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Child and Youth Mental Disorders: Prevalence and Evidence-Based Interventions

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

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Executive Summary

This report summarizes recent high-quality research evidence on the prevalence of the major mental disorders affecting children and youth and on effective prevention and treatment interventions for addressing these disorders. According to estimates derived from recent well-designed prevalence surveys in other countries, as many as 12.6% of children and youth aged 4–17 years — or nearly 84,000 in British Columbia (BC) — are likely experiencing clinically significant mental disorders at any given time. These surveys also reveal stark service shortfalls in that under one third of young people with disorders — just 31% or 26,000 in BC — are estimated to be receiving specialized mental health services.

Effective prevention programs are imperative to lessen the burden of avoidable mental disorders and to reduce the need for treatment services over time. At the same time, all children and youth with established disorders need to receive effective treatments to alleviate their distress, address their symptoms and reduce their impairment. For both prevention and treatment, there are numerous interventions showing positive outcomes based on rigorous studies in children and youth. Effective *prevention* programs range from cognitive-behavioural therapy (CBT) (for anxiety and major depressive disorders) to parent training (for substance use and conduct disorders). Effective *treatments* range from CBT (for anxiety, major depressive and substance use disorders) to parent training (for conduct disorder) to medications (for attention-deficit/hyperactivity and bipolar disorders, as well as schizophrenia).

Mental disorders are arguably the leading health problems that Canadian children and youth face from infancy onwards — based on the high numbers with disorders and the unacceptable service shortfalls. These shortfalls would not be tolerated for physical health problems in young people, such as cancer or diabetes, and should no longer be tolerated for mental health problems. To definitively address these needs, a coordinated and comprehensive *population health* strategy is required — promoting healthy development for all children and youth, preventing disorders for all those at risk, providing effective treatments for all those with established disorders, and monitoring outcomes across the population to ensure that BC's young people are flourishing and meeting their full potential. To implement this strategy, the following steps are recommended:

1. Provide a comprehensive range of evidence-based interventions at each stage of development, *starting in early childhood* and continuing through middle childhood and adolescence.
2. Triple investments in evidence-based treatment services to *reduce symptoms and impairment among all children and youth with established mental disorders.*
3. Make equivalent investments in evidence-based prevention programs *to reduce the prevalence of mental disorders in children and youth* and to *reduce the need for treatment services over time*, starting with the four common preventable disorders (anxiety, substance use, conduct and depressive disorders).
4. Evaluate all new and existing treatment services and prevention programs *to ensure that they are effective at reducing symptoms, impairment and disorders.*
5. Invest in new population data collection *to monitor the prevalence of mental disorders among all children and youth in BC over time.*

While these steps may seem ambitious, improving the mental health of children and youth is one of the most important investments that any society can make. BC's present and future wellbeing depends on it.

1. Overview

This report summarizes recent high-quality research evidence on the prevalence of mental disorders in children and youth and on effective interventions for preventing and treating these disorders. This report was requested by BC's Ministry of Children and Family Development (MCFD) to inform policy and practice deliberations on improving child and youth mental health outcomes across the province. These deliberations build on MCFD's 2003–2008 *Child and Youth Mental Health Plan for BC*, and on BC's 2010 *Healthy Minds, Healthy People: A 10-Year Plan to Address Mental Health and Substance Use*.[1,2]

In preparing this report, we built on the premise that research evidence is just one source of information among many for guiding policy and practice. There are several other critical principles to consider. Most importantly, all children and youth need to be nurtured and protected from avoidable adversities — conditions that are essential for creating good mental health.[3] Similarly, all families and all communities need to adequately care for children and youth. But to do so, they also need sufficient resources, especially where extremes of socioeconomic disadvantage exist, as in many Aboriginal and First Nations communities.[3] Beyond ensuring strong supports for young people and their families, ensuring the coordination of programs and services and ensuring culturally-competent services are essential complements to evidence-based policy and practice.[3] Within this mix, research evidence is nevertheless a crucial source of information for ensuring that children and youth are offered the *most effective* interventions possible.

Throughout this report, we define "mental health" as social and emotional wellbeing — essential for all children and youth to flourish and reach their full potential — while acknowledging the importance of other dimensions of wellbeing including the physical, the cognitive and the cultural. Conversely, we define "mental disorders" as social or emotional difficulties causing clinically-significant symptoms and impairment at home, at school, and in the community — consistent with definitions given in the American Psychiatric Association's *Diagnostic and Statistical Manual, Fourth Edition (DSM-IV)* and *Fifth Edition* (*DSM-5*) and the World Health Organization's *International Classification of Diseases, Tenth Edition* (*ICD-10*). We further define "prevention" as providing programs *before* disorders develop, to reduce the incidence of disorders, while "treatment" involves providing services *after* disorders have developed, to mitigate distress, symptoms and impairment. We define "young children" as those aged birth to six years, "children" as those aged birth to 12 years, and "youth" as those aged 13–18 years.

2. Methods

For *prevalence*, we updated our 2002 review of the prevalence of mental disorders in children and youth, originally prepared to inform MCFD's 2003–2008 *Child and Youth Mental Health Plan for BC*.[4,5] We conducted a systematic search of the peer-reviewed literature to identify new high-quality epidemiologic surveys published in English from 2003 to 2013. To ensure rigour and to increase relevance to the BC population, we limited our review to comprehensive surveys with representative population samples of 500 or more children or youth and response rates of 70% or better from relatively high-income countries (as defined by the World Bank). We required surveys to assign diagnoses using DSM-IV or ICD-10 criteria, based on measures of *both* symptoms *and* impairment. Furthermore, surveys had to use valid and reliable assessment measures that incorporated reports from multiple sources, such as youth, parents or teachers. Finally, surveys had to report prevalence over a period of three, six or 12 months for multiple mental disorders across broad age ranges among both girls and boys. We conducted a meta-analysis for each disorder using data from all included surveys and a statistical model that accounted for variation in study methods and findings.[6] We then applied the resulting prevalence estimates for each disorder to the most recent population figures for the applicable age ranges to estimate the number of children and youth who may be affected in BC and Canada at any given time.[7,8]

For *interventions*, we searched the peer-reviewed literature to identify randomized-controlled trial (RCT) evidence on effective prevention and treatment interventions for children and youth for each of the major disorders (listed here by prevalence): anxiety disorders including obsessive-compulsive disorder (OCD); attention-deficit/hyperactivity disorder (ADHD); substance use disorders; conduct disorder; major depressive disorder; autism spectrum disorders; bipolar disorder; eating disorders; and schizophrenia. Where possible, we incorporated findings from our *Children's Mental Health Research Quarterly,* which provides ongoing systematic review and synthesis evidence to policymakers, practitioners and the public using methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health*.[9,10] We conducted additional searches to identify systematic reviews and RCTs on selected topics not covered in the *Children's Mental Health Research Quarterly* either recently (e.g., conduct and major depressive disorders) or to date (e.g., eating and autism spectrum disorders). To identify this additional literature, we searched standard databases (e.g., Cochrane, Medline, PsycINFO) using disorder names coupled with terms defining *age* (birth to 18 years), *methods* (systematic reviews or RCTs), and *interventions* (prevention or treatment). For parsimony and to further ensure that this report would summarize the best available research evidence, we included only those intervention approaches (prevention programs, psychosocial treatments or medications) where we found statistically significant benefits from two or more RCTs evaluating outcomes in children or youth (aged birth through 18 years). For medications, we also required that at least one RCT used placebo controls. Because this was a policy-relevant synthesis and not a traditional systematic review, it is possible that additional interventions could be identified. However, our approach still enabled us to identify a comprehensive range of effective interventions for children and youth.

3. Prevalence

Our systematic review revealed nine high-quality epidemiologic surveys that met our inclusion criteria: four from the United States (US), two from the United Kingdom, and one each from Puerto Rico, Israel and Hong Kong.[11-20] All surveys were either regionally or nationally representative, with samples averaging 5,000 and ranging from 500 to 10,500, including girls and boys aged 4–17 years. Only one survey (based in the US) included Aboriginal children and youth.[12] All surveys used standardized measures for assessing *both* symptoms *and* impairment using *DSM-IV* or *ICD-10* criteria, reflecting recent improvements in epidemiologic methods. Table 1 provides an overview of the prevalence of specific mental disorders in children and youth, based on our meta-analyses of all nine included surveys from other countries. Table 1 also provides estimates of the number of children and youth who may be affected by these disorders in BC and Canada at any given time, based on the most recent population figures for those aged 4–17 years (for child-onset disorders) or for those aged 11–17 years only (for youth-onset disorders). Table 2 provides further estimates of the number affected in each region of BC.

Overall, we estimate that 12.6% of children and youth aged 4–17 years may be experiencing mental disorders at any given time, which means that as many as 84,000 in BC and 678,000 in Canada may be affected. Notably, this figure represents only those children and youth with *clinically significant* disorders who require intervention to alleviate their distress, address their symptoms and reduce their impairment. Furthermore, we estimate that 29% of children and youth meet criteria for two or more disorders at any given time. Specifically, depression often co-occurs with anxiety or substance use disorders, while conduct disorder often co-occurs with ADHD or substance use disorders.[11,12,14,18,19]

Based on this review, we also estimate that only 31% of these young people — or 26,000 of the 84,000 in need in BC — are receiving specialized mental health services (although some children and youth do receive support through primary care or schools).[11,13,14,18,19] (Most surveys defined specialized mental health services as those provided by community-based multi-disciplinary teams in outpatient settings, but some also included specialists in inpatient settings.) Although service utilization varies by disorder and by country, this suggests that as many as 58,000 children and youth in BC (and 468,000 in Canada) may not be receiving the specialized mental health services they need. Estimates of unmet need in each region of BC can be found in Table 2.

Our new *prevalence* estimates are slightly lower than our findings from 2002 (with notable exceptions such as autism spectrum disorders).[4,5] However, these differences likely reflect improvements in epidemiologic methods rather than true changes in the population burden of child and youth mental disorders. This conclusion is supported by a key epidemiologic measure known as the confidence interval, which represents the chance (e.g., 95%) that the prevalence in the population lies within a given range, based on findings from representative samples. In 2002, we reviewed older surveys that used DSM-III criteria and inconsistent impairment measures, resulting in prevalence estimates with relatively wide confidence intervals.[4,5] For our current prevalence estimate of 12.6%, we found a relatively narrow 95% confidence interval of 10.6–14.9%, based on newer surveys using more recent DSM-IV or ICD-10 criteria and more stringent impairment measures.

Our new estimates of the *population affected* are also lower than our previous findings, primarily because there are now fewer children and youth aged 4–17 years in BC (664,000 in 2012 compared with 714,000 in 2002).[7] Furthermore, since mental disorders typically persist into adulthood in the absence of effective interventions, many older youth aged 18–19 years will also be affected, making 84,000 a *conservative estimate* of the true population burden of child and youth mental disorders in BC.[3]

Table 1. Prevalence of Mental Disorders in Children and Youth

Disorder	Estimated Prevalence (%)	Age (Years)	Estimated Population Affected* BC	Canada
Any Anxiety Disorder	3.8	4–17	25,300	204,400
Generalized Anxiety Disorder	0.7	4–17	4,700	37,700
Posttraumatic Stress Disorder	0.5	4–17	3,300	26,900
Obsessive-Compulsive Disorder	0.4	4–17	2,700	21,500
Attention-Deficit/Hyperactivity Disorder	2.5	4–17	16,600	134,500
Any Substance Use Disorder	2.4	11–17	8,400	66,400
Alcohol Abuse or Dependence	1.4	11–17	4,900	38,800
Marijuana Abuse or Dependence	1.2	11–17	4,200	33,200
Conduct Disorder	2.1	4–17	14,000	113,000
Major Depressive Disorder	1.6	4–17	10,600	86,100
Any Autism Spectrum Disorder	0.6	4–17	4,000	32,300
Bipolar Disorder	0.6	11–17	2,100	16,600
Any Eating Disorder	0.2	11–17	700	5,500
Schizophrenia**	0.1	11–17	300	2,800
Any Disorder* **	**12.6**	**4–17**	**83,700**	**677,900**

* These estimates represent the *expected* rather than the *actual* number of children and youth affected by mental disorders in BC and Canada, based on our meta-analysis of disorder prevalence in other countries.

** The prevalence estimate for schizophrenia is drawn from a previous review, since schizophrenia was not assessed in the surveys included in this review.[5]

*** The overall estimate for children and youth with at least one disorder is less than the sum of estimates for specific disorders, since many children and youth have two or more disorders concurrently.

Table 2. Children and Youth Affected by Mental Disorders in Each Region of BC

Disorder	Estimated Prevalence (%)	Age	Estimated Population Affected*				
			North	Island	Interior	Vancouver	Fraser
Any Anxiety Disorder	3.8	4–17	1,900	3,800	3,900	5,400	10,400
Generalized Anxiety Disorder	0.7	4–17	400	700	700	1,000	1,900
Posttraumatic Stress Disorder	0.5	4–17	300	500	500	700	1,400
Obsessive-Compulsive Disorder	0.4	4–17	200	400	400	600	1,100
Attention-Deficit/Hyperactivity Disorder	2.5	4–17	1,300	2,500	2,600	3,500	6,800
Any Substance Use Disorder	2.4	11–17	600	1,300	1,300	1,800	3,500
Alcohol Abuse or Dependence	1.4	11–17	400	800	800	1,100	2,000
Marijuana Abuse or Dependence	1.2	11–17	300	600	700	900	1,700
Conduct Disorder	2.1	4–17	1,100	2,100	2,200	3,000	5,700
Major Depressive Disorder	1.6	4–17	800	1,600	1,600	2,300	4,400
Any Autism Spectrum Disorder	0.6	4–17	300	600	600	900	1,600
Bipolar Disorder	0.6	11–17	200	300	300	500	900
Any Eating Disorder	0.2	11–17	<100	100	100	200	300
Schizophrenia**	0.1	11–17	<100	<100	<100	<100	100
Any Disorder* **	**12.6**	**4–17**	**6,400**	**12,600**	**13,000**	**17,900**	**34,400**
Unmet Need for Intervention			**4,400**	**8,700**	**9,000**	**12,300**	**23,600**

* These estimates represent the *expected* rather than the *actual* number of children and youth affected by mental disorders in each BC MCFD region or Health Authority across BC, based on our meta-analysis of disorder prevalence in other countries. Caution is warranted when interpreting estimates for less common disorders in smaller regional populations.

** The prevalence estimate for schizophrenia is drawn from a previous review, since schizophrenia was not assessed in the surveys included in this review.[5]

*** The overall estimate for children and youth with at least one disorder is less than the sum of estimates for specific disorders, since many children and youth have two or more disorders concurrently.

4. Evidence-Based Interventions

Our reviews revealed numerous RCTs evaluating interventions for preventing and treating mental disorders in children and youth that show statistically significant evidence of positive benefits.[21-55] Table 3 lists the general prevention and treatment approaches (e.g., cognitive-behavioural therapy or CBT) where there were positive findings from *two or more* such RCTs. The table also provides specific program names for those exemplary interventions that are supported by particularly robust evidence, i.e., positive findings from *three or more* RCTs in children or youth. Psychosocial prevention and treatment interventions are described in more detail in the appendix.

We set high thresholds to include only those interventions where positive findings have been replicated in at least one additional study. Nonetheless, we were still able to identify effective intervention options for each of the major mental disorders affecting young people. Furthermore, many of these interventions can be delivered in flexible formats that have the potential for reaching many more children and youth. For example, CBT can be delivered effectively to children and youth, not just individually, but also in groups.[21-25] Some treatments for common disorders can also be delivered to young people in remote areas with support from parents and with telephone support from clinicians.[21-25,56]

Clearly there are many effective prevention and treatment interventions for children and youth. However, caution is required in applying these findings to ensure that these interventions fully benefit Canadian children and youth. Since most *prevention* studies have been conducted in other countries, new evaluations are recommended prior to widespread implementation in BC, due to potential differences in our baseline health and social services. Similarly, caution is required in applying our findings on effective *treatments*. In particular, comprehensive psychosocial interventions (such as the US-based *Multi-Systemic Therapy*) should be evaluated in local settings prior to implementation. Researchers, policymakers and practitioners also need to collaborate on developing and evaluating culturally adapted programs and services, especially in Aboriginal and First Nations communities.

Finally, *psychiatric medications can cause serious side effects or adverse events in children and youth.*[46] Therefore, caution and close monitoring are advised for all young people being prescribed these medications. As well, for most conditions, these medications should only be used when children or youth have not benefited from prevention interventions and have not responded to psychosocial treatments.

Table 3: Evidence-Based Interventions for Child and Youth Mental Disorders

Anxiety Disorders*	**3.8% or 25,300 (4–17 years) in BC**
Prevention: Cognitive-behavioural therapy (CBT) prevents development of disorders and/or symptoms in children and youth (e.g., *FRIENDS*).[21-23]	
Treatment (Psychosocial): CBT reduces diagnoses and symptoms in children and youth; eye-movement desensitization and reprocessing reduces symptoms in children and youth.[22,24-26]	
Treatment (Medication): Antidepressants (fluoxetine) reduce symptoms in children and youth.[25,27]	
Attention-Deficit/Hyperactivity Disorder	**2.5% or 16,600 (4–17 years) in BC**
Treatment (Psychosocial): Behavioural therapy, CBT, and parent training reduce symptoms in children; neurofeedback reduces symptoms in children and youth.[28-33]	
Treatment (Medication): Stimulants (methylphenidate, dextroamphetamine, and atomoxetine) reduce symptoms in children and youth.[34]	
Substance Use Disorders	**2.4% or 8,400 (11–17 years) in BC**
Prevention: Resistance skills training and parent training prevent development of disorders and/or symptoms in children and youth.[35,36]	
Treatment (Psychosocial): CBT and family therapy reduce symptoms in children and youth; motivational training reduces symptoms in youth.[37,38]	
Conduct Disorder	**2.1% or 14,000 (4–17 years) in BC**
Prevention: Parent training and social skills training prevent development of disorders and/or symptoms in children (e.g., *Nurse-Family Partnership, Incredible Years, Triple P*).[21,39-43]	
Treatment (Psychosocial): Parent training reduces diagnoses and symptoms in children and youth; CBT combined with parent training and family therapy reduces symptoms in children and youth (i.e., *Multi-Systemic Therapy*).[44,45]	
Treatment (Medication): Newer antipsychotics (risperidone and quetiapine) reduce challenging behaviours, but should be limited to particularly severe situations where children or youth have not responded to other treatments.[46]	
Major Depressive Disorder	**1.6% or 10,600 (4–17 years) in BC**
Prevention: CBT prevents development of disorders and/or symptoms in children and youth.[21,47]	
Treatment (Psychosocial): CBT reduces diagnoses and symptoms in children and youth; interpersonal psychotherapy reduces symptoms in children and youth.[47,48]	
Treatment (Medication): Antidepressants (fluoxetine) reduce symptoms in children and youth.[47,48]	

* Although obsessive-compulsive disorder is an anxiety disorder, interventions differ (see next page).

Table 3 (Cont'd): Evidence-Based Interventions for Child and Youth Mental Disorders

Autism Spectrum Disorders	**0.6% or 4,000 (4–17 years) in BC**
Treatment (Psychosocial): Intensive behavioural intervention improves cognitive and language abilities and adaptive behaviours in young children.[49] **Treatment (Medication):** Newer antipsychotics (risperidone and aripiprazole) reduce repetitive and challenging behaviours, but should be limited to particularly severe situations where children or youth have not responded to other treatments.[50]	
Bipolar Disorder	**0.6% or 2,100 (11–17 years) in BC**
Treatment (Medication): Newer antipsychotics (risperidone, aripiprazole, and quetiapine) reduce manic symptoms in youth.[46,51]	
Obsessive-Compulsive Disorder	**0.4% or 2,700 (4–17 years) in BC**
Treatment (Psychosocial): CBT (exposure and response prevention) reduces symptoms in children and youth.[22,52] **Treatment (Medication):** Antidepressants (fluoxetine and sertraline) reduce symptoms in children and youth.[52,53]	
Eating Disorders	**0.2% or 700 (11–17 years) in BC**
Prevention: Media literacy training prevents development of symptoms in children and youth.[54] **Treatment (Psychosocial):** Family therapy reduces anorexia symptoms in children and youth.[54]	
Schizophrenia	**0.1% or 300 (11–17 years) in BC**
Treatment (Medication): Newer antipsychotics (risperidone and olanzapine) reduce symptoms in youth.[51,55]	

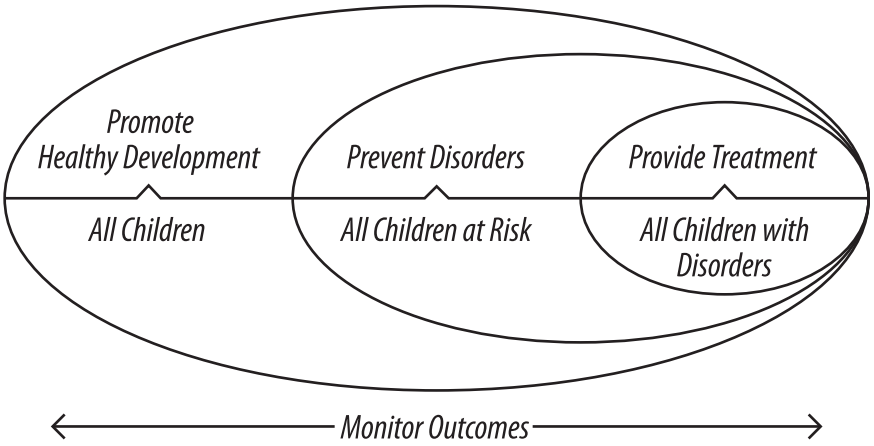
5. Conclusions

This report summarizes recent high-quality research evidence on the prevalence of the major mental disorders affecting children and youth and on effective prevention and treatment interventions for addressing these disorders. According to estimates derived from recent well-designed prevalence surveys in other countries, 12.6% of children and youth aged 4–17 years — or nearly 84,000 in BC — are experiencing clinically significant mental disorders at any given time. These surveys also reveal stark service shortfalls in that under one third of young people with disorders — just 31% or 26,000 in BC — are estimated to be receiving specialized mental health services.

Longitudinal studies have found that 50–75% of all individuals with a mental disorder were first diagnosed in childhood or adolescence, which suggests that the early years are the optimal time to address mental health problems and avert poor life course outcomes.[57] Effective prevention programs are imperative to lessen the burden of avoidable mental disorders and to reduce the need for treatment services over time. At the same time, all children and youth with established disorders need to receive effective treatments to alleviate their distress, address their symptoms and reduce their impairment. For both prevention and treatment, there are numerous interventions showing positive outcomes based on rigorous studies in children and youth. Effective *prevention* programs range from CBT (for anxiety and major depressive disorders) to parent training (for substance use and conduct disorders). Effective *treatments* range from CBT (for anxiety, major depressive and substance use disorders) to parent training (for conduct disorder) to medications (for ADHD and bipolar disorder, as well as schizophrenia). Given that evidence-based treatments generally outperform usual clinical care, it is imperative that all children and youth receive the most effective treatments.[58]

On balance, a comprehensive and coordinated *population health* strategy is needed to definitively address child and youth mental health: promoting healthy development for all children and youth, preventing disorders for all those at risk, providing effective treatments for all those with established disorders, and monitoring outcomes across the population to ensure that BC's young people are flourishing and meeting their full potential.[3] This strategy is depicted in Figure 1.

Figure 1: Population Strategy for Child and Youth Mental Health[3]



6. Recommendations

To implement a comprehensive and coordinated *population health* strategy , the following steps are recommended:

1. Provide a comprehensive range of evidence-based interventions at each stage of development, *starting in early childhood* and continuing through middle childhood and adolescence.
2. Triple investments in evidence-based treatment services to *reduce symptoms and impairment among all children and youth with established mental disorders.*
3. Make equivalent investments in evidence-based prevention programs *to reduce the prevalence of mental disorders in children and youth* and to *reduce the need for treatment services over time*, starting with the four common preventable disorders (anxiety, substance use, conduct and depressive disorders).
4. Evaluate all new and existing treatment services and prevention programs *to ensure that they are effective at reducing symptoms, impairment and disorders.*
5. Invest in new population data collection *to monitor the prevalence of mental disorders among all children and youth in BC over time.*[59]

While these steps may seem ambitious, mental disorders are arguably the leading health problems that Canadian children and youth face from infancy onwards — based on the high numbers with disorders and the unacceptable service shortfalls.[3] These shortfalls would not be tolerated for physical health problems in young people, such as cancer or diabetes, and should no longer be tolerated for mental health problems.[60] Improving the mental health of children and youth is one of the most important investments that any society can make. BC's present and future wellbeing depends on it.

Citing This Report

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Appendix: Description of Evidence-Based Psychosocial Interventions

Behavioural therapy: Children are taught to improve their behaviour using techniques frequently implemented by parents and teachers such as reward systems (for attention-deficit/hyperactivity disorder, or ADHD).

Cognitive-behavioural therapy: Children and youth are taught to challenge their negative thoughts and improve their coping skills using techniques such as cognitive reframing and relaxation training, as well as being taught to tolerate feared situations (for anxiety disorders including obsessive-compulsive disorder) and being encouraged to engage in positive activities (for ADHD as well as substance use, conduct and major depressive disorders).

Eye-movement desensitization and reprocessing: Children and youth are taught to imagine fearful situations while engaging in rapid eye movements, then to express their feelings and thoughts until negative emotions are reduced (for anxiety disorders).

Family therapy: All family members are taught to increase communications and positive interactions, while parents are taught to improve their overall parenting skills (for substance use and conduct disorders); parents implement a behavioural weight gain program while children and youth learn cognitive restructuring to correct their distorted body image and unrealistic beliefs about food (for anorexia).

Intensive behavioural intervention: Young children are taught to improve their social communication skills and to develop their adaptive behaviours through highly structured and frequently repeated behavioural tasks with rewards, while parents are taught to incorporate such tasks into children's daily routines (for autism spectrum disorders).

Interpersonal psychotherapy: Children and youth are taught to develop strategies for dealing with four specific issues: grief, role transitions, interpersonal role conflicts, and interpersonal limitations (for major depressive disorder).

Media literacy training: Children and youth are taught to recognize and critique media and cultural messages and about body shape and weight, then to develop their abilities to assess what constitutes healthy body shape and weight (for eating disorders).

Motivational training: Youth are taught to consider the risks associated with substance use using a non-confrontational approach that also helps them identify their substance problems and reflect on their options for change (for substance use disorders).

Neurofeedback: Children and youth are taught to complete computerized auditory and visual exercises targeting attention and working memory (for ADHD).

Parent training: Parents are taught to address specific areas of concern using a range of techniques including rewarding positive behaviours and setting consistent rules and limits (for ADHD as well as substance use and conduct disorders).

Resistance skills training: Children and youth are taught a range of skills including resisting peer pressure and increasing their social skills, as well as being provided with education about substance use (for substance use disorders).

Social skills training: Children are taught a variety of interpersonal skills to improve their behaviour and coping during social interactions, using techniques such as role-playing, problem solving, and modeling (for conduct disorder).