing behaviors associated with disordered eating. Some of these programs have focused on self-esteem enhancement strategies (O'Dea & Abraham, 2000), given the link between adolescent disordered eating and low self-esteem in late childhood (Button, Sonuga-Barke, Davies, & Thompson, 1996; Shisslak, Crago, Renger, & Clark-Wagner, 1998). Other researchers have focused on media literacy training as a means of enhancing body image and reducing the risk of dieting (see McVey, in press, for a review). That work stems from studies that have revealed an association between disordered eating and the internalization of media messages (Cusumano & Thompson, 2000; Levine & Smolak, 1998; Levine, Piran, & Stoddard, 1999; Morry & Staska, 2001). The onset of disordered eating in girls has also been associated with the normative changes that occur during early adolescence, such as the natural increases in body weight and fat experienced by girls during puberty, and the increase in the importance of peer acceptance and romantic interests (Levine, Smolak, Moodey, Shuman, & Hessen, 1994).

In response to that research, McVey and Davis (2002) implemented a universal primary prevention program using a life-skills promotion program aimed at teaching Grade 6 girls effective ways of assertively coping with the normative stressors that may trigger the onset of body image concerns and dieting. The six-session (50-min) curriculum was delivered during the students' regularly scheduled health classes. Findings from their controlled 12-month follow-up evaluation found that the intervention failed to have a significant influence on the girls' reported body image satisfaction or eating problem scores. Instead, participants in both the intervention and control groups showed improvements in body image satisfaction and decreases in eating problem scores over time. As such, the program did not cause harm to the intervention participants, a concern that has been raised in other prevention studies (Carter, Stewart, Dunn, & Fairburn, 1997), but rather, failed to deliver a substantial intervention effect. The authors proposed that the outcome measures used in their study may not have adequately captured the attitude/behavioral changes made by a life-skills approach program.

It can be argued that the new trend to adopt health promotion strategies in the field of prevention of disordered eating (O'Dea & Abraham, 2000; Neumark-Sztainer, Sherwood, Collier, & Hannan, 2000) necessitates the inclusion of outcome measures that track, more closely, improvements in resiliency factors. For example, programs that have a self-esteem enhancement component might be more successful in improving self-esteem (O'Dea & Abraham, 2000) than in reducing disordered eating among young adolescent girls. Additional longitudinal research could determine whether those improvements help to prevent the onset of eating disorder symptoms in late adolescence (Button et al., 1996). Similarly, a focus on stress management skills and social problem-solving skills (McVey & Davis, 2002) may be successful in reducing feelings of perfectionism, which may also assist in the prevention of disordered eating, given their reported link (Flett, Hewitt, Boucher, Davidson, & Munro, 1992; Levine & Smolak, 1992; McVey, Pepler, Davis, Flett, & Abdolell, 2002; Steiger, Leung, Puentes-Neuman, & Gottheil, 1992).

In the current study, the McVey and Davis (2002) intervention was replicated to determine if the inclusion of outcome measures tapping those resiliency factors (global self-esteem, body image satisfaction, and feelings of perfectionism) might better assess potential attitude/behavioral changes facilitated by a life-skills promoting approach. For the current study, specific types of perfectionism were examined, including self-oriented and socially prescribed perfectionism. Both have been reported to be associated with disordered eating among adolescent and early adolescent girls (Flett et al., 1992; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991; McVey et al., 2002).

In addition, the current study used the 1–6 scoring of the Children’s version of the EAT-26 (ChEAT), as it is recommended for use with a general nonclinical population (Wells, Coope, Gabb, & Pears, 1985). The authors in the current study were interested in knowing if their intervention was successful in making even minimal shifts in girls’ eating attitudes and behaviors (e.g., shifts in ratings from sometimes to rarely or never; endorsements typically scored as zero). Compared with the control group, participants in the intervention group were expected to show higher scores on body image satisfaction and global self-esteem, and lower scores on negative eating attitudes and behaviors and feelings of perfectionism, after the intervention and at the 6 and 12-month follow-up periods.

## METHOD

### Participants

Participants were 258 girls in Grade 6 (mean age = 11.18 years,  $SD = 0.38$ ). The number of participants varied for each measure because some students did not answer all questions on the survey. No data were available for students who did not participate in the study. Students (182 intervention and 76 control) were drawn from four senior elementary schools (Grades 6–8). Of those who reported, the majority of participants were Canadian born (79%), reported English as their first language (71%), and were living with two parents (70%). Approximately 44% were Caucasian, 20% were South Asian, 13% were Asian, 9% were African Canadian, 3% were Native Canadian, and the remaining 11% identified themselves in the “other” category. There were no significant differences in age or ethnicity between the participants in the intervention and control groups.

Additional information was collected to better describe the profile of the participants. Self-reports of the girls’ height and weight were collected and a mean body mass index (BMI) score and percentile value were calculated for each student. All participants were within 10% of body weight for their age ( $M = 17.98$ ,  $SD = 3.02$ ; Hammer et al., 1991). At baseline, 21.4% of the girls reported that they had experienced their first menstrual period. Participants were asked to describe how they felt about their body shape, using a response format of 0, I feel too fat; 1, I feel just right; or 2, I feel too thin. The majority of the participants reported that they felt just right (68%), whereas 26% reported that they felt too fat, and 6% reported that they felt too thin. Finally, using a response format of 1 (no) and 2 (yes), 30% of the participants answered yes to the question: Are you currently trying to lose weight? There were no significant differences in puberty status or BMI between the two conditions.

### Procedure

Once permission to conduct the study was granted by the school board, a letter was sent to the parents of all Grade 6 girls in the four schools. The letter explained the purpose and nature of the study and requested written permission for their daughter’s participation. Parents and students were informed that the purpose of the research was to learn more about children’s attitudes and feelings about eating. Parents were given the opportunity to contact the researchers by telephone if they had any questions. Four schools willing to participate were matched on socioeconomic status, size, and geographic location and then randomly assigned to either the intervention or control condi-

tion. All girls who had parental consent to participate were asked to complete a questionnaire at four time intervals: before the intervention, 1 week following the intervention, and at 6-month and 12-month follow-up intervals. Participants in both the intervention and control groups completed the questionnaires in the same respective classrooms at each time interval.

### School-Based Intervention

The student intervention (McVey & Davis, 2002), which served as a basis for a teacher's resource guide, entitled *Every Body is a Somebody* (Seaver, McVey, Fullerton, & Stratton, 1997), was facilitated by the first author (see Table 1 for an outline of the curriculum). As with the original study, information was disseminated through classroom activities, group discussions, and slide and video presentations in six weekly 50-min sessions.

### Measures

#### Body Image Satisfaction

The body image subscale (11 items) of the Self-Image Questionnaire for Young Adolescents was used to assess body image satisfaction (SIQYA: Petersen, Schulenberg, Abramowitz, Offer, & Jarcho, 1984). The scale, developed for use with Grade-6 and Grade-7 students, was designed to detect early adolescent transition-related changes in self-image and to tap affective and social comparative aspects of body image. Respondents are asked to rate each statement according to how it describes them, from 1 (*very well*) to 6 (*not at all*). The range of scores for this subscale is 11–66, with higher scores indicative of higher body image satisfaction. The body image subscale has good internal reliability ( $\alpha = .77$  for girls; Attie & Brooks-Gunn, 1989) with young adolescents (Repinsky & Leffert, 1994).

#### Global Self-Esteem

The 10-item Rosenberg Self-Esteem Scale was used to assess general self-esteem and feelings about oneself (Rosenberg, 1965). Participants are asked to respond with how strongly they agree or disagree with each statement, where 4 = strongly agree and

Table 1. Every body is a somebody curriculum

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Week 1: media influences	Unrealistic "ideal" body shapes portrayed in the media and how these images are related to girls' perception of themselves, as well as the various methods that the media employ to create a "perfect" image of beauty.
Week 2: enhancing self-esteem and body image	Ways to promote positive self-esteem and body image, including ways to lower the importance placed on physical appearance as a sole barometer for self-worth.
Week 3: body size acceptance	Genetic influences on body shape, the negative effects of shifting an individual's weight beyond the natural weight range, and acceptance and awareness of individual differences in body shape and size.
Week 4: healthy living	A nondieting approach to healthy eating and active living.
Week 5: stress management	Stress management techniques that focus on assertive styles of communication and social problem-solving strategies to help attenuate the negative influences of stress on body image concerns.
Week 6: positive relationships	Identifying healthy versus unhealthy relationships, applying problem-solving strategies to issues related to peer relations and negative comments about weight and shape.

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1 = strongly disagree. Scores range from 10 to 40 with higher scores representative of higher self-esteem. The scale has good internal reliability ( $\alpha = .77-.88$ ) in similar adolescent samples (Rosenberg, 1965).

### **Eating Attitudes and Behaviors**

The children's version of the Eating Attitudes Test was used to measure negative eating attitudes and behaviors (ChEAT; Maloney, McGuire, & Daniels, 1988; Maloney, McGuire, Daniels, & Specker, 1989). Like the Eating Attitude Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982), this is a 26-item self-report questionnaire, with an adapted 6-point scale for this study: 1 (*always*), 2 (*usually*), 3 (*often*), 4 (*sometimes*), 5 (*rarely*), 6 (*never*). Given that the authors in the current study used a different coding scheme than originally reported for this scale (Garner et al., 1982), factor analyses and reliability testing were conducted. The factor analyses revealed similar findings to those reported in a previous study, which used the clinical ChEAT scoring method (Smolak & Levine, 1994). The internal consistency for each of the three subscales was .83, .58, and .50, with the range of scores for the dieting, bulimia, and oral control subscales being 14–60, 6–22, and 9–38, respectively.

### **Perfectionism**

The 22-item Child and Adolescent Perfectionism scale (CAPS; Flett et al., 1992) was used to measure self-oriented perfectionism (i.e., high self-standards) and socially prescribed perfectionism (i.e., the perception that others demand perfection), using a five-item response format (1, false—not at all true of me; 2, mostly false; 3, neither true nor false; 4, mostly true; 5, very true of me). The CAPS is a children's version of the Multi-dimensional Perfectionism Scale (Hewitt et al., 1991). Based on psychometric analysis by the scale authors, two of the self-oriented perfectionism subscale items were dropped. A sum score was used for both subscales, with higher scores reflecting greater levels of perfectionism. In the current study, the possible range of scores was 10–50 for each of the subscales and each demonstrated good reliability ( $\alpha = .88$  and  $.82$ , respectively).

## **Statistical Analysis**

Repeated measures analyses of variance (ANOVA), using the presence of intervention as the between-group variable (two levels) and time (four levels) as the within-group variable, were performed on the five outcome measures: body image satisfaction, global self-esteem, eating attitudes and behaviors, and self-oriented and socially prescribed perfectionism. Pairwise comparisons were performed on the data to examine the nature of the repeated measures' effects, where appropriate.

## **RESULTS**

Independent *t* tests between the intervention and control groups on the five outcome measures at baseline were nonsignificant.

### **Measures**

#### **Body Image Satisfaction**

There was a significant Group  $\times$  Time interaction for scores on body image satisfaction,  $F(3, 564) = 3.31, p = .02$ . Planned comparisons showed that the intervention group

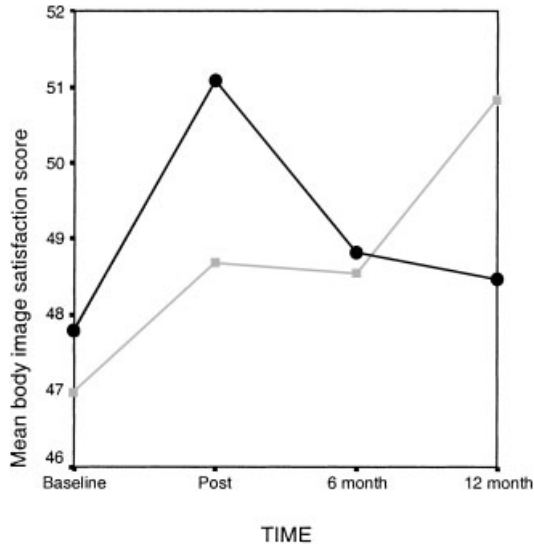


Figure 1. Group (intervention and control) by time (baseline, postintervention, 6-month, and 12-month follow-up) effect for girls' body image satisfaction scores. Circles = intervention group; squares = control group.

had significantly higher scores on body image satisfaction than the control group at postintervention (Figure 1). However, the increase in scores was not maintained over the 6-month and 12-month follow-up intervals. In fact, by the 12-month interval, the scores for the intervention group had dropped below that of the control group, which had improved from baseline. As such, there was a significant time effect,  $F(3, 564) = 4.38$ ,  $p = .005$ , but no group effect,  $F(1, 188) = .17$ ,  $p = .68$ , found for body image satisfaction scores. For both groups combined, mean body image satisfaction scores at the postintervention follow-up ( $M = 50.18$ ,  $SD = 11.16$ ), the 6-month follow-up ( $M = 48.80$ ,  $SD = 11.08$ ), and the 12-month follow-up ( $M = 49.03$ ,  $SD = 11.57$ ) were significantly higher ( $p < .05$ ) than the mean score at baseline ( $M = 47.40$ ,  $SD = 10.12$ ).

### Global Self-Esteem

There was also a significant Group  $\times$  Time interaction for scores on global self-esteem,  $F(3, 564) = 2.75$ ,  $p = .04$ . Planned comparisons revealed that by group, mean global self-esteem scores at postintervention were significantly higher than the mean scores at baseline, with the intervention group increasing significantly more than the control group (Figure 2). There was also a significant main effect of time,  $F(3, 564) = 7.93$ ,  $p < .001$ , but not for group,  $p = .14$ . For both groups combined, mean global self-esteem scores were significantly higher than baseline ( $M = 29.77$ ,  $SD = 5.4$ ), at the postintervention ( $M = 31.27$ ,  $SD = 6.5$ ,  $p = .01$ ), 6-month ( $M = 31.36$ ,  $SD = 5.8$ ,  $p = .002$ ), and the 12-month follow-ups ( $M = 31.72$ ,  $SD = 6.3$ ,  $p < .001$ ).

### Eating Attitudes and Behaviors

In addition, there was a significant Group  $\times$  Time interaction for the dieting subscale,  $F(3, 355) = 3.36$ ,  $p = .02$ , but not for the bulimia,  $F(3, 405) = 1.59$ ,  $p = .20$ , or the oral control,  $F(3, 381) = 1.88$ ,  $p = .14$ , subscales of the ChEAT. Planned comparisons showed

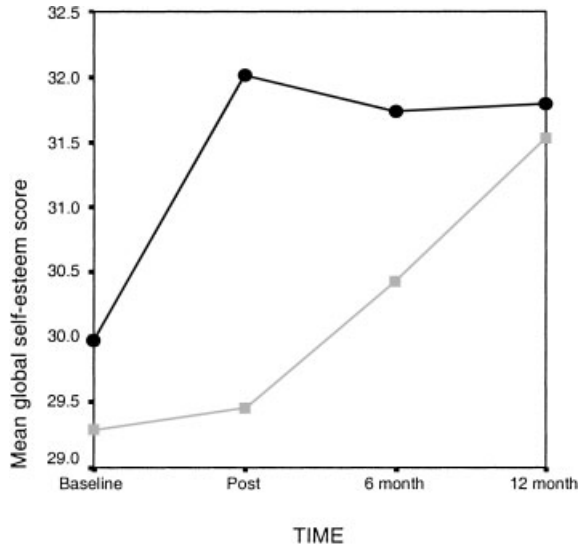


Figure 2. Group (intervention and control) by time (baseline, postintervention, 6-month, and 12-month follow-up) effect for girls’ global self-esteem scores. Circles = intervention group; squares = control group.

that for the intervention group, mean dieting scores decreased significantly from baseline ( $M = 30.47, SD = 10.49$ ) to postintervention ( $M = 26.20, SD = 9.78$ ) and remained significantly lower than baseline at both the 6-month ( $M = 26.86, SD = 9.65$ ) and

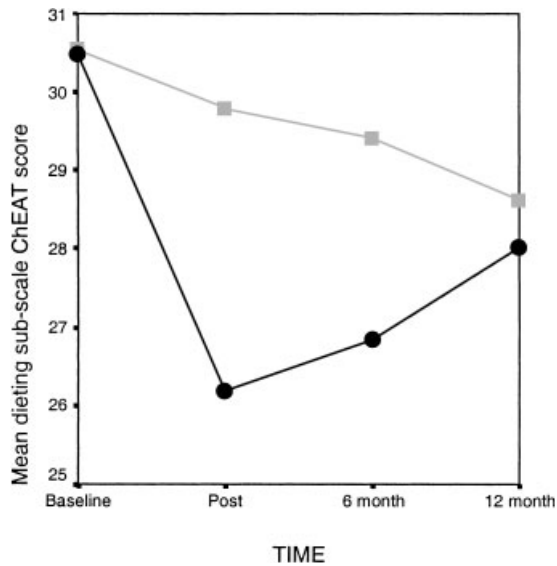


Figure 3. Group (intervention and control) by time (baseline, postintervention, 6-month, and 12-month follow up) effect for girls’ dieting behaviors and attitudes on the dieting subscale of the children’s version of the Eating Attitudes Test-26. Circles = intervention group; squares = control group.

12-month ( $M = 28.02$ ,  $SD = 10.62$ ) follow-ups ( $p < .02$ ). Scores were significantly lower at postintervention for the intervention group ( $M = 26.20$ ,  $SD = 9.78$ ) compared with the control group ( $M = 29.78$ ,  $SD = 10.23$ ;  $p = .05$ ; Figure 3). There was no significant main effect for group on the dieting subscale.

There was a significant effect of time for the bulimia subscale,  $F(3, 405) = 6.65$ ,  $p < .001$ , but not for group,  $F(1, 149) = 1.64$ ,  $p = .203$ . For all groups combined, the bulimia scores were significantly lower ( $p < .001$ ) at the postintervention ( $M = 8.57$ ,  $SD = 2.70$ ), the 6-month follow-up ( $M = 8.40$ ,  $SD = 2.62$ ), and the 12-month follow-up ( $M = 8.74$ ,  $SD = 2.86$ ;  $p = .02$ ) compared with the mean score at baseline ( $M = 9.36$ ,  $SD = 2.85$ ). There were no significant time,  $F(3, 381) = 1.28$ ,  $p = .28$ , or group effects,  $F(1, 152) = .005$ ,  $p = .94$ , for the oral control subscale.

### Perfectionism

A significant time effect was found for self-oriented perfectionism,  $F(3, 546) = 10.10$ ,  $p < .001$ . However, there was no significant Group  $\times$  Time interaction,  $F(3, 546) = 1.26$ ,  $p = .29$ , or group effect,  $F(1, 182) = 1.73$ ,  $p = .19$ . For all groups combined, the mean self-oriented perfectionism scores at postintervention ( $M = 29.4$ ,  $SD = 7.6$ ), the 6-month follow-up ( $M = 29.6$ ,  $SD = 8.5$ ), and the 12-month follow-up ( $M = 28.6$ ,  $SD = 8.6$ ) were significantly lower ( $p < .001$ ) compared with the mean scores at baseline ( $M = 31.9$ ,  $SD = 7.2$ ).

There was also no significant Group  $\times$  Time interaction,  $F(3, 531) = 1.02$ ,  $p = .38$ , or group effect,  $F(1, 177) = .13$ ,  $p = .72$ , for scores on socially prescribed perfectionism. However, a significant time effect was found,  $F(3, 531) = 4.95$ ,  $p = .002$ . For all groups combined, the mean socially prescribed perfectionism scores at postintervention ( $M = 23.9$ ,  $SD = 8.9$ ), the 6-month follow-up ( $M = 23.4$ ,  $SD = 9.4$ ), and the 12-month follow-up ( $M = 23.2$ ,  $SD = 9.7$ ) were significantly lower ( $p < .004$ ) than the mean score at baseline ( $M = 24.9$ ,  $SD = 9.3$ ).

## DISCUSSION

The purpose of the current study was to replicate and better evaluate the potential effectiveness of a school-based life-skills promotion program delivered to girls in Grade 6. The findings showed that the intervention had a significant and positive short-term influence on the girls' body image satisfaction, global self-esteem, and negative eating attitudes and behavior scores. However, these gains were not maintained 1 year later. By the 12-month follow-up, the mean body image satisfaction score for the intervention participants was lower, although not significantly, than that of the controls. With respect to global self-esteem, the improvement reported by the intervention group was maintained. However, the control group's scores caught up to those of the intervention by the 12-month follow-up. The dieting scores of the intervention group decreased significantly from baseline to the postintervention and the 6-month and 12-month follow-ups. Although those scores gradually increased from postintervention to the 12-month follow-up, they remained lower than those of the control group throughout the entire period of the study and were significantly lower than the controls at postintervention.

The design of the current study did not permit the authors to examine if the intervention participants had a more favorable outcome over the longer term. For example, the intervention participants might show significantly higher body image satisfaction and global self-esteem and lower dieting scores than their control counterparts, once they

reach mid adolescence. It has been argued that during the early adolescent period of high risk for body image dissatisfaction (Levine & Smolak, 2001), repeated booster sessions may be necessary to sustain initial intervention gains. In the current study, the self-esteem enhancement strategies focused mainly on global self-esteem. Muir, Wertheim, and Paxton (1999) reported that specific aspects of self-concept were lower in dieters than nondieters (i.e., parental relations, emotional stability, physical appearance, and general self-concept). Additional research should examine if the enhancement of those specific self-esteem dimensions leads to greater resilience against disordered eating. A recent elementary school prevention project that focused on the teaching of student competencies as a technique to promote positive body image and reduce risk factors for disordered eating revealed promising preliminary results (Kater, Rohwer, & Levine, 2000).

Despite the similarity in intervention, this intervention had the positive influence of lowering participants' dieting scores (albeit short-term); a different outcome than that reported by McVey and Davis (2002). The use in the current study of a 1–6 rating for the ChEAT (Wells et al., 1985) may have helped detect slight changes in eating attitudes and behaviors brought on by the intervention that may have otherwise been missed. Given that the 1–6 scoring gives equal weight to each item, it is possible to examine even slight shifts in eating attitudes and behaviors (e.g., sometimes engaging to never engaging). As such, the 1–6 scoring of the ChEAT may represent a more suitable outcome measure for prevention studies involving children.

Of importance, the intervention program did not have a significant influence on the participants' perfectionism scores. Still, perfectionism is reported as a risk factor for the development of disordered eating and its association has been demonstrated among girls as young as 12 and 13 years of age (McVey et al., 2002). Future research is required to evaluate whether the inclusion of life-skills strategies designed to enhance the positive mindset of girls (LeCroy & Daley, 2001) might help to decrease their feelings of perfectionism.

The findings of the current study support teaching health promotion strategies as a safe and effective way to help girls feel good about themselves and their bodies, during a time in their lives when they might be inclined to start dieting (Neumark-Sztainer et al., 2000; O'Dea & Abraham, 2000). An advantage to the universal program used in the current study (such as one offered to girls during their routine school health class) is that it provides wider access to the information. It also helps to prevent students from feeling stigmatized about their concerns, a potential problem if students have to seek support outside of the class or school setting. Finally, the self-esteem enhancement and life-skills promotion strategies offered in a universal program have unanticipated benefits, including the potential to reduce or prevent other risky behaviors experienced by youth during this stage of development (e.g., smoking, early sexual involvement, depression, anxiety; Haney & Durlak, 1998; Resnick, et al., 1998).

Although the current study had some methodologic strengths, which included a large sample size, a control group, and a 1-year follow-up interval, there were limitations. First, the follow-up period did not extend into later adolescence, when one would expect an increase in the prevalence of disordered eating (Rosen, Silberg, & Gross, 1988). Longitudinal follow-up of health promotion programs delivered to elementary school children has been initiated (Smolak & Levine, 2001) and warrants further study. Second, the intervention group was facilitated by the first author who has extensive experience in the area of body image and eating disorders. That method of implementation raises the issue of sustainability within the school setting. Although it remains unclear whether the same life-skills curriculum delivered by teachers would be equally effective in promoting

positive body image and global self-esteem, O'Dea and Abraham (2000) found that a teacher-delivery format for their self-esteem enhancement program led to positive changes in participants' body image satisfaction and eating behaviors. The life-skills promotion strategies used in the current study were matched to the provincial ministry of education's health and physical education curriculum expectations, a strategy that has been shown to be an important first step in gaining the involvement of teachers (Smolak, Harris, Levine, & Shisslak, 2001). Teacher delivery of the life-skills program has recently been evaluated as part of a comprehensive, multilevel, intervention conducted with male and female middle school students (McVey, Tweed, & Blackmore, 2003).

The current study revealed the short-term benefits of implementing a life-skills approach with 11–12-year-old girls to help prepare them for the normative stressors that may trigger the onset of disordered eating in early adolescence. Future evaluations of life-skills programs conducted with elementary school children might include outcome measures that focus on risk or resiliency factors (e.g., self-esteem, perfectionism, body image, dieting) in the short term and problem-based outcome (disordered eating) in the long term.

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