

CHILDREN'S MENTAL HEALTH RESEARCH

Quarterly

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**Treating concurrent mental disorders
in children**

OVERVIEW

Co-occurring disorders:
Prevalence and patterns

REVIEW

Can one treatment work
for two disorders?





About the Quarterly

We summarize the best available research evidence on a variety of children's mental health topics, using systematic review and synthesis methods adapted from the *Cochrane Collaboration*. We aim to connect research and policy to improve children's mental health. The BC Ministry of Children and Family Development funds the *Quarterly*.

About the Children's Health Policy Centre

We are an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University. We focus on improving social and emotional well-being for all children, and on the public policies needed to reach these goals.

To learn more about our work, please see childhealthpolicy.ca.

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We highlight recent findings on the number of young people who are coping with concurrent mental disorders and the associated burdens they face.



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Can one treatment work for two disorders?

The best way to help children with concurrent disorders is to provide a single effective treatment for both conditions. But how well does this approach work? To answer this question, we conducted a systematic review of transdiagnostic interventions.

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NEXT ISSUE

Preventing eating disorders in children

Programs for preventing eating disorders are crucial to help more children, and to help them before disorders develop. To inform these efforts, we conducted a systematic review.

How to Cite the Quarterly

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

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We celebrate the Indigenous Peoples whose traditional lands
Quarterly team members live and work on.

Co-occurring disorders: Prevalence and patterns

Children who experience one mental health condition often face more than one—what is commonly referred to as having concurrent or co-occurring conditions. But just how common is this experience? A recent systematic review that combined data from 14 population-based surveys found that for children who met criteria for one mental disorder, 26.5% met criteria for two or more.¹ Researchers have found even higher concurrent rates for children receiving mental health treatment services and for those in foster care.²⁻³ (The adjacent sidebar provides information on rates for Indigenous children.)

Research on which disorders are more likely to co-occur is crucial for informing both prevention and treatment efforts. And the co-occurrence of substance use and other mental disorders has been particularly well studied. A systematic review of 21 population-based surveys compared young people with any substance use, including those whose use reached the level of a disorder, to individuals without any substance use.² When young people had any substance use or a substance use disorder, their odds of having other disorders significantly increased.

Children with multiple mental health conditions often face added challenges.

This included nearly eight times greater odds of also experiencing conduct, oppositional defiant or attention-deficit/hyperactivity disorders, slightly more than four times greater odds of co-occurring depressive disorders, and approximately two times greater odds of co-occurring anxiety disorders.²

Data are more limited on the co-occurrence of disorders that do not involve substance use. A population-based survey of Puerto Rican children nevertheless provides insights on the overlap of conduct/oppositional defiant disorders, attention-deficit/hyperactivity disorder (ADHD), anxiety disorders and depression.⁵ Researchers found high levels of co-occurrence across all four conditions. But levels were particularly high for children whose primary diagnosis was conduct/oppositional defiant disorder — with anxiety disorders co-occurring for 55.3%, ADHD for 35.7%, and depression for 17.6%.⁵



Among young people who meet criteria for one mental disorder, 26.5% of them will meet criteria for two or more disorders.

ISHUTTERSTOCK / ALESSANDROBASCIOU

Concurrent disorder rates among Indigenous children

Researchers tracked the rates of concurrent mental disorders for more than 600 Indigenous children to determine if there were changes as they reached adolescence.⁴ The children, who were living in one of eight Indigenous communities in Canada or the United States, were assessed when they were ages 10 to 12 years, and then again at ages 12 to 15. At the first time point, 9.2% met criteria for two mental disorders. By the second time point, this percentage had increased to 26.6%. This latter concurrence rate was similar to other populations of children¹ — potentially reflecting the strength of Indigenous children, given that many faced added challenges, including limited service access and economic disadvantage.⁴

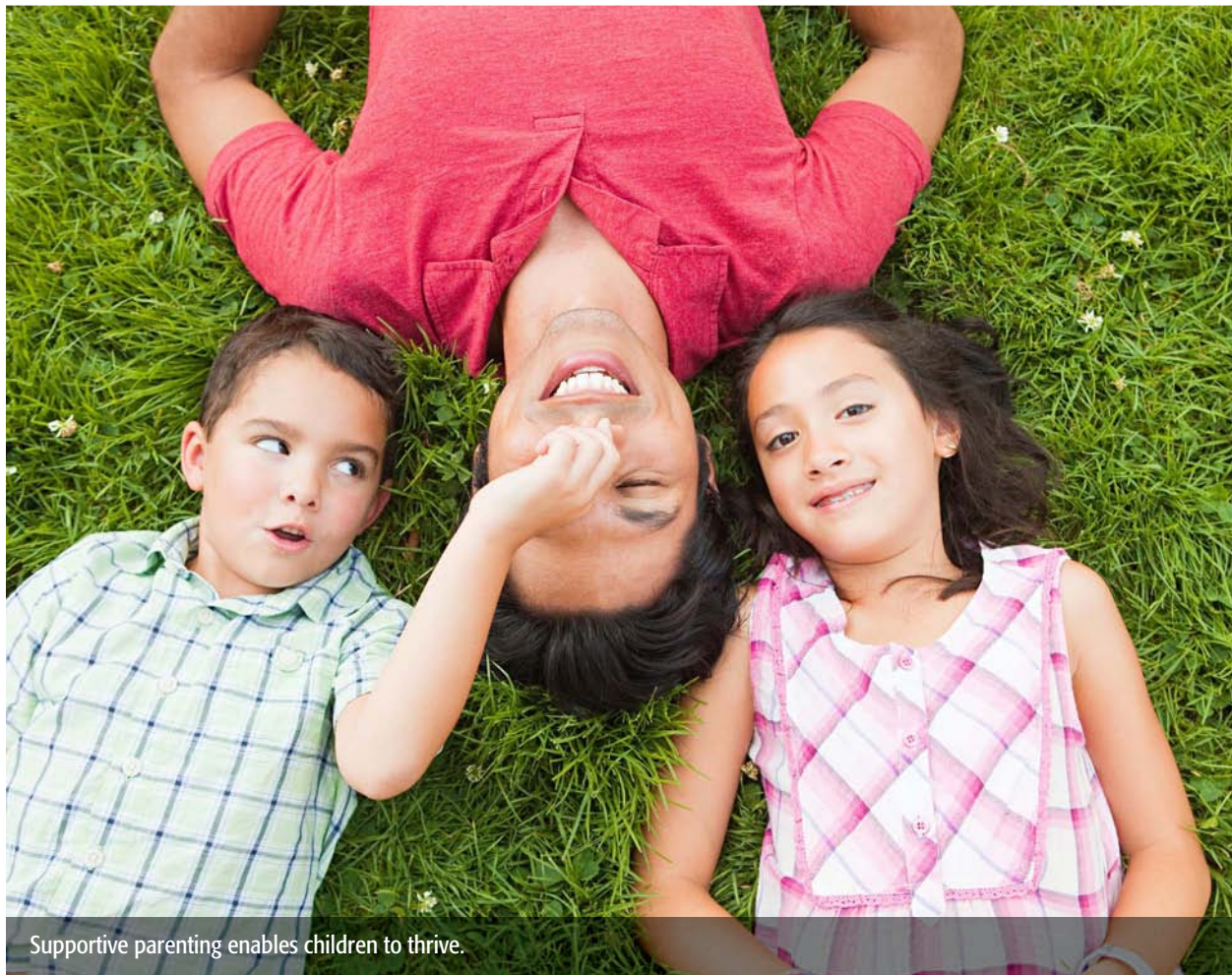
The added challenges of multiple disorders

Children with multiple mental health conditions often face added challenges. Experiencing more than one mental disorder has been associated with an increased likelihood of attempting suicide and dying by suicide.⁶⁻⁷

Concurrent childhood mental health conditions occur frequently and can be severe.

Children with concurrent disorders are also more likely to experience greater impairment overall as well as in specific situations, including at school, at home and in relationships.⁸⁻⁹ In addition, these children are at greater risk for experiencing poorer quality of life and more peer problems, and they are more likely to drop out of treatment and have poorer treatment responses than those with one disorder only.¹⁰⁻¹¹

Concurrent childhood mental health conditions occur frequently and can be severe — underscoring the importance of effective care that addresses all identified concerns. Children with co-occurring disorders are more likely to receive treatment than those with one disorder only, however, about 50% of those with two disorders do not receive *any* treatment.¹² To inform efforts to better help children with concurrent disorders, the [Review article](#) that follows presents findings from five rigorous treatment evaluations that aimed to address two disorders with a single intervention. 🙌



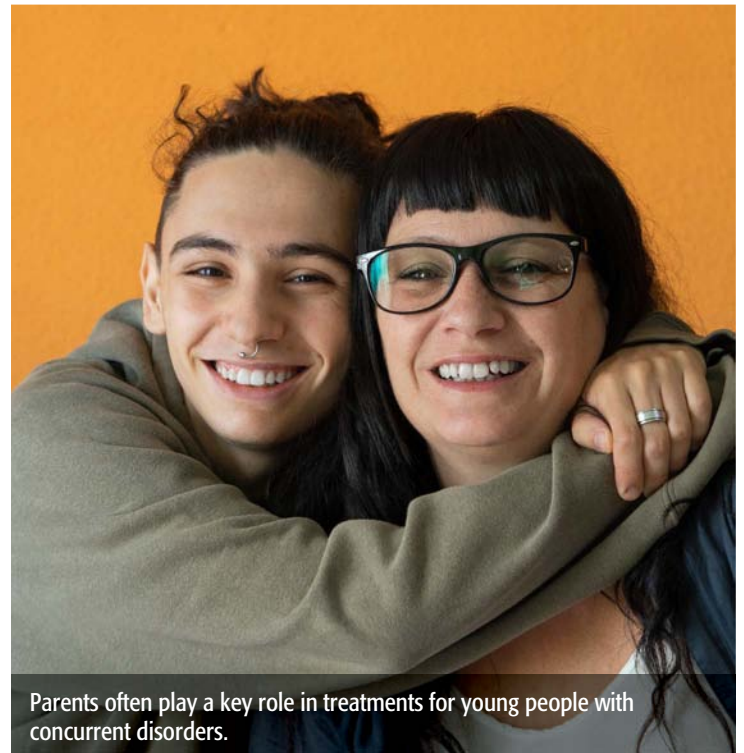
Supportive parenting enables children to thrive.

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Can one treatment work for two disorders?

For children with co-occurring mental disorders, ideally a single intervention would be provided for both — an approach known as transdiagnostic treatment.¹³ And there is more and more research on such interventions. We therefore conducted a systematic review to identify the most effective transdiagnostic treatments.

We accepted five randomized controlled trials (RCTs) evaluating three different treatments: Brief Behavioral Therapy,¹⁴ Risk Reduction through Family Therapy (RRFT)¹⁵ and Multidimensional Family Therapy (MDFT, three RCTs).^{16–18} These interventions aimed to treat concerns including substance use,^{15–18} anxiety,¹⁴ depression,¹⁴ posttraumatic stress¹⁵ and conduct disorder symptoms.^{16–18} The next sections describe each treatment in turn.



Parents often play a key role in treatments for young people with concurrent disorders.

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Anxiety and depression

The RCT evaluating Brief Behavioral Therapy included American children and teens experiencing one of three anxiety disorders (separation anxiety, generalized anxiety or social phobia) as well as depression or dysthymia or significant symptoms of these disorders.¹⁴ Among participants, 94.1% met diagnostic criteria for at least one of the specified anxiety disorders, including 32.4% who also had concurrent depression. Practitioners delivered Brief Behavioral Therapy sessions over 16 weeks, with components for both young people and their parents.

Young people received education on depression and anxiety, learned relaxation and problem-solving skills, and practised facing feared situations (such as being away from their parents).^{14, 19} Parents participated in a check-in and review. For the first, fourth and final sessions, parents of school-aged children participated in the full appointment, while parents of teens participated in half of these three appointments.¹⁹ Parents randomized to the comparison group received a list of practitioners and programs specializing in childhood depression and anxiety; reportedly, 82.2% connected with services and attended an average 6.6 sessions.¹⁴

Posttraumatic stress and substance use

The RCT evaluating RRFT included American teens who had experienced interpersonal violence resulting in at least five symptoms of posttraumatic stress disorder (PTSD) and had also used a substance (other than tobacco) at least once in the past 90 days.¹⁵ Among participants, 65.8% met criteria for PTSD by self-report, 76.7% by caregiver report. Substances used were alcohol (74.2%), marijuana (66.9%) and other drugs (12.9%), including cocaine, “pills,” stimulants, “club drugs” and hallucinogens.

RRFT primarily combined trauma-focused cognitive-behavioural therapy (CBT) for PTSD with multisystemic therapy for substance use. Delivered by practitioners weekly for an average of 19 weeks, the intervention involved individual sessions for youth, brief caregiver and family sessions when applicable, and occasional telephone or text check-ins between sessions. Youth randomized to treatment-as-usual worked with practitioners trained in trauma-focused CBT, who were instructed to provide whichever treatment

This systematic review provides promising evidence that transdiagnostic treatments can address symptoms of two different mental disorders concurrently.

they typically used with youth experiencing PTSD and substance use problems. Practitioners providing the treatment-as-usual could also refer youth to other community agencies to address their substance use. As a result, 14.3% were referred for substance treatment, 22.2% were referred to other mental health services, and 20.6% were hospitalized.¹⁵

Substance use disorders and behaviour problems

The first MDFT evaluation included American youth who had been diagnosed with a substance use disorder and concurrent behaviour problems.¹⁶ Among the substance use disorders, 91.1% met criteria for cannabis, 21.4% for alcohol, and 24.1% for unspecified substances. As well, all youth were involved in the court system and 51.8% met diagnostic criteria for conduct disorder.

MDFT began by focusing on enhancing parents' and teens' motivation to participate in treatment and change their behaviours. Practitioners then taught teens communication, emotional regulation, coping and social skills while also supporting parents to increase their involvement with their children and to use effective parenting strategies. Sessions occurred twice a week over four to six months and included time with youth and parents alone and together. About half of the sessions occurred in a community clinic and half in family homes.

Youth randomized to the comparison condition received CBT and motivational interviewing to treat their substance use, including three group sessions per week and one individual session per month in a community clinic over four to six months.¹⁶

The second MDFT evaluation included American youth who had been diagnosed with a substance use disorder and at least one concurrent disorder.¹⁷ Among the substance use disorders, 100% met criteria for cannabis, 71% for alcohol, and 33% for stimulants or opioids. The most frequent additional concerns were conduct disorder (77%), followed by attention-deficit/hyperactivity disorder (21%) and major depression (18%). Practitioners delivered MDFT over six to nine months. Youth randomized to the comparison condition participated in residential substance use treatment, which also lasted six to nine months and used CBT and motivational interviewing.¹⁷

The third MDFT evaluation included youth from five Western European countries, all with cannabis use disorder coupled with clinically significant behaviour problems.¹⁸ Practitioners delivered two MDFT sessions per week for up to six months. Youth randomized to the comparison condition received individual counselling also for up to six months.^{18, 20} Although individual counselling varied in the theoretical orientations used, in all

By using an effective transdiagnostic intervention, each concern can be addressed.



Children with concurrent disorders can experience great success with effective interventions.

cases it included motivational interviewing, drug education, identification of substance use triggers and relapse prevention strategies.²⁰ Table 1 summarizes these five evaluations.

Treatment	Approaches + goals	Sample size	Child ages (country)
Brief Behavioral Therapy ^{14,19}	Children learned relaxation + problem-solving skills + practised facing feared situations; parents participated with children in 3 sessions + received separate updates at all other sessions over 4 months to address anxiety + depression	185	8–17 years (United States)
Risk Reduction through Family Therapy (RRFT) ¹⁵	Youth + caregivers (separately + together) learned techniques from trauma-focused cognitive-behavioural therapy + multisystemic therapy over 4½ months (average) to address posttraumatic stress symptoms + substance use	124	13–18 years (United States)
Multidimensional Family Therapy (MDFT) ¹⁶	Youth learned communication, emotional regulation, coping + social skills; parents were taught parenting skills over 4–6 months to address substance use disorders + conduct disorder symptoms	112	13–18 years (United States)
MDFT ¹⁷	As above but delivered over 6–9 months to address substance use disorders + a variety of concurrent disorders*	113	13–18 years (United States)
MDFT ^{18,21}	As above but delivered over 3–6 months to address cannabis use disorder + behaviour problems	450	13–18 years (5 European countries) [†]

* Concurrent conditions included conduct disorder (77%), attention-deficit/hyperactivity disorder (21%) and depression (18%).
 † Countries were Belgium, France, Germany, the Netherlands and Switzerland.

Anxiety and depression results

Turning to intervention outcomes, Brief Behavioral Therapy showed benefits compared to children whose parents received a list of practitioners and programs specializing in childhood depression and anxiety (i.e., treatment-as-usual).¹⁴ (Throughout this systematic review, intervention-comparison differences had to reach statistical significance for an outcome to be deemed beneficial.) At four-month follow-up, children who received Brief Behavioral Therapy were significantly more likely to show a positive response (defined as anxiety and/or depressive symptoms being “very much improved” or “improved” according to an independent rater). In fact, 67.5% had a positive response with Brief Behavioral Therapy compared to only 43.1% with treatment-as-usual.¹⁴ As well, children who received Brief Behavioral Therapy had significantly reduced anxiety symptoms and improved overall functioning — with magnitude of clinical impact, or effect size, being small for anxiety (Cohen’s *f* = 0.21) and medium for functioning (Cohen’s *d* = 0.49).

However, Brief Behavioral Therapy did not make a difference regarding the percentage of children who experienced remission from anxiety or depression at four-month follow-up.¹⁴ (Remission was defined as having “very much improved” anxiety and/or depressive symptoms.) Although 36.3% of children who received Brief Behavioral Therapy experienced remission compared to 22.2% of those who received treatment-as-usual, the difference was not statistically significant. As well, Brief Behavioral Therapy and treatment-as-usual did not produce significantly different outcomes for depressive symptoms.¹⁴

Adolescents randomized to the transdiagnostic treatment completed more sessions than those receiving typical treatments.

PTSD and substance use results

RRFT also produced benefits compared to treatment-as-usual.¹⁵ Regarding PTSD symptoms, at 13½-month follow-up, RRFT participants had significantly less severe avoidance and hyperarousal symptoms (e.g., anger outbursts and hypervigilance) according to youth report, although not caregiver report. Effect sizes for both youth-reported outcomes were medium (*d* = 0.47 and *d* = 0.52, respectively). Still, researchers found no

significant program benefits for severity of intrusive symptoms (e.g., recurrent and involuntary distressing memories of the trauma) or overall PTSD severity by either youth or caregiver report.¹⁵

By 13½-month follow-up, RRFT had also led to youth using substances for significantly fewer days overall. Effect size for this outcome was substantial, namely, a 90% decrease relative to treatment-as-usual (event rate = 0.10). Youth who received RRFT compared to treatment-as-usual also used significantly fewer substances overall (odds ratio [OR] = 0.25), used less cannabis (OR = 0.04) and used cannabis on fewer days (event rate = 0.05). However, RRFT had no impact on either the number of days in which alcohol was consumed or any alcohol use.¹⁵

With more widespread use of effective prevention interventions, it may be possible to avert much unnecessary suffering for children.

Substance use and behaviour results

The first MDFT evaluation found similar substance use outcomes relative to the comparison condition, a group substance use treatment program, at 18-month follow-up.¹⁶ Participants in both MDFT and the comparison condition had fewer days of substance use and less problematic use, with no significant difference between the groups.^{16, 22} However, MDFT did outperform the comparison condition for three of six behavioural outcomes.¹⁶ Specifically, youth who received MDFT had fewer arrests for felonies, with a large effect size ($d = 0.96$); reported engaging in significantly fewer serious personal and property crimes, such as aggravated assaults or car thefts, albeit with a small effect size ($d = 0.38$); and reported fewer behavioural problems generally, with a small effect size ($d = 0.39$).¹⁶ That said, there were no differences between youth receiving MDFT and the comparison group in total number of arrests, arrests for misdemeanours or youth-reported criminal offences.

Results for substance use and other mental health conditions

The second MDFT evaluation found benefits relative to the comparison condition, a residential substance use treatment program, at nine-month follow-up.¹⁷ Specifically, MDFT led to less problematic substance use (medium effect size; $d = 0.51$) as well as less frequent use (large effect size; $d = 1.18$), all by youth report. Youth who received MDFT also reported engaging in fewer criminal offences (medium effect size; $d = 0.42$). But there were no significant differences between MDFT and the comparison group regarding overall behaviour or emotional concerns.¹⁷

Cannabis use and other mental health conditions

MDFT did not fare as well in the third evaluation. At six-month follow-up, no statistically significant differences were found between MDFT and treatment-as-usual regarding cannabis use — either disorder diagnoses or frequency of use.¹⁸ As well, there were no meaningful differences regarding emotional problems by youth or parent report, or behaviour problems by parent report.²⁰ However, MDFT did produce significantly greater reductions in youth-reported behaviour problems (small effect size; $d = 0.26$).²⁰ As the sidebar notes, practitioners' adherence to the MDFT model also influenced outcomes. Table 2, on the next page, summarizes outcomes for all five RCTs.

Fidelity favours better outcomes

Beyond assessing whether Multidimensional Family Therapy (MDFT) was effective in reducing cannabis use and other mental health concerns, researchers also examined how practitioner fidelity to MDFT principles affected youth outcomes.²¹ Independent raters reviewed videotaped sessions from 25% of MDFT cases. (Researchers chose this percentage to sample a range of cases and sessions for each therapist.) They found that average adherence to the model was similar to previous evaluations (i.e., 3.1 out of 7, or moderate). Researchers then established that MDFT adherence ratings predicted significant decreases in both youth substance use frequency and cannabis "dependence" at six months. (Because the study began in 2006, the researchers used this older "dependence" diagnosis in some of their analyses rather than the current term, cannabis use disorder.) These findings underscore the importance of delivering effective treatments as intended. Policy-makers can support practitioners to deliver with fidelity in typical community settings, for example, by ensuring needed training is available.²³

Table 2. Transdiagnostic Treatment Outcomes

Treatment	Follow-up	Outcomes
Brief Behavioral Therapy (vs. treatment-as-usual*) ¹⁴	4 months	↑ Positive response rate for anxiety and/or depression [†] NS Anxiety and/or depression – remission rate [‡] ↓ Anxiety symptoms NS Depressive symptoms ↑ Overall functioning
Risk Reduction through Family Therapy (RRFT) (vs. treatment-as-usual) ¹⁵	13½ months (average)	NS Posttraumatic stress disorder (PTSD) – overall symptom severity (2 of 2 measures) NS PTSD – intrusion symptom severity (2 of 2 measures) ↓ PTSD – avoidance symptom severity (1 of 2 measures) ↓ PTSD – hyperarousal symptom severity (1 of 2 measures) ↓ Substance use [§] – # of days of use ↓ Substances – # used ↓ Cannabis use – any ↓ Cannabis use – # of days of use NS Alcohol use – any NS Alcohol use – # of days of use
Multidimensional Family Therapy (MDFT) (vs. group outpatient substance use treatment program) ¹⁶	18 months	NS Substance use – problems NS Substance use – # of days of use NS Arrests – total # ↓ Arrests – felonies NS Arrests – misdemeanours NS Criminal offences ↓ Serious personal + property crimes** ↓ Behaviour problems
MDFT (vs. residential substance use treatment program) ¹⁷	9 months	↓ Substance use – problems ↓ Substance use – frequency ↓ Criminal offences NS Behaviour problems NS Emotional problems
MDFT (vs. treatment-as-usual) ^{18,20}	6 months	NS Cannabis use disorder diagnoses NS Cannabis use – frequency ↓ Behaviour problems (1 of 2 measures) NS Emotional problems (2 of 2 measures)
↓ or ↑ Statistically significant benefits favouring intervention over comparison. NS No significant difference between intervention and comparison. * Parents received a list of practitioners/programs specializing in childhood depression + anxiety; 82.2% of these children connected with services. † Response rate defined as “very much improved” or “improved” anxiety and/or depressive symptoms. ‡ Remission rate defined as “very much improved” anxiety and/or depressive symptoms. § Included alcohol, cannabis, cocaine, “pills,” stimulants, “club drugs” + hallucinogens. ** Included crimes such as aggravated assault, rape and motor vehicle theft.		

Recapping the results

When children experience multiple mental health concerns, can they be treated using a single intervention? The results from these five studies suggest that some can. The most successful intervention, RRFT, reduced PTSD and substance use symptoms. MDFT also reduced substance use and criminal offending, according to one evaluation,^{15–16} although two other evaluations found benefits for behaviour but not substance use relative to comparison treatments.^{16, 18} And while Brief Behavioral Therapy reduced anxiety symptoms and improved overall functioning, it did not outperform treatment-as-usual for depressive symptoms.¹⁴

Implications for practice and policy

This systematic review provides promising evidence that transdiagnostic treatments can address symptoms of two different mental disorders concurrently. Six implications follow.

- **Use effective transdiagnostic treatments when there is more than one problem.** Practitioners regularly encounter children who are experiencing more than one disorder. By using an effective transdiagnostic intervention, each concern can be addressed. RRFT reduced both substance use and PTSD symptoms, while MDFT reduced both substance use and behaviour concerns, including criminal offending.^{15, 17} So these two approaches are a good starting point.
- **Learn from young people’s engagement in transdiagnostic treatments.** Some research has found that children with concurrent disorders are more likely to drop out of treatment.¹¹ However, for the studies we reviewed where participation was assessed, adolescents randomized to the transdiagnostic treatment completed more sessions than those receiving typical treatments.^{15, 21} So, these interventions have the potential to increase treatment completion.
- **Encourage parents’ involvement in children’s mental health care.** Parents played a crucial role in the two most successful transdiagnostic therapies — RRFT and MDFT. Consequently, involving parents in treatment, beyond just these two therapies, may be beneficial for many young people.
- **Ensure practitioners have the time and resources to deliver transdiagnostic treatments well.** Practitioners with limited experience delivering transdiagnostic interventions will need time and resources to learn these new approaches and to learn to deliver them with fidelity. Policy-makers can help by ensuring that practitioners have the training and supports they need so children receive effective treatments for all the mental health concerns they face.
- **Build on what works.** Practitioners will also need to treat children experiencing combinations of disorders not addressed by currently available transdiagnostic treatments. While more research is needed on treating multiple conditions concurrently, practitioners can nevertheless still rely on proven interventions for each individual disorder — delivering both. Our *Effective Interventions* report outlines best approaches for addressing 12 of the most common childhood mental health conditions.
- **Practise prevention.** Concurrent disorders cause added challenges for children. Prevention should therefore be the highest priority — providing effective interventions for individual disorders as well as those that are concurrent. As noted above, our *Effective Interventions* report identifies many effective single-disorder prevention programs and our prior *Quarterly* issue identified four effective transdiagnostic prevention programs.^{24–25} With more widespread use of effective prevention interventions, it may be possible to avert much unnecessary suffering for children and their families.

All children deserve to flourish, and all deserve to receive effective prevention and treatment services in proportion to their needs.

At any given time, approximately 26.5% of BC children aged 4 to 18 years — or more than 31,000 — are likely experiencing concurrent mental disorders.^{1, 26} Given the “double” challenges facing these young people, building capacity to address co-occurring childhood mental disorders is essential. A first step is offering effective transdiagnostic treatments, such as we have described here, to all children experiencing concurrent disorders. An equally crucial step is offering effective transdiagnostic prevention programs, such as those we have previously described, to all who could benefit. All children deserve to flourish, and all deserve to receive effective prevention and treatment services in proportion to their needs, including children experiencing concurrent mental health problems. 🖐️

METHODS

We use systematic review methods adapted from the *Cochrane Collaboration*. We build quality assessment into our inclusion criteria to ensure that we report on the best available research evidence, requiring that intervention studies use randomized controlled trial (RCT) evaluation methods and meet additional quality indicators. For this review, we searched for RCTs on psychosocial transdiagnostic interventions that aimed to treat multiple mental health concerns. Table 3 outlines our database search strategy.

Table 3. Search Strategy	
Sources	<ul style="list-style-type: none">• Campbell Systematic Reviews, Cochrane Database of Systematic Reviews, CINAHL, ERIC, Medline and PsycINFO
Search Terms	<ul style="list-style-type: none">• Mental disorders and concurrent or comorbid <i>and</i> prevention, treatment or intervention
Limits	<ul style="list-style-type: none">• Published between 2009 and 2023 in a peer-reviewed journal• Reported on children aged 18 years or younger• Used systematic review, meta-analysis or RCT methods

To identify additional RCTs, we also hand-searched the reference lists from relevant systematic reviews and the Web of Science database. Using this approach, we identified 92 articles describing 68 studies. Two team members then independently assessed each article, applying the inclusion criteria outlined in Table 4.

Table 4. Inclusion Criteria for RCTs
<ul style="list-style-type: none">• Participants were randomly assigned at study outset to intervention and comparison groups (i.e., no-treatment, treatment-as-usual or active control)• Study authors provided clear descriptions of participant characteristics, settings and interventions• Interventions were evaluated in settings comparable to Canada• Interventions aimed at treating symptoms of two or more mental disorders• At study outset, most participants met diagnostic criteria for at least one mental disorder and had clinically significant symptoms of another mental disorder• Follow-up was three months or more (from the end of the intervention)• Attrition rates were 20% or less at final assessment and/or intention-to-treat analysis was used• Child outcome indicators included two or more mental health outcomes, such as symptoms or diagnosis• Reliability and validity were documented for primary outcome measures• Statistical significance was reported for primary outcome measures• Studies were excluded when authors stated there was insufficient power to detect differences between groups or did not correct for multiple comparisons

Five RCTs met all the inclusion criteria. Figure 1 depicts our search process, adapted from Preferred Reporting Items for Systematic Reviews and Meta-Analyses.²⁷ Data from these studies were then extracted, summarized, and verified by two or more team members. Throughout our process, any differences among team members were resolved by consensus. 🤝

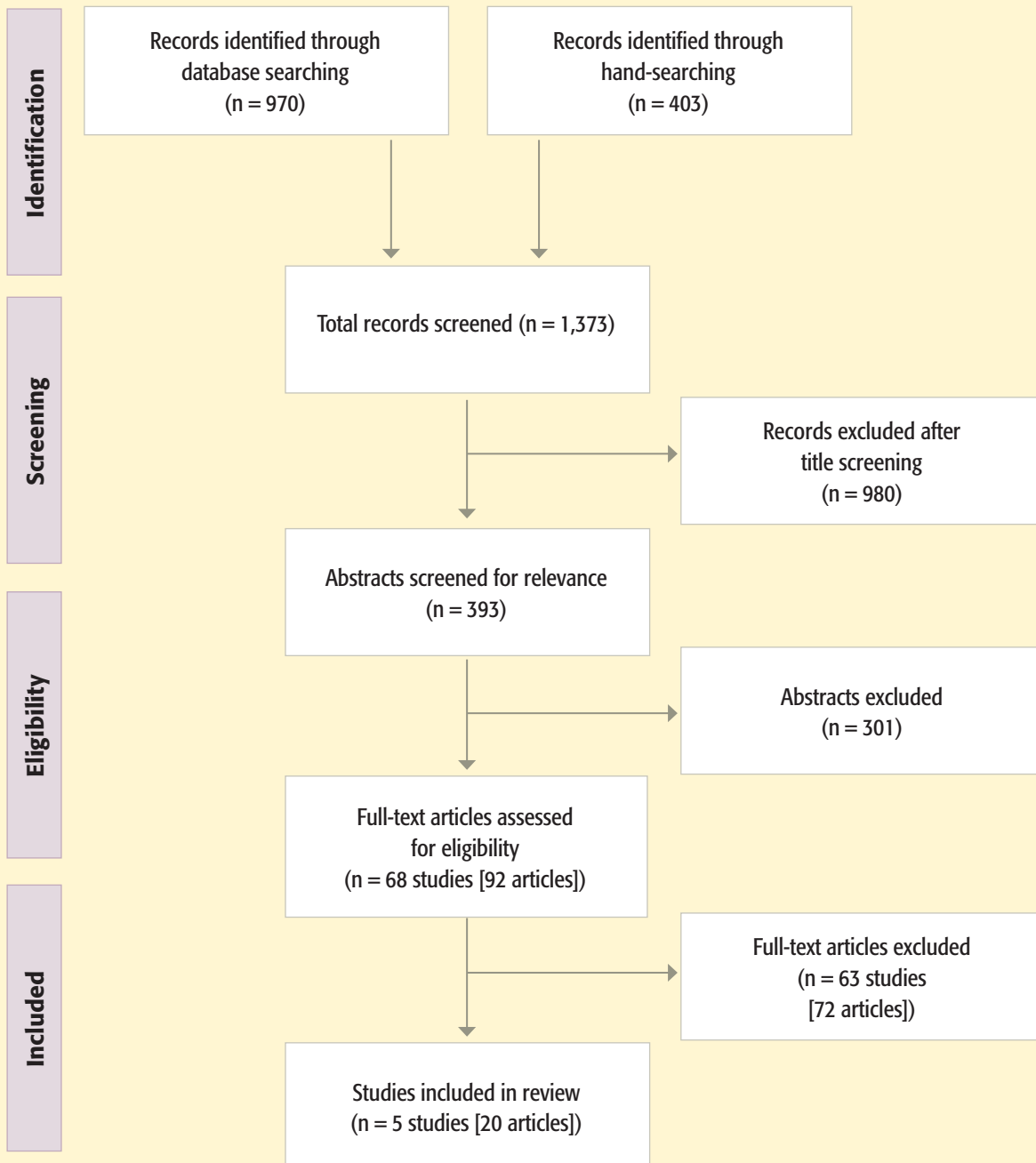
For more information on our research methods, please contact

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Figure 1. Search Process for RCTs



RESEARCH TERMS EXPLAINED

The best available research evidence on how well interventions work for children is crucial in guiding public policy decisions and investments. **Randomized controlled trials** (RCTs) are an important standard in the health sciences for assessing intervention effectiveness. RCTs work by randomly assigning participants to intervention or comparison groups. Randomizing participants guarantees that every young person enrolled in the study has an equal chance of being assigned to intervention or comparison groups. The goal is having the intervention as the only difference, thereby providing confidence that any benefits found are not due to chance.

To determine how well an intervention works, researchers analyze relevant child outcomes. Analyses include assessing whether the differences in outcomes between the intervention and comparison groups reach **statistical significance**. This process gives more certainty that any differences favouring the intervention were not due to chance. In the studies we reviewed, researchers used the typical convention of having at least 95% confidence that observed results reflected the intervention's real impact.

Beyond determining whether outcomes are statistically significant, it is important to evaluate how much difference the intervention made in the young person's life — or the “real life” magnitude or clinical impact. Called an **effect size**, this quantitative measure shows the strength of the relationship between the intervention and the outcome. The studies we reviewed used the following specific effect size measures:

- **Cohen's *d***, where effect sizes are quantified as small (0.20), medium (0.50) or large (0.80)
- **Cohen's *f***, where effect sizes are quantified as small (0.10), medium (0.25) or large (0.40)
- **event rate**, which indicates how often a particular outcome is likely to occur, such as differences in number of days of youth substance use across treatment and comparison conditions
- **odds ratio**, which describes the probability of an event occurring, such as different odds of using substances across treatment and comparison conditions 🖐



Researchers carefully select relevant child outcomes to determine an intervention's effectiveness.

SHUTTERSTOCK / TY LIM

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BC government staff can access original articles from [BC's Health and Human Services Library](#). Articles marked with an asterisk (*) include randomized controlled trial data that was featured in our Review article. For more information about these programs, please contact study authors.

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