Developing an Ecological Approach to Eating Disorders Prevention: The Ontario Project

Michael P. Levine
Department of Psychology, Kenyon College, USA

Gail L. McVey
Community Health Systems Resource Group, The Hospital for Sick Children, Toronto, Canada

Over the past 10–15 years the results of individual programs, literature reviews, and meta-analyses have converged to demonstrate that prevention of eating disorders (EDs) can work. For example, selective and indicated dissonance-based interventions (DBIs), focusing on certain types of risk factors (e.g., internalization of the thin ideal), consistently show sustained positive effects on mixed-risk groups of young adult females in college (e.g., in sororities and/or inter-collegiate athletes) and on adolescent and young adult females already showing signs of ED symptoms (Becker, Stice, Shaw, & Woda, 2009; Stice, Shaw, & Marti, 2007). With the exception of Becker’s DBI (see Chapter 44), the most promising programs, such as Stice’s DBI, Stice’s Healthy Weight intervention (see Chapters 24 & 44), and the Stanford-based Student Bodies online program (see Chapter 46), are designed for high-risk individuals. To help prevent the development of new cases (i.e., to reduce the incidence; see Chapters 5 & 41), we need to expand the scope of ED prevention to a broad, ecological perspective anchored in the health promotion and universal portions of the prevention spectrum (Levine & McVey, 2012; Levine & Smolak, 2008). This means that prevention necessarily involves efforts to reinforce health, resilience, and the ability to cope effectively with life’s developmental challenges and hardships (Levine & Smolak, 2006; see also Chapter 33).

After briefly exploring the semantics of prevention, this chapter outlines the limitations of current efficacious and effective programs and then describes key features of an ecological model of prevention. The model is illustrated with McVey’s program of research, advocacy, policy development, and professional training in order to explore lessons learned from and challenges in evaluating an ecological approach. We conclude with suggestions to guide future theory and research.
The Semantics of Ecological Prevention

We prevent a condition when we understand the factors that significantly increase the probability of the condition and trigger its onset, and then we eliminate or moderate those factors in systematic ways to reduce the incidence of that condition or significantly delay its onset. In general, a program is successful when there are two principal outcomes (Institute of Medicine, 2012; Levine & Smolak, 2008). First, asymptomatic participants show a significantly lower rate—and, ideally, a low rate in absolute terms—of onset of disordered eating or EDs over time as compared to a group of nonparticipants with a comparable level of initial risk. In universal prevention, the expected outcome for the comparison group is the population incidence. Second, program benefits outweigh various costs, including the risk of unintended harm.

What “conditions” are being prevented? The ecological perspective is similar to the sociocultural paradigm in assuming that components of ED psychopathology occur on a continuum, are in and of themselves unhealthy, and some are well-established risk factors for EDs (see Chapters 1 & 67). Consequently, our ecological perspective proposes that prevention researchers conceptualize the EDs in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; see also Chapters 2–4, 8–11, & 13) as extremes of six intertwined continua (Levine & Smolak, 2006):

1. Negative body image.
2. Unhealthy forms of weight management.
3. Overvaluing, in the definition and evaluation of self, perceived weight and shape in relation to unrealistic standards of beauty, fitness, and muscularity.
4. Irrational fear and loathing of body fat and fat people, feeding drives for thinness and leanness.

People with eating attitudes and behaviors that generate mild-to-moderate problems (e.g., disability and distress) and who have moderate to high levels of continuum 1, plus 2 or 6, and at least one of 3 to 5, suffer from disordered eating. Both disordered eating (DE) and EDs are appropriate outcome measures for ecological prevention research, and the individual variables are reasonable candidates for mediation analysis in the prevention of EDs.

Ecological Models, Health Promotion, and Universal Prevention

There is no doubt that, over the past 15 years, evidence-based selective and targeted programs guided by social cognitive theory have elevated the scientific and sociological status of prevention in the ED field. Yet, at the same time there is increasing emphasis on prevention approaches guided by an ecological perspective with roots in public health and in the multidimensional, systemic approaches that have been effective in the substance abuse prevention field (Levine & Smolak, 2006). There are three major reasons for this development.

First, given the substantial evidence supporting the role of sociocultural risk factors in the development of EDs and DE (see Chapters 21 & 27), it stands to reason that prevention should focus on understanding and changing the multiple, interlocking systems that constitute
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“sociocultural” environments. Various prevention-oriented theories in the ED field (Levine & Smolak, 2006; Piran, 2010; Smolak & Levine, 1996), in community psychology (e.g., community-based, nonclinical model; Institute of Medicine, 2012) and in developmental psychology (e.g., developmental contextualism; Lerner, Fisher, & Weinberg, 2000) emphasize sociocultural factors that can be organized within an ecological model. As a group, these approaches highlight four concentric arenas of risk (and potential resilience) that each individual exists within: individual (biological and personal history factors, e.g., temperament, level of physical maturation, age, history of abuse; see Chapter 34); relationship (peer, family, and intimate partner influences; see Chapters 26 & 31); community (neighborhood, school, athletic, or workplace influences; see Chapters 35 & 42); and societal (greater cultural and social policies and norms; see Chapters 23, 25, 29, 43, & 48). An ecological approach is entirely consistent with the fundamental definition of universal prevention as a health-promoting enterprise that works by improving public policies, groups, communities, and institutions such as school systems (Cowen, 1973; Levine & Smolak, 2006; Oesterle, Hawkins, Fagan, Abbott, & Catalano, 2010). The spirit of this perspective is captured by the Institute of Medicine’s (2012) observation that “community-based prevention requires cultural, social, and environmental changes, much like the extensive changes in water, sanitation and housing, and nutrition that occurred in the first half of the 20th century” (p. 17). Trickett and Rowe (2012) provide an excellent review of the evolution of ecological thinking in prevention, health promotion, and public health.

The second pillar is Stice et al.’s (2007) meta-analytic finding that selective and, in particular, targeted programs for preventing EDs work best with those who are at high risk due to specific contextual and developmental variables (e.g., they are college students) or at very high risk due to, for example, a very negative body image. This is significant because, according to the Rose Paradox in public health, in a large population the clear majority of new cases of a disorder come from those at low-to-moderate risk because they far outnumber people at high risk (Austin, 2001; see also Chapter 41).

Finally, there has long been tension between meta-analytic findings that prevention effects are largest for females aged 15 and older versus a desire to develop and implement effective programs for children and younger adolescents well before they develop the components of DE (let alone ED) that produce so much suffering and loss of productivity and vitality (see Chapters 22 & 37). As yet there are no effective dissonance-based, healthy weight, online cognitive-behavioral programs for children and younger adolescents, although there have been notable successes applying media literacy (see Chapter 45). In addition, there have been a number of prevention programs for young participants that generated positive outcomes in the short term, only to see positive effects fade—without systemic support—over the subsequent 6 to 12 months (Levine & Smolak, 2006). This state of affairs reinforces the potential of an ecological perspective to add significantly to the overall landscape of prevention.

Key Features of an Ecological Model: The Ontario Project

How does one go about conceptualizing and implementing multilevel ecological/public health models for addressing prevention of the spectrum of DE and EDs? One effective way to answer this deceptively simple question is an extended example that illustrates various stages of policy and program development. Beginning in 1996, G. L. McVey has designed, implemented, and evaluated a series of prevention programs aimed at children, youth, and young adults, as well as adults who mentor them. Collectively, these programs and the policy
development, advocacy, organizing, and training that support and extend them are known as The Ontario Project because they have been carried out in the province of Ontario, Canada (Levine & McVey, 2012). In the following exposition special attention is given to the relevance, impact, and application of this work, and the ways in which the scope and innovative nature of The Ontario Project embody the key elements of an ecological approach to prevention. All the connections to be discussed between The Ontario Project and the foci, processes, and research-related elements of this ecological approach are summarized in Table 47.1.

### Phase 1: Classroom-Based Prevention

The first phase of The Ontario Project encompassed the transition from experience with the limitations of traditional classroom-based prevention (see Chapter 42) to a more ecological approach. Thus, the initial studies were efficacy trials of classroom-based interventions aimed at promoting positive body image among females ages 11 and 12, that is, at the vulnerable developmental phase of early adolescence (Smolak & Levine, 1996). Drawing from social cognitive theory, the six-session prevention program incorporated media literacy about negative effects of the idealization of thinness. Guided by the nonspecific vulnerability-stressor model (Levine & Smolak, 2006), the program also promoted life skills, such as those for stress management and peer relations, including role-playing of social problem-solving techniques.

### Table 47.1 Elements of an ecological approach to prevention demonstrated in the Toronto project (1996 through 2013).

<table>
<thead>
<tr>
<th>Element</th>
<th>Phase</th>
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<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Focus</td>
<td></td>
</tr>
<tr>
<td>Government and public policy (society)</td>
<td>Y</td>
</tr>
<tr>
<td>School, athletics, workplace (community)</td>
<td>Y</td>
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<tr>
<td>Peers, family, adult role models (relationships)</td>
<td>Y</td>
</tr>
<tr>
<td>Knowledge, values, and skills (individual)</td>
<td>Y</td>
</tr>
<tr>
<td>Process involves:</td>
<td></td>
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<tr>
<td>Partnership development with knowledge users from multiple sectors</td>
<td>Y</td>
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<tr>
<td>Training professionals from multiple disciplines</td>
<td>Y</td>
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<tr>
<td>Knowledge gained is translated into policy development and sustainable programs</td>
<td>Y</td>
</tr>
<tr>
<td>Programs are acceptable and feasible</td>
<td>Y</td>
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<tr>
<td>Evaluation is conducted at multiple levels including:</td>
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<tr>
<td>Improvements at the individual level</td>
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<tr>
<td>Reductions in disordered eating</td>
<td>Y</td>
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<tr>
<td>Reductions in eating disorders</td>
<td>N</td>
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<tr>
<td>Reductions in other psychological and/or physical problems</td>
<td>N</td>
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<tr>
<td>Increases in psychosocial strengths, resilience</td>
<td>Y</td>
</tr>
<tr>
<td>Improvements in ecology</td>
<td></td>
</tr>
<tr>
<td>Described and documented</td>
<td>Y</td>
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<tr>
<td>Systematically assessed</td>
<td>N</td>
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to resist weight-based teasing/bullying and pressures to diet. A nondieting approach to healthy eating and physical activity was emphasized. Two randomized controlled trials (RCTs) produced promising but ambiguous and limited results (McVey & Davis, 2002; McVey, Davis, Tweed, & Shaw, 2004).

McVey subsequently incorporated all-girl groups facilitated by public health practitioners. This development reflected research illuminating peer pressure to diet, as well as Piran’s (2001, 2010) school-based participatory action research linking creation of healthy peer norms (relationship level of the ecological model; Table 47.1) to sustained decreases in the incidence of EDs. Although the theoretical model, content, and goals of the intervention, including the classroom prevention curriculum, were an extension of the program implemented in the first two studies, other aspects of this second wave of studies also represented movement toward a more ecological, multisystems approach. In a very real sense, this development originated and blossomed at the community level. A mental health division of the government-mandated public health unit contacted McVey and asked that she apply her prevention and research expertise to the body image and eating issues that were highlighted by the unit’s own assessment of the needs of young girls. Thus, the project’s feasibility and potential effectiveness were increased by foundational buy-in and resource support from a mental health division of the government-mandated health unit. A potentially important collaboration was established between the researchers and the health unit management team.

An ecological approach was also present in the four ways selected to improve the program’s sustainability and fidelity, that is, the probability of the program being implemented as intended. First, with respect to adult leaders and role models for youth (relationship level), facilitators for the all-girl peer groups were selected from a pool of public health nurses who were moderately knowledgeable about body image and had previous experience facilitating youth groups oriented toward mental health. Second, consistent with an ecological model’s emphasis on collaboration with stakeholders (see process section of Table 47.1), the evidence-based, manualized prevention program (Every BODY Is A Somebody; Seaver, McVey, Fullerton, & Stratton, 1997) was coauthored by public health and school board colleagues in partnership with the research team, and matched to the provincial government’s mandated objectives. Third, face-to-face workshops available through a Ministry-funded training grant provided detailed instructions for facilitating each lesson (process of multidisciplinary training). These workshops also provided background education in the prevention of EDs and DE and in the function of adult role models in promoting positive body image (relationship level). Finally, weekly group meetings, overseen periodically by the research team, enabled the peer-group facilitators and the lead public health nurse to discuss the previous week’s session and prepare for the next week’s session (relationship level).

This enhanced 12-session intervention was evaluated using original and replication RCTs (McVey, Lieberman, Voorberg, Wardrope, & Blackmore, 2003a, 2003b). The program was successful at 3-month follow-up in significantly improving body esteem and in reducing DE (McVey et al., 2003a). However, the replication study, in which the young adolescent females had significantly higher baseline levels of DE, was unsuccessful (McVey et al., 2003b). The implication that this type of more ecological intervention, anchored in the universal-selective portion of the prevention continuum (Levine & Smolak, 2006; Levine & McVey, 2012), may be more suitable for those at low to moderate risk was folded into subsequent training of other health units (process of knowledge translation to improve ecology; Table 47.1). It is noteworthy that open-ended feedback from participants following the intervention revealed that the group experience enhanced their sense of belonging and connectedness with peers and their school.
It appears that McVey’s training of local staff to facilitate the interventions deepened the connection of the programs to the school as a potentially positive ecological influence. It also helped sustain programs beyond the study period; for example, the peer group program became embedded into the health unit’s routine delivery of services to local schools (process of knowledge translation). McVey’s partnership with the health unit also continued beyond the research design, allowing for periodic updates to programming, based on new findings from the EDs prevention literature. Supported by a publicly funded EDs training program, McVey conducted face-to-face workshops to disseminate the evidence-based intervention components to other public health units and school boards across the province of Ontario (McVey et al., 2005; focus on society level; processes of multidisciplinary training and knowledge translation). These workshops also alerted adult participants to how their own attitudes, comments, and behaviors can influence body image concerns, while highlighting how school personnel and public health staff can effectively participate in identification, referral, and support of youth showing signs of EDs (focus on relationship and community levels). Evaluations conducted with the professional participants revealed that the workshops were associated with significant increases in knowledge about EDs and in the confidence to facilitate body image and self-esteem promotion strategies with youth (McVey et al., 2005).

**Phase 2: Toward a Whole-School Ecological Approach**

As described in detail elsewhere, the next step in McVey’s program was the Healthy Schools-Healthy Kids project (Levine & McVey, 2012; McVey, Tweed, & Blackmore, 2007). The ecological framework for prevention in early adolescence integrated the following: training of teachers and other staff regarding healthy influences on body image, nutrition, and physical activity (focus on relationship and community levels); curricula embedded into all grade levels and across multiple topics (community level); live theater highlighting the negative influences of media and appearance-based teasing (individual and relationship levels); after-school programs (community level); posters and public service announcements underscoring size acceptance, healthy eating, and active living (relationship and community levels); and inclusion to some extent of parents, teachers, and other school personnel in the intervention (relationship and community levels). The peer groups were also included, with graduates subsequently disseminating media literacy strategies to the rest of the student body (relationship level).

Healthy Schools-Healthy Kids, implemented over an 8-month period, was evaluated rigorously in a large-scale RCT with a 6-month follow-up assessment. One unique feature was an ecological assessment in which teachers completed, both before and immediately after the intervention, a measure reflecting how they perceived social, behavioral, and nutritional/physical aspects of the school “climate.” Multivariate analyses revealed that, as predicted, program participation reduced internalization of the thin ideal among the male and female students in grades 6 through 8 and reduced DE among the female students ($d = 0.39$ at 8-month posttest and $d = 0.27$ at 6-month follow-up). Reductions in unhealthy weight-loss behaviors were significant for boys and girls at posttest, although this effect was lost by 6-month follow-up. There were no intervention effects on any of the measures completed by teachers, including perceptions of school climate.

**Late Adolescence and Emerging Adulthood**

The late adolescent transition is a high-risk period, so McVey and colleagues partnered with university-based practitioner-stakeholders to build the capacity of professionals to promote positive body image in male and female undergraduates ages 18 through 23. The six-session “Every BODY Is A Somebody” body image curriculum was integrated into the training program
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for undergraduate peer health educators conducted annually by health promotion staff across three Ontario universities. Focusing on the individual, relationship, and community levels of the ecological model (Table 47.1), the purpose of this intervention was to influence the peer health educators themselves at the individual level in order to leverage their roles as mentors and leaders. The goal was to spread their newly gained knowledge and attitudinal shifts to the larger university community (rippling effect) through workshops they conducted with students and through role modeling of body positive, weight-bias-sensitive attitudes. To determine its feasibility in a collegiate setting, the program, cofacilitated by McVey and a health promotion specialist from student health services, was evaluated in an uncontrolled pilot study with a pre-post design (McVey et al., 2010). Participants were 30 undergraduate peer health educators. The standard training session format and location were modified based on stakeholder preferences expressed by both health promotion staff and students (process of acceptability and feasibility).

Quantitative analyses revealed that participation led to increased body satisfaction and decreased internalization of the thin ideal (McVey et al., 2010). Open-ended feedback revealed that participants particularly enjoyed the videos on set-point theory and on media influences, as well as information about life skills. An overwhelming majority said they also enjoyed the face-to-face format, the interactive activities, and the length of the program. The impact of this training program for peer influencers on the undergraduate community remains to be determined. Plans are in place to secure funding to conduct effectiveness trials on this collaborative model of prevention. Evaluations of Becker’s Body Image Program for female undergraduates in sororities or in athletics (see Chapter 44) have demonstrated that peer health educators as trained agents of change can indeed affect the rest of the student population positively by actively engaging with the issues they believe in, by modeling body satisfaction, and by disseminating health-promoting knowledge and practices.

Phase 3: Toward a Societal-Ecological Approach

Educators and Public Health Practitioners Research confirms that teachers and public health practitioners in schools are important channels and mediators of community-based prevention (Institute of Medicine, 2012). McVey, Gusella, Tweed, and Ferrari (2009) created an online research-based training resource for teachers in grades 4 through 6 (focus on relationship and community levels). “The Student Body: Promoting Health at Every Size” uses classroom activities previously shown to improve body satisfaction and eating behaviors (McVey et al., 2007). Program content (www.aboutkidshealth.ca/thestudentbody) includes case studies, background information, classroom activities, and supplementary resources. There are six modules: media and peer pressure, healthy eating, active living, weight-based teasing, adult role models, and school climate. To maximize adoption by teachers and school-oriented public health practitioners, health-promoting activities were matched to three of the provincial government’s mandated objectives (community and society levels), such as “Healthy eating: Outline the factors that influence body shape and size (e.g., heredity, diet, exercise)” (McVey & Gusella, n.d.).

The effectiveness of the online prevention program, supplemented by face-to-face tutorials conducted in small groups, was examined over a 60-day study period in an RCT with 78 elementary school teachers and 89 local public health practitioners. All participants completed (online) pre- and postprogram self-report assessments of knowledge about factors influencing body image in children and of self-efficacy in addressing weight bias in their school. Information was also solicited on program layout and content in relation to the feasibility and perceived benefits of this program as a knowledge translation tool.

The online training resource significantly improved teachers’ knowledge about dieting, while increasing public health professionals’ efficacy expectations for fighting weight bias. As
a group, program participants reported increased awareness about the presence and negative effects of potential weight bias in their work. In addition, the program’s layout and content were well received, and the online program continues to be accessed by both new and returning visitors (process of knowledge translation).

Athletes  In “BodySense: A Positive Body Image Initiative for Female Athletes” (www.bodysense.ca), McVey and colleagues collaborated with both a multidisciplinary steering committee of community-based health professionals and a national advisory group of relevant associations (e.g., Canadian Association for the Advancement for Women in Sport) to help reduce pressures to be thin in sport, and to promote positive body image and eating behaviors in young female athletes (Buchholz, Mack, McVey, Feder, & Barrowman, 2008; focus on societal level). The foundation of the 3-month BodySense program is 10 integrated “BodySense Basics” presented in workshops at gymnastic clubs: one workshop for parents and coaches and one for the gymnasts (individual and relationship levels). Gymnastics clubs, coaches, and parents were also given a BodySense Basics poster, a miniresource library of books, eight newsletters (on topics such as the Female Athlete Triad and sport nutrition), and a “fuel tank” box of low-cost, high-energy snacks that clubs could provide to athletes.

Participants in the initial outcome research were competitive female gymnasts (ages 11 to 18 years), parents, and coaches from seven gymnastic clubs across the province of Ontario. Four of the clubs were randomly designated to receive the 3-month BodySense program, whereas the remainder constituted a control group. Participation in the BodySense program resulted in athletes perceiving a reduction in pressure from their sports clubs to be thin, though no changes were found in body esteem, DE, or internalization of the media ideal. No significant change was observed over time on mothers’ measures.

Phase 4: Capitalizing on Shifts in Ecology

Large-scale ecological programs such as The Ontario Project are necessarily connected to governmental policies and practices, which are subject to change, sometimes in response to public concerns. Even as Phases 2 and 3 were being enacted and evaluated in the mid-2000s, shifting government priorities over time and the ensuing mandate changes experienced at the local level by public health units began to offset the gains made in focused efforts to prevent EDs and DE. Time and resources devoted to these prevention activities were replaced by widespread promotion of healthy eating and healthy weights in an effort to reverse the rising trend of childhood obesity/overweight (see Chapter 65). Concerns for childhood obesity, although justified, overshadowed the serious public health issue of EDs and DE among Canadian children and youth (Public Health Agency of Canada, 2010). However, loss of resources devoted to ED prevention, coupled with a surge of educational programs designed to improve nutrition and physical activity, led to a new issue: inadvertent increases in anxieties about food and body weight.

As a result, in 2007 a planning meeting was organized and cohosted by Adair and McVey (Adair et al., 2008). Supported by the provinces of Ontario and Alberta, researchers, practitioners, and policy-makers at the federal, provincial, and territorial levels from the fields of obesity and EDs gathered to discuss areas of shared concern and potential conflict (focus on societal level; Table 47.1). Following recommendations generated at that conference, in 2008 McVey hosted in Ontario an international conference on the prevention of weight-related disorders. This conference linked internationally recognized academic researchers with knowledge
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users engaged in educational, mental health, and other health-related policies and practices within Ontario (societal level; McVey, Levine, Piran, & Ferguson, 2012). In 2011 a Canadian Prevention Strategy Group, working across the fields of EDs and obesity prevention, was formed (process of partnership development) following a national planning meeting hosted by McVey. The guiding principles publicly endorsed at that 2011 meeting by professionals from multiple disciplines and various sectors of society reinforced The Ontario Project’s emphasis on a social-ecological approach to prevention that, for greatest impact, reaches out to adult influencers of children and youth.

This shift in the ecology of public concerns and government priorities led McVey to expand her prevention efforts and research to align with government mandates that public health resources be devoted to preventing chronic disease via promotion of healthy weights (Ontario Ministry of Health Promotion, 2010). This population health approach (societal level) followed the principles endorsed by the Canadian Prevention Strategy Group and encouraged development, implementation, and evaluation of a training model that uses face-to-face workshops and case study coaching to enable “adult influencers” to deliver nonstigmatizing health promotion (focus on relationship level and process of multidisciplinary training; McVey et al., 2013). Specific components of the training ranged from how adults can be role models for healthy forms of self-care to nonstigmatizing and culturally sensitive ways they can apply key findings from the weight science literature (Neumark-Sztainer et al., 2007).

An evaluation (with 6-week follow-up) of the full-day, face-to-face workshop conducted with 342 Ontario public health promoters revealed that participation led to statistically significant decreases in antifat attitudes and internalization of media stereotypes, and to significant increases in self-efficacy to address weight bias (McVey et al., 2013). Participants indicated that this training heightened awareness of their own weight biases and of the need to broaden their perspective on healthy weight promotion to include mental health promotion. Future research will incorporate participant feedback that additional sessions are warranted to help translate the newly gained knowledge into daily practice, and that resource support at the organizational level will be pivotal (focus on process of acceptability and feasibility).

In response to the aforementioned national planning and dissemination meetings, which resulted in consensus to develop guiding principles for the prevention of the broad spectrum of weight related disorders, British Columbia (BC) rolled out a province-wide “Weight to Well-being” initiative that integrates ED and obesity prevention by including strategies to reduce weight stigma and bias in the BC healthcare system (societal, community, and relationship levels; Provincial Health Services Authority, 2013b). In addition to creating an innovative, interactive, online weight bias resource for healthcare practitioners (MacKean & GermAnn, 2013), BC has made important strides toward implementing a systems approach to prevention of the full spectrum of weight-related issues (Provincial Health Services Authority, 2013a).

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Paxton (2012; see Chapter 48) has reviewed government public health initiatives to reduce body image concerns and EDs. In countries such as Argentina, Australia, Israel, Spain, and the United States, progress at the government level has helped establish regulations designed to discourage DE among children and youth and to limit or buffer widespread exposure of the public to media-based images of severely underweight fashion models. The Ontario Project represents Canada in this category.
The series of community-based prevention studies carried out as part of The Ontario Project spanned efficacy trials, effectiveness trials, implementation studies, and translational research. This research program took a lifespan developmental approach and, as shown in Table 47.1, was ecological in its insistence that (a) all phases throughout the research cycle be anchored in partnership development with knowledge users from multiple sectors and with trainees from different disciplines; and (b) knowledge gained be translated into policy development and sustainable programs—with implications for the societal, community, relationship, and individual levels of influence—not just limited projects, followed by papers and publications.

Specifically, as the prevention strategies were being integrated into the provincial curriculum so that all children living in Ontario could have access to them, workshop training on the research findings and the practical intervention strategies was conducted across the province with professionals from the sectors of education, public health, afterschool care, and parks and recreation/sport. This led to the uptake of evidence-based strategies among adult influencers constituting one of the natural support systems for children and youth. The resulting “buzz” created positive shifts at the institutional and community level in terms of attitudes and beliefs about food, weight and shape, and how to model these to children. At multiple, intersecting levels of the ecology, there was increased attention to and support for sensitivity about weight bias and weight-based bullying/teasing, adopting and promoting a nondieting approach to eating, and promoting a body positive environment.

Another ecological feature, and a unique strength, of The Ontario Project is the merging of prevention research and knowledge translation activities with established training and advocacy practices and with the building, at the societal level of ecological prevention, of a provincial network of specialized, ministry-funded ED treatment programs for clients across the age spectrum and their families (www.ocoped.ca). This network has enabled ED experts to conduct workshops and consultations with over 5,000 community-based health practitioners and health educators across Ontario, and to build a “community of practice” with a subgroup of them. Once a year this multidisciplinary network of approximately 120 healthcare professionals now specializing in the treatment of EDs meet in person for training in up-to-date evidence-based assessment and treatment practices. These developments have greatly increased the integration and standardization of best practices in assessment, treatment, early identification, and multilevel prevention of EDs (McVey et al., 2005).

The Evidence Base

Outcome Evaluations The Society for Prevention Research (SPR; 2004) lists eight criteria for a successful prevention program:

1. The program is carefully derived from an explicit theoretical model.
2. Trained personnel have implemented it with high fidelity.
3. Outcome research uses samples permitting adequate statistical power and reasonable generalization.
4. Reliable and valid measures are used, and, if possible, administered by people blind to study conditions.
5. A pattern of predicted outcomes is seen in the target behaviors.
6. A pattern of predicted mediating effects is observed in the risk and protective factors derived from the model guiding program development.
7. Predicted outcomes are observed in the short term and over a meaningfully long follow-up period.
The first seven criteria have been met in at least two RCTs or reasonable substitutes, such as time-series designs with long baselines. Replication is most persuasive when accomplished by two or more independent sets of investigators.

To date, four EDs prevention programs meet or come very close to meeting these stringent criteria: the dissonance-based programs of Stice and C. B. Becker; Stice’s Healthy Weight program; and C. B. Taylor’s Student Bodies program. The Ontario Project meets SPR criteria 1 through 6 and a portion of criterion 7, but it does not meet criterion 8. Predicted outcomes were observed, albeit in the short term and not consistently in long-term follow-up. Original and replication RCTs were conducted, although not by independent sets of investigators.

Socio-Behavioral Evidence Ten years since the findings on the peer support group intervention were published, the health unit where the study took place still offers these groups as part of routine service delivery. Additional public health nurses at that study site have been trained internally to be group facilitators. Other health units across the province of Ontario have adopted this programming. Also, the Student Body online curriculum continues to be used by teachers and public health professionals in at least three Canadian provinces. Finally, face-to-face workshops continue to be offered free of charge throughout Ontario to disseminate up-to-date prevention strategies with stakeholders who work with children and youth.

Conclusions and Future Directions

The ecological paradigm focuses on helping youth cope with stressors, including developmental challenges (Smolak & Levine, 1996), in a healthy manner by improving various larger systems (e.g., school climate) surrounding them. The goals are to facilitate positive youth development (build their capacity to problem-solve, seek support, sustain healthy relationships) and prevent negative health outcomes such as DE and EDs. McVey et al.’s (2007) comprehensive school-based program, developed over time through the interplay of needs assessment and preliminary curriculum design and evaluation, became part of the Ontario Ministry of Education’s curriculum, which ensured its dissemination in a timely way to teachers and public health professionals through province-wide professional development training (McVey et al., 2005, 2009, 2010).

This integrative prevention model, which has its ecological roots in a community-level approach called the Comprehensive School Health (CSH) model (Pan-Canadian Joint Consortium for School Health, n.d.), is itself already supported at the societal level by public health agencies and many other organizations throughout Ontario and Canada (e.g., the Canadian Association for School Health; the Ontario Healthy Schools Coalition; the Ontario Society of Nutrition Professionals in Public Health). Applying the CSH model to prevention of EDs and DE fits with emerging initiatives for the school setting, eliminating duplication and increasing the consistency of health promotion information (e.g., concerning sexual harassment, bullying and teasing, nutrition, active lifestyles) presented to educators, school support staff, students, and families. Coordination of prevention research and knowledge translation activities has been potentiated by McVey’s active membership in various coalitions and through her delivery of many face-to-face, community-based prevention workshops across Ontario (McVey et al., 2005). In this way the province benefits from a geographical scaffolding (i.e., a network) of health, public health, and mental health professionals, nonprofit groups, and other concerned citizens who are united in efforts to promote
health and decrease disease related to the intersection of body image, obesity, and eating disorders (see Chapter 49). There is evidence that negative body image, eating pathology, EDs, substance use disorders, and nonsuicidal self-injury are part of a larger spectrum of significant problems in self-care (Lerner et al., 2000; Piran & Teall, 2012). Engaging youth and adults in creating positive and safe environments that foster a sense of inclusion, identity, and connectedness among children and youth has the potential to improve health outcomes and prevent a myriad of mental health concerns and risky behaviors.

Key Lessons from The Ontario Project

**Partnership Development** Community and institutional partnerships are key factors in ensuring that the development and implementation of an ecological prevention program is relevant, feasible, and sustainable (Levine & Smolak, 2006; Piran, 2010). It is important, right from the beginning, to reach out to established institutions that support children, youth, and young adults—and adult professionals—and invite them to be partners in programming and research. This helps to conceptualize the complex ecology of the target audiences, to generate creative programming ideas appropriate to their contexts, and to sustain programming beyond the scope of the research project. Collaborative, empowering relationships with local organizations provided end-users with a sense of ownership of the intervention, thereby increasing their motivation to support implementation of the intervention and sustain it over the long term.

**Paying it Forward** The ecological approach to prevention relies on building and maintaining relationships at the personal, professional, and political levels (Levine & Smolak, 2006; Piran, 2001, 2010). McVey’s ongoing, active participation in working groups and community-based coalitions related to school health, body image, and healthy weights helped to build trust and sustain relationships between the stop-go research funding cycle, while optimizing the timing of the implementation and dissemination of intervention research.

**Fostering Uptake** An ecological approach is necessarily connected to the initial (“upstream”) portions of the mental health intervention spectrum known as public health promotion and universal prevention (Levine & Smolak, 2006, 2008; Levine & McVey, 2012; see Chapter 41). This means that large-scale ecological prevention is eventually aligned with public policy. For McVey and colleagues, integrating prevention strategies with policy by matching them to the Ministry of Education’s learning objectives was critically important to foster dissemination and uptake of the evidence-based strategies. In turn, McVey was asked to be part of government “think tanks,” and to contribute further to curriculum and policy-related development. As noted previously, sustainability was extended and reinforced through integration of evidence-based interventions into routine public health service delivery in the province of Ontario by practitioners whom McVey consulted with and trained in her collaborative studies.

**Challenges and Future Directions**

Large-scale, multidimensional, and ecological prevention programs such as The Ontario Project face many challenges, some of which are similar to the obstacles encountered in ED advocacy work in general (see Chapter 66). For example, McVey and colleagues found that the
greatest barrier was the ongoing struggle and all too frequent failure to secure ongoing administration and financial support for the program of prevention research and its roll-out in the community.

Full adoption of an ecological perspective will require exploration of the long, rich, and complex history of community-based prevention and health promotion (Institute of Medicine, 2012). This would help tremendously in developing research-oriented criteria for effective ecological programs. We need to clarify (a) what we mean by, and how we measure, various forms of social, institutional, and cultural change; (b) the processes by which differences between and within those ecological segments affect individuals and groups; and (c) the multiple effects of social change on the intended health outcomes and on other important realms, such as community well-being (Institute of Medicine, 2012; Piran, 2001; Trickett, 2009). Experience with The Ontario Project is consistent with previous work in the EDs field (Levine & Smolak, 2006; Piran, 2001, 2010) in emphasizing that such ecological constructs include healthy social norms, effective social policies, solid relationships between children and adults (including parents), and opportunities for children and adolescents to be coached and mentored by adults who embody constructive goals, values, and behavioral repertoires.

Conceptualizing, implementing, and measuring environmental changes that affect health promotion for the public will benefit from expanded and strengthened connections to the fields of public health and public policy (Austin, 2012; McVey et al., 2009, 2013). In general, as has been the case in the development and dissemination of other empirically supported EDs prevention programs to date (Becker et al., 2009), this important work will require collaboration between various stakeholders, including professionals from the sectors of public policy, health, education, and athletics (Institute of Medicine, 2012) and from the fields of (in alphabetical order) anthropology, human development, medicine (e.g., pediatrics, nursing), psychology, psychiatry, public health, public policy, sociology and social justice, and social work. As seen in The Ontario Project, integrating prevention work across the public health issues of EDs and obesity will allow researchers, practitioners, and activists to capitalize on shared risk factors (Neumark-Sztainer et al., 2007) and to leverage, instead of compete for, limited resources.

A related challenge is supplementing sophisticated outcome evaluations with equally useful analyses of the processes involved in promoting the uptake and feasibility of the intervention and the research. Trickett and Rowe (2012) comment that the steps taken to conduct an integrated, systemic health intervention at the level of the schools—such as school readiness, administrative support, teacher buy-in, and collaboration with local champions—are not typically conceptualized up front as part of the intervention model. This was done in The Ontario Project, but future research needs to pay careful attention, not only to the process of preparation, but also to documenting processes in ways that are useful to readers of publications and to local and ongoing knowledge consumers and translators.

In conclusion, while we applaud the tremendous recent strides made in evidence-based prevention in the selective and targeted portions of the mental health intervention spectrum (Becker et al., 2009), we believe that theory, previous research, and the findings of The Ontario Project warrant renewed attention to public health promotion and universal-selective prevention using an ecological perspective (Wilksch, 2014). We hope that this work, informed by a variety of research methods and by work in a variety of fields, will make prevention and the meanings of success more broadly and deeply “sociocultural.”
References


