SFU

# Improving Children's Mental Health: Six Highly Effective Psychosocial Interventions

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

***May 2015***

Charlotte Waddell

Christine Schwartz

Jen Barican

Caitlyn Andres

Daphne Gray-Grant

Children's Health Policy Centre

Faculty of Health Sciences, Simon Fraser University
Room 2435, 515 West Hastings Street, Vancouver, BC, Canada V6B 5K3
childhealthpolicy.ca

## Executive Summary

- This research report was prepared at the request of the British Columbia (BC) Ministry of Children and Family Development (MCFD). It aims to inform policymaking by providing a review of highly effective children's mental health psychosocial prevention and treatment interventions – based on randomized-controlled trial evidence of benefits in young people as well as policy feasibility.

- The burden of childhood mental disorders is high. Based on our 2014 review of epidemiologic research evidence, an estimated 12.6% of children aged 4–17 years – or nearly 84,000 in British Columbia (BC) – are experiencing mental disorders at any given time. Our 2014 review also indicated that only 31% of these children were estimated to be receiving the specialized mental health services they needed, suggesting stark service shortfalls likely to result in high levels of unnecessary distress and impairment.

- BC could make significant progress in addressing these shortfalls by focusing on highly effective interventions for four of the most common – and *preventable* – childhood mental disorders. Taken together, we estimate that these disorders affect more than 58,000 BC children at any given time:
  - Anxiety disorders,
  - Substance use disorders,
  - Conduct disorder, and
  - Major depressive disorder.

- Based on this review, the following two generic intervention approaches are highly effective:
  1. **Parent training** – prevents and treats conduct disorder, and prevents substance use disorders; and
  2. **Cognitive-behavioural therapy** – prevents anxiety and major depressive disorders; and treats anxiety, substance use, conduct and major depressive disorders.

- The following four prevention programs were also supported by exceptional research evidence:
  1. *Nurse-Family Partnership* – prevents child maltreatment and conduct disorder;
  2. *Incredible Years* – prevents conduct disorder;
  3. *Triple P* – prevents conduct disorder; and
  4. *Friends* – prevents anxiety disorders.

- These six highly effective psychosocial prevention and treatment interventions should be made available to all children in need in BC – ensuring offerings across the age span, starting prenatally and continuing through the early years and into the late teens. Other interventions are also needed, covering the full range of mental health problems affecting young people. (Please see our 2014 report.) But making these six highly effective interventions available for these four prevalent and preventable disorders is a strong starting point for greatly improving children's mental health, leading to subsequent lifelong benefits.

- Children's mental health psychosocial interventions can also yield substantial public savings. For example, *Nurse-Family Partnership* saves an estimated $18,000 per family through reduced healthcare, child protection, justice and social services spending over the 10-15 years following program delivery. Preventing just one case of conduct disorder can also yield lifetime public savings of $2.6–4.4 million through reduced healthcare, child protection, justice and social services spending. Therefore addressing children's mental health also makes economic sense – particularly if interventions start early in the lifespan.

# 1. Overview

This research report was prepared at the request of the British Columbia (BC) Ministry of Children and Family Development (MCFD). It aims to inform policymaking by providing a review of highly effective children's mental health psychosocial prevention and treatment interventions – based on randomized-controlled trial evidence of benefits in young people as well as policy feasibility.

In a 2014 review of epidemiologic research evidence, we estimated that 12.6% of children aged 4–17 years – or nearly 84,000 in BC – were experiencing mental disorders at any given time.[1] Our 2014 review also indicated that only 31% of these children were estimated to be receiving the specialized mental health services they needed, suggesting stark service shortfalls.[1] In that same report, we also summarized the research evidence on a comprehensive array of effective interventions for young people, to further inform policymaking regarding effective ways to address the shortfalls.[1]

Building on our previous work, this new report identifies a selection of highly effective psychosocial interventions for preventing and treating four of the most common childhood mental health problems: anxiety, substance use, conduct and major depressive disorders. Taken together, we estimate that these disorders affect more than 58,000 BC children at any given time:

- *Anxiety disorders* – affect 3.8% or 25,300 BC children aged 4–17 years;
- *Substance use disorders* – affect 2.4% or 8,400 BC children aged 11–17 years;
- *Conduct disorder* – affects 2.1% or 14,000 BC children aged 4–17 years; and
- *Major depressive disorder* – affects 1.6% or 10,600 BC children aged 4–17 years.[1]

Other interventions are also needed, covering the full range of mental health problems affecting young people. (For more information on other disorders and other treatments, including medications, please see our 2014 report.[1]) But starting with these four disorders could have a particularly high impact at a population level because in addition to being highly prevalent, there is also evidence that we can *prevent* these four disorders – thereby potentially reducing prevalence as well as subsequent distress, impairment and the need for services across the lifespan. (Note that these are the only four childhood mental disorders for which we currently have strong prevention evidence.)

In this report, we define "mental health" as social and emotional wellbeing – essential for all children 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, Fifth Edition* (*DSM-5*) and the World Health Organization's *International Classification of Diseases, Tenth Edition* (*ICD-10*). We further define "prevention" as providing interventions *before* disorders develop, to reduce the prevalence of disorders, and "treatment" as providing interventions *after* disorders have developed, to mitigate distress, symptoms and impairment. Finally, we use the term "child" to encompass young people from early childhood through the late teen years.

## 2. Methods

We identified effective psychosocial prevention and treatment interventions for the four disorders of interest drawing on our 2014 report[1] as well as on our ongoing work through the *Children's Mental Health Research Quarterly*.[2] The *Quarterly* uses systematic review, synthesis and critical appraisal methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health*.[3,4] For this particular review we applied two inclusion criteria for selecting interventions: 1) scientific merit and 2) policy feasibility.

First, applying the criterion of scientific merit, we identified psychosocial prevention and treatment interventions with evidence of statistically-significant and clinically-meaningful benefits from two or more randomized-controlled trials evaluating outcomes in young people for each of the four disorders. Intervention benefits had to include either: 1) reductions in diagnoses (or incidence), which is the more rigorous measure, or 2) reductions in symptoms, which is less rigorous but still clinically meaningful.

Second, applying the criterion of policy feasibility, we identified interventions from our shortlist where there was evidence that they could realistically be implemented in BC. We included interventions with potential for implementation across two or more age groups, or with two or more disorders, or across both prevention and treatment – thereby permitting economies of scale, e.g., in training practitioners. We also included interventions where foundations were already laid in BC through previous or existing children's mental health initiatives, and where implementation was therefore clearly feasible.[5,6]

This approach allowed us to create a final list of interventions with high potential for impact at a population level. Because this was a policy-relevant synthesis and not a traditional systematic review, it is possible that additional interventions could be identified. We have also not attempted to be exhaustive, but rather, to identify the *most promising* interventions as a basis for setting policy priorities. Our approach nevertheless enabled us to identify a range of highly effective psychosocial prevention and treatment interventions for the four disorders of interest. (For more information on our methods, please contact the authors.)

## 3. Findings

We identified six highly effective psychosocial prevention and treatment interventions for childhood anxiety, substance use, conduct and major depressive disorders. We identified two generic approaches, namely parent training and cognitive-behavioural therapy, where there was evidence from two or more randomized-controlled trials showing benefits in young people, including whether these benefits involved reductions in diagnoses or symptoms. We also identified specific programs where there was exceptional research evidence in the form of three or more randomized-controlled trials showing benefits in young people. All six interventions showed evidence of policy feasibility as well: having potential for implementation across two or more age groups, or two or more disorders, or across both prevention and treatment; and having foundations already laid through previous or existing BC initiatives. The table below depicts our findings. While we list interventions according to children's ages at time of delivery, note that for some, benefits extended for many years beyond this. For example, *Nurse-Family Partnership* led to multiple significant children's mental health and other benefits at 10-20-year follow-up.[7,8]

***Table: Highly Effective Psychosocial Prevention and Treatment Interventions***[1,2,9-19]

| Age | Prevention | Treatment |
|---|---|---|
| *Infancy:* Prenatal → 2 Years | • **Parent training** reduces child maltreatment and later conduct disorder symptoms, e.g., *Nurse-Family Partnership* | |
| *Early Childhood:* 3 → 5 Years | • **Parent training** reduces conduct disorder symptoms, e.g., *Incredible Years, Triple P*<br>• **Cognitive-behavioural therapy** reduces anxiety disorder symptoms | • **Parent training** reduces conduct disorder symptoms<br>• **Cognitive-behavioural therapy** reduces anxiety disorder diagnoses |
| *Middle Childhood:* 6 → 12 Years | • **Parent training** reduces substance use disorder diagnoses and conduct disorder symptoms<br>• **Cognitive-behavioural therapy** reduces anxiety disorder symptoms, e.g., *Friends*, and major depression diagnoses | • **Parent training** reduces conduct disorder symptoms<br>• **Cognitive-behavioural therapy** reduces anxiety disorder diagnoses |
| *Teens:* 13 → 18 Years | • **Cognitive-behavioural therapy** reduces anxiety disorder symptoms and major depression diagnoses | • **Cognitive-behavioural therapy** reduces anxiety disorder diagnoses, substance use disorder symptoms, conduct disorder symptoms and major depression symptoms |

As shown in the table, two generic intervention approaches are supported by particularly strong research evidence: **parent training** and **cognitive-behavioural therapy (CBT)**. Both these approaches have been repeatedly shown to effectively prevent and treat multiple childhood mental disorders, across varying developmental periods.

When parent training begins very early in the lifespan – prenatally or when children are in infancy or early childhood – it is highly effective at preventing conduct disorder symptoms. As well, it is still effective in preventing these symptoms when children reach their middle years, and is effective in treating symptoms of conduct disorder in both younger and older children. Beyond this, it also prevents substance use disorder diagnoses in older children. Parent training typically involves teaching parents about healthy child development, as well as how to provide safe and nurturing environments for children. It can also be used to teach range of parenting techniques including rewarding positive behaviours, setting consistent rules and limits, and using appropriate discipline.

Among the parent training interventions, three specific prevention programs stand out: ***Nurse-Family Partnership***, ***Incredible Years*** and ***Triple P***. All are supported by multiple randomized-controlled trials and all show long-term benefits. Among these, *Nurse-Family Partnership* has particularly compelling results. This targeted home visiting program involves providing intensive nursing supports to young, low-income women who are preparing to parent for the first time – beginning in pregnancy and continuing until children reach age two years. *Nurse-Family Partnership* reduces child maltreatment and reduces conduct disorder symptoms, while also improving children's learning. There is preliminary evidence that it also reduces anxiety, substance use and depressive symptoms when children are older.[7] *Incredible Years* and *Triple P* also reduce conduct disorder symptoms in young children. Delivered by trained practitioners, these relatively brief programs comprise 10-20 sessions and use structured group formats. *Incredible Years* is targeted, while *Triple P* can be either targeted or universal. As with *Nurse-Family Partnership,* the goal is to help parents build new skills to support their child's healthy development.

CBT also has far-reaching benefits. It effectively prevents anxiety disorder symptoms in younger and older children and in teens, and prevents depression diagnoses in older children and teens. As well, it effectively treats anxiety, substance use, conduct and major depressive disorders in young people. Among the cognitive-behavioural interventions, the universal ***Friends*** prevention program stands out in that it reduces anxiety disorder symptoms in older children, according to multiple randomized-controlled trials.

For both prevention and treatment, CBT involves teaching children to challenge their negative thoughts and improve their coping skills, using techniques such as cognitive reframing and relaxation training. It also teaches children to tolerate feared situations (for anxiety disorders) and encourages them to engage in positive activities (for substance use, conduct and major depressive disorders). CBT is typically delivered over 10-16 weeks – by trained practitioners in the community, or by trained teachers in classrooms in the case of *Friends*. CBT can also be delivered individually or in groups across various developmental stages, from early childhood through the late teens, and beyond. Notably, CBT is recommended as *the* first-line treatment for childhood anxiety and depression. This is because randomized controlled trials have repeatedly demonstrated robust and enduring benefits compared to less structured forms of psychotherapy, and compared to psychiatric medications.[1,2] As well, CBT does not have the negative side effects that are common among many medications.[1,2]

## 4. Conclusions

Based on this review, there are six highly effective psychosocial prevention and treatment interventions for childhood anxiety, substance use, conduct and major depressive disorders. In aggregate, more than 58,000 BC children are affected by these disorders at any given time[1] – making them a top priority for new investments that could have high impact on a population level.

The following two generic intervention approaches are highly effective:
1. **Parent training** – prevents and treats conduct disorder, and prevents substance use disorders; and
2. **Cognitive-behavioural therapy** – prevents anxiety and major depressive disorders; and treats anxiety, substance use, conduct and major depressive disorders.

The following four specific programs were also supported by exceptional research evidence:
1. *Nurse-Family Partnership* – prevents child maltreatment and conduct disorder;
2. *Incredible Years* – prevents conduct disorder;
3. *Triple P* – prevents conduct disorder; and
4. *Friends* – prevents anxiety disorders.

These six highly effective prevention and treatment interventions should be made available across BC – ensuring offerings across the age span, starting prenatally and continuing through the early years and into the late teens. However, it is important to deliver these interventions with fidelity. This is because when interventions are substantially altered, e.g., delivered by less well-trained practitioners, they can be ineffective.[20] Other interventions are also needed, covering the full range of mental health problems affecting young people. (Please see our 2014 report.[1]) But making these six highly effective interventions available for these four prevalent and preventable disorders is a starting point for greatly improving children's mental health, leading to subsequent lifelong benefits.

Early childhood remains the basis for mental health in the middle childhood and teen years, and beyond. That said, continuity of care is needed when mental health problems persist into early adulthood. Of the interventions we have featured, CBT in particular is highly effective for treating anxiety and depression in adults, too. So if CBT was made widely available, continuity of care could be strengthened for children whose mental health problems persisted into early adulthood.

Notably, foundations for providing these interventions have already been laid through previous and existing BC children's mental health initiatives. *Nurse-Family Partnership* is currently being evaluated across the province, sponsored by the BC Ministry of Health in partnership with MCFD and the five regional Health Authorities – through *Healthy Minds, Healthy People*, BC's 2010-2020 mental health plan.[6,21] Parent training has been provided in various formats to BC parents, starting as a component of MCFD's 2003–2008 *Child and Youth Mental Health Plan*.[5] CBT, meanwhile, was a central feature of MCFD's 2003–2008 *Child and Youth Mental Health Plan*.[5] This included initiating the *Friends* prevention program in most BC schools, and providing practitioner training across the province to ensure the widespread availability of CBT for treating a variety of childhood mental disorders. BC has led the country with these initiatives, which are unique in Canada. It is now a matter of enhancing and sustaining them, to ensure that all children in need are reached, coupled with ensuring the full array of other interventions that are needed.[1]

Most mental disorders start in childhood then persist across the lifespan.[22] Childhood is therefore the optimal time to intervene to definitively address mental health problems and avert poor life course outcomes.[23] It is currently estimated that the costs associated with mental disorders exceed $51 billion annually in Canada.[24] Yet children's mental health interventions can yield substantial public savings. For

example, *Nurse-Family Partnership* saves an estimated $18,000 per family through reduced healthcare, child protection, justice and social services spending over the 10-15 years following program delivery.[25] Preventing just one case of conduct disorder can also yield public savings of $2.6–4.4 million through reduced healthcare, child protection, justice and social services spending over the course of one child's lifetime.[26] Therefore addressing children's mental health also makes economic sense – particularly if interventions start early in the lifespan.[27]

Based on recent research evidence, the current shortfalls are stark – with only an estimated 31% of children with mental disorders receiving the specialized mental health services they need.[1] These shortfalls would not be tolerated for children's physical health problems, such as cancer or diabetes, and should no longer be tolerated for children's mental health problems.[28] Recognizing that such shortfalls cannot be resolved immediately, at a minimum, commitments should be made to new investments in children's mental health. Ensuring the availability of the six highly effective interventions for preventing and treating four highly prevalent children's mental disorders, as discussed here, is a strong starting point.

## Citing This Report

Please cite this report as follows: Waddell C, Schwartz C, Barican J, Andres C, Gray-Grant D. *Improving Children's Mental Health: Six Highly Effective Psychosocial Interventions*. Vancouver, BC: Children's Health Policy Centre, Simon Fraser University; 2015.

## Acknowledgements

The BC Ministry of Children and Family Development and the Canada Research Chairs Program provided support for this work.

## References


1. Waddell C, Shepherd CA, Schwartz C, Barican J. *Child and youth mental disorders: Prevalence and evidence-based interventions*. Vancouver, BC: Children's Health Policy Centre, Simon Fraser University; 2014 (online at childhealthpolicy.ca/wp-content/uploads/2014/06/14-06-17-Waddell-Report-2014.06.16.pdf childhealthpolicy.ca).
2. Children's Health Policy Centre. *Children's Mental Health Research Quarterly*. Vancouver, BC: Children's Health Policy Centre, Simon Fraser University; 2006–present (online at childhealthpolicy.ca/the-quarterly/).
3. Higgins JPT, Green S. *Cochrane handbook for systematic reviews of interventions, version 5.1.0.* 2011 (online at cochrane-handbook.org).
4. Evidence-Based Mental Health. *Purpose and procedure.* 2015 (online at ebmh.bmj.com/content/4/1/2.full?sid=a5fcadff-bdd2-46ae-b427-cbadd5f205eb).
5. Ministry of Children and Family Development. *Child and youth mental health plan for British Columbia.* Victoria, BC: Ministry of Children and Family Development; 2003 (online at mcf.gov.bc.ca /mental_health/pdf/cymh_plan.pdf).
6. Ministry of Health Services and Ministry of Children and Family Development. *Healthy minds, healthy people: A 10-year plan to address mental health and substance use in British Columbia*. Victoria, BC: Government of British Columbia; 2010 (online at health.gov.bc.ca/library/publications/year/2010/healthy_ minds_healthy_people.pdf).
7. Schwartz C, Waddell C, Shepherd C, et al. Nurse-Family Partnership and children's mental health. *Children's Mental Health Research Quarterly* 2011;5(1):1-16 (online at childhealthpolicy.ca/wp-content/uploads/2012/12/RQ-1-11-Winter.pdf).
8. Olds DL, Kitzman H, Knudtson MD, et al. Effect of home visiting by nurses on maternal and child mortality: Results of a 2-decade follow-up of a randomized clinical trial. *Journal of the American Medical Association Pediatrics* 2014;168:800-806.
9. Kennedy S, Rapee R, Edwards S. A selective intervention program for inhibited preschool-aged children of parents with an anxiety disorder: Effects on current anxiety disorders and temperament. *Journal of the American Academy of Child and Adolescent Psychiatry* 2009;48:602-609.
10. Rapee R. The preventative effects of a brief, early intervention for preschool-aged children at risk for internalizing: Follow-up into middle adolescence. *Journal of Child Psychology and Psychiatry* 2013;54:780-788.
11. Donovan C, March S. Online CBT for preschool anxiety disorders: A randomized control trial. *Behavioural Research and Therapy* 2014;58:24-35.
12. McGrath P, Lingley-Pottie P, Thurston C, et al. Telephone-based mental health interventions for child disruptive behavior or anxiety disorders: Randomized trials and overall analysis. *Journal of the American Academy of Child and Adolescent Psychiatry* 2011;50:1162-1172.
13. Larsson B, Fossum S, Clifford G, et al. Treatment of oppositional defiant and conduct problems in young Norwegian children: Results of a randomized controlled trial. *European Child and Adolescent Psychiatry* 2009;18:42-52.
14. Najavits L, Gallop R, Weiss R. Seeking Safety therapy for adolescent girls with PTSD and substance use disorder: A randomized controlled trial. *Journal of Behavioral Health Services and Research* 2006;33:453-463.
15. Esposito-Smythers C, Spirito A, Kahler C, Hunt J, Monti P. Treatment of co-occurring substance abuse and suicidality among adolescents: A randomized trial. *Journal of Consulting and Clinical Psychology* 2011;79:728-739.
16. Chen C, Li C, Wang H, et al. Cognitive behavioral therapy to reduce overt aggression behavior in Chinese young male violent offenders. *Aggressive Behavior* 2014;40:329-336.
17. Rohde P, Jorgensen J, Seeley J, Mace D. Pilot evaluation of the Coping Course: A cognitive-behavioral intervention to enhance coping skills in incarcerated youth. *Journal of the American Academy of Child and Adolescent Psychiatry* 2004;43:669-676.
18. Rosselló J, Bernal G. The efficacy of cognitive-behavioral and interpersonal treatment for depression in Puerto Rican adolescents. *Journal of Consulting and Clinical Psychology* 1999;67:734-745.
19. Clarke G, Rohde P, Lewinsohn P, Hops H, Seeley J. Cognitive-behavioral treatments of adolescents depression: Efficacy of acute group treatment and booster sessions. *Journal of the American Academy of Child and Adolescent Psychiatry* 1999;38:272-279.
20. Olds DL, Robinson J, Pettitt L, et al. Effects of home visits by paraprofessionals and by nurses: Age 4 follow-up results of a randomized trial. *Pediatrics* 2004;114:1560-8.

21. Children's Health Policy Centre. *BC Healthy Connections Project.* Vancouver, BC: Children's Health Policy Centre, Simon Fraser University; 2015 (online at childhealthpolicy.ca/bc-healthy-connections-project/).
22. Kim-Cohen J, Caspi A, Moffitt TE, et al. Prior juvenile diagnoses in adults with mental disorder: Developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry* 2003:60:709-717.
23. Waddell C, Shepherd CA, McLauchlin G. Creating mentally healthy communities, starting with children. In: Canadian Population Health Initiative, Editor. *Mentally healthy communities: A collection of papers*. Ottawa, ON: Canadian Institute for Health Information; 2008:45-58.
24. Lim KL, Jacobs P, Ohinmaa A, Schopflocher D, Dewa CS. A new population-based measure of the economic burden of mental illness in Canada. *Chronic Diseases in Canada* 2008;28:92-8.
25. Lee S, Aos S, Miller M. *Evidence-based programs to prevent children from entering and remaining in the child welfare system: Benefits and costs for Washington*. Olympia, WA: Washington State Institute for Public Policy, 2008: 48 p. (online at wsipp.wa.gov/ReportFile/1020).
26. Cohen MA, Piquero AR. New evidence on the monetary value of saving a high risk youth. *Journal of Quantitative Criminololgy* 2009;25:25-49.
27. Heckman JJ. Skill formation and the economics of investing in disadvantaged children. *Science* 2006;312:1900–1902.
28. Royal College of Psychiatrists. *Whole-person care: From rhetoric to reality, achieving parity between mental and physical health*. London, England: Royal College of Psychiatrists; 2013 (online at rcpsych. ac.uk/pdf/OP88summary.pdf).