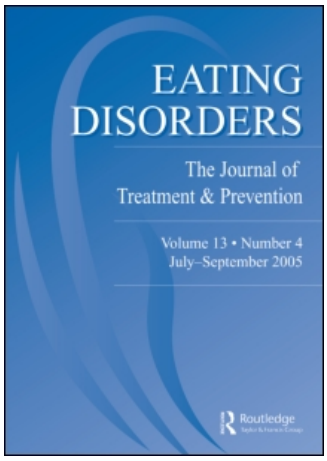

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Prevention of Body Dissatisfaction and Disordered Eating: What Next?

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Prevention of Body Dissatisfaction and Disordered Eating: What Next?

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Eating disorder prevention is a young field that has made significant strides in the past two decades. It is timely to take a look back at what we have learned during this period in order to begin to address the question, "What next?" This paper considers several key issues based upon a review of the literature and the authors' perspectives. Topics discussed include: (1) environmental approaches; (2) global mental health versus eating disorder specific interventions; (3) participatory approaches; (4) the integration of obesity and eating disorder prevention; (5) boys; (6) program evaluation; and (7) whether we know enough to move ahead.

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A spectrum of eating and weight-related problems exists, ranging from negative body image and weight/shape concerns to eating disorders such as anorexia nervosa and bulimia nervosa (Levine & Smolak, 2006; Neumark-Sztainer, 2005b). Cash identified 19% and 6% of young adult females and males, respectively, suffering significant distress associated with body dissatisfaction (Cash, 2002), while subclinical and full-blown eating disorders affect approximately 6% of women and a smaller proportion of men (Herzog & Delinsky, 2001; Hoek & van Hoeken, 2003). Levine and Smolak (2006) estimate that the spectrum of disordered eating affects at least 10–15% of girls and women between the ages of 9 and 19 years. This number is much higher if we take into account the percentages of individuals engaged in unhealthy, but not necessarily extreme, weight control behaviors, such as meal skipping, fasting, and smoking. In one large study, over half of adolescent girls reported the use of unhealthy weight control behaviors during the previous year (Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002). Such levels of distress warrant concerted attempts at preventing body dissatisfaction and disordered eating.

The field of eating disorder prevention has made significant strides in the past two decades, and in particular in the past decade (Levine & Piran, 2004; Levine & Smolak, 2006; McVey, 2004; Stice & Shaw, 2004; Wertheim, 2000). We are aware of over 50 prevention programs whose evaluations were published in the scientific literature between the years 1994–2005. Prior to that time, only six evaluated programs were published. It seems timely to take a look back at what we have learned from this work in order to address the question, "What next?" This paper offers suggestions about the future of several important issues in the prevention of body dissatisfaction and disordered eating. As a compilation of the authors' ideas, this paper is not meant to be exhaustive in coverage nor is it meant as the final word. Rather, we hope this paper will serve as an impetus for further discussion, ideas, and plans to move forward with program development and evaluation.

Most programs for the prevention of body dissatisfaction and disordered eating are considered to be either targeted or universal-selective prevention programs. Targeted prevention focuses on people who do not yet have an eating disorder, but who are at high risk because they have clear precursors, such as a very negative body image (Committee on Prevention of Mental Disorders, 1994). There is no doubt that a variety of targeted interventions, including cognitive-behavioral techniques, dissonance-reduction procedures, and computer-assisted psychoeducational programming can, at least in the short-run, produce significant improvements in high-risk older adolescents and young adults (Levine & Smolak, 2006; Stice & Shaw, 2004). However, such therapy-like interventions, which focus on the individual, do not prevent the earliest symptoms and forms of eating problems since they start with individuals who are already exhibiting problematic attitudes or behaviors. Consequently, in this paper we focus on programs that fall between "universal" and "selective" on Mrazek and Haggerty's continuum of prevention (Committee on Prevention of Mental

Disorders, 1994). These programs are designed for very large groups at high risk for body dissatisfaction and disordered eating because of a characteristic such as gender or age. However, the individuals are not yet showing symptoms of eating disorders. Thus, these groups are not as clearly "on the path" to eating disorders as the people included in targeted prevention samples.

In most instances, school- or community-based interventions with preadolescent and adolescent girls are examples of "universal-selective" prevention. Based on a continuum model, either implicitly or explicitly, the goals of these prevention programs have been, in general, to decrease the risk factors that lead to, and increase the factors that protect against, body dissatisfaction, unhealthy weight control behaviors, and disordered eating symptoms. How successful have we been?

Paxton (2002) reviewed controlled prevention interventions designed primarily to intervene when symptoms were still few. About half of the studies reported a positive post-intervention or follow-up effect on at least one measure of body dissatisfaction, although the effect was typically only modest in size. Of those that assessed an eating behavior outcome, about half reported a post-intervention effect in at least one measure, although this was reduced at follow-up, and again effect sizes were modest. Several other recent reviews (Dalle Grave, 2003; Levine & Piran, 2004; Levine & Smolak, 2006) have reached similar conclusions about the promising, but far less than ideal, outcomes of universal-selective programs.

These literature reviews clearly show that the young field of eating disorder prevention has made substantial progress during the past decade. Building on this foundation requires identifying key questions and promising themes that have emerged from the growing empirical literature. Although there are a myriad of possibilities, we have opted to focus on seven of them that we believe are central to address.

ENVIRONMENTAL APPROACHES: HOW CAN WE REACH BEYOND THE INDIVIDUAL TO INCREASE OUR IMPACT?

It is increasingly well established that cultural factors, including peer teasing, media messages, and sexual harassment, contribute to the development of the spectrum of body dissatisfaction and disordered eating (Smolak & Murnen, 2004; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). This alone would suggest that if we are to *prevent* eating disorders, which would presumably include stopping the development of harmful behaviors along the spectrum (starting with body dissatisfaction and dieting), then efforts to change the environment are likely to be critical. In addition to the role of sociocultural factors in the etiology of disordered eating, two other phenomena suggest that we need to increase our efforts to focus on modifying the groups, institutions, and other environmental factors that shape social

and physical environments in which we live (Cowen, 1973) and to evaluate those interventions to ascertain their specific impact.

The first of these phenomena is the frequent failure to maintain positive outcomes following participation in the types of universal-selective interventions typically implemented in schools (Levine & Piran, 2004; Levine & Smolak, 2006). Although failure to maintain outcomes following interventions may be due to a variety of causes (e.g., difficulty integrating new skills into ongoing behavioral repertoires), environmental influences are likely to be key factors reducing long-term maintenance of change. If, for example, parent comments contribute to body dissatisfaction and disordered eating (e.g., Smolak, Levine, & Schermer, 1999) then returning a child to an environment within which parents continue to remark on the child's body shape and weight may undo the benefits of the program. Second, it is well established in the field of cigarette smoking and other drug prevention that multidimensional, ecological interventions are more likely to have a lasting positive effect on youth (see, e.g., Biglan, Mrazek, Carnine, & Flay, 2003). Cigarette smoking prevention may differ from eating disorders prevention in several important ways. For example, there is increasingly cultural pressure not to smoke, as indicated by state and municipal laws prohibiting smoking in public places such as offices, restaurants, and bars. Similarly, cigarette advertisements have long been banned from television. There is no comparable cultural anti-dieting message. Arguably, the culture actively supports dieting behaviors. On the other hand, there are important similarities between smoking and eating disorder prevention. Most notably, both are increasingly problems of young adolescent girls who appear to be responding, at least in part, to the influence of mass media and mass marketing and to normative expectations, that is, the belief that "lots of people" are engaging in this "grown-up" behavior.

From this environmental perspective, it becomes particularly important to eradicate messages and practices that objectify women (Frederickson & Roberts, 1997; Piran, 2002; Smolak & Murnen, 2004), as well as to decrease social pressures on young men to develop extremely muscular body builds. Thus, environmental approaches must deal with the issues of the gendered nature of body image concerns and eating disorders. Similarly, environmental approaches require consideration of the impact of ethnicity, as well as the intersection of ethnicity and gender, on body image and eating problems (Larkin, 1994; Piran, 2001; Thompson, 1994).

When we modify the environment, there is the potential for a positive impact on people who are not actually enrolled in a program. For example, following implementation of a program, changes in a school's nutrition or physical education programs, or in its policies on teasing and harassment, may benefit students who attend the school the following year, even if the school does not use the curriculum portion of the program again. Within schools, students can be encouraged to work together and with adults

toward modifying their school environment such that weight teasing is not allowed and healthier food options are available and "cool" (Piran, 2001). Similarly, within a fitness center, changing advertising from "exercise for weight-loss" towards "exercise for well-being," removing pictures of excessively thin models, hiring staff with diverse body shapes and of different ages, and encouraging the wearing of comfortable clothes suitable for all body shapes are structural and policy changes likely to reduce body image concerns in this environment (Wigg, 2004). We recognize that environmental change is ambitious and expensive, and that in other fields such as cardiovascular risk reduction, environmental changes have not always led to the desired changes in health outcomes (Farquhar et al., 1990). However, Tobler et al.'s (2000) meta-analysis indicated that more comprehensive, ecological programs were the most effective approach in preventing substance abuse. In a field such as eating disorders in which the evidence for negative consequences of environmental influences is so strong, we cannot ignore this challenge. Thus, it is encouraging that eating disorder prevention programs, such as that developed by McVey & Tweed (2005), are beginning to address environmental factors and show promising findings.

If we are to enhance our ability to conceptualize and implement environmental interventions, we need training in the development and evaluation of such interventions. For this professional development to take place, we need to foster collaboration with "unconventional" partners such as policy makers, politicians, public health professionals, school administrators, food manufacturers and distributors, medical anthropologists, and the fitness and fashion industries. These initiatives can be successful. For example, following lobbying, education, and numerous parliamentary submissions, a recent Parliamentary Inquiry in Victoria, Australia, made recommendations such as "that a code of conduct for the media industry be developed, recognizing the media's social responsibility to display images that are representative of the community (p. x)" and that "the Department of Education . . . in partnership with schools, undertake a program of evaluation, monitoring and implementation of whole-of-school health promotion in primary schools (p. xii)" (Family and Community Development Committee, 2005).

More proximal influences, such as the home environment and parental behaviors, also are important to consider when designing environmental interventions. Parents clearly socialize their children; provide norms about eating, weight, shape, and response to stress; and influence the food environment in the home (Fisher & Birch, 2001). Critical comments and encouragement to lose weight by parents are associated with more dieting in adolescent girls, and mother's modeling of more extreme crash dieting is associated with parallel behaviors in daughters (Benedikt, Wertheim, & Love, 1998; Striegel-Moore & Kearney-Cooke, 1994; Wertheim, Martin, Prior, & Sanson, 2002; Wertheim, Mee, & Paxton, 1999). For these reasons parents are likely

to be important to include in prevention efforts, starting at early developmental stages of their children. Thus, in working toward the modification of environmental influences of potential relevance to body dissatisfaction and disordered eating, we need to consider both the distal and more proximal environmental spheres of influence.

SHOULD INTERVENTIONS FOCUS ON BROADER MENTAL HEALTH OR EATING DISORDER-SPECIFIC ISSUES?

A Broader Focus

In developing interventions aimed at the prevention of eating disorders, we need to explore possibilities for taking a broader approach that could promote the overall positive well-being of youth (Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002). Given the comorbidity of eating disorders with other psychological problems and health-related issues, particularly mood disorders and substance-related disorders, it seems reasonable to address factors that might underlie not only eating problems, but also other problems. A broader approach, with the potential to positively affect a variety of behavioral and mental health problems, is likely to appeal to educators and public officials concerned about violence, depression, substance abuse, obesity, and poor nutrition, as well as the financial and time expense of multiple programs. Programs that increase skills for coping with stress and negative affect, improve self-esteem, and reduce depression may well have a positive impact on risk factors for eating disorders, because some studies suggest that low self-esteem (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004) and negative affect (Stice, 2002) increase the risk of body image and eating problems.

Body Image and Eating Disorder Focus

While a broader focus has many advantages, research suggests that interventions that are more focused on specific risk factors are more likely to be effective in modifying specific outcomes being targeted for change (Franko & Orosan-Weine, 1998; Perry, 1999). Indeed, while there may be some general risk factors (e.g., personality traits) that contribute to the development of eating disorders, the best predictors appear to be eating disorder-specific risk factors (Stice, 2002; The McKnight Investigators, 2003). For example, a variety of longitudinal studies show that body dissatisfaction or weight concerns in middle school predict eating disorders symptoms, if not eating disorders per se (Shisslak & Crago, 2001). Thus, although enhancing students' overall self-esteem and life skills may be of value, research suggests that we should continue to address the specific issue of body image and its development. Similarly, although helping parents improve their communication

with their children is a valuable goal, it is likely that the most effective communication interventions would stress the specific importance of avoiding "fat talk" (e.g., conversations around the topic, "I'm so fat") and weight-related teasing at home (Neumark-Sztainer, 2005b; Nichter, 2000; Wertheim, Paxton, Schutz, & Muir, 1997). The success of Botvin's Life Skills Training approach in preventing and delaying initiation of cigarette and other substance use in middle school students indicates that *combining* broader and focused approaches could be a very fruitful strategy for preventing disordered eating (Botvin, 2000).

PARTICIPATORY APPROACHES: HOW CAN WE ENSURE THAT OUR INTERVENTIONS ARE RELEVANT AND SUSTAINED?

Participatory approaches in which interested parties are involved in the assessment of needs and the formulation of intervention strategies and desired outcomes offer another interesting paradigm for prevention programs. Such approaches are likely to increase the participants' sense of ownership and to facilitate the sustainability of the intervention. For example, program directors might meet with students, parents, and teachers to identify sources of body image problems as well as possible solutions to those problems. This gives the community members increased incentive and motivation to continue since they have a vested interest in the success of a program they believe will be effective.

Encouraging participant ownership of programs does not diminish the need to prepare and disseminate specific programs in the form of curricula for schools or youth groups; it simply means that these materials shouldn't stand on their own. In particular, the participatory approach tailors the materials to the contexts of the participants' lives to increase the probability that these contexts will be changed in ways that promote long-term decreases and increases in risk and protective factors, respectively. This participant-focused approach may be particularly valuable as we attempt to extend programs developed for one group (e.g., white females) to other groups (e.g., girls from ethnic minority groups; boys). An excellent example of this approach is found in Moran's efforts to integrate evidence-based programming for the prevention of substance use in white youth with the tribal cultures of Native Americans committed to helping their youth reduce the incidence of cigarette smoking and alcohol use (Moran & Reaman, 2002).

A recent study by Becker, Smith, and Ciao (2005) illustrates how sorority group solidarity and positive expectations contributed to both a strong desire for members to be involved in a prevention intervention program and the development of a sense of group ownership. Initially, student researchers recruited participants at sorority meetings with the incentive of sorority service credit. However, by the second year the incentive was no

longer needed and participants reported being involved for sorority loyalty, wanting to assist sorority researchers, and having heard that the program was a positive experience. Notably, positive outcomes, including a reduction in bulimic pathology and body dissatisfaction, were observed in this study.

A participatory model also has proven successful in empowering youth and staff to decrease the incidence of eating disorders in their residential ballet school (Piran, 1999, 2001). In the school, the students worked in focus groups with a facilitator to uncover social experiences that adversely affected their body image in and outside of the school, for example, peer-group weight, gender, class, or race-related teasing or harassment. The students then, in collaboration with the school, devised strategies to address these negative factors, for example, implementing anti-teasing and harassment policies. These changes were associated with a significant improvement in body esteem and a reduction in disordered eating patterns. Finally, evaluation of a theater-based program aimed at preventing teasing through active involvement in developing a script and acting out a play suggests that this type of participatory approach may lead to increased interest and ownership among elementary school children (Haines, Neumark-Sztainer, & Thiel, 2004).

In order to facilitate widespread use of participatory approaches, we need to operationalize participatory methods so that they are easily understood and can be implemented in different types of settings. It is easier to distribute a curricular program that clearly outlines activities that can be taught than to describe the steps involved in participatory health promotion approaches. However, if participatory approaches are to be more widely utilized, we need to provide details on how active participation of different groups (e.g., teachers, parents, children) was achieved within specific interventions and how others might easily adopt a similar approach.

COULD WE, AND SHOULD WE, INTEGRATE THE PREVENTION OF OBESITY AND DISORDERED EATING?

Integrating Obesity Concerns

We cannot afford to ignore the growing prevalence of obesity among youth and, indeed, in many people around the world, and the extensive resources being directed toward its prevention. Research suggests considerable overlap between obesity, eating disorders, and disordered eating behaviors (Irving & Neumark-Sztainer, 2002; Neumark-Sztainer, 2003). Overlapping ground between eating disorder and obesity prevention includes healthy weight management, healthy eating patterns, increased physical activity, enhanced media literacy, positive body image, and effective skills for coping with negative affect and with stressors. An important direction for our

field is, therefore, to develop programs that address the broad spectrum of weight-related problems (Austin, Field, Wiecha, Peterson, & Gortmaker, 2005; Neumark-Sztainer, Butler, & Palti, 1995; Neumark-Sztainer, Story, Hannan, & Rex, 2003). Progress is likely to be enhanced if we consider strategies for collaborating with and learning from those professionals who are developing obesity prevention programs. This collaboration may not always be easy, as there are real differences in perspectives (Cogan & Ernsberger, 1999). However, we view this step as necessary in order to improve our broad-focus prevention programs and to ensure that obesity prevention programs do not have harmful effects on body image, dieting behaviors, weight-teasing, and other risk factors for eating disorders. There is also a strong practical reason for this approach—public health funding for prevention programs is currently focused primarily on preventing obesity.

It is noteworthy and very promising that well-designed interventions may have benefits for the prevention of both eating disorder and obesity risk factors (Neumark-Sztainer, 2005a). *Planet Health* was designed as an obesity prevention intervention for youth (Gortmaker et al., 1999). This multifaceted environmental program aims for behavioral changes such as increasing fruit and vegetable intake, eating fat in moderation, being physically active every day, and limiting television (and other screen use). Austin and colleagues found that *Planet Health* was effective in preventing the onset of purging behaviors and diet pill use for weight loss (Austin et al., 2005). These findings suggest that enhanced knowledge about, and support for, effective weight management tools may alleviate the need to resort to extreme measures. *New Moves*, a program for girls at risk for overweight due to sedentary lifestyles, was designed to address risk factors for obesity related to eating and physical activity behaviors, while simultaneously assisting girls to feel good about themselves and their bodies (Neumark-Sztainer et al., 2003). Although program effects were modest, *New Moves* was received very positively by girls, parents, and school staff. Furthermore, in individual interviews, girls described positive changes in how they perceived themselves and steps that they were taking toward changing their behaviors. A more intensive study of the *New Moves* program is currently underway and will evaluate changes in body composition, along with changes in body image attitudes and disordered eating behaviors. Further work is needed to identify shared risk factors and develop programs that are effective in preventing obesity and eating disorders.

Maintaining the Importance of Eating Disorder Prevention

There is so much attention being given to obesity that we need to be committed to ensuring that efforts at eating disorder prevention are not dismissed as unimportant. In our efforts to integrate messages that address the broad spectrum of weight-related problems, we need to be sure that attention

is being paid to how youth of all sizes feel about and take care of their bodies. We worry that more weightist prejudice, more widespread body dissatisfaction at all sizes, and more eating disorders will be the collateral damage of a war on obesity that does not take into account the nature and the causes of the spectrum of negative body image and disordered eating.

But then how does one acknowledge the prevalence and growing incidence of childhood obesity, with its many attendant health risks? One possibility is found in the tenets of the Health at Every Size movement (Robison, 2003). This movement emphasizes that it is important to allow a person's weight to settle wherever it may as that person moves toward "health," where health is defined in terms of (a) a positive body image, (b) an active lifestyle, (c) better eating habits (e.g., more fruits and vegetables, less saturated fats and soft drinks), (d) the development of life skills and social support for coping effectively with stress, (e) abstinence from tobacco and other appetite suppressants, and (f) eating to satisfy hunger and to provide sufficient energy and nutrients for strength, stamina, and so forth.

A different possibility is seen in the approach championed by Heinberg, Thompson, and Matzon (2001). These researchers agree that prevention should foster an acceptance and appreciation of non-weight-related features (muscles, balance, skills, skin color, etc.) that can contribute to a positive body image. They also agree that stigmatizing overweight people or blindly glorifying slenderness only adds to our problems in regard to obesity and eating disorders. However, Heinberg and colleagues suggest that we encourage those who are objectively too heavy to have the mild-to-moderate amount of *weight* dissatisfaction necessary to motivate healthier eating, higher activity levels, and other healthy weight control strategies. The practicality and the benefit/cost ratio for either of these approaches are currently unknown, but the limited effectiveness of obesity prevention programs to date suggests that both approaches are worth evaluating.

WHAT ABOUT BOYS?

Programs aimed at preventing eating disorders and promoting a positive body image have tended to focus on girls more than boys. A few universal prevention programs have included both boys and girls (Kater, Rohwer, & Levine, 2000; O'Dea & Abraham, 2000; Smolak, Levine, & Schermer, 1998). None of these programs altered boys' behaviors, although they did positively affect knowledge (Smolak et al., 1998), attitudes (O'Dea & Abraham, 2000), and intended behavior (Kater et al., 2000). Given that these programs were not designed with clear acknowledgment of the gendered nature of body image and body change strategies, these effects provide some reason for optimism.

Over the past decade, research has made it absolutely clear that boys are indeed dissatisfied with their bodies, perhaps at levels comparable to those seen among girls, but this is only apparent if muscularity and fat are considered (e.g. McCabe & Ricciardelli, 2004). Furthermore, this body dissatisfaction can result in steroid and food supplement abuse during adolescence at rates that appear comparable to eating disorders among adolescent girls (e.g. Smolak, Murnen, & Thompson, 2005). The potential negative physical and psychological effects of steroid and food supplement abuse are serious (e.g. Cafri et al., 2005), so there is certainly a need for development of programs to prevent body dissatisfaction (weight and shape concerns, coupled with the undue influence of body shape on self-concept) in boys.

Few programs have been expressly directed at improving body image among boys. Stanford and McCabe (2005) developed a two-session intervention that focused on self-esteem and acceptance of body differences. The 12–13 year old boys in this small program (n = 52) showed increased muscle satisfaction and self-esteem, as well as decreased negative affect, relative to a control group (n = 69). There was no change, however, in the use of body change strategies, including the extreme strategies of steroid and food supplement use and bulimia.

The most thoroughly researched program aimed at preventing steroid and food supplement abuse is the ATLAS program, developed as a selective prevention program with high school athletes (e.g. Goldberg & Elliot, 2000; MacKinnon et al., 2001). Interestingly, this was not developed as a body image prevention program but is instead rooted in the drug abuse prevention literature. ATLAS uses a multifactorial, school ecology approach to change group norms, increase resistance skills, and promote media literacy. The program has been successful in reducing both the intention to use steroids and food supplements and initiation of use of these substances (Goldberg & Elliot, 2000; MacKinnon et al., 2001).

Just as research suggests that the lived experience of being female may be crucial in the development and prevention of eating problems in girls (Larkin & Rice, 2005; Piran, 1999; Smolak & Murnen, 2004), gender role likely plays a role in boys' body image (McCreary, Saucier, & Courtenay, 2005; Smolak & Stein, 2006) and hence in the prevention of their body image related problems. Thus, as with girls, emerging research suggests that an environmental approach may well be fruitful with boys.

HOW CAN WE IMPROVE OUR EVALUATION STRATEGIES?

Evaluation is necessary to understand whether our interventions are working and to inform program improvements. Evaluation also provides an opportunity to validate the relevance of hypothesized risk and protective

factors to the development of eating disorders. Evaluation is also needed to convince potential partners of the importance and effectiveness of interventions. For example, in the aforementioned Parliamentary Inquiry in Victoria, Australia, submissions included data on prevalence rates and effects of body image concerns and eating disorders, as well as specific prevention success cases in the form of model schools where interventions had been effective. This information was then specifically referred to in the parliamentary report and guided recommendations. In order to move the field of eating disorder prevention forward, we need to take into account the breadth, depth, and stage of evaluation designs.

Breadth of Evaluation

We need more sophisticated evaluations of our interventions. Specifically, we should aim for randomized, controlled designs that take into account the need for randomizing units other than individuals (e.g., schools, classrooms, clinics, Girl Scout troops) and have adequate power to detect meaningful differences as statistically significant. These designs do require large sample sizes, however, and consequently substantial funding, which the area has typically had difficulty in attracting. It is imperative that researchers work to educate both public and private funding sources about the importance of prevention and the need for strong evaluation designs. Collaboration with interested communities and agencies, including schools, Girl Scouts, health clinics, and churches, may reduce the cost of some of this work, or at least enhance the feasibility of conducting such evaluations.

We also need longer follow-ups: At present the longest follow-up period for a controlled outcome evaluation has been 2 years (Killen, 1996; Neumark-Sztainer et al., 1995), but most are three or six months (Levine & Smolak, 2006). Ideally, we should be following participants through periods of developmental transition that pose a risk for disordered eating, such as puberty and the transition from high school to college. Studies also need to be long enough to establish true prevention effects for universal and selective programs. In other words, the follow-up period needs to be long enough to see whether a significant portion of girls, in absolute terms and in comparison to data from control groups or population studies, do *not* develop the expected eating or body image pathology following participation in a program.

Depth

As a relatively young field, we need to place a high priority on process evaluations of our interventions. We need to use qualitative as well as quantitative methods to explore which elements of our programs seem to be working better than others. Quantitative data allow us to compare change

across intervention and control groups, while qualitative data can provide information on why programs do and don't work, for example, on perceived strengths and on obstacles to carrying out the program elements as they were designed. Qualitative data also can inform us about the experience of participation in the program, such as feelings of empowerment or embarrassment, and can pinpoint the beginning signs of change in individual behavior (e.g., intentions to change) and in environmental systems (e.g., changes in a school system's harassment policies).

In addition, instead of using only broad measures of eating disorder pathology as the outcome measures, we need to include assessments of specific behaviors and attitudes that have been targeted in the particular intervention. For example, a media literacy intervention should include assessment of knowledge, attitudes and behaviors in regard to media, alongside traditional outcomes measures related to negative body image, pathogenic weight management, and disordered eating. This depth of assessment in regard to media is needed to examine the mediators of success in a program intended to promote healthy changes through media literacy (see, e.g., MacKinnon et al., 2001). In parallel, when we engage in participatory approaches toward changing multidimensional environments in a school or community, we need to document the steps taken and assess what changes were proposed, the extent to which they were made, and the obstacles that arose.

Developmental Stages of Evaluation

The evaluation of intervention and prevention research has been conceptualized as developmental in nature. For example, Kellam and Langevin (2003) have suggested a series of phases of prevention research including (1) undertaking efficacy trials (initial tests of a new intervention in highly researcher-controlled contexts, as when researchers implement programs themselves within a school to ensure it is implemented correctly), (2) doing effectiveness trials (tests in the natural context or environment, as in evaluations when the teachers themselves implement the program), (3) developing sustainability (e.g., ensuring the program is maintained over time in the school), (4) going-to-scale (e.g., broader dissemination across schools), and (5) sustaining programs system-wide (e.g., through policy and practices within the regional Department of Education). To date most evaluation studies in the prevention field have consisted of initial efficacy trials, with some important exceptions (Becker et al., 2005). Researchers need to keep in mind the range of elements to a full prevention approach, and evaluate them systematically, ensuring and assessing both ownership by community partners and fidelity of programs (i.e., correct implementation) during effectiveness trials; considering barriers to and facilitators of wider diffusion and dissemination of programs; and obtaining both economic and social evidence useful for promoting programs to policy makers.

DO WE KNOW ENOUGH TO MOVE AHEAD?

Moving Ahead

In order to design and implement preventive interventions we need not wait until longitudinal studies can provide us with a full and complete picture of the multidimensional etiology of eating disorders or the perfect intervention strategy. We know enough to intervene.

Because of very limited resources that have been used in the development and evaluation of most prevention programs to date, our ability to detect statistically significant changes has been harmed. This has led to a state of affairs in which we often hear the unfair contention that "eating disorder prevention does not work," which is sometimes followed by "and they are potentially counterproductive and dangerous." In truth, our efforts have probably not been any worse than those in other fields, particularly given the relative dearth of funds with which most of us have had to manage. The vast majority of eating disorder prevention programs that have evaluated the knowledge gained as a result of an intervention have reported positive effects (Levine & Smolak, 2006). Although knowledge is frequently insufficient to bring about change, it is a necessary requirement for many types of change. Increases in knowledge may provide the basis for behavioral and attitudinal changes at a later time, or provide the foundation on which a future intervention may have a stronger outcome. Significant, lasting improvements in attitudes and behaviors are legitimately our goal, but increases in relevant knowledge should not be dismissed, and should be assessed where feasible. Moreover, many evaluated programs produce improvements in knowledge and attitudes pertaining to body image, and such changes are typically required to produce sustained changes in behavior. And the fact that behavioral changes are not typically maintained over follow-up periods should not be seen as undermining the entire enterprise of prevention. Rather, this phenomenon suggests that no one short-term curriculum or other intervention is likely to be sufficient. We may need booster sessions, changes in the environmental contexts, increased focus on different variables, different presentation styles, or changes in programs to better acknowledge developmental levels, in order to have long lasting effects. As is the case for the treatment of eating disorders, which typically faces the challenge of degradation of positive effects following program termination, current findings should act to spur further research rather than deter it.

As discussed by O'Dea (2000, 2002), who is a supporter of prevention research, it is possible for preventive interventions to do more harm than good by teaching disordered eating behaviors or by glamorizing symptoms (see, e.g., Smolak et al., 1998). However, a meta-analysis by Stice and Shaw (2004) found little evidence of such iatrogenesis. With regard to unintentionally "doing harm," Hansen (1992) reviewed the outcomes of several different

types of programs intended to prevent alcohol and/or other drug use by underage youth. The programs most likely to backfire and *increase* alcohol and other drug use were those that relied solely on information and/or clarification of positive values antithetical to drug use. Consequently, we recommend against strategies that provide too much information on eating disorders or that feature detailed descriptions by individuals who have recovered from eating disorders (or who are barely recovered).

On the other hand, Hansen's (1992) review also indicated that the most effective programs had *zero* risk of inadvertently causing increased use. These are the multidimensional programs (some of which emphasized changes in individuals, in schools, and in the community) that promote healthy norms and values in peers and teachers, teach life skills to youth, and also teach them specific skills for resisting unhealthy cultural pressures to use alcohol and other drugs. The field of eating disorders prevention would do well to follow the lead of state-of-the-art prevention work in the substance use area (Levine & Smolak, 2006), and, in fact, a number of promising programs for preventing disordered eating have adopted a multidimensional, ecological perspective (McVey & Tweed, 2005; Neumark-Sztainer, Sherwood, Coller, & Hannan, 2000; Piran, 1999; Steiner-Adair et al., 2002). Further, evaluation of interventions should be conducted in a manner that would reveal any negative outcomes. Thus, although our commitment to ethics means that we must be attentive to the possibility of negative (iatrogenic) outcomes in both high- and low-risk participants in our programs, there is no empirical basis for the contention that our prevention efforts are so potentially harmful that we should suspend them until we can be assured that they are likely to be completely effective. It has long been known that various forms of psychotherapy and psychopharmacology have negative effects on a minority of clients and patients, but this finding fuels the argument for improving therapy, not for abandoning it.

Learning More

The field of eating disorder prevention can be enhanced by research in many areas. Greater understanding of interpersonal and institutional risk and protective factors would help identify specific environments, attributes, and behaviors to target in interventions, as well as the individuals who would benefit most from interventions. Clarification of risk and protective factors also would help to justify the use of time and resources aimed at prevention of specific outcomes such as weight-related teasing and unhealthy dieting. Use of dismantling designs would help to determine which components of multifaceted programs are most effective. This strategy can be supplemented by more focused research designed to identify the most effective components of particular interventions in terms of content, activity, or delivery style (Durkin, Paxton, & Wertheim, 2005; Paxton,

Wertheim, Pilawski, Durkin, & Holt, 2002). For example, a recent experimental study of the impact of "thin-and-beautiful media images" on young women who had already internalized media ideals found that a brief form of media-literacy psychoeducation delivered prior to media exposure prevented the typical negative effects of those media images. Further, the addition of a pre-exposure dissonance reduction procedure to psychoeducation had no effect (Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). It is also vital that we develop a greater understanding of strategies for engaging teachers (Piran, 2004; Smolak, Harris, Levine, & Shisslak, 2001; Yager & O'Dea, 2005) and parents (Neumark-Sztainer, 2005b), as well as policy makers, media professionals, and various people working in the fashion and fitness industries. Finally, it is important to find ways to interest boys in the messages of universal prevention programs. They are, after all, among the people who need to learn to send and appreciate new messages about the female body.

CONCLUSION

Substantial advances have been made in the field of eating disorder prevention over the past 20 years. The field, which was virtually nonexistent in the early to mid 1980s, has grown both theoretically and empirically. There are ongoing conversations about the importance of helping young people to feel better about themselves and their bodies, to avoid unhealthy dieting behaviors, and to prevent the onset of features of serious eating disorders. Etiological models are being developed, tested, refined, and retested. Various interventions have been developed and evaluated, including school curricula, interactive Web-based computer programs, whole school approaches, group programming in sororities, and work with community youth groups such as the Girl Scouts. We are well aware of the challenges inherent in modifying cultural norms that facilitate poor body image, calorie-restrictive dieting, chaotic overeating, and the extremes of exercise. The interventions conducted and evaluated to date are just a beginning. Although at times we feel discouraged by the slow rate of progress in developing and disseminating effective prevention programs, for the most part we are excited about the prospects that lie ahead. We hope that researchers, activists, and others committed to the promotion of health in contexts that respect diversity of size, shape, and eating will take part in the important and exciting work that remains to be done.

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