CHILDREN'S MENTAL HEALTH
POLICY RESEARCH PROGRAM
UNIVERSITY OF BRITISH COLUMBIA

Preventing and Treating Eating Disorders in Children and Youth

A Research Report Prepared for the
British Columbia Ministry of Children
and Family Development

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PREFACE

This report is one in a series of research reports being prepared by the Children's Mental Health Policy Research Program at the University of British Columbia at the request of British Columbia's (BC's) Ministry of Children and Family Development (MCFD). At any given time, over one in seven or 140,000 children in BC experience mental disorders serious enough to impair their development and functioning at home, at school and in the community.[1] To support MCFD's goal to improve children's mental health in BC, in 2002-2003 we produced four reports: on population health and clinical service considerations;[2] on practice parameters for treating attention-deficit/hyperactivity disorder, conduct disorder, depression, obsessive-compulsive disorder and schizophrenia;[3] on child psychiatric epidemiology;[1] and on performance monitoring.[4] In 2003, MCFD then announced *a new Child and Youth Mental Health Plan (the Plan)*[5] to better address the needs of children and families in BC.

The research reports prepared by the Children's Mental Health Policy Research Program will support MCFD's *Plan* by identifying the most effective prevention and treatment approaches for a variety of children's mental health problems. This report focuses on preventing and treating eating disorders. Other reports have focused on conduct disorder,[6] anxiety disorders,[7] depression,[8] implementing evidence-based practice,[9] First Nations children,[10,11] early psychosis[12] and suicide.[13]

Our reports are intended to be a resource for policy-makers, practitioners, researchers, families, teachers and community members working with children in BC. We recognize that research evidence is only one component of good policy and practice. This report addresses only the content, or the specific factors, in preventing and treating eating disorders in children. Applying this content in policy and practice requires integration of the research evidence together with practitioner experience and child and family preferences. Our goal, nevertheless, is to facilitate evidence-based policy and practice by making summaries of the best research evidence available as a guide to everyone concerned with improving children's mental health in BC.

EXECUTIVE SUMMARY

Eating disorders, including anorexia and bulimia, affect approximately 1,000 children in BC. They are characterized by distortions in the perception of body shape and weight coupled with severe disturbances in eating behaviours. Eating disorders have a profound impact on development due to the early age of onset and the severe physical consequences. Other mental health problems such as anxiety and mood disorders frequently coexist with eating disorders, further adding to children's distress and impairment. Both prevention and treatment are important elements of a public policy response to eating disorders in children. While some risk and protective factors have been identified as contributing to the development of eating disorders, research has yet to identify a clear casual pathway. Nevertheless, there is sufficient research evidence on prevention and treatment such that systematic reviews are available on both. Therefore, this report summarizes findings from systematic reviews completed over the past five years. To be included, reviews had to meet a high standard involving an explicit focus on eating disorders in children along with a description of the search strategy and a list of criteria used to select original studies for detailed review.

Findings

- Two prevention reviews met criteria. Most promising eating disorder prevention programs used cognitive-behavioural techniques to change unhealthy attitudes and behaviours, or developed children's media literacy skills. Didactic educational programs that provided information about eating disorders were not effective.
- One treatment review met criteria. Most promising eating disorder treatments for children with anorexia used family therapy. Cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT) were also shown to be effective but most studies had adult bulimic participants. Medications such as serotonergic anti-depressants were also found to improve bulimic symptoms in adults but were associated with serious side effects.

Recommendations

- Prevention is crucial and should be a part of the spectrum of mental health strategies for children in BC. Prevention programs should be modeled after cognitive-behavioural and media literacy programs described in the research. Given the relatively low prevalence rate of eating disorders, it is likely more efficient and cost-effective to target prevention programs towards high-risk groups.
- Treatment is also crucial and should be modeled after the most promising programs that focus on family therapy for anorexia or CBT and IPT for bulimia, particularly for older children. Physicians should also be involved in treatment given the serious medical complications associated with eating disorders.
- For both prevention and treatment, approaches that are not supported by the best available research evidence should be carefully evaluated or discouraged. For populations where the research evidence is lacking (such as children with concurrent mental health problems), prevention and treatment interventions should be modeled after the principles and key elements of those approaches that are supported by research, and should also be evaluated.

1 INTRODUCTION

1.1 What are Eating Disorders?

Eating disorders consist of a distortion in the perception of body shape and weight and involve severe disturbances in eating behaviour. There are two major eating disorders described in the Diagnostic and Statistical Manual *(DSM-IV-TR)* of the American Psychiatric Association.[14] Anorexia nervosa involves an intense fear of gaining weight coupled with a refusal to maintain a normal body weight (detailed *DSM* diagnostic criteria are outlined in Appendix A).[14] Anorexia is often associated with severe physical symptoms due to extreme malnourishment. In contrast, bulimia nervosa involves repeated episodes of binge eating followed by counteracting behaviours designed to prevent weight gain such as self-induced vomiting, laxative use or excessive exercise. Individuals with bulimia frequently maintain a normal weight and therefore are often more difficult to identify. Both types of eating disorders usually begin in adolescence but anorexia typically has an earlier age of onset.[15] There are no definitive biological or psychological tests for eating disorders and secrecy and denial can make identification difficult.[16] Consequently, diagnoses must be made clinically based on reports from multiple informants (children, parents, teachers and others), ideally involving multidisciplinary team assessments.

Large-scale epidemiological surveys of children in the community have found that the estimated prevalence rate for eating disorders is 0.1%.[3] BC has a population of approximately one million children.[17] This means that at any given time, approximately 1000 children in BC may be affected. Moreover, eating disorders have a profound effect on development, due to the early age of onset and the associated physical consequences including cardiac, gastrointestinal and endocrine disturbances.[18] Other mental health problems such as obsessive compulsive disorder, generalized anxiety disorder and mood disorders often co-occur, adding to children's distress and impairment.[19,20]

Children's mental health is influenced by a variety of interacting biological, psychological and social factors. Risk factors are characteristics, events or processes that increase the likelihood of the onset of a disorder.[21] In contrast, protective factors can moderate the impact of risk factors by allowing children to develop resilience in the face of adversity.[22] Current research suggests that there are multiple factors influencing the development of eating disorders including individual, family, cultural and biological characteristics.[15] Key risk factors include being female, dieting, perfectionism and a family history of eating disorders.[16,20,23] Other risk factors include peer environments that involve social comparison and teasing, experiences of social transition such as international migration, exposure to negative media messages and genetic vulnerability.[24] Protective factors for eating disorders have yet to be fully described.[15]

1.2 Prevention and Treatment Issues

The distress and impairment associated with eating disorders in children makes prevention a priority. Prevention programs begin before disorders develop, to enhance protective factors or mitigate risk factors and therefore reduce the number of new cases of disorders in the population.[22,25,26] Prevention programs may be either universal or targeted. Universal programs are directed at entire populations, while targeted programs are directed at children identified as being at high-risk on the basis of having risk factors or early symptoms.[22,27] Both types of prevention programs have advantages and disadvantages.[28] Universal programs avoid isolating or labelling particular children but may be unnecessarily expensive and may intervene with many children and families who are not at risk. Meanwhile, targeted programs can be more efficient but require accurate identification of children at risk, which is difficult. Targeted programs may also expose identified children to labelling and stigma. Although more research is required to determine the optimal mix of universal and targeted prevention programs, it is generally agreed that both are needed.

Prevention and treatment fall on a continuum of interventions to address mental disorders. Prevention is a priority if we are to reduce the number of children with eating disorders. However, treatment is also crucial for children who have established symptoms. Treatment aims to reduce the duration, severity and impairment associated with a disorder, as well as to prevent recurrence.[22] Treatment focuses on individuals or small groups rather than on populations. As with prevention, there are trade-offs.[28] Treatment provides much needed support to children and families and can alleviate symptoms through a specific focus on those who are most severely affected. However, treatment programs are costly, may result in labelling and associated stigma, and cannot reach all children in need. Evidence from large-scale epidemiological surveys in Canada and elsewhere indicates that fewer than 25% of children with serious mental disorders (including eating disorders) receive treatment from specialized mental health services (although more than 50% likely receive services through primary care and schools).[2] While the optimal mix of prevention and treatment is not yet known, it is generally acknowledged that both strategies are needed if we are to reduce the distress and impairment associated with children's mental disorders, including eating disorders.

1.3 Purpose of this Report

This report was requested by MCFD to inform policies and programs for preventing and treating eating disorders in children. There have been several systematic reviews on this topic in the past five years. Consequently, this report summarizes these reviews. The provision of effective mental health treatment involves a number of factors beyond research evidence. For instance, a practitioner's skills and style are critical to the success of any intervention including the ability to establish therapeutic relationships with children and families. These and other aspects of the therapeutic process including setting, frequency and milieu are generally referred to as non-specific factors. Specific factors are those that reflect the content or therapeutic approach, such as cognitive-behavioural therapy (CBT). Both specific and non-specific factors are essential to successful outcomes. However, this report addresses only the specific factors, or the content, that can be used in the prevention and treatment of eating disorders. A discussion about the processes used to implement these interventions is beyond the scope of this report.

2 METHODS

Using Medline, PsycINFO, and the Cochrane Database of Systematic Reviews, we searched for systematic reviews published in English from January 1999 to June 2004 on preventing or treating eating disorders in children aged zero to 18 years. Reviews were included that examined efficacy (can this intervention work in ideal settings?) and, if possible, effectiveness (does this intervention work in usual settings?). We also sought information on the costs of interventions. The search terms were *anorexia* or *bulimia*, combined with *prevention, treatment, intervention, management* or *therapy*. Where applicable, search terms were modified to follow database indexing. All abstracts identified through these searches were assessed. Relevant reviews were then retrieved. Two reviewers independently assessed all reviews using the criteria outlined in Appendix B. To be included, reviews had to meet a high standard involving an explicit focus on eating disorders in children, a description of the search strategy and a list of the inclusion criteria used to select articles for detailed review. Reviews also had to include at least two high-quality randomized controlled trials (RCTs). Disagreements about which reviews to include were resolved by consensus involving all the authors.

3 FINDINGS

3.1 Summary

A total of 22 reviews were retrieved. Of these, two prevention reviews[16,29] and one treatment review[30] met our inclusion criteria. The findings on prevention and treatment are summarized in Tables 1 and 2 respectively. The number of original studies included in each review ranged from eight to 53. The reviews mainly focused on RCTs, though the prevention reviews also relied on other controlled studies, reviews and clinical guidelines. Most reviews examined efficacy rather than effectiveness. Two of the three reviews used a meta-analytic approach, pooling data from the reviewed articles.[16,29] The third review used descriptive methods to draw their conclusions.[30] Most studies in the three reviews were conducted with female participants, although a small number of studies included males. All three reviews focused their analyses on children aged 8-18 years but two reviews also included studies with adult participants.[29,30] No reviews assessed costs.

3.2 Prevention

Prevention programs were addressed in two systematic reviews that met criteria.[16,29] The programs were diverse in scope and were offered in a variety of formats including discussion groups and presentations. The two most promising prevention programs were psychological interventions that either used cognitive-behavioural techniques[29] or developed media literacy skills.[16] In addition, the most efficacious programs were targeted to older high-risk individuals, used an interactive approach and offered multiple sessions.[29] Didactic, non-interactive programs that only provided information about eating disorders were not effective.

Cognitive interventions challenged unhealthy attitudes such as body dissatisfaction and body image distortion. Behavioural interventions altered problematic behaviours such as fasting and overeating. These psychological programs also focused on the promotion of self-esteem, the development of stress management skills and the encouragement of healthy weight-control behaviours.[29] In comparison, media literacy interventions taught children how to critically analyze the media and recognize cultural pressures regarding body shape and weight. Program content focused on changing children's perceptions about the thin ideal promoted by the media and on developing children's ability to realistically assess what constituted a healthy body shape and size. Both prevention reviews found media literacy interventions to have significant positive effects on risk factors such as the thin ideal.[16,29] Additionally, prevention programs that that were CBT-based were effective in reducing body dissatisfaction.[29] However, even though successful prevention programs reduced risk factors, the majority of programs did not result in significant reductions in eating disorder symptoms such as bingeing.[29]

TABLE 1. Preventing Eating Disorders in Children

Author(s)	Scope	Original Studies Included	Main Positive Findings
Pratt & Woolfenden (2004)[16]	• *Age:* 10-19 years • *Inclusion Criteria:* RCTs on prevention programs for children published from 1887-2002	• 8 RCTs: 5 psychological 2 media literacy 1 educational	• Media literacy skill building programs reduced internalization of societal ideals relating to appearance
Stice & Shaw (2004)[29]	• *Age:* Separate analysis for children under 15 years versus children & adults older than 15 years of age • *Inclusion Criteria:* Controlled studies on prevention programs published from 1980-2003	• 21 RCTs: 12 psychological 1 media literacy 8 educational • 32 other studies: 8 psychological 3 media literacy 21 educational	• 15 programs with widely varying content reduced eating disordered behaviours; CBT-based programs were most promising • Characteristics of the most effective programs: targeted to high-risk groups; interactive & multi-session formats; participants who were females over age 15

3.3 Treatment

Psychological and biological treatments for eating disorders were included in one systematic review that met criteria. Gowers and Bryant-Waugh examined 39 studies and reviews which included a wide variety of psychological and pharmacological treatments for eating disorders.[30] Although the review focused on children, studies involving adults were also included when the authors felt the results were applicable to children.

Regarding psychological treatments, family therapy that focused on mobilizing family resources was the most promising treatment for children with anorexia. Variants on traditional family therapy, such as multiple family group therapy where family members learn by identifying with other families, were also promising.[30] Other psychological interventions found to be efficacious in the treatment of eating disorders were CBT and interpersonal therapy (IPT), although most studies had adult participants. CBT was found to be moderately efficacious in treating symptoms of anorexia such as body image disturbance. In addition, CBT that focused on changing thoughts involving weight and shape and altering abnormal eating behaviours (including bingeing and purging) was found to be the most efficacious treatment for bulimia.[30] IPT focused on identifying and modifying interpersonal difficulties associated with the onset or continuation of an eating disorder.[30]

Gowers and Bryant-Waugh also reviewed the efficacy of medications in the treatment of eating disorders.[30] None of the medications the authors examined were found to be efficacious for promoting weight gain or reducing eating disorder symptoms in anorexia. In contrast, fluoxetine was shown to reduce bulimic behaviours in the short-term and to prevent relapse in studies with adults. Overall, the authors concluded that medications should not be considered first-line treatments for eating disorders as there is insufficient evidence of their efficacy in children.[30]

TABLE 2. Treating Eating Disorders in Children

Author(s)	Scope	Original Studies Included	Main Positive Findings
Gowers & Bryant-Waugh (2004)[30]	• *Age:* : 8-18 years (also extrapolated from adult studies) • *Inclusion Criteria:* Studies & reviews on treatments published from 1993-2003	• 29 RCTs: 18 psychological 11 medication • 3 other studies: 2 psychological 1 medication • 7 reviews: 5 psychological 2 medication	• Family therapy improved eating disorder symptoms for children with anorexia • CBT & IPT also improved eating disorder symptoms, mainly for bulimia (most studies were with adults)

4 DISCUSSION

Out of 22 reviews that were assessed, two prevention reviews and one treatment review met our inclusion criteria. Thus, although a large number of reviews on eating disorders were available few were high quality.

Regarding prevention, our findings indicated that both cognitive-behavioural interventions and media literacy programs showed promising results.[16,29] CBT-based programs encouraged children to challenge thoughts that promoted body dissatisfaction, and stop unhealthy behaviours including fasting and overeating. Media literacy programs taught children how to critically analyze the media and recognize cultural pressures regarding body shape and weight, and were efficacious in reducing the acceptance of the thin ideal.[16] One review also found that targeted, interactive, multi-session programs for females over 15 years of age were the most efficacious. However, further research is needed on the impact of eating disorder prevention programs before committing to large-scale interventions, especially considering that although many of the studies reduced risk factors they did not result in significant reductions in eating disordered symptoms.[29]

Regarding treatment, most of the evidence supported psychological interventions.[30] A variety of family therapy modalities were found to be efficacious in the treatment of children with anorexia. Other interventions, such as CBT and IPT, were also found to be efficacious in reducing body image disturbance and symptoms associated with eating disorders.[30] However, most of these studies were conducted with adults. Finally, although fluoxetine reduced bulimic behaviours and appeared to prevent relapse in adults, the use of medication alone was rarely sufficient for treating bulimia. In addition, no medications were found to be efficacious as a primary treatment for anorexia.[30] Overall, more research is required to better understand the safety and effectiveness of medications in children with eating disorders. The use of medications should be reserved for severe eating disorders and when they are prescribed, children should be carefully monitored. Moreover, even when medication is not being used, the involvement of physicians in the treatment team is typically warranted because the medical complications of eating disorders are extensive, potentially irreversible and can be life threatening.[31]

There were several limitations in the prevention and treatment reviews on childhood eating disorders and in this research report. Even though eating disorders often first appear during adolescence, there were very few studies focused on children. Given the lack of child focused studies in the area of eating disorders, it is common for researchers to extrapolate findings from the adult literature, as Gowers and Bryant-Waugh did in their treatment review. The similar clinical presentation in eating disorders across the life span (such as bingeing and purging) is often provided as a reason for drawing from the adult literature but the needs of children may differ.[30] Nevertheless, because some authors mixed child and adult findings or simply extrapolated from adult findings, this report also included findings from adult literature. Finally, reviews examined studies that assessed efficacy, not effectiveness, and none assessed costs.

Overall, despite the limitations in the research, there were also a number of important strengths. There were high quality reviews that provided solid empirical support for the use of prevention and treatment programs. Specifically, the current evidence suggests that practitioners and policy-makers should consider psychological prevention programs that use CBT-based techniques and develop media literacy skills. Additionally, factors beyond program content were identified as important to prevention program efficacy including participant characteristics and program length. Empirically supported treatment programs were also identified including family therapy, CBT and IPT. Accordingly, investing in these empirically supported prevention and treatment programs could make a valuable contribution to the lives of children and their families in BC.

5 RECOMMENDATIONS

- Prevention is crucial and should be a part of the spectrum of mental health strategies for children in BC. Prevention programs should be modeled after cognitive-behavioural and media literacy programs described in the research. Given the relatively low prevalence rate of eating disorders, it is likely more efficient and cost-effective to target prevention programs towards high-risk groups.
- Treatment is also crucial and should be modeled after the most promising programs that focus on family therapy for anorexia or CBT and IPT for bulimia, particularly for older children. Physicians should also be involved in treatment given the serious medical complications associated with eating disorders.
- For both prevention and treatment, approaches that are not supported by the best available research evidence should be carefully evaluated or discouraged. For populations where the research evidence is lacking (such as children with concurrent mental health problems), prevention and treatment interventions should be modeled after the principles and key elements of those approaches that are supported by research, and should also be evaluated.

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APPENDIX A

Features of Eating Disorders in Children

The following description is adapted from the *Diagnostic and Statistical Manual* of the American Psychiatry Association.[14]
For a diagnosis of anorexia nervosa, a child must display all of the following symptoms:

- Refusal to maintain a minimally normal weight or failure to make predictable weight gains
- Extreme fear of gaining weight even though underweight
- Self-evaluation is overly influenced by weight or denies the severity of current low body weight
- Absence of multiple menstrual cycles (in girls who are postmenarcheal)

For a diagnosis of bulimia nervosa, a child must display all of the following symptoms:

- Recurrent episodes of binge eating where large quantities of food are consumed over a short time period
- Repeated engagement in behaviours to prevent weight gain such as self-induced vomiting or fasting
- Self-evaluation is overly influenced by weight

APPENDIX B

Criteria for Assessing Research Articles*

Basic Criteria
- Articles published in English about children aged 18 years or younger
- Articles on topics relevant to children's mental health policy and practice

Systematic Reviews
- Clear statement of relevant topic
- Clear description of the methods including sources for identifying literature reviewed
- Explicit statement of criteria used for selecting articles for detailed review
- At least two studies reviewed meet criteria for assessing original research studies

Original Research Studies
- Clear descriptions of participant characteristics, study settings and interventions
- Random allocation of participants to comparison groups
- Maximum drop-out rate of 20% (post-test)
- Outcome measures of both clinical and statistical significance
- For treatment, diagnostic "gold" standards used
- For medication, double-blinding, placebo-controlled procedures used

*Adapted from *Evidence Based Mental Health*[32]