CHILDREN'S MENTAL HEALTH RESEARCH

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Promoting healthy eating and preventing eating disorders in children

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Children's Health Policy Centre

About the Children's Health Policy Centre

We are an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University. We aim to improve children's social and emotional health and reduce health disparities starting in childhood. To learn more about our work, please see childhealthpolicy.ca.

About the *Quarterly*

The *Quarterly* provides summaries of the best available research evidence on a variety of children's mental health topics, prepared using systematic review and synthesis methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health*. Our goal is to improve outcomes for children by informing policy and practice. The BC Ministry of Children and Family Development funds the *Quarterly.*

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This Issue

NEXT ISSUE

Treating eating disorders

Eating disorders can have devastating – sometimes deadly – consequences for young people. We review what can be done to help children recover.

How to Cite the *Quarterly*

We encourage you to share the *Quarterly* with others and we welcome its use as a reference (for example, in preparing educational materials for parents or community groups). Please cite this issue as follows:

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Keeping kids comfortable with their bodies

It's what's inside that counts; how you are, and not how you look, how you dress or whether you're thin, it is how you are that counts. I think that's the first most important thing.

— Adolescent girl[1]

Among non-overweight boys and girls, 83 to 95% were *not* attempting to lose weight by dieting.

Children typically feel at ease with their bodies and with eating to fuel them. For most children, eating is pleasurable and looking in the mirror is just part of their daily routine. For some, however, these activities are laden with frustration and discomfort. If children's challenges with eating and body image become severe, they may even have an eating disorder.

The three recognized eating disorders — anorexia nervosa, bulimia nervosa and binge eating disorder — share two key characteristics. All involve disturbances with *food consumption,* albeit in different forms. Young people with anorexia excessively restrict food, while those with bulimia and binge eating disorder engage in repeated episodes of excessive eating over a short time, while simultaneously feeling a lack of control.[2] Young people with bulimia then attempt to prevent weight gain by engaging in problematic behaviours such as self-induced vomiting or excessive exercise.[2] As well, all young people with eating disorders experience great *distress about their bodies.*

Although eating disorders cause tremendous distress and impairment, they are relatively rare. Only 0.2% of children and youth aged 11 to 17 are estimated to have these disorders at any given time.[3] This means that approximately 700 young people are affected in BC at any given time, or approximately 5,500 in Canada.[3] (Our next issue will highlight effective treatments for children and adolescents with eating disorders.)

Most Canadian children perceived their bodies as being "about the right size."

How do most children feel about their bodies?

Fortunately, the available research suggests that many children are content with their body size and shape. Evidence of this comes from large studies tracking children in representative population samples. Notable among these studies is *Health Behaviour in School-Aged Children,* a survey of more than 229,000 children aged 11 to 15 from 24 wealthy countries.[4] Across the countries, researchers calculated children's body mass index (BMI), based on children's self-reported height and weight, and asked children how they perceived their body size.[4] Data were gathered from three successive (cross-sectional) samples of children, each capturing new cohorts of children from 2001 through 2010. The researchers then reported findings for all the countries in aggregate.

The survey revealed that among non-overweight children, 54 to 65% believed that their body was "about the right size."[4] For overweight children, however, these numbers were lower — ranging from only 12% (for girls) to 34% (for boys). Further, whether children were overweight or not, there were still gender differences, with boys reporting more body satisfaction than girls. Children's satisfaction with their bodies was also relatively stable over the decade, with one exception: overweight girls' satisfaction with their bodies actually improved over time. The authors suggested that this might have occurred because of shifting public perceptions about what constitutes normal body weight, with norms moving higher.[4] Table 1 provides more details about children's perceptions of their bodies according to this survey.

Table 1: Percentage of Children Reporting Being "About the Right Size"[4]

	2001/2[i]	2005/6	2009/10
Boys — non-overweight	65.3	64.3	65.2
Girls — non-overweight	53.6	53.9	55.2
Boys — overweight	31.9	33.9	34.3
Girls — overweight	12.0	14.6	18.1

i Study included three successive groups of children aged 11 to 15.

Nearly 43,000 Canadian children participated in the original survey, and researchers were able to perform separate analyses on this data. Similar to the international findings, most Canadian children perceived their bodies as being "about the right size."[5] Similar gender differences also emerged, with boys consistently reporting higher body satisfaction than girls, as shown in Figures 1a and 1b.[5] The Canadian data also revealed important age differences: body satisfaction was greatest among the youngest participants (i.e., those in Grade 6 compared with those in Grade 8 or 10), also shown in Figures 1a and 1b.[5] (Note that Canadian findings are organized by children's grades rather than ages.)

How do BC students feel about their bodies?

In 2013, nearly 30,000 BC public school students from Grades 7 through 12 responded to a survey about their health and well-being.[6] The results showed that the majority of these students (76%) were at a healthy body weight based on their body mass index (calculated based on students' self-reported height and weight).[6] However, fewer respondents (68%) felt that they were about the right weight.[6] Notably, 22% of healthy weight girls thought they were overweight, compared with only 4% of healthy weight boys.[6]

Figure 1a: Percentage of Canadian girls who reported their body being "about the right size"[5]

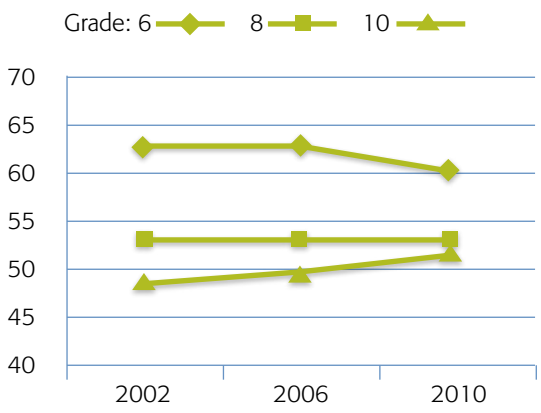
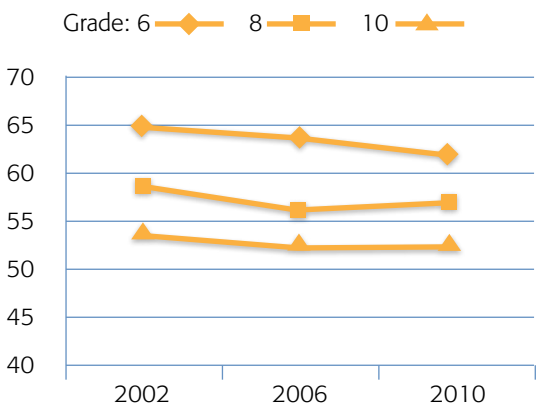


Figure 1b: Percentage of Canadian boys who reported their body being "about the right size"[5]



While the *Health Behaviour in School-Aged Children* survey measured three successive (cross-sectional) samples of children, other studies have followed the *same* young people over months and years. These longitudinal studies have found similar age and gender patterns. For example, the *Project EAT* study, which tracked more than 2,500 American youth between 1999 and 2004, found moderate levels of body satisfaction. It also found that these levels remained relatively stable over the five years of the study.[7] Boys also consistently reported significantly greater body satisfaction than girls.[7]

Project EAT nevertheless showed significant declines in young people's body satisfaction at specific transition times — namely, when children moved from middle school to high school.[7] As well, a notable pattern was found for girls. Those who began the study later, when they were in high school, showed a small *improvement* in their body satisfaction at the end of the study (i.e., when they had reached young adulthood).[7] The authors hypothesized that young women may experience less pressure to view their bodies negatively compared with adolescents, including experiencing less teasing about their weight and less exposure to friends who diet.[7] The authors also suggested that maturity and career development may give young women a wider variety of characteristics to base their self-image on compared with adolescents.[7]

Similarly, another study tracking more than 1,300 Grade 8 and 10 Australian students over one year found that while most were moderately satisfied with their bodies, boys were significantly more satisfied than girls.[8] As well, while body satisfaction declined slightly but significantly over time for both boys and girls, these declines were steeper for girls.[8]

The data on dieting

Beyond body satisfaction, it is also important to know about children's eating habits, particularly potentially risky behaviours such as dieting. The *Health Behaviour in School-Aged Children* survey examined this issue too. It found that among non-overweight boys and girls, 83 to 95% were *not* attempting to lose weight by dieting.[4] Among overweight boys and girls, however, only 56 to 77% were *not* attempting to lose weight by dieting.[4] Whether overweight or not, more girls than boys reported dieting, as shown in Table 2.

Table 2: Percentage of Children Reporting *Not* Dieting[4]

	2001/2	2005/6	2009/10
Boys — non-overweight	95.2	94.8	94.3
Girls — non-overweight	83.0	83.0	84.1
Boys — overweight	77.4	74.3	74.8
Girls — overweight	56.4	56.8	60.4

What sets some girls apart?

The authors of *Project EAT* wanted to learn how some girls were able to achieve high body satisfaction.[9] To do so, they first identified the 27% of girls with high body satisfaction within their sample.[9] Then they conducted analyses to determine which factors distinguished these girls from their less satisfied female peers. Both ethnic background and age were found to be significant factors. Specifically, African-American girls were almost three times more likely than Caucasian girls to express high body satisfaction.[9] As well, girls in junior high were more likely to have high body satisfaction compared with girls in high school.[9]

Girls' behaviours and beliefs also made a difference. For example, those with high body satisfaction were more likely to care about being healthy, eating healthy foods, and being fit and exercising — and were *less* likely to care about their weight.[9] They were also less likely to report weighing themselves or engaging in frequent dieting and other weight control behaviours.[9]

As well, there were links between girls' body satisfaction and the behaviours of their mothers and friends. The girls who felt better about their bodies were more likely to report having mothers who exercised to be fit and encouraged them to eat healthy foods.[9] These girls were also less likely to have friends who dieted to lose weight and more likely to report that their friends also cared about being fit and exercising.[9]

These findings suggest that many factors influencing girls' satisfaction with their bodies may be modifiable — such as attitudes about being healthy, eating healthy foods, and exercising to be fit — meaning that more girls could be encouraged to feel at ease with their bodies.

The analyses of the Canadian data from the *Health Behaviour in School-Aged Children* looked at child behaviour more broadly — examining *any* behaviours intended to lead to weight loss, not just dieting. Still, there were similar findings in that 71 to 92% of Canadian children were not engaging in *any* weight loss behaviours, including dieting.[5] Similar to the international figures, as shown in Figures 2a and 2b, Canadian girls were more likely to be trying to lose weight than boys across all time points. In fact, the oldest girls had at least double the rates of dieting compared with the oldest boys.[5]

Figure 2a: Percentage of Canadian girls who reported *not* attempting to lose weight[5]

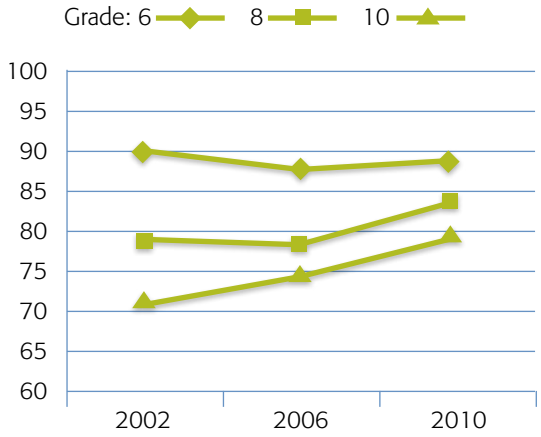
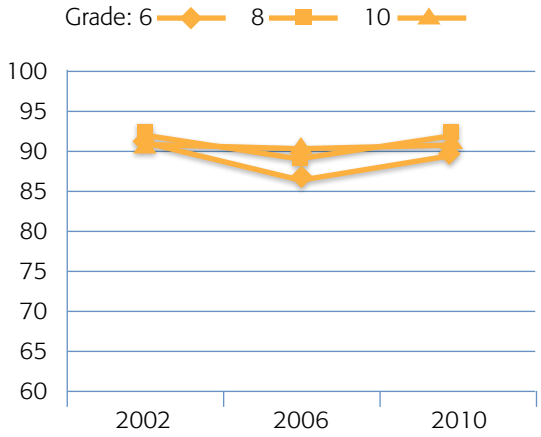


Figure 2b: Percentage of Canadian boys who reported *not* attempting to lose weight[5]



A recent study of more than 13,500 American high school students, also representative of the population, found similar gender patterns. Among those trying to lose weight, girls (63%) greatly outnumbered boys (33%).[10] Notably, however, this study had higher rates of young people attempting to lose weight compared with the previous surveys, likely due to the exclusive focus on adolescents. This study also provided important information on the types of disordered eating behaviours that the adolescents were engaging in: not eating for 24 hours or longer (13%); taking diet pills (5%); and taking laxatives or vomiting (4%).[10]

What can we learn from those struggling and those doing well?

The available evidence suggests that young people commonly feel satisfied with the size and shape of their bodies and that they typically do not engage in potentially problematic weight loss behaviours. This is particularly true for boys and for younger children. Still, some young people *are* unhappy with their bodies. In the Review article that follows, we identify several programs that can help these children and youth by addressing early symptoms of eating disorders, such as body dissatisfaction and problematic weight loss behaviours, before full-blown disorders emerge.

The available evidence suggests that young people commonly feel satisfied with the size and shape of their bodies and that they typically do not engage in potentially problematic weight loss behaviours.

Eating shouldn't be agonizing

The best way to reduce the distress and negative health outcomes caused by eating disorders is to prevent them from developing in the first place. To this end, practitioners and researchers have created different programs for young people. But how well do these programs actually work?

To answer this question, we conducted a systematic review of randomized controlled trials (RCTs) focusing on how to prevent eating disorders in young people. (Please see Methods for details on our searches and inclusion criteria.)

We accepted six RCTs assessing four programs:

- *Education Program* aimed to discourage unhealthy weight control practices in teenage girls in the general population (one RCT; universal program).[11]
- *Healthy Weight* aimed to reduce bulimic symptoms in teenage girls with body image concerns (two RCTs, the second involving a direct comparison to *Dissonance*; targeted program).[12–17]
- *Dissonance* aimed to reduce eating disorder risk factors and bulimic symptoms in teenage girls with body image concerns (two RCTs; targeted program).[13–20]
- *Student Bodies* aimed to reduce unhealthy eating attitudes and behaviours and to encourage healthy weight loss in overweight teenage boys and girls (two RCTs, the second of which also focused on reducing binge eating; targeted program).[21–22]

What did each program entail?

Among the four, the *Education Program* was the only universal intervention. It was delivered to all teenage girls in classrooms that were randomly assigned to receive the program within one Italian high school.[11] Local teachers, who received specialized training developed by practitioners, delivered this six-session psycho-educational program, which included teaching skills for combatting the media's emphasis on thinness.[11]

In contrast, *Healthy Weight* was targeted, focusing on American teenage girls with pre-existing body image concerns.[12–13] This three-session weight management program taught girls how to develop balanced eating and exercise plans.[12]

Dissonance was also targeted, focusing on American teenage girls with pre-existing body image concerns.[13, 18] Similar to *Healthy Weight, Dissonance* involved either a three- or four-session program (depending on the RCT), delivered by practitioners. But it had different content than *Healthy Weight* — challenging girls' internalizations of the "thin ideal." In other words, it taught them alternatives to beauty ideals for females that focus on thinness.[13, 24]

The fourth program, *Student Bodies,* was also targeted but addressed a different population — overweight American adolescents.[21–22] These researchers focused on this group of young people, citing data finding that overweight individuals have higher rates of disordered eating.[21] Two versions of this 16-week cognitive-

Healthy Weight girls had significantly fewer bulimic symptoms, greater body satisfaction, and fewer new cases of obesity.

How does obesity fit with eating disorders?

The most commonly used system for diagnosing mental disorders in North America specifically excludes obesity.[2] The *Diagnostic and Statistical Manual of Mental Disorders* does this because of the wide range of genetic, physiological, behavioural and environmental factors that contribute to the development of obesity.[2] Still, many researchers and practitioners view obesity and eating disorders as being on the same end of a continuum — with problematic beliefs and behaviours at one end, and healthy beliefs and behaviours at the other.[23]

behavioural therapy (CBT) program were delivered over the Internet. The first taught young people self-monitoring skills for weight control and cognitive exercises for improving body image.[21] The second included additional content to address binge eating, including tracking binges and learning emotional regulation skills.[22]

Table 3 provides more information on the four programs. It also describes the RCTs that evaluated them.

Table 3: Program and Randomized Controlled Trial Characteristics

Program Country	Components	Ages Number
Universal		
Education Program[11] Italy	• *Psycho-educational group:* 6 sessions (2 hours each) led by teachers; provided information on healthy development, body image, media pressure to be thin, eating disorders; discouraged excessive dieting; taught skills for critiquing media using dyadic instruction, group discussion + written assignments • *Question + answer (Q+A) sessions:* 1 for teens + 1 for parents, led by practitioners	16–18 years 141 girls
Targeted — Body Image Concerns		
Healthy Weight[12] United States	• *Healthy Weight:* 3 sessions (1 hour each) led by practitioners; provided information on "thin ideal" vs. healthy bodies; developed + implemented individualized eating + activity plans using food + exercise diaries, motivational interviewing, behavioural modification, brainstorming + peer support	14–19 years 188 girls
Healthy Weight vs. Dissonance[13–14] United States	• *Healthy Weight:* See above OR • *Dissonance:* 3 sessions (1 hour each) led by practitioners; taught critical evaluation of thin ideal + strategies to challenge it; recognized positive personal attributes using motivational exercises, role plays, group activities + written homework	14–19 years 481 girls
Dissonance[18–19] United States	• *Dissonance:* 4 sessions (1 hour each) led by practitioners; same content + activities as described above	14–19 years 306 girls
Targeted — Overweight		
Student Bodies I[21] United States	• *Cognitive-behavioural therapy:* 16-week program (1–2 hours per week) delivered via Internet; provided information on nutrition, exercise, body image; taught challenging of negative thoughts about body using behavioural modification, food + exercise log, online discussion groups, individual feedback + support from practitioners • *Parent newsletters:* Encouraged creating supportive home environments for teens • *Parent Q+A sessions:* Available when needed, led by practitioners	12–18 years 51 girls + 30 boys
Student Bodies II[22] United States	• See above PLUS provided information on binge eating; taught how to track binge episodes + emotional regulation skills • *Parent handbook* provided	14–18 73 girls + 32 boys

How well did the interventions work?

For all studies, we report outcomes for which young people participating in the interventions made gains that were statistically significant compared with controls. As well, we report outcomes for the final time period measured in each study, which ranged from 10 months (for the *Education Program*) to three years (for *Dissonance*).

Education Program

The *Education Program* led to a number of important gains for girls. Ten months after the program ended, participating girls were less likely to develop

bulimia than controls (0% vs. 3%, respectively).[11] As well, among girls who did not restrict their eating at the start of the study, those who participated in the program were less likely to begin dieting excessively, defined as eating fewer than 1,000 calories per day (3% vs. 12%).[11] Similarly, among girls whose self-esteem was not heavily influenced by their body weight or shape at the start of the study, those who participated in the program were less likely to develop this concern (0% vs. 15%).[11]

However, the *Education Program* had no effect on the following outcomes: new anorexia diagnoses; eating disorder symptoms (e.g., preoccupation with being thinner); unhealthy weight control methods (i.e., fasting, self-induced vomiting and laxative/diuretics abuse); or body mass index (BMI).[11]

Healthy Weight

Both trials of *Healthy Weight* also led to important gains for girls. By final follow-up — which occurred one year after the program ended in the first RCT and three years after the program ended in the second — *Healthy Weight* girls had significantly fewer bulimic symptoms, greater body satisfaction, and fewer new cases of obesity.[12, 14] Girls participating in the second RCT made even more gains. They also had a 61% reduction in the risk of onset of eating disorder symptoms (such as intense fear of gaining weight and binge eating episodes), less internalizing of the thin ideal, and fewer negative moods.[14] Despite these important gains, *Healthy Weight* had no effect on dieting or negative moods in the first RCT, or on psychosocial impairment in the second RCT.[12, 14]

Dissonance

Dissonance, too, led to important gains for girls. The first RCT (which directly compared *Dissonance* to *Healthy Weight*) tested the program under carefully controlled conditions, with rigorous training and supervision of practitioners (i.e., an efficacy trial).[13] At three-year follow-up, girls in the program had fewer eating disorder symptoms, greater body satisfaction, more positive mood, and fewer psychosocial difficulties.[14] As well, their psychosocial skills were significantly better than girls who participated in *Healthy Weight* (the only outcome for which one program significantly outperformed the other).[14] Girls in the *Dissonance* program also had reduced bulimic symptoms and reduced internalization of the thin ideal (at two-year follow-up), and fewer new cases of obesity (at one-year follow-up). However, these gains were not maintained at three-year follow-up.

The second RCT, meanwhile, involved more typical conditions, with school nurses and counsellors recruiting participants and delivering the intervention with limited supervision (i.e., an effectiveness trial).[18] As often occurs in effectiveness trials, participants made fewer gains. Still, at three-year follow-up, girls had fewer eating disorder symptoms.[19] They were also more satisfied with their bodies (at two-year follow-up) and dieted less (at one-year follow-up). However, these gains were not maintained at three-year follow-up.[19] As well, this delivery of

Is dieting a dirty word?

Some readers may be surprised that the *Healthy Weight* program focused on developing an individualized eating plan, given that self-reported dieting has repeatedly emerged as a risk factor for bulimia.[12] Recognizing the potentially problematic aspects of typical dieting, *Healthy Weight* developers carefully constructed the program to avoid these pitfalls. First, girls were *not* asked to count calories or to reduce caloric intake to a certain level.[12] Second, girls were discouraged from going long periods without eating.[12] Finally, girls were encouraged to focus on the goal of making their bodies *healthy* rather than thin.[12]

The main findings of this review are that eating disorders can indeed be prevented.

the program failed to prevent new cases of eating disorders and obesity; it also had no impact on girls' internalization of the thin ideal, impairment, depressive symptoms or health care use.[19]

Table 4 summarizes findings for all four programs, including both significant and non-significant outcomes.

Table 4: Program Outcomes at Final Follow-up

Program (Follow-up)	Significant improvements compared with controls	No significant differences compared with controls (or outcomes favoured controls)
Universal		
Education Program [11] (10 months)	↓ New bulimia cases ↓ Excessive dieting [i] ↓ Influence of body weight/shape on self-esteem [ii]	• New anorexia cases • Eating disorder symptoms • Unhealthy weight control methods • Body mass index
Targeted — Body Image Concerns		
Healthy Weight [12] (1 year)	↓ Bulimic symptoms ↓ Body dissatisfaction ↓ New obesity cases	• Dieting • Negative mood
Healthy Weight [14] (3 years)	↓ Eating disorder symptoms ↓ Bulimic symptoms ↓ Body dissatisfaction ↓ Internalization of the "thin ideal" ↓ New obesity cases ↓ Negative mood	• Psychosocial impairment
Dissonance [13–14] (3 years)	↓ Eating disorder symptoms ↓ Body dissatisfaction ↓ Negative mood ↓ Psychosocial impairment	• Bulimic symptoms (significant at 2 years only) • Internalization of the "thin ideal" (significant at 2 years only) • New obesity cases (significant at 1 year only)
Dissonance [18–19] (3 years)	↓ Eating disorder symptoms	• New eating disorders or obesity cases • Body dissatisfaction (significant at 2 years only) • Dieting (significant at 1 year only) • Internalization of the "thin ideal" • Psychosocial impairment • Depressive symptoms • Health care use
Targeted — Overweight		
Student Bodies I [21] (4 months)	↑ Skills for managing eating + physical activity (e.g., self-monitoring, problem-solving)	• Weight concerns • Body shape concerns [iii] • Concerns about eating • Using dietary restraint • Body mass index
Student Bodies II [22] (5 months)	↓ Binge eating episodes ↓ Body mass index	• Weight + shape concerns • Overeating episodes • Dietary fat intake • Depressive symptoms

i Analysis limited to girls who did not restrict food intake at baseline.
ii Analysis limited to girls who rated body weight/shape as being not very important at baseline.
iii While both groups had reduced concerns over body shape, the reductions were significantly greater for the control group.

Student Bodies

Both versions of *Student Bodies* also led to benefits for participating teenage boys and girls. The first RCT found that youth in *Student Bodies I* used their new CBT skills to manage their eating and physical activities more often, including seeking

more social support; and engaging in more self-monitoring, problem-solving and goal setting at four-month follow-up.[21] The second RCT found that youth in *Student Bodies II*, which also addressed binge eating, made even more gains. These youth had fewer episodes of binge eating and lower BMIs at five-month follow-up.[22]

However, both versions of *Student Bodies* failed to make an impact on young people's concerns about their weight or shape. In fact, in the first RCT, control participants made greater gains in this domain.[21] As well, in this same RCT, the program failed to make an impact on eating concerns, dietary restraint and BMI.[21] In the second RCT, the program failed to produce improvements on overeating episodes, dietary fat intake or depressive symptoms.[22] These weaker results may be explained, in part, by difficulties in engaging with young people via the Internet alone. For example, in the first RCT, participants read only 30% of the materials,[21] and in the second RCT, 31% of youth assigned to the intervention never even logged on to the program.[22]

Effective prevention programs take many different forms

The main findings of this review are that eating disorders can indeed be prevented. All four programs that we examined succeeded in different ways.

The *Education Program*'s positive results were especially notable because universal programs often struggle to achieve benefits. This is because they are inevitably delivered to many low-risk young people.[25] Nevertheless, the *Education Program* still produced some compelling results for teenage girls. Not only did the program reduce problematic behaviours (e.g., excessive dieting) and troublesome thinking (e.g., self-esteem being overly affected by body weight and shape), it also prevented new cases of bulimia and required relatively few resources.

Healthy Weight and *Dissonance* both took a targeted approach and also succeeded. Both effectively prevented the development of eating disorder symptoms among teenage girls with body image concerns — even though both programs focused on different content. As with any targeted program, there was the advantage of efficiency in that interventions were delivered to those at risk, who were likely in greatest need, with stigma and labelling as potential unwanted outcomes.[3] Nonetheless, remarkably, both programs had benefits that were sustained for three years after both programs ended. And *Healthy Weight* had the added benefit of preventing the development of new cases of obesity.

Both versions of *Student Bodies* also took a targeted approach, focusing on boys and girls at risk due to being overweight. *Student Bodies I* was less successful, helping teenagers to manage their eating and exercise, but not reducing eating disorder symptoms, such as concerns about body shape. However, *Student Bodies II*, which incorporated specific strategies to address binge eating, led to significant benefits. It reduced binge episodes and lowered BMIs for both boys and girls.

Our findings suggest promising options for practitioners and policy-makers concerned with preventing eating disorders.

Implications for practice and policy

Our findings suggest promising options for practitioners and policy-makers concerned with preventing eating disorders. All the programs described here were offered to teens in relatively simple formats.

- The *Education Program*, the one universal option, showed promise according to one RCT and was appealing in that it can be offered to every young person, with little stigma. It involved classroom sessions on healthy body image. It reduced eating disorder cases as well as symptoms. However, further research evidence is needed on the effectiveness of this brief psycho-educational intervention delivered by teachers.
- *Healthy Weight*, which was targeted toward teenage girls with body image concerns, showed considerable promise according to two RCTs. It involved sessions on healthy body image and healthy eating and exercise. It reduced eating disorder symptoms and further, prevented the development of obesity. Notably, benefits were sustained at three-year follow-up. Community practitioners delivered this brief psycho-educational intervention. It merits consideration for BC youth.
- *Dissonance*, also targeted toward teenage girls with body image concerns, showed promise according to two RCTs. It involved sessions on healthy body image and critiquing media. It reduced eating disorder symptoms. Similar to *Healthy Weight*, many benefits were sustained at three-year follow-up. Community practitioners also delivered this brief psycho-educational intervention. But findings were less robust than for *Healthy Weight*.
- *Student Bodies*, targeted toward overweight teenage boys and girls, also showed promise according to one RCT (on the enhanced version of the program). It involved Internet CBT focusing on healthy body image and healthy eating and exercise. As well, the enhanced version specifically addressed binge eating. The enhanced version reduced binge eating episodes and lowered BMI measurements. However, further research evidence is needed on the effectiveness of this youth-administered online intervention.

Eating disorders are an important source of distress, disability and even premature mortality for young people in BC, with approximately 700 children and youth severely affected at any given time.[3, 23] These disorders also incur considerable societal costs.[23, 26–27] Yet our findings strongly suggest that these disorders are preventable, particularly if they are addressed early in the lifespan. Eating disorder prevention programs should therefore be part of the mental health program continuum for young people in BC.

Eating disorder prevention programs should be part of the mental health program continuum for young people in BC.

We conducted a comprehensive search to identify high-quality research evidence on the effectiveness of programs aimed at preventing eating disorders in children. We used methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health* and applied the following search strategy:

Table 5: Search Strategy

Sources	• CINAHL, ERIC, Medline, PsycINFO and Web of Science
Search Terms	• Anorexia, bulimia or eating disorders *and* intervention or prevention
Limits	• Peer-reviewed articles published in English between 2004 and 2014 • Children aged 18 years or younger • Randomized controlled trial (RCT) methods used

Using this approach, we found 38 RCTs. Two team members then assessed each study, finding six that met all our inclusion criteria, detailed in Table 6.

Table 6: Inclusion Criteria for RCTs

- Interventions aimed at preventing eating disorders
- Clear descriptions of participant characteristics, settings and interventions
- Random assignment to intervention and control groups at study outset
- Follow-up of three months or more (from the end of intervention)
- Attrition rates below 20% at follow-up or use of intention-to-treat analysis
- Outcome indicators included symptoms of eating disorders
- Outcome measures were assessed using two or more sources (e.g., child, researcher measures)
- Study assessors were blinded to participant's group assignment
- Reliability and validity of all primary outcome measures documented
- Levels of statistical significance reported for primary outcome measures

For more information on our research methods, please contact

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BC government staff can access original articles from BC's Health and Human Services Library.

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