Promoting Mental Health in the Early Years: Effective Psychosocial Interventions

A Research Report

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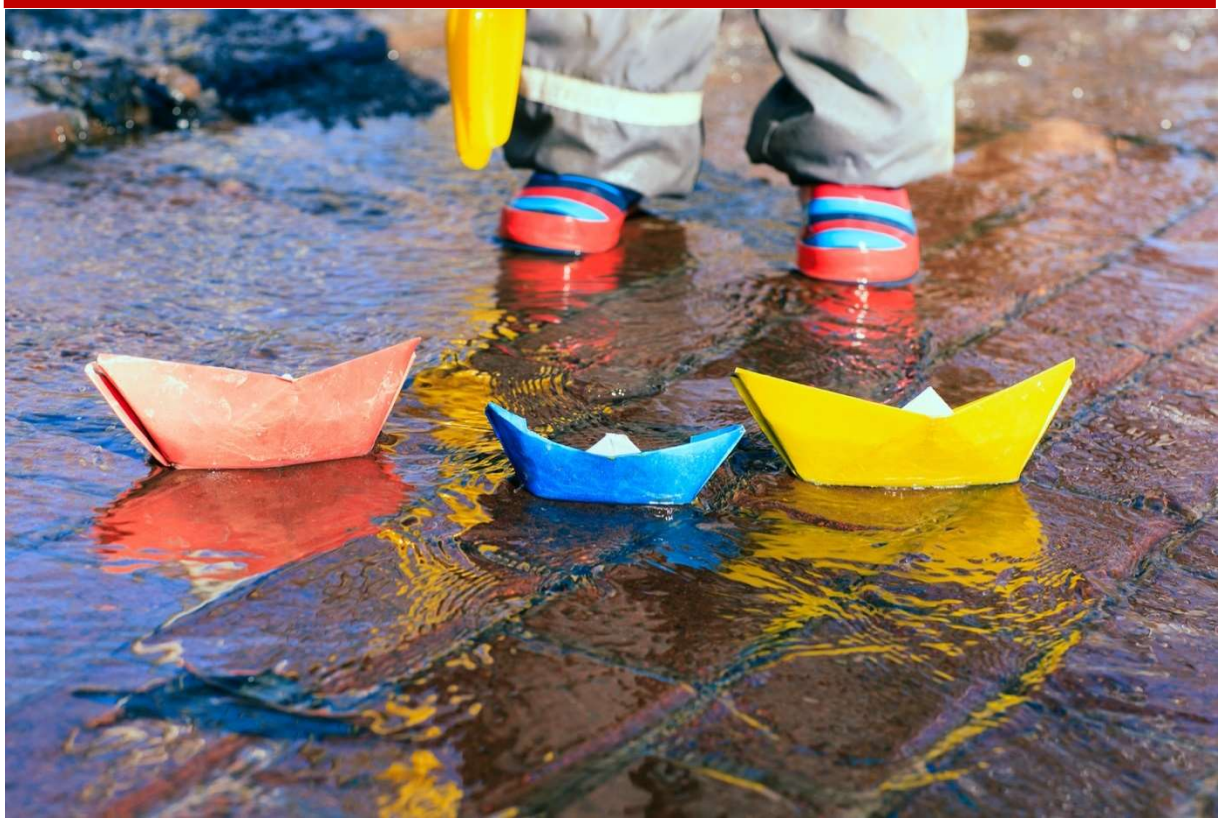

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We celebrate the Indigenous Peoples on whose traditional territories we are all privileged to live and work.

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Executive Summary

Mental health — or social and emotional wellbeing — begins in the early years and underpins the overall health of both individuals and populations. At the same time, many young children experience avoidable adversities, such as family socioeconomic disadvantage, which can contribute to the development of mental disorders. So, early childhood is the optimal time to intervene — particularly to prevent the onset of mental disorders, and to treat these disorders. To inform policymaking, we therefore sought high-quality research evidence on effective psychosocial interventions for preventing and treating three of the most common mental health conditions that start in early childhood: anxiety, attention-deficit/hyperactivity disorder (ADHD) and behaviour disorders.

On balance, we found strong evidence supporting cognitive-behavioural therapy for anxiety — with two prevention and four treatment programs showing success. We also found strong evidence supporting parent training for behaviour problems — with 11 prevention and two treatment programs showing success. As well, we found evidence supporting parent training for ADHD — with four prevention and three treatment programs showing some success. As a result, there is ample evidence to act on — starting with early childhood anxiety and behaviour programs, where the research evidence is strongest. Prevention, in particular, is also cost-effective. For example, preventing just one case of a severe childhood behaviour disorder can save millions of dollars in averted lifetime costs. Investments in effective prevention programs in early childhood can therefore benefit not only children and families, but also society.

Given the potential to improve developmental trajectories starting early in life, there is a collective ethical imperative to ensure that the prevention of mental disorders is a top population health and public policy priority. Offering effective prevention programs to all in need will help to create conditions that enable more children to flourish and meet their potential — in turn contributing to addressing health and social disparities. Ensuring that all young children with mental disorders are identified early and receive timely and effective treatment programs is also crucial — in keeping with international commitments to meet children's needs and honour their rights. In turn, collective flourishing will be enhanced by wise public investments in mental health in early childhood.

Children's social and emotional wellbeing, or mental health,
is crucial for healthy development —particularly during the early years,
which lay the foundations for flourishing and resilience across the lifespan.

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1. Background

1.1 Importance of Social and Emotional Wellbeing in Children's Early Years

Children's social and emotional wellbeing, or mental health, is crucial for healthy development — particularly during the early years, which lay the foundations for flourishing and resilience across the lifespan.[1–4] More than the absence of mental illness, mental health is also a dynamic state of wellbeing that underlies the health of both individuals and populations.[5–6] Conditions that respect, meet and protect children's basic needs contribute to mental health and so should be ensured for all children.[7] At the same time, avoidable early adversities such as family socioeconomic disadvantage are associated with not only the development of mental disorders but also the fuelling of lifelong health and social disparities.[8–11]

Effective early interventions can prevent mental disorders
or greatly mitigate their impact —
ensuring that children flourish both socially and emotionally.

Partly due to avoidable early adversities, such as family socioeconomic disadvantage, most mental disorders first emerge in childhood and adolescence,[12–14] — with some cases occurring in very young children, an issue which is not always widely appreciated.[15] Mental disorders are now a leading cause of childhood disability, with as many as 12.7% of young people being affected at any given time.[16] The incidence of mental health problems has also increased during the global COVID-19 pandemic.[17] Even more concerning, only an estimated 44.2% of children with mental disorders receive any services for these conditions, based on a systematic review of high-quality studies from high-income countries.[16] There are even greater service shortages for marginalized populations such as Indigenous children.[18] Childhood mental disorders then often persist unnecessarily and affect lifelong development — with high associated costs for individuals and for society.[19]

Yet these costs are not inevitable. Effective early interventions span a continuum from universal or targeted prevention programs that are offered before problems emerge or become entrenched, to case identification and clinical treatments that are offered when children have disorders. [20–21] These interventions can prevent new cases of mental disorders or greatly mitigate their impact — thereby ensuring that children flourish both socially and emotionally.[22–23]

1.2 Purpose of This Research Report

This report therefore aims to identify the best available research evidence on effective psychosocial interventions for preventing and treating mental disorders in the early years — to inform policymaking intended to better meet children's needs. We focused on anxiety, attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant and conduct (behaviour) disorders because these conditions start early and are relatively common.[12, 16, 24] As well, psychosocial interventions have been developed and evaluated for each of these conditions for young people.[25] The larger context is that of taking a population health approach to improving children's mental health: addressing avoidable adversities and promoting mental wellbeing for all children; providing effective prevention programs for all those who can benefit; providing effective treatments for all those with disorders; and tracking outcomes and collective progress.[26] The context is also that of honouring children's rights, including children's right to receive the services they need when they need them.[7, 18]

2. Methods

For this report, we used systematic review methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health* to identify randomized controlled trials (RCTs) evaluating psychosocial prevention and treatment interventions for anxiety, ADHD and behaviour disorders. We built on a recent comprehensive systematic review on interventions for children of all ages[25] — extracting data on psychosocial interventions delivered to children up to age six or to their parents. To ensure that we included the most recent research evidence, we also conducted updated searches to identify new RCTs. (Please also see Appendices: Table A1, search strategy; and Figure A1, search process.)

We required RCTs to assess interventions that were delivered to young children and/or their families living in high-income countries (for comparability to BC) and to be published in peer-reviewed journals. Study attrition had to be ≤20% or intention-to-treat analyses had to be performed. For most RCTs, we required two or more informant sources (e.g., child, parent and/or teacher). But we made an exception for studies assessing psychosocial interventions for the prevention of ADHD, requiring only one informant source because there were fewer available studies. As well, we required at least one informant source to be "blinded" — that is, assessors did not know whether children/families were in the intervention or comparison groups. Again, the only exception was for ADHD prevention because few studies included blinding. To ascertain long-term benefits, we also required RCTs to follow children for at least three months after the end of the intervention. (Please also see Appendices: Table A2, RCT inclusion criteria.)

For reporting on intervention effectiveness, we required that two or more RCTs show statistically significant reductions in disorder diagnoses and/or symptoms based on reliable and valid measures at final follow-up. We classified interventions according to their components, such as cognitive-behavioural therapy (CBT). Given the importance of replicating positive findings,[27] we then excluded interventions where program components were supported by only one successful RCT. For example, we excluded Perry Preschool, which involved enriched preschool curriculum coupled with parent-preschool collaboration, evaluated in one RCT.[28] Beyond this, we excluded studies of programs that were delivered by school staff given the older ages of most elementary school students.

Following these steps, we identified 24 RCTs from the previous systematic review that met criteria. Our updated searches also found 228 new articles, allowing us to identify four additional RCTs that met criteria. For the 28 accepted RCTs — evaluating 26 interventions — we then extracted diagnostic and/or symptom outcome data at final follow-up and compiled data tables summarizing the studies and interventions. Throughout our process, all steps were conducted and/or verified by two or more team members, resolving any differences by consensus.

Psychotropic medications were deemed beyond scope for this report because few have been evaluated with children aged six years or younger. As well, many such medications come with side-effects that may be particularly concerning with young children — an even greater concern if pharmacological approaches are used in place of effective psychosocial interventions.[29] But we acknowledge that medications may have a role in some treatment situations, for example, when effective prevention programs and psychosocial treatments have been offered and children have not benefited.

This report is based on research evidence drawn from high-quality quantitative studies evaluating intervention effectiveness, namely RCTs, because these methods are regarded as high-quality scientific evidence for assessing the impact of health-related interventions.[30–31] We nevertheless acknowledge that this methodology has limitations — including under-representing Indigenous Peoples, methods and perspectives.[32–33] More studies are needed that are designed for and about Indigenous children and that are led by Indigenous Peoples — informed by Traditional Knowledge as well as scientific methods.

3. Findings

3.1 Overview

We identified effective psychosocial interventions for all three early childhood mental health conditions covered in this review — 17 for prevention and nine for treatment. For anxiety, CBT proved highly successful for both prevention (two programs evaluated in two RCTs) and treatment (four programs evaluated in four RCTs). For ADHD, parent training proved successful for both prevention (four programs evaluated in four RCTs) and treatment (three programs evaluated in four RCTs). (We use the term "parent training" consistent with descriptions in the research of programs that aim to support parents and teach them to encourage their children's positive behaviours and development.) As well, for behaviour disorders, parent training proved highly successful for both prevention (11 programs evaluated in 12 RCTs) and treatment (two programs evaluated in two RCTs). For prevention, 16 of 17 programs were targeted, that is, delivered to participants deemed to be at risk, while one was universal, delivered to participants representing a given population.

Many of these studies provided data on particularly salient outcomes — namely statistically significant reductions in diagnoses. For prevention, this included reductions in the onset of new cases of disorder (or incidence) for intervention children. For treatment, this included children who had disorders beforehand but who no longer met diagnostic criteria after program completion. Diagnostic reductions were found for five anxiety interventions and one behaviour intervention. Beyond this, many studies also reported statistically significant reductions in symptoms as a result of both prevention and treatment programs.

Many studies also provided data on effect sizes — which indicate the magnitude of the impact, or the degree to which the intervention made a meaningful difference for children's lives and wellbeing. In the studies reported here, this was measured as Cohen's *d* (*d*) or odds ratio (OR) or eta-squared (η^2). (For *d*, values >0.40 are at least moderate; for OR, values >3.47 are at least moderate; and for η^2, values >0.06 are at least moderate.[31, 34–35] Moderate or greater effect sizes were demonstrated for either diagnoses or symptoms or both for three anxiety, one ADHD and six behaviour interventions. Tables 1–3 below describe the RCTs and their findings for each condition.

3.2 Early Interventions for Anxiety Disorders

3.2.1 Prevention

Two CBT programs, evaluated in two RCTs, proved effective in preventing anxiety diagnoses and/or symptoms for young, at-risk children.[36–38] Both programs involved parents, educating them about anxiety and teaching them to assist their children to: reduce physical symptoms of anxiety using techniques such as deep breathing; challenge unrealistic and unhelpful anxious thinking; and practice being in fear-provoking situations while managing anxiety.[39] Coping and Promoting Strength stood out. Comparison children had 8.5 times higher odds of developing an anxiety disorder compared with intervention children.[37–38]

3.2.2 Treatment

Four CBT programs, evaluated in four RCTs, proved effective in treating anxiety in young children.[40–43] These programs also involved working with parents or families using CBT as described above, with one program also including child social skills training.[40] All four interventions led to reductions in diagnoses, with moderate-to-large effect sizes for three of them.[40, 42–43] Timid to Tiger stood out. Comparison children had 8.5 times higher odds of continuing to have an anxiety disorder compared with intervention children.[43] See Table 1 below.

Table 1. Early Intervention Studies and Results for Anxiety

Program	Program Components*	Child Ages	Duration	Follow-Up	Anxiety Outcomes (Effect Sizes)
Prevention – Targeted					
Cool Little Kids[36]	Parent CBT training (group)	4 years	3 months	9 months	NS Any diagnoses ↓ 1 of 1 symptom
Coping and Promoting Strength[37–38]	Family CBT	6–13 years	5 months	9 months	↓ Any diagnoses (OR=8.54) ↓ 3 of 4 symptoms (*d*=0.54–0.74)
Psychosocial Treatment					
Cool Little Kids plus Social Skills[40]	Parent CBT training + child social skills training (groups)	2–5 years	2½ months	3 months	↓ Any diagnoses ↓ Number of diagnoses (*d*=1.76) ↓ 3 of 5 symptoms (*d*=0.89–2.11)
Parent Education Program[41]	Parent CBT training (group)	3–4 years	2½ months	3 years	↓ Any diagnoses ↓ 2 of 3 symptoms
Strongest Families – Chase Worries Away[42]	Self-directed family CBT with coaching	6–12 years	6½ months	5½ months	↓ Any diagnoses (OR=2.51)
Timid to Tiger[43]	Parent CBT training (group)	2–9 years	2½ months	1 year	↓ Primary diagnoses (OR=3.68) ↓ Any diagnoses (OR=8.50) NS 3 of 3 symptoms

CBT = cognitive-behavioural therapy; NS = not significant; ↓ = statistically significant reductions; OR = odds ratio; *d* = Cohen's *d*

* Intervention deemed successful if component(s) used showed success in two or more trials, i.e., CBT for anxiety across two prevention and four treatment trials; where "group" is not indicated, intervention was delivered to individual families

3.3 Early Interventions for Attention-Deficit/Hyperactivity Disorder

3.3.1 Prevention

Four group parent training programs, evaluated in four RCTs, each effectively reduced one ADHD symptom for at-risk children.[44–50] These programs typically involved coaching parents to encourage children's positive behaviours with praise and attention, while discouraging difficult behaviours by ignoring minor problems.[51] One parent training program also included a child tutoring component.[49–50]

3.3.2 Treatment

Three parent training programs, evaluated in four RCTs, effectively reduced one or two ADHD symptoms for young children with this disorder.[52–55] (One study was a replication trial, testing Parenting Group over a shorter duration.)[55] These programs used the principles described above, mostly in groups, with one also including child behaviour therapy and social skills training.[52] Parenting Group stood out based on the second (replication) trial — reducing two symptoms with a strong effect size.[55] See Table 2 below.

Table 2. Early Intervention Studies and Results for Attention-Deficit/Hyperactivity Disorder

Program	Program Components*	Child Ages	Duration	Follow-Up	ADHD Outcomes (Effect Sizes)
Prevention – Targeted					
Incredible Years[44]	PT (group)	3–4 years	3 months	3 months	↓ 1 of 1 symptom
Incredible Years + Literacy training[45–46]	PT (group)	5–6 years	6½ months	4 months	↓ 1 of 1 symptom
Legacy for Children[47–48]	PT (group)	Prenatal	3¼ years	2 years	↓ 1 of 1 symptom (OR=2.00)
SAFE Children[49–50]	PT (group) + child tutoring	6 years	5 months	4¼ years	↓ 1 of 6 symptoms
Psychosocial Treatment					
Behavioural and Social Skills Class[52]	PT, child behaviour therapy + social skills training (groups)	5–12 years	1¾ months	3 months	↓ 1 of 2 symptoms
New Forest Parenting Programme[53]	PT	3–7 years	2¾ months	8¼ months	↓ 1 of 3 symptoms (d=0.25)
Parenting Group[54]	PT (group)	5–18 years	3 months	1 year	↓ 1 of 5 symptoms
Parenting Group† [55]	PT (group)	5–18 years	1½ months	6 months	↓ 2 of 8 symptoms (η^2 =0.10)

PT = parent training; ↓ = statistically significant reductions; OR = odds ratio; d = Cohen's d; η^2 = eta-squared

* Intervention deemed successful if component(s) used showed success in two or more trials, i.e., PT for ADHD across four prevention and four treatment trials; where "group" is not indicated, intervention was delivered to individuals

† Trial replicating earlier RCT on Parenting Group

3.4 Early Interventions for Behaviour Disorders

3.4.1 Prevention

Eleven parenting training programs, evaluated in 12 RCTs, effectively reduced early childhood behaviour symptoms — one delivered universally[56–57] and 10 delivered with at-risk groups.[58–70] (One study was a replication trial testing Incredible Years Basic with slightly older children).[60] These programs typically focused on supporting parents and teaching them to encourage children's positive behaviours with praise and attention, while discouraging negative behaviours by ignoring minor problems.[71] Triple P and Incredible Years stood out by showing success in reducing symptoms across multiple RCTs — albeit using different program versions — including one version of each with large effect sizes.[59, 69]

3.4.2 Treatment

Two parent training programs, evaluated in two RCTs, effectively reduced behaviour diagnoses and/or symptoms for young children with these disorders.[72–74] Both parent training programs included elements described above. Incredible Years again stood out — for significantly reducing diagnoses in addition to symptoms. Specifically, five months after the program ended, comparison children had five times the odds of still meeting diagnostic criteria for oppositional defiant disorder compared to children whose parents received Incredible Years. See Table 3 below.

Investments in effective prevention programs in early childhood can benefit not only children and families but also society.

Table 3. Early Intervention Studies and Results for Behaviour Disorders

Program	Program Components*	Child Ages	Duration	Follow-Up	Behaviour Outcomes (Effect Sizes)
Prevention – Universal					
Triple P[56–57]	Parent training (PT) (group)	3–6 years	1 month	4 years	↓ 2 of 8 symptoms
Prevention – Targeted					
Chicago Parent Program[58]	PT (group)	2–4 years	2¾ months	1 year	↓ 2 of 4 symptoms
Incredible Years Basic[59]	PT (group)	3–4 years	2¾ months	3¼ months	↓ 2 of 4 symptoms (*d*=0.63–0.89)
Incredible Years Basic† [60]	PT (group)	4–8 years	3½ months	4 months	↓ 1 of 2 symptoms (*d*=0.08)
Incredible Years Enhanced[61]	PT (group)	2–5 years	9–11 months	8 months	↓ 1 of 2 symptoms
Infant Behavior Program‡ [62–63]	PT	1–1¼ years	1½ months	6 months	↓ 1 of 2 symptoms (*d*=0.51)
Nurse-Family Partnership[64]	PT	Prenatal	2¼ years	13 years	↓ 3 of 14 symptoms
Parent-Child Interaction Therapy§ [65]	PT	2–7	2½ months	6–9 months	↓ 1 of 2 symptoms
Parent-Management Training – Oregon¶ [66]	PT (group)	6–10 years	3¼ months	8¾ years	↓ 3 of 3 symptoms (*d*=0.28)
Strongest Families Smart Website[67–68]	Self-directed PT with coaching	4 years	10 months	1¼ years	↓ 1 of 2 symptoms (*d*=0.22)
Triple P Online[69]	Self-directed PT with coaching	2–8 years	4 months	5 months	↓ 2 of 3 symptoms (*d*=0.70–1.28)
Triple P Online Brief[70]	Self-directed PT	2–9 years	2 months	9 months	↓ 2 of 4 symptoms (*d*=0.39–0.41)
Psychosocial Treatment					
Incredible Years Basic[72–73]	PT (group)	3–7 years	3–3¾ months	7¾ years	↓ Oppositional defiant diagnoses (OR=5.00) ↓ 1 of 3 symptoms
Parent-Child Interaction Therapy[74]	PT	2–7 years	5 months	1 year	↓ 2 of 5 symptoms (*d*=0.61–0.64)

PT = parent training; ↓ = statistically significant reductions; *d* = Cohen's *d*; OR = odds ratio

* Intervention deemed successful if component(s) used showed success in two or more trials, i.e., PT for behaviour across 12 prevention and two treatment trials; where "group" is not indicated, intervention was delivered to individuals

† Trial replicating earlier RCT on Incredible Years Basic with slightly older children

‡ Based on Parent-Child Interaction Therapy (PCIT)

§ Shortened version of PCIT was considered "usual care"

¶ Trial included only boys

4. Discussion

4.1 Summary

Mental health — or social and emotional wellbeing — begins in the early years and underpins the health of both individuals and populations.[4–5] At the same time, many young children experience avoidable adversities, such as socioeconomic disadvantage, which can contribute to the development of mental disorders.[9] So, early childhood is the optimal time to intervene to prevent these disorders and to treat them.

To inform policymaking, we therefore sought research evidence on effective psychosocial interventions for preventing and treating three of the most common mental health conditions that start in early childhood: anxiety, ADHD and behaviour disorders. Our systematic review identified 28 RCTs meeting criteria: six for anxiety, eight for ADHD and 14 for behaviour disorders. These RCTs evaluated 26 programs: six for anxiety (two prevention, four treatment); seven for ADHD (four prevention, three treatment); and 13 for behaviour problems (11 prevention, two treatment). Program components involved CBT for anxiety and parent training for ADHD and behaviour.

On balance, we found strong evidence supporting CBT for anxiety, with one of two prevention programs and four of four treatment programs reducing disorder diagnoses, as well as reducing symptoms in some cases. We also found strong evidence supporting parent training for behaviour problems, with 11 of 11 prevention programs reducing symptoms and one of two treatment programs reducing both diagnoses and symptoms. As well, there was evidence supporting parent training for ADHD, with four prevention and three treatment programs reducing symptoms (only). As a result, there is ample evidence to act on — starting with programs for anxiety and behaviour, where the research evidence is strongest.

For BC, delivering successful interventions such as CBT and parent training should be feasible because of their relatively short durations in community settings. As well, both CBT and parent training can be adapted for different cultural contexts — for example, with Indigenous communities.[75–76] CBT has the added benefit of already being delivered by many community practitioners[77] while efforts to increase the availability of parent training are ongoing.[78]

Prevention, in particular, is also cost-effective. For example, economic analyses in the United States (US) have shown that preventing just one case of a severe childhood problem such as conduct disorder may save an estimated $5.6 million (2021 USD equivalency) in averted lifetime costs across multiple public sectors including healthcare, special education, child protection and justice.[79] As well, prevention programs such as Nurse-Family Partnership have been estimated to pay for themselves when averted health care, child protection and justice costs are amortized over 10 years or more.[80] Therefore, investments in effective prevention programs in early childhood can benefit not only children and families but also society.

4.2 Policy Implications

4.2.1 Ensure effective prevention programs for all children who could benefit

Effective prevention programs, such as those reviewed here, should be scaled up and offered widely in BC — addressing anxiety with CBT and addressing behaviour problems with parent training. Supporting cultural adaptations will help enhance safety, relevance and results. Tracking outcomes will also inform ongoing program improvements. Yet policy responsibilities for mental health in early childhood typically span multiple public sectors and agencies which can impede efficiency and coordination. In BC this includes among others: the BC Ministries of Children and Family Development, Health, and Mental Health and Addictions; the Provincial Health Services Authority; five regional Health Authorities; and the First Nations Health Authority. Collective leadership on mental health in early childhood therefore needs to include these groups. However, while ADHD prevention is also important, given weaker evidence, further program evaluations are warranted prior to scale up. Putting this research in context, it is important to acknowledge that recommendations on effective prevention programs presuppose adequate service system capacity — including accurate identification of children at risk who can benefit from targeted programs, in addition to program delivery. So increasing overall prevention capacity is essential.

4.2.2 Ensure effective treatment programs for all children with disorders

Effective treatment programs, such as those reviewed here, should also be offered to all children in need, preferably early in the course of disorder — addressing anxiety with CBT and addressing ADHD and behaviour with parent training. But recognition of mental disorders in early childhood is not always widespread. Practitioner leaders can therefore play important roles — ensuring that children with disorders are identified early and receive careful assessments, and that they then receive effective treatments with appropriate follow-up. Both CBT and parent training can also be provided by a range of practitioners in a range of community settings, which should enhance access. However, this will require coordination, for example, across the children's services and health sectors, among others. Policymakers can also play crucial leadership roles in ensuring adequate funding and supports for early childhood mental health care — and in fostering greater public recognition of the mental health needs of young children and the importance of meeting these needs. Beyond this, as with prevention, recommendations on effective treatments presuppose adequate service system capacity — including assessment and diagnostic capacity, in addition to treatment delivery. So increasing treatment capacity is also essential.

4.2.3 Address underlying health and social disparities

Young children, by definition, are embedded within their families and communities, so it is crucial to support these families and communities. Yet many BC families continue to struggle with socioeconomic disadvantage — which in turn can contribute to early childhood mental health problems, further fuelling cycles of health and social disparities. Public initiatives that address these disparities will therefore help in addressing mental health in early childhood. Examples include enacting policies and programs that better reach and support disadvantaged families with enriched child benefits and income supplements.

Indigenous children and communities in particular merit enhanced resourcing proportionate to need — given the longstanding legacies of colonialism which include socioeconomic inequities, racism, intergenerational trauma and overrepresentation of Indigenous children in child welfare systems.[81–82] Initiatives led by and for Indigenous communities are the first step — which Indigenous leaders are taking, highlighting the strength and resiliency of their communities.[83]

4.2.4 Address research gaps

While we found many RCTs on early interventions, some of which included children from diverse cultural backgrounds, we found no studies conducted with a significant proportion of Indigenous children that met our criteria. This gap needs to be addressed with increased funding and opportunities for Indigenous-led research — which is occurring through new programs such as the Canadian Institutes for Health Research Indigenous Healthy Life Trajectories Initiative[84] — which includes a long-term early child development project being led by BC's Nuu-chah-nulth Tribal Council.[85]

4.3 Conclusions

Given the potential to reduce avoidable adversities and improve developmental trajectories starting early in life, we have a collective ethical responsibility to ensure that preventing mental disorders is a top population health and public policy priority. Offering effective prevention programs to all in need will help to create conditions that enable more children to flourish and meet their potential — in turn contributing to addressing health and social disparities. Ensuring that all young children with mental disorders are identified early and receive timely and effective treatment programs is also crucial — in keeping with international commitments to meeting children's needs and honouring their rights. Collective flourishing will in turn be enhanced by wise public investments in mental health in early childhood.

Given the potential to reduce avoidable adversities and improve developmental trajectories starting early in life, we have a collective ethical responsibility to ensure that preventing mental disorders is a top public policy priority.

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Competing interests: Charlotte Waddell and Nicole Catherine are co-leading BC's RCT on Nurse-Family Partnership, one of the interventions discussed in this review.

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6. Appendices

6.1 Search Strategy

Table A1. Search Strategy

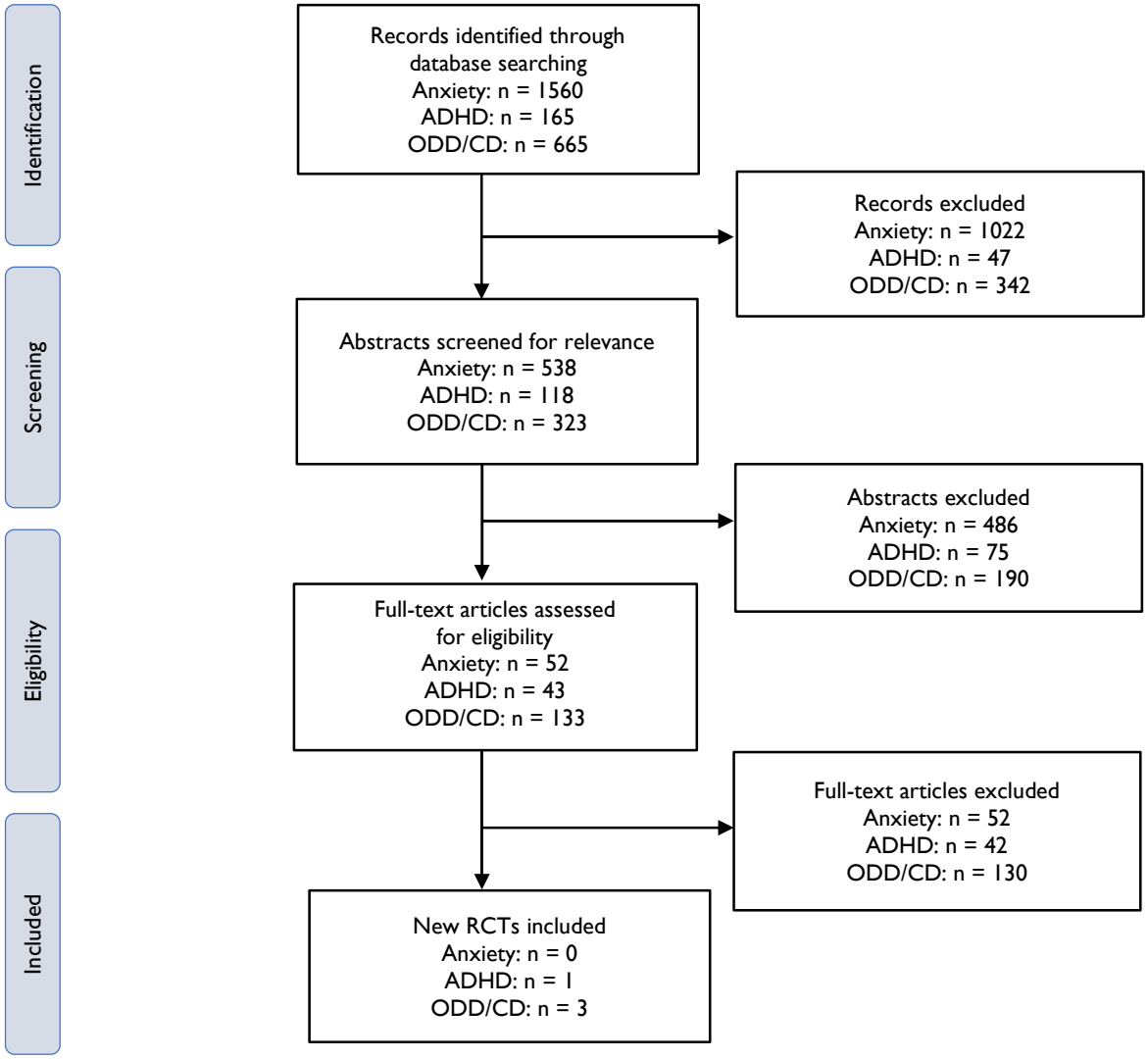
Databases	• CINAHL, ERIC, Medline and PsycINFO
Search Terms	• Anxiety disorder, anxiety, agoraphobia, generalized anxiety disorder, panic disorder, phobic disorder, selective mutism, separation anxiety disorder, social anxiety disorder, social phobia or specific phobia *and* prevention, intervention or treatment • Attention deficit disorder with hyperactivity, ADHD, attention deficit, attention disorder, hyperkinesis *and* prevention, intervention or treatment • Conduct disorder, oppositional defiant disorder, aggressive behaviours, child behaviour disorders or juvenile delinquency a*nd* prevention, intervention or treatment
Limits	• Peer-reviewed articles published in English through until mid-April 2021* • Child participants aged 18 years or younger† • RCT methods used

* Updating searches were conducted building on the previous report,[25] which had search dates spanning from database inception to: 2018 for anxiety, 2020 for ADHD and 2017 for oppositional and/or conduct disorders

† To ensure that we captured all potentially relevant studies, we initially included children up to age 18 years, then extracted data from accepted RCTs for only young children

6.2 Search Process

Figure A1. Search Process*



* Adapted from Preferred Reporting Item for Systematic Reviews and Meta-Analyses[86]

6.3 Randomized Controlled Trial Inclusion Criteria

Table A2. RCT Inclusion Criteria

General
• Random assignment to intervention or control/comparison groups (i.e., no intervention or usual care) • Clear descriptions provided of participant characteristics, settings and psychosocial interventions • Participants included children aged six years or younger • Interventions aimed to prevent or treat anxiety, ADHD,* oppositional defiant and/or conduct disorders • Interventions were not delivered by school staff, for applicability to the early years • Interventions evaluated in a high-income country for comparability with Canadian policy and practice settings • For prevention studies, most participants did not have a primary diagnosis of anxiety, ADHD or oppositional defiant and/or conduct disorders at study outset • For treatment studies, most participants had a primary diagnosis of anxiety, ADHD or oppositional defiant and/or conduct disorders, or had been referred for treatment for behavioural problems, at study outset • Outcome indicators included diagnoses and/or symptoms of the disorder of interest, assessed at follow-up • Follow-up was three months or more from the end of the intervention • Attrition rates were 20% or less at follow-up and/or intention-to-treat analyses was used • Reliability and validity of all primary outcome measures or instruments was documented • Levels of statistical significance were reported for primary outcome measures • Interventions were not focused on specialized subpopulations which would limit applicability to most children
Anxiety, Oppositional Defiant and/or Conduct Disorders
• For prevention and treatment studies, outcome indicators included either one diagnostic measure where the diagnostician was blinded, or two symptom measures, completed by two or more informant sources, e.g., child or parent or teacher, at least one of whom was blinded to participants' group assignment
ADHD
• For prevention studies, outcome indicators completed by at least one informant source* • For treatment studies, outcome indicators completed by two or more informant sources, e.g., child or parent or teacher, at least one of whom was blinded to participants' group assignment

* For ADHD, because there were few prevention studies, inclusion criteria were more expansive to allow for the incorporation of more studies, including studies aiming to prevent other disorders but where ADHD was also assessed