



School-based health education strategies for the improvement of body image and prevention of eating problems

School-based
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An overview of safe and successful interventions

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Jennifer A. O'Dea

Faculty of Education, University of Sydney, New South Wales, Australia

Abstract

Purpose – The purpose of this paper is to review current programmes and major issues surrounding preventive interventions for body image and obesity in schools.

Design/methodology/approach – A literature review was carried out by analysing papers cited in major literature databases from the last 50 years. This review describes and summarises activities from body image programmes and eating disorder prevention programmes in schools and outlines self esteem and media literacy approaches that have produced positive results in some large, randomised and controlled interventions.

Findings – A total of 21 programmes met the inclusion criteria. Of these, four included males and 17 reported at least one improvement in knowledge, beliefs, attitudes or behaviours. The most effective programmes were interactive, involved parents, built self esteem and provided media literacy.

Practical implications – Body image concerns, eating problems and obesity among children and adolescents are becoming increasingly targeted for preventive health education and health promotion programmes. The role of health educators is complicated because of legitimate concerns that we must “do no harm” in our efforts to ameliorate both issues in schools. Health educators need to be careful to ensure that the implementation of programmes for the prevention of child obesity do not inadvertently create food concerns, body image issues, weight stigma, prejudice or eating disorders. Similarly, eating disorder prevention programmes must take care both not to condone obesity nor to glamorise or normalise dieting or disordered eating.

Originality/value – This paper provides health educators with an overview of important issues and suitable strategies to consider when implementing programmes for body image improvement and the prevention of eating problems and childhood obesity.

Keywords Health education, Diet, Self esteem, Schools, Obesity

Paper type Research paper

Introduction

Body image and eating problems among children and adolescents are becoming increasingly targeted for preventive education and health promotion programmes. Body image problems may be observed among children, adolescents and young people as eating disorders, body dissatisfaction, health damaging weight control practices such as vomiting, fasting, laxative and steroid use and excessive exercise. Anorexia Nervosa affects 0.5-1 per cent of adolescent girls and Bulimia Nervosa affects 3-5 per cent of girls and young women (Fisher *et al.*, 1995). The prevalence of sub-clinical



partial-syndrome eating disorders is much higher than these fully diagnosed clinical disorders affecting 10-20 per cent of girls and women (Killen *et al.*, 1986), although these estimates may be inaccurate because of the very secretive nature of these disorders and because young people with eating disorders tend to be the ones who do not participate in research studies about eating disorders (Beglin and Fairburn, 1992).

Disordered eating behaviours, including at least one of the following – fasting, skipping meals to lose weight, diet pills, vomiting, laxatives, smoking cigarettes and binge eating – were recently reported by a staggering 56 per cent of 9th grade females and 28 per cent of 9th grade males (Croll *et al.*, 2002). Reports of dieting, fear of fatness, body image concerns and weight loss attempts, as well as cases of more serious eating disorders have been documented in children as young as seven years old (Ricciardelli and McCabe, 2001).

Body image and eating problems have been consistently more common among girls and young women, but recent reports show that boys and young men are increasingly reporting these problems (McCreary and Sasse, 2000; O’Dea and Rawstorne, 2001). Young male adolescents are known to be concerned with their body size and shape and they undertake weight control and weight gain behaviours (e.g. fad weight gain diets, inappropriate weight lifting, and steroid abuse) that may be hazardous to their health.

In addition to the psychological and physiological consequences of body dissatisfaction and eating disorders, and the obvious economic and social costs of treating such problems, recent studies also show that body dissatisfaction among young people is associated with low self esteem and depression (Stice *et al.*, 2000). In their large four-year longitudinal study of adolescent girls, Stice *et al.* (2000) observed that elevated body dissatisfaction, dietary restraint and symptoms of bulimia at study entry predicted onset of depression in initially non-depressed girls.

Clearly, body image concerns, weight loss behaviours and eating problems pose a serious and increasing threat to the short- and long-term physical, psychological and social health of children and adolescents.

The relationship between overweight, body image and eating disturbances in children

Over the last 30 years body image problems, eating problems and the number of children who are overweight have all increased worldwide (Troiano and Flegal, 1995; Chinn and Rona, 2001). Because overweight, perceived overweight and weight concerns are known to precede dieting, hazardous weight loss behaviours and eating disturbances, the current trend towards the co-occurrence of increasing eating disorders and increasing child overweight is very concerning. It is probable that the increasing rates of children overweight may be one of the factors that have resulted in more dieting and weight loss attempts among young people. Hence, the two trends could be expected to continue in tandem. Further, it appears that children and adolescents who use these extreme attempts at weight loss only manage to perpetuate the futile cycle of dieting, purging, binge eating and further weight gain. Among American high school girls of various weights, Stice *et al.* (1999) found that those who tried extreme methods to lose weight were the most likely to gain weight over time and were therefore at greater risk for obesity. Girls who used more extreme weight loss methods such as laxatives, appetite suppressants, vomiting and fasting gained more weight than those who were not involved in extreme weight loss attempts. Among girls who dieted, the risk of obesity onset was greater than for non-dieters, irrespective of their actual weight at the beginning of the study.

Clearly, one of the major aims of the programmes to improve body image, eating problems and child obesity is to encourage healthy eating and physical activity among children and adolescents without promoting fad diets, weight loss attempts and the diet-binge cycle.

First, do no harm

Those involved in the planning of educational programmes to promote sensible eating and prevent body image and eating problems – who include teachers, health educators, dietitians, school administrators, nurses, researchers, policy makers and those responsible for food product development, marketing and advertising – should remember one of the most basic principles of modern medicine – “first, do no harm”. There have been warnings about the potential to do more harm than good when attempting to prevent eating disorders and child overweight (Garner, 1988; Piran, 1999; O’Dea, 2000). Obesity prevention programmes may inadvertently serve to heighten awareness of body weight and increase weight concerns and weight loss attempts among children and adolescents. Eating disorder prevention programmes, especially those that directly refer to case studies or eating disorder behaviours such as vomiting, starvation, laxative abuse, diet pills and cigarette smoking for weight control, are likely to introduce these issues to children and adolescents in a suggestive manner. Several research reports confirm that teenage girls and young women have adopted smoking after receiving messages about its potentially slimming effects (Tomeo *et al.*, 1999).

Further, prevention programmes, no matter how well meaning, may inadvertently glamorise and normalise dieting, disordered eating and the ideal of being slim by using case studies of sufferers who are celebrities (Garner, 1988). Parents, teachers, food advertisers and marketers may unwittingly transfer anti-fat messages, weight prejudice, body image stereotypes and fear of food by perpetuating the “good foods, bad foods” myth and creating negative, frightening messages about food and weight. Teachers may also provide incorrect or inappropriate dietary advice (Piran, 1999; Ransley, 1999; O’Dea and Abraham, 2001).

The use of negative language, a focus on problem-based messages such as sugar and fat are “bad” and use of the term “junk food” contribute to the underlying fear of food, dietary fat and weight gain which precede body image concerns and eating problems. Children and adolescents need to know that they can enjoy a variety of different foods in a balanced diet and they need to be enabled to do so in a positive, motivating atmosphere. Negative messages or those that produce guilt, shame or fear of food are likely to do more harm than good.

Interventions to prevent eating disorders and improve body image

This section presents a summary of major school-based research interventions which have attempted to address body image improvement and prevention of eating problems among children and adolescents. A review of published programmes was conducted by searching major research databases including Medline, Psych Info, Current Contents, CINAHL, Sociofile and ERIC. Only large studies (> 100 participants) and those with a control group are included. Smaller studies such as Wade *et al.* (2003) and Baranowski and Hetherington (2001) have been included in the reference list to allow the reader to access these. Preventive interventions undertaken among college students or adults have not been included.

The current review has identified 21 relevant interventions. They came from the US, Canada, England, Australia, Israel, Switzerland and Italy (Table I). The majority of studies (13 of 21), report findings among girls only and 8 of 21 studies included both sexes. The vast majority of interventions (18 of 21), resulted in at least one form of significant improvement and these are marked with an asterisk in Table I. The studies of Killen *et al.* (1993), Dalle Grave *et al.* (2001) and Kater *et al.* (2002) reported no statistically significant results in regard to behaviour change but significant improvements in knowledge were achieved in these studies. The studies of Paxton (1993), McVey and Davis (2002), and McVey *et al.* (2003a) reported no statistically significant intervention effects. No studies reported adverse effects.

Early studies, before 1995, focused on using an information-giving approach by providing female students with knowledge about eating disorders, facts about the dangers of dieting, nutrition information, analysis of the social construction of body ideals and cultural stereotypes of the perfect body (Moreno and Thelan, 1993; Killen *et al.*, 1993; Paxton, 1993). These early studies, reported increased knowledge of eating disorders and weight control issues but reported nothing in the way of body image improvement or reduction in eating disorder behaviours. Never the less, these early studies paved the way for later researchers to design more successful interventions. The study of Neumark-Sztainer *et al.* (1995) introduced the topics of behaviour modification for weight control and skills in media analysis and assertiveness. The study reported a decrease in bulimic tendencies and improvement in eating patterns among Israeli schoolgirls.

More recent interventions have produced moderate improvements in beliefs, attitudes and behaviours such as body image, body dissatisfaction, self-image and dieting as well as increased knowledge. Some of these successful approaches and programmes are outlined below.

Media literacy interventions

The focus of media literacy programmes is to educate young people about the media's artificial creation of the "perfect" body by the perpetuation of "perfect" images of men and women who are almost always stereotypically slim and muscled. Media literacy aims to increase student's awareness about body stereotypes in the media and suggest ways of combating media messages and trends, such as suggesting advocacy roles. A media literacy programme conducted among Girl Scouts troops (Neumark-Sztainer *et al.*, 2000) resulted in a decrease in the internalisation of the ideal body. The same study improved the girls self-efficacy related to being able to impact weight-related social norms.

Another programme including media literacy was conducted among girls nine to ten years of age (Smolak *et al.*, 1998). The results of this study showed that programmes have been able to improve the knowledge of nutrition, effects of dieting and causes of body fat in girls of this age, but have done little to change their eating, exercise or weight control behaviours. The study did show an improvement in the girls' attitudes and beliefs about fat people, and two years later several of these effects were still present (Smolak *et al.*, 1998).

Media literacy programmes are likely to bring about improvement in students' body image and risk of eating problems by having students understand that media images are unrealistic and often manipulated to create perfection. Students may then reject the media images as largely artificially created and unacceptable. Another explanation for the moderate improvement in body image shown to result from media analysis is that they help young people to reject media stereotypes of perfection by promoting

Study/description	Results	Conclusions and implications for school based applications
<p>Moreno and Thelan (1993): Female students aged 13-14 years in junior high home economics classes in USA. A total of 30 intervention and 74 controls in study 1 and 50 intervention and 65 controls in study 2. Videotape of 6.5 minutes depicting a conversation between two sisters about bulimia nervosa and harmful effects of bingeing and purging and suggestions for sensible weight management and resisting peer pressure to diet. Video presented by clinical psychology student in study 1 and home economics teacher in study 2</p> <p>Paxton (1993): Year 9 female students aged 14 years in Australia. A total of 107 intervention and 29 controls. Programme of five classes addressing media images of women, determinants of body size, healthy and unhealthy weight control and emotional eating. Conducted by two psychologists</p>	<p>Improved knowledge of bulimia and disordered eating behaviours Reduced intentions to diet</p>	<p>Programme was successful in changing knowledge of bingeing, purging, dieting and other disordered eating behaviours Effectiveness of home economics teacher versus psychologist were equivalent Video was well received by students and teachers Suggestion that "short" programmes need to be continued with "booster" sessions Suggestion of using peer-led sessions</p>
<p>No significant effect on dietary restraint, eating and weight control behaviours, bulimia, drive for thinness, body dissatisfaction, body image or self esteem</p>	<p>No significant effect on dietary restraint, eating and weight control behaviours, bulimia, drive for thinness, body dissatisfaction, body image or self esteem</p>	<p>Author concludes programme to be ineffective among year 9 girls due to their body image already being entrenched Media impact on girls needs to be tackled Short-term school programmes need to be supplemented through other educational methods or anti-dieting media campaigns Suggestions that peer leaders may be beneficial in programme presentation Suggestion that programmes should target younger students</p>

(continued)

Table I.
Summary of large, controlled school-based intervention studies of eating disorders prevention and/or body image improvement programmes among children and adolescents

Study/description	Results	Conclusions and implications for school based applications
<p>Killen <i>et al.</i> (1993): 6th and 7th grade female students aged 11-13 years in USA. A total of 438 intervention and 400 controls. Programme to instruct about harmful effects of unhealthy weight regulation; promotion of healthful weight regulation through sound nutrition and physical activity and develop coping skills to resist media body image messages. A total of 18 lessons of slide shows depicting case studies of seven girls illustrating normal pubertal development, ineffectiveness and dangers of dieting, skill development to counteract cultural pressures promoting dieting and thin body ideal, promotion of healthy eating and physical activity</p> <p>Neumark-Sztainer <i>et al.</i> (1995): A total of 269 Israeli girls aged 15-16 years in 10th grade. A total of 126 intervention and 143 controls. Ten week programme among boys and girls, but only data from girls analysed. Topics included adolescent development, healthy eating, physical activity, behaviour modification for weight loss, advertising, body image and the media, eating disorders, assertiveness</p>	<p>Knowledge of weight regulation principles, growth and development cultural influences and dangerous weight loss methods increased in intervention group No effect on dietary restraint, bulimia, weight concerns, body mass index or eating behaviours</p> <p>Increased knowledge of nutrition and more regular meal patterns No effect on body satisfaction, weight loss methods or food preferences Reduced onset of unhealthy dieting and bingeing among girls who had not tried this before</p>	<p>Authors conclude that programme failed to reduce unhealthy weight regulation and promote healthy behaviours Suggestion that screening and then targeting high-risk girls may be most beneficial</p> <p>High student and staff satisfaction with programme Students prefer interactive activities Authors conclude that programme helped to prevent onset of some unhealthy behaviours but no effect on reducing existing unhealthy behaviours. Therefore, suggestion for early prevention in younger girls Suggestion for greater focus on changing self-perceptions, self esteem</p>

(continued)

Study/description	Results	Conclusions and implications for school based applications
<p>Buddeberg-Fischer <i>et al.</i> (1998): A total of 314 Swiss students, 14-19 years who had scored relatively high on risk of disturbed eating. Ten classes received three health promotion lessons, ten classes were controls. Lessons included beauty ideals, pubertal development, healthy eating, nutrition, eating disorders and their treatment. A 90 minute lesson each month for three months. Delivered by adolescent psychiatry staff</p>	<p>No intervention effect for overall group of male and female students for eating attitudes, physical distress or psychological impairment Girls with highest eating disorders scores improved on physical impairment symptoms</p>	<p>Recommendation that prevention programmes address students' cognition, emotions and behaviour Important to capture the interest of male and female students as well as those who do not have any symptoms of eating disorders Lack of "blinding" may have biased the results Future studies should focus on students' self-perceptions, identity and relationships</p>
<p>Smolak <i>et al.</i> (1998): A total of 222 male and female 5th grade students aged 9-10 years in USA. Ten classroom lessons on knowledge of nutrition, body fat and dieting, attitudes about fat people and body esteem and behaviours such as healthy eating and exercise</p>	<p>Knowledge of nutrition, effects of dieting and causes of body fat improved Attitudes towards fat people improved</p>	<p>Authors conclude that behaviour change such as eating and exercise patterns, weight reduction attempts and teasing fat children was not changed by the programme</p>
<p>Santonastaso <i>et al.</i> (1999): A total of 254 Italian schoolgirls aged 16 years. 154 intervention, 154 controls. Four two-hour sessions each week for one month. Conducted by psychiatrist and psychologist. Lessons on pubertal weight changes, importance of physical appearance and body image, relationships, information about eating disorders and dieting and attitudes towards food and dieting</p>	<p>At 12 months after the intervention, low risk girls' body dissatisfaction decreased, but high-risk girls' did not No effect on BMI or other aspects of eating disorders</p>	<p>Authors conclude that a programme including information about eating disorders does not encourage unhealthy eating attitudes or behaviours Schools should implement coping skills to help students deal with media and social pressure to diet and be slim High-risk girls may need more help</p>

(continued)

Table I.

Study/description	Results	Conclusions and implications for school based applications
<p>O'Dea and Abraham (2000): A total of 470 male and female students in Australia aged 11-14 years. Interactive self esteem programme including stress management, building positive sense of self, analysis and rejection of cultural and media gender stereotypes (student led) and building self esteem. No mention of eating, food or disorders. Blinding of students and teachers</p>	<p>Improved body satisfaction and decreased importance of social acceptance, physical appearance and athletic ability Improved physical self esteem in females Less weight loss and dieting in intervention girls In high-risk students, improved body image, drive for thinness and physical self esteem</p>	<p>Positive student and teacher evaluation Self esteem development can improve body image in male and female adolescents Important to include males Involving parents, especially fathers, seems to help female students Focusing on positive approach rather than a negative, problem-based approach appears to be beneficial among young adolescents Authors reported high programme satisfaction Longer follow-up suggested Girl Scout groups appear to be a suitable place for such programmes</p>
<p>Neumark-Sztainer <i>et al.</i> (2000): A total of 226 girls in USA aged 9-11 years attending Girl Scouts. Six sessions dealing with pubertal development, positive self-assessment, self esteem, media awareness of body image ideals, media literacy and advocacy</p>	<p>Programme increased knowledge related to their body weight and reduced desire for the thin ideal Self-efficacy to impact weight-related social norms increased No effect on dieting or other behaviours</p>	<p>Authors reported high programme satisfaction Longer follow-up suggested Girl Scout groups appear to be a suitable place for such programmes</p>
<p>PHELPS <i>et al.</i> (2000): A total of 532 grade 6-8 students aged 11-15 years and 312 9-11th grade females aged 13-16 in the USA. A six-session programme was incorporated in the home and careers curriculum and delivered by regular classroom teachers. Control group participated in regular music classes. Lessons included historical and cultural influences on body image; increased physical self esteem; increased personal competence; discussion of pubertal developments; exploration of appropriate weight control and a case study of a woman who had recovered from an eating disorder</p>	<p>Trend towards reduced disordered eating, body dissatisfaction and drive for thinness, but not statistically significant Trend towards increased self esteem and personal competence but not statistically significant Older girls improved on attitudes and beliefs about sociocultural mores, dysfunctional eating behaviours and future intentions regarding weight control</p>	<p>Interactive programme with older girls was more successful and well received by teachers and girls Authors conclude that younger children were not able to benefit from self evaluation type discussion Small groups (e.g. 6-8) work the best Teachers need training in active listening, non-judgemental feedback, providing information without "lecturing" and the ability to allow students to discover their own thoughts and feelings</p>

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Study/description	Results	Conclusions and implications for school based applications
<p>Stewart <i>et al.</i> (2001): A total of 752 schoolgirls in year 9 (13-14 year olds) in the UK. Interactive six week programme of lessons including cultural influences on body image, weight regulation, information about eating disorders, self esteem, managing stress, healthy eating, non-dieting</p> <p>Varnado-Sullivan <i>et al.</i> (2001): A total of 157 female and 130 male, 6th and 7th grade private school students aged 12-13 years in USA. Body Logic Programme I involved school students in interactive sessions about body image, social and media influences, self esteem, impact of puberty on body image, nutrition. Body Logic II involved parents and high-risk children</p> <p>Dalle Grave <i>et al.</i> (2001): A total of 106 Italian students aged 11-12 years. Six two-hour sessions plus two two-hour booster sessions presented by psychologists. Programme included socio-cultural slim ideal, dieting and its effects, eating disorders and risk factors for eating disorders, self-acceptance</p> <p>Smolak and Levine (2001): Long term effect of initial Smolak <i>et al.</i> (1998) programme investigated using the original 9-11 year old boys and girls in USA who participated two years earlier compared to an additional group of new controls</p>	<p>Knowledge of eating disorders increased in both intervention and control girls Dietary restraint decreased in intervention girls No intervention effect on weight concern but shape concern and eating concerns decreased in intervention girls</p> <p>Female participants improved on fear of fatness and avoidance of forbidden foods High-risk girls also improved Males improved on fear of fatness Efforts to attract parents and high-risk students failed</p> <p>Increased knowledge of eating disorders No intervention effect for eating behaviours, dietary restraint, weight or shape concerns or self esteem</p> <p>Participants had greater knowledge, used fewer weight control techniques and had higher body esteem Original controls had scores “in between” suggesting a “spill over” effect among original controls</p>	<p>Authors conclude that intervention produced short-term improvement in dieting and body concerns especially among high-risk girls Suggestion to continue such programmes each year and start with younger children Suggestion to focus on families and teachers and include boys Recommendation that the programme was partially effective but did not attract high-risk students or parents Suggestion that poor body image and disordered eating may now be considered “normal” and acceptable in some high-risk students and their parents</p> <p>Authors conclude that programme improved knowledge and had no adverse effects Important to include males Important to further study with larger numbers</p> <p>Girls benefited more than boys Demonstrates long term impact Spill-over effect among controls suggests that children discussed what was learned in the programme, demonstrating interest and relevance of programme</p>

(continued)

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Study/description	Results	Conclusions and implications for school based applications
<p>Withers <i>et al.</i> (2002): A total of 218 Australian private school girls in year 7 aged 12-13 years. Intervention group received a 22-minute video including information about female development, socio-cultural and media influences on body image, the harmful effects of dieting and eating disorders, healthy eating and self-image enhancement</p>	<p>Girls who watched the video made positive changes to drive for thinness and intention to diet and improved knowledge</p>	<p>Authors conclude that positive changes occurred but one month later, only the knowledge changes were maintained Long-term and booster programmes recommended Other powerful influences such as the media need to be addressed</p>
<p>Kater <i>et al.</i> (2002): A total of 415 boys and girls aged 9-13 years in USA received an 11-week programme. Topics included pubertal changes, genetic diversity, hazards of dieting, nutrition, coping skills, media analysis</p>	<p>Intervention students improved on most scales but not in comparison to controls Modest improvement in knowledge and effect of the media</p>	<p>Authors conclude that knowledge can be improved but not body image suggesting that young students should be included in future programmes Suggestion that adults and school administrators become involved</p>
<p>Steiner-Adair <i>et al.</i> (2002): A total of 500 girls in 7th grade aged 12-14 years in USA. Eight weekly lessons delivered by teachers, nurses and guidance counsellors. Topics included pubertal changes, weightism, positive self-assessment, self esteem, media literacy, fad diets and nutrition and coping skills</p>	<p>Knowledge of issues discussed in the programme improved Body esteem improved Eating behaviours did not change</p>	<p>Authors conclude that the study produced some improvement that lasted six months Programme was not harmful Leaders of programmes need to be monitored and trained</p>
<p>McVey and Davis (2002): A total of 263 girls in grade 6 aged 10-11 years in Canada. Six-session programme on media literacy about dangers of thin ideal and promotion of self esteem, stress management and peer relation skills. Lessons facilitated by a psychologist (McVey)</p>	<p>No effect on body image satisfaction or eating problems Both the intervention and control group girls improved on both measures suggesting that the routine school health education curriculum had helped the control girls</p>	<p>Also include school administrators, teachers and parents to support programme Involvement of parents might be helpful in prevention of disordered eating Have the teachers deliver the programme</p>

(continued)

Study/description	Results	Conclusions and implications for school based applications
<p>McVey <i>et al.</i> (n.d.): A total of 258 girls aged 11-12 years in Canada. Replication of McVey and Davis (2002) (listed above)</p>	<p>Programme improved body image satisfaction, self esteem and reduced dieting Body image satisfaction was not maintained at follow-up</p>	<p>Authors conclude that their original study was replicated, and especially effective in preventing dieting Self esteem enhancement is beneficial for other issues such as smoking and early sexual involvement</p>
<p>McVey <i>et al.</i> (2003a): A total of 214 girls in grades 7 and 8 aged 12-13 years in Canada. Ten-session peer support group designed to improve body esteem and global self esteem and reduce negative eating attitudes and behaviours. Programme same as above with addition of a small support and discussion group held at lunch time. Groups led by public health nurses</p>	<p>Programme successful at improving body esteem and weight esteem and reduced dieting Girls reported many benefits of participation</p>	<p>Long term programmes and follow-up required Authors conclude that life skills presented in peer support groups were successful at improving body esteem and self esteem and reducing dieting Success based on improving resiliency and self esteem in a peer support setting Authors suggest programmes should also address the school climate by involving teachers, parents and school staff</p>
<p>McVey <i>et al.</i> (2003b): A total of 282 girls in grades 7 and 8 aged 12-13 years in Canada. Attempt to replicate previous peer support study (listed above)</p>	<p>Contrary to previous findings, this study did not replicate the previous results Both intervention and control girls' scores improved for all measures, including body esteem, self esteem and dieting</p>	<p>Authors suggest that inability to replicate the previous study results may be due to more girls initially dieting in this group The programme themes and content may have also "spilled over" to the control group of girls at different schools Suggestion to include younger children before dieting and disordered eating becomes entrenched Suggest "whole" school change</p>

Table I.

self-acceptance. Studies that have included media analysis, media literacy and examination of media gender stereotypes have resulted in various improvements in body image (see Table I, e.g. Neumark-Sztainer *et al.*, 2000; O'Dea and Abraham, 2000; Varnado-Sullivan *et al.*, 2001; Withers *et al.*, 2002; McVey *et al.*, n.d.; McVey *et al.*, 2003a, b; Steiner-Adair *et al.*, 2002). At this stage in the research process it is unclear as to whether media analysis skills help to improve body image in a cognitive manner (for example by helping young people reject social norms for the thin ideal) or as a function of improving self-acceptance and self esteem (for example encouraging young people to accept themselves and reject cultural stereotypes). Future studies could further examine this important research question.

Self-esteem development to improve body image and prevent eating problems

Self esteem refers to the child's judgement about his/her overall worth. Building child self esteem is a logical approach to the prevention of body image and eating problems. Children and adolescents with high self esteem are fundamentally satisfied with themselves as a person, whilst still able to identify weaker characteristics that may require work to improve. High self esteem envelops a realistic self-appraisal of the child's characteristics and competencies coupled with an attitude of self-acceptance, self-respect and self-worth.

Poor self esteem is known to be an important factor in the development of body image concerns, dieting, disordered eating and eating disorders (Button *et al.*, 1996). In a large, longitudinal study of 594 schoolgirls, Button *et al.* (1996) found that girls with low self esteem at age 11-12 years were at a significantly greater risk of developing severe eating problems by 15-16 years of age.

In addition, other studies show that overweight children and adolescents or those who perceive themselves to be overweight, have poorer overall self-esteem and body esteem than their lower weight peers (Patton *et al.*, 1990; Cattarin and Thomson, 1994).

Self esteem protection and enhancement is therefore appropriate and desirable for all children and adolescents but it is particularly relevant in the treatment and prevention of body image problems and eating disturbances, because low self esteem is considered to be a potent risk factor for these problems (Button *et al.*, 1996; Shisslak *et al.*, 1998; Patton *et al.*, 1999, Friedman, 2002).

Self esteem development and enhancement is also believed to improve the other factors known to contribute to body image and eating problems. For example, development of a positive self-image and a strong sense of self worth are likely to help children and adolescents become more satisfied with their body shape and size and more resilient and resistant to the unrealistic body image ideals portrayed in the media. Children with high self esteem are better able to cope with teasing, criticism, stress and anxiety, which are all associated with eating problems.

Further, the development of a positive self-image, which includes valuing a broad array of aspects of the self other than physical appearance, is likely to help children value their many different characteristics and those of others. This type of self-image development is likely to reduce children's obsession with perfectionism and the belief that one must be perfect, or strive to be perfect, in order to be valued, accepted and loved. As perfectionism is strongly associated with body image problems and eating disorders (Stice, 2002) it is believed that modifying this risk factor by developing self esteem may help young people to be more self accepting and less involved in the futile

quest for perfection. Body image improvement and eating disorder prevention programmes that have included a strong self esteem component are presented in Table I (O'Dea and Abraham, 2000; Neumark-Sztainer *et al.*, 2000; Phelps *et al.*, 2000; Stewart *et al.*, 2001; Varnado-Sullivan *et al.*, 2001; McVey and Davis, 2002; McVey *et al.*, n.d.; McVey *et al.*, 2003a, b; Steiner-Adair *et al.*, 2002).

A school-based self-esteem programme – “everybody’s different”

The content of the “everybody’s different” programme is outlined in Table II. The aim of “everybody’s different” (O'Dea and Abraham, 2000) is to improve the body image, eating attitudes and behaviours of young male and female adolescents by focusing on developing their self esteem. The nine-week programme focuses on expanding grade seven and eight students’ self-identity and sense of self-worth by encompassing many aspects of the self and thereby decreasing the emphasis and importance of physical appearance. In addition, the programme activities promote themes of self-acceptance, respect, tolerance and reduced self-expectations of perfection. The major programme theme is that an individual’s uniqueness is to be expected, valued and accepted. A strong message of the programme is that everybody is different and nobody is perfect.

The secondary school teachers who delivered the programme were trained to build self esteem by adopting a student-centred, co-operative and interactive teaching style, which is known to promote student self esteem. The educational approach featured the use of student discussion, group work, team work, games, play, drama and a content-free, self esteem building curriculum in which both the teaching style and the content of educational activities foster a positive sense of self, student involvement, self efficacy, vicarious learning, exchange of feedback and opinion and a safe, respectful and positive classroom environment in which the students feel that they cannot “fail”.

The everybody’s different programme significantly improved the body image of intervention students compared to controls. Female students and those at high risk for eating problems particularly benefited from the programme, showing improvements in body satisfaction, drive for thinness, physical appearance ratings, reduced dieting and less unhealthy weight loss after the intervention. Social acceptance (peer pressure, popularity), physical appearance and athletic competence were less important to both male and female students after the intervention and close friendships became more important. Many of the improvements were still significant at the 12-month follow-up.

A unique and interesting finding of this new self esteem approach was the improvement in body image among both boys and girls as well as those who were overweight or at high risk of developing body image or eating problems. This is evidenced by the fact that the improvement in the body satisfaction of high-risk male and female students was still statistically significant 12 months after the self esteem programme.

Improvements in body image may prove to be beneficial in helping students to be less body conscious and therefore more likely to become physically and socially active, as body consciousness is often cited as a barrier to physical activity in both boys and girls (O'Dea, 2003; Piran, 2001). Overcoming this barrier would be hugely beneficial for all children, but particularly helpful in the treatment and prevention of overweight children.

Since the initial findings from the everybody’s different self esteem intervention trial, McVey and her colleagues have produced similar positive results among 11-12 year old Canadian girls in the classroom (McVey *et al.*, n.d.) and in smaller peer support groups

Table II.
An outline of the objectives, methods and approaches in the everybody's different programme

Major objective	Methods, approaches and activities	Description of how lessons achieve specific objectives
Identify ways of dealing with stress	Group discussions. Students report how they deal with stress. Activities are student-led, not teacher-imposed	Encourage students to develop healthy ways of coping with stress such as peer, teacher, family and parental support; identification and expression of anger and other emotions; communicating with others in order to solve problems. Enhances peer communication and peer support
Relaxation/visualisation exercises and take home tape recordings	Relaxation/visualisation exercises and take home tape recordings	Relaxation promotes positive body awareness, stress control and enhances positive physical sensation
Benefits of stress control – student-led discussion and reporting	Benefits of stress control – student-led discussion and reporting	Homework activities encourage adoption of positive peer, parental and family support
Develop skills for building a positive sense of self	Expanding self-image to include a wide array of physical and personal attributes – student-led	Broadens self-image to include many different aspects of the self. Diminishes importance of physical appearance. Promotes diversity, tolerance, acceptance, respect and develops awareness about the undesirability of prejudice and teasing. Encourages positive self-talk and reduces obsessive, “all-or-nothing” rigid thinking
Awareness and acceptance that everybody is different and nobody is perfect	Awareness and acceptance that everybody is different and nobody is perfect	Reduces the unrealistic and futile pursuit of perfection
Identifying positive self attributes	Identifying positive self attributes	Models peer support
Learning to give and receive positive feedback	Learning to give and receive positive feedback	Positively involves significant others
Positive self evaluation, Identifying and valuing uniqueness in self and others	Positive self evaluation, Identifying and valuing uniqueness in self and others	Reduces impact of criticism from others by receiving positive support from varied sources

(continued)

Major objective	Methods, approaches and activities	Description of how lessons achieve specific objectives
Explore individuality of self and peers (self advertisements)	Exploration, discussion, identification and rejection of stereotypes in our society (student led discovery of media images of stereotypes – not teacher imposed. Art activities)	Examination, discussion and rejection of cultural stereotypes of males and females Rejection of slim/muscular ideals Reinforcement that individuality and diversity are normal and acceptable Reinforces and models self-acceptance
Develop acceptance of self and others	Reinforcement that diversity, uniqueness and differences between people are to be expected and accepted (student presentation of artwork and presentation of main messages/discovery from this activity) Peer support (drama activities, role plays, discussion)	Media literacy and awareness skills Development of reinforcement of self acceptance and acceptance of others Reduced importance of physical appearance and enhanced importance of many varied attributes Improved identification and expression of emotions Improved peer and parental communication and relationships Expansion of self expression skills
Discover, practice and develop communication skills		

Table II.

(McVey *et al.*, 2003a), using a self esteem, self-acceptance, media literacy, life skills approach. The two separate studies implemented the everybody is a somebody programme (Seaver *et al.*, 1997), which includes self esteem enhancement and self-acceptance strategies, stress management techniques, peer relations skills and media literacy lessons and found improved body satisfaction, global self esteem and attitudes towards dieting.

Another recent self esteem intervention among grade seven and eight students in Canada also replicated some of the original findings of O'Dea and Abraham (2000) and produced body satisfaction improvements in male and female students and improved physical appearance ratings of overweight females (Tsimicalis, 2002).

Other studies among adolescent girls that have utilised a predominantly self esteem building and self-acceptance approach have also been successful in improving the pursuit of the thin ideal (Neumark-Sztainer *et al.*, 2000), reducing dietary restraint, shape concerns and eating concerns (Stewart *et al.*, 2001), reducing dysfunctional eating behaviours (Phelps *et al.*, 2000) and increasing body weight satisfaction (Steiner-Adair *et al.*, 2002).

Conclusions from programmes to date

Whilst there are no firm conclusions about the most efficacious way to prevent eating disorders, body image problems or child obesity, the observation of programme outcomes to date provides some firm trends in approaches to prevention. First, it is clear that iatrogenesis (the tendency to inadvertently harm participants or create unintentional adverse effects), is something that health educators and others involved in preventive activities must take very seriously. The evaluation of the 21 programmes in this broad summary of preventive activities to date suggests that interactive, student-centred learning activities are well received by students and produce positive results. The inclusion of boys in the programmes was reported as being important by several authors (see Table I) and positive results were achieved among male participants in the studies of Smolak *et al.* (1998), O'Dea and Abraham (2000), Varnado-Sullivan *et al.* (2001), and Smolak and Levine (2001). Several programmes reported the value of having programmes delivered in the regular school environment by a teacher who had some skills in facilitating small group discussion and interactive activities (Moreno and Thelan, 1993; O'Dea and Abraham, 2000; Phelps *et al.*, 2000; Stewart *et al.*, 2001; Steiner-Adair *et al.*, 2002; McVey and Davis, 2002). Peerled sessions were suggested as potentially useful by Moreno and Thelan (1993), Paxton (1993), and McVey *et al.* (2003a). The inclusion of parents in a positive way was suggested by O'Dea and Abraham (2000), Stewart *et al.* (2001), Varnado-Sullivan *et al.* (2001), Kater *et al.* (2002), Steiner-Adair *et al.* (2002), and McVey and Davis (2002), McVey *et al.* (2003a b n.d.). Addressing issues of changes to the larger school environment as part of a systems approach to prevention was suggested by Paxton (1993), O'Dea and Abraham (2000), Withers *et al.* (2002), Kater *et al.* (2002) and McVey *et al.* (2003b). The collective positive results of these studies lend support to the self esteem approach for the improvement of body image and prevention of eating disturbances in children and adolescents.

School policy, curriculum, and environmental considerations

Development of media literacy skills and student self esteem in the prevention of body image and eating problems would be very naïve if confined to the individual or to the school classroom. A child's body image, self esteem and sense of self-worth, whilst certainly effected by school curricula and teaching style (e.g. authoritarian teaching

versus student centred, interactive, inclusive teaching), is also impacted by peers (e.g. teasing), attitudes of family, teachers and coaches, school environment, community factors (e.g. the media, advertising, sports involvement) and culture (e.g. feminist issues, cultural stereotypes, social norms and stigma about weight and shape. See for example, Friedman, 2002). An extensive outline of these risk and protective factors for body image and eating disturbances is provided by Shisslak and Crago (2001) in a review of the many factors that effect body image and eating disorders.

School policy changes such as anti-teasing policies are very powerful ways of changing the whole school environment to promote a greater diversity in body shapes and a greater tolerance of individual differences.

A holistic environmental approach to the prevention of body image and eating problems as well as prevention of child overweight, such as the Health Promoting Schools Framework (Piran, 1999; O'Dea and Maloney, 2000) theorises that whole communities need to be involved in fostering overall health within school and community environments. Several facets of prevention need attention, including school curricula, school ethos, school policies and school community involvement. This very important systemic approach to prevention has been undertaken with success in an international residential ballet school in Canada among male and female students considered to be at high risk of developing body image concerns and eating problems (Piran, 1999; Piran, 2001). Students aged 10-18 years and in school grades 5-12 participated in the study where the researcher, a clinical psychologist (Dr Piran) helped the school to develop an awareness of eating problems by implementing systemic changes that would reduce body weight and shape preoccupation. The main method was to change the whole school environment to:

Create a school environment in which the students felt comfortable with the processes of puberty and growth and believed in their right to feel safe and positive in their diverse bodies (Piran, 1999, p. 79).

The project involved school administrators, teachers and students talking in focus groups to make suggestions for systemic changes within the school environment. Briefly, the type of changes that were implemented included a change in staff and student focus from body shape to stamina and conditioning; prohibiting teachers from making any body-related comments to students; anti-teasing policy; providing a teacher who could talk to students about body or shape concerns; staff education sessions about normal growth and development in puberty, "body prejudice" and self esteem development. Whilst the inability to find an appropriate control group for such an innovative study makes objective analysis difficult, the outstanding improvement among school students in this particular school warrants considerable attention. The results revealed significant reductions in disordered eating patterns and disturbed attitudes about eating and body shape as well as significant increases in healthy eating. Similarly, the whole school approach described by O'Dea and Abraham (2000) provides a case study of a girl's high school in which systemic changes were implemented in order to foster an environment which was protective of students' body image and self esteem.

Table III outlines some recommendations for curriculum, school policy and community changes that are likely to help in the treatment and prevention of weight and body image issues in schools. In particular, teachers should focus on the positive aspects of growth and nutrition with a focus on the normal and acceptable diversity in

Table III.
School policy, curriculum,
and environmental
considerations in the
promotion of healthy
body image and
prevention of eating
problems among school
children

Area of focus	Suggested strategy	Suggested activities
School curriculum, teaching and learning	Planned, sequential health education curriculum that includes topics on normal growth and development, benefits of sensible eating, examination of fad dieting, development of self esteem	Topics on normal pubertal growth and development Essential functions of body fat – especially in females Complications of underweight (e.g. low bone density, hormonal irregularities, nutrient deficiencies etc.) Examination of the physiological, social, psychological and economic pitfalls of fad, weight loss, or body building diets Role plays of students dealing with peer group pressure Demonstrations/modelling peer support
Skill development to reduce the influence of peer group pressure to diet and engage in unhealthy weight control methods such as vomiting, laxative abuse, steroid use, inappropriate weight lifting	Cross curricular activities that complement Health Education curricula	English/media classes about persuasive advertising Science/biology lessons about physiological functions of body fat
Teacher training and skill development and awareness		Teachers and school personnel are given the opportunity to reflect on their own beliefs, values and attitudes about their own body image Teachers examine their body image prejudices Teachers and school personnel are given training in order to identify eating and body image problems, prevention strategies and access to counselling and referral services
School ethos	Examination of school culture, policies and practices related to teasing, bullying, prejudice	Issues are discussed in class and in open forum including students, parents, school staff and community members. School policy is developed by all participants. Students have a voice in decision making
School environment	Examination of food services and provision of healthy food and beverage choices	Total school community examines and responds to results

(continued)

Area of focus	Suggested strategy	Suggested activities
School-community partnerships and services	<p>Comparison of curriculum messages about food and nutrition versus messages from school meals</p> <p>Review of barriers to participation in school sport and physical education</p> <p>Develop collaborative relationships with families, school and community health workers, youth services and community agencies</p> <p>Strengthen community support services and referral services</p> <p>Involve various community people such as parents, nurses, counsellors, youth workers, coaches, health professionals, dance teachers, journalists</p>	<p>Community members such as local businesses or nutritionists are co-opted to assist</p> <p>Allow students to select or design school sport uniforms, allow students to wear modest swimming costumes such as board shorts, ensure student privacy in change rooms and showers, attention to specific suggestions and desires of overweight students, offer single sex activities</p> <p>Open forum to invite participation</p> <p>Media messages in local newspapers and radio and school newsletters</p> <p>Presentations by community partners, e.g. presentation by local psychologists about referral systems</p> <p>Organise and advertise referral services for students, families, teachers and school staff</p> <p>Provide updates, awareness and training for community people</p>

Table III.

growth rates, size and shape. Nutrition activities should focus on positive aspects of healthy eating, rather than focusing on “junk foods”, “good and bad” foods or high fat foods. For example, teachers can create lessons in which students taste, enjoy and identify the benefits of low fat flavoured milks, yoghurts and ice creams, rather than focusing on the high fat content of foods. Similarly, the focus of nutrition education lessons should be on the students’ perceptions of the benefits of healthy eating and physical activity (O’Dea, 2003), rather than the “dangers” and “problems” of weight issues or diet-related diseases.

Several researchers also suggest various ecological, empowerment and activism approaches to the prevention of eating problems (Levine and Smolak, 2002; Piran, 1999). Such policy and environmental changes within schools and communities can do much to foster an environment that promotes a more healthy and realistic body image.

Whole systems such as families, schools, communities, governments and corporations need to be involved in and committed to the protection and enhancement of child health and the prevention of these pernicious body image and eating problems which are currently burgeoning among our youth.

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