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Quarterly

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Preventing concurrent mental disorders in children

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Children's Health Policy Centre

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.

Quarterly Team

Scientific Writer
Christine Schwartz, PhD, RPsych

Scientific Editor
Charlotte Waddell, MSc, MD, CCFP, FRCPC

Senior Research Manager
Jen Barican, BA, MPH

Research Manager
Donna Yung, BSc, MPH

Production Editor
Daphne Gray-Grant, BA (Hon)

Copy Editor
Naomi Pauls, MPub

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This Issue

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NEXT ISSUE

Treating concurrent mental disorders in children

Among children with a mental disorder, more than one in four meet diagnostic criteria for two or more conditions. We identify ways to better support these children, including using interventions that can effectively treat concurrent disorders.

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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Errata In the Spring 2018 *Quarterly*, Table 5 incorrectly identified the number of substance use problems for young people who had participated in Multidimensional Family Therapy vs. CBT III as increasing at 8¼-month follow-up. In fact, those problems decreased.

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

OVERVIEW

Addressing the challenges of concurrent mental disorders

Supportive parenting can help children avoid developing mental health concerns.

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Mental disorders cause substantial distress for individual children, and for their families. They also constitute one of the leading causes of childhood disability globally.[1] Compounding the challenges, among children who meet diagnostic criteria for one disorder, 26.5% meet criteria for two or more.[2] In other words, more than a quarter of children with any disorder also have concurrent disorders.

Beyond prioritizing the prevention of childhood mental disorders generally, it is particularly important to prevent concurrent disorders given the added harms they cause. One effective approach entails expanding delivery of the many proven programs for preventing common conditions such as childhood anxiety, behaviour and substance use problems.[3] Building on protective factors is another effective approach. For example, helping young people develop positive relationships with their parents has been found to protect against developing anxiety disorders.[4] (The sidebar identifies such factors for Arctic Indigenous youth globally and in Canada.)

Recent research has also looked at modifiable risk factors that increase the likelihood of children developing multiple disorders. For example, for both anxiety and depression, common risk factors include challenges with regulating emotions and with experiencing negative emotions such as anger and guilt on a frequent basis.[6–7] As well, limited parent involvement and support play a role in the development of behaviour and substance use problems.[8] Notably, experiencing avoidable childhood adversities, including maltreatment, is a risk factor for several disorders.[9]

These research findings support the development of interventions to address common risk factors underlying multiple disorders — programs collectively termed *transdiagnostic* prevention programs.[10] When successful, these interventions have several potential advantages over those that address single disorders only. They can provide a greater range of benefits while simultaneously simplifying training and implementation.[11–12] As well, they have the potential to reduce mental health service shortfalls and reduce delivery costs.[12–13] But how well do these programs live up to their potential? To answer this question, the Review article that follows examines the outcomes from recent rigorous evaluations of transdiagnostic prevention programs.

What enhances mental health for Arctic Indigenous youth?

A systematic review focused on Arctic Indigenous youth aimed to identify factors enhancing their mental well-being.[5] Of 15 accepted articles, three featured youth in Canada — from communities in Nunavik and Northern Quebec. Many of the protective factors identified were not unique to Indigenous youth, such as positive parent-child relationships. However, some more specific factors emerged for Arctic Indigenous youth. These included living in communities that embraced Traditional Knowledge and cultural revitalization, and having kinship structures that emphasized family connections. These findings led the authors to stress the importance of community and culture for Arctic Indigenous youth. Applying these findings, practitioners can promote mental well-being by supporting Indigenous youth to connect with their cultures. Policy-makers can also play a role by supporting Indigenous communities to ensure that their cultures flourish.[5]

REVIEW

One program, multiple benefits

In an effort to enhance potential prevention benefits, program developers are designing interventions to address multiple childhood mental disorders, rather than single disorders only. To determine how well these programs work, we conducted a systematic review of programs designed to avert multiple disorders — also known as transdiagnostic prevention programs.

We accepted eight randomized controlled trials (RCTs). Six trials evaluated five universal programs, which aimed to prevent disorders in children regardless of risk.[10, 14–18] Two RCTs evaluated two targeted programs, which aimed to prevent disorders for children who already had symptoms.[11, 19] Although most of the programs addressed anxiety and/or depression,[10–11, 14–16, 19] some set out to prevent other mental health concerns, including eating disorders,[10, 14–15] behaviour problems,[18] substance use,[18] and internalizing and externalizing problems.[17] (Internalizing problems typically include anxiety, depressive and somatic/bodily concerns, while externalizing problems include impulsivity, disruptive behaviour and substance use concerns.)[20]

Schools are an excellent venue for reaching large numbers of children with effective interventions.

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Six studies, five universal programs

The first universal program — called .b Mindfulness in Schools, or .b — aimed to prevent anxiety, depression and eating disorder symptoms.[10, 14] For the first .b evaluation, a practitioner taught mindfulness skills such as paying attention, breath counting and awareness, and relaxation techniques. Australian students in Grades 7 and 8 received this eight-lesson program in their schools.[10] For .b (and for all the other programs that we report on), outcomes were compared to a control group.

The universal program Strengthening Families successfully prevented anxiety, depressive, somatization, hyperactivity and inattention symptoms.

The second .b evaluation also assessed the program's effectiveness in reducing anxiety, depression and eating disorder symptoms among 12- to 14-year-olds.[14] While content was similar to the first evaluation, in this case .b was delivered in nine lessons by both a practitioner and a classroom teacher to Australian secondary students in their schools. As well, in this evaluation, some students were randomized to have their parents involved. These parents received a one-hour information session followed by weekly emails with videos summarizing key points of the .b curriculum.[14]

A similar program, Mindfulness Training for Teens, also aimed to prevent anxiety, depression and eating disorder symptoms.[15] In this program, a practitioner taught mindfulness skills in eight lessons to Grade 8 or 10 Australian students in their schools.[15]

The third program, Strengthening Families, aimed to prevent internalizing and externalizing problems.[17] Program trainers delivered the intervention to separate groups of parents and young people in community

settings. Trainers taught effective parenting strategies, including communication skills and limit setting, over six sessions. Meanwhile, young people received life and social skills training, also over six sessions. In addition, young people and their parents participated in six sessions together that focused on improving communication, resolving conflicts and encouraging family time.[17]

The fourth program, Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A), attempted to prevent anxiety and depressive symptoms.[16] (This RCT met our inclusion criteria because, despite its name referring to treatment, the program being evaluated was a universal prevention intervention.) UP-A practitioners taught Spanish student in Grades 9 and 10 cognitive-behavioural techniques (such as challenging unhelpful thinking), motivational enhancement (including setting specific and obtainable goals to help maintain motivation), and mindfulness techniques. Students participated in this nine-lesson program in their schools.[16, 21]

The targeted interventions Super Skills for Life and the EMOTION program reduced anxiety and depressive symptoms.

The fifth program, Strong African American Families–Teen (SAAF–T), aimed to prevent substance use, behaviour problems and depressive symptoms for Black youth.[18] Intervention leaders delivered the program in separate groups in community settings to youth and caregivers (predominantly parents of participating youth). Over five sessions, leaders taught caregivers parenting skills such as providing consistent supervision, solving problems cooperatively and dealing with discrimination. Teens were taught skills including creating and attaining goals, abiding by household rules, and dealing with racism, also over five sessions. As well, youth and caregivers participated in five sessions together that focused on practising their new skills.[18] Table 1 summarizes these five universal programs and their six evaluations.

Table 1. Universal Prevention Programs

Intervention	Approaches + goals	Sample size	Child ages/grades (country)
.b Mindfulness in Schools[10]	Mindfulness skills to prevent **anxiety, depressive + eating disorder symptoms** over 8 lessons delivered in schools	308	Grades 7– 8 (Australia)
.b Mindfulness in Schools[14]	As above but delivered over 9 lessons	555	12 –14 years (Australia)
	As above + parental involvement consisting of weekly summaries of program curriculum by email		
Mindfulness Training for Teens[15]	Mindfulness skills to prevent **anxiety, depressive + eating disorder symptoms** over 8 lessons delivered in schools	434	Grades 8 + 10 (Australia)
Strengthening Families[17]	Life + social skills training to prevent **internalizing + externalizing problems** for young people over 6 sessions; parenting training for parents over 6 sessions; + communication + conflict resolution training for families over 6 sessions delivered in community settings	289	11–14 years (Spain)
UP-A[22]	Cognitive-behavioural, motivation enhancement + mindfulness techniques to prevent **anxiety + depressive symptoms** over 9 lessons delivered in schools	151	Grades 9 –10 (Spain)
SAAF–T[18]	Skills training to prevent **substance use, behaviour problems + depressive symptoms** for teens over 5 sessions; skills training for caregivers over 5 sessions; skills practice for families over 5 sessions delivered in community settings	502	16 years (United States)

UP-A Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents
SAAF–T Strong African American Families – Teen

Two studies, two targeted programs

In addition to the five universal programs, we also report on two targeted interventions. Super Skills for Life aimed to reduce anxiety and depressive symptoms among Spanish students in Grades 1 to 3 who had elevated

symptoms of either disorder.[19] Program facilitators taught children cognitive-behavioural skills, including thinking about situations more accurately (i.e., cognitive restructuring), engaging in behaviours that improve mood and decrease anxiety (i.e., behavioural activation), and problem-solving and social skills. Children participated in this eight-session group in their schools.[19]

The EMOTION program set out to reduce symptoms of anxiety and depression among Norwegian eight- to 12-year-olds who had elevated symptoms of either disorder.[13] Group leaders (primarily psychologists and school nurses) taught children cognitive-behavioural skills, including cognitive restructuring, behavioural activation and problem-solving. This 20-session group program was delivered over 10 weeks in schools. Parents also attended a separate seven-session group where they reviewed the materials being taught to children and were encouraged to reward children for their efforts.[13] Table 2 summarizes these two programs and their evaluations.

Table 2. Targeted Prevention Programs

Intervention	Approaches + goals	Sample size	Child ages/grades (country)
Super Skills for Life[19]	Cognitive-behavioural techniques to reduce **anxiety + depressive symptoms** over 8 sessions delivered in schools	123	Grades 1–3 (Spain)
EMOTION program[13]	Cognitive-behavioural techniques to reduce **anxiety + depressive symptoms** over 20 sessions; parallel content for parents over 7 sessions	795	8–12 years (Norway)

Markedly different outcomes for universal programs

Outcomes for the universal programs showed wide variation. (For all programs, we report on their outcomes relative to the control conditions.) The first .b Mindfulness in Schools evaluation found no mental health gains at three-month follow-up.[10] The results included no significant improvements relative to the control group in anxiety or depressive symptoms, concerns about body weight and shape, mental well-being (e.g., feeling optimistic about the future) or emotional dysregulation (e.g., feeling out of control when upset).[10]

The second .b evaluation also found no mental health benefits at one-year follow-up relative to the control group, regardless of whether there was parental involvement.[14] The findings included no significant improvements in anxiety or depressive symptoms, concerns about body weight and shape, or mental well-being.[14]

To optimally support all children, a public mental health strategy should be employed.

Similarly, the program Mindfulness Training for Teens also failed to outperform the control condition.[15] At three-month follow-up, no differences were reported in anxiety or depressive symptoms, concerns about body weight and shape, or mental well-being.[15]

In contrast, the program Strengthening Families led to many mental health gains at six-month follow-up.[17] The program produced statistically significant reductions in both anxiety and depressive symptoms by parent report (although not by youth self-report). It also significantly reduced somatic symptoms (a tendency to be overly sensitive to or complain about relatively minor physical problems) as well as aggression, hyperactivity and inattention. However, the program made no significant difference for symptoms potentially suggestive of psychosis, such as confusion and being out of touch with reality.[17]

Beyond these basic mental health outcomes, Strengthening Families also significantly reduced young people's stress regarding personal relationships at six-month follow-up.[17] As well, the program led to significantly reduced feelings of inadequacy and increased self-esteem. However, the program made no significant difference regarding relationships with parents or peers or regarding self-reliance (including confidence in personal problem-solving abilities).[17]

The UP-A program did not outperform the control group on any mental health outcome at three-month follow-up.[16, 22] The results included no impact on anxiety or depressive symptoms, behaviour problems at school, peer problems, quality of life or self-esteem.[16, 22]

Finally, the SAAF–T program produced positive results for all assessed mental health outcomes at 1¾-year follow-up relative to the control group.[18] Youth in the program experienced significantly fewer depressive symptoms, with a 4.5% decrease, and experienced significantly fewer behaviour problems, with a 36% decrease. On a composite measure of alcohol, marijuana and tobacco use, SAAF–T led to a 32% decrease, which was also significant. As well, problematic substance use, such as using in hazardous situations or experiencing problems due to use, was significantly reduced for youth in the program, with a 47% decrease.[18] Researchers also evaluated the cost-effectiveness of SAAF–T (see adjacent sidebar).

How much is prevention worth?

After researchers demonstrated that the Strong African American Families–Teen (SAAF–T) program was effective in preventing alcohol use, they took the added step of determining whether the program was cost-effective.[24] To do so, researchers calculated the cost of delivering the program while considering the benefits from reductions in alcohol use and binge drinking, to identify the estimated costs of preventing episodes of each of these events. They concluded that the program was cost-effective so long as policy-makers were willing to pay $100 to prevent an episode of alcohol use and $440 to prevent an episode of binge drinking. Policy-makers, of course, need to weigh these expenditures against the costs of alcohol use by adolescents, including binge drinking, which can accrue health care costs from accidents and injuries, risky sexual behaviour and potential future substance use disorders. Given the high price of adolescent alcohol use, SAAF–T has the potential to not only improve lives but also to do so in a cost-effective manner.[24]

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Including parents in prevention programs can be especially helpful.

Table 3 summarizes the outcomes for all six universal program evaluations.

Table 3. Universal Prevention Evaluation Outcomes

Intervention	Follow-up	Outcomes
.b Mindfulness in Schools[10]	3 months	NS Anxiety symptoms NS Depressive symptoms NS Body weight/shape concerns NS Mental well-being NS Emotional dysregulation
.b Mindfulness in Schools[14]	1 year	NS Anxiety symptoms* NS Depressive symptoms NS Body weight/shape concerns NS Mental well-being
Mindfulness Training for Teens[15]	3 months	NS Anxiety symptoms NS Depressive symptoms NS Body weight/shape concerns NS Mental well-being
Strengthening Families[17]	6 months	↓ Anxiety symptoms (1 of 2 measures) ↓ Depressive symptoms (1 of 2 measures) ↓ Somatic symptoms ↓ Aggression ↓ Hyperactivity symptoms ↓ Inattention symptoms NS Psychotic-like symptoms ↓ Stress about social relationships NS Relationships with parents NS Relationships with peers ↓ Feelings of inadequacy ↑ Self-esteem NS Self-reliance
Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A)[16, 22]	3 months	NS Anxiety symptoms (2 of 2 measures) NS Depressive symptoms (2 of 2 measures) NS Behaviour problems at school (2 of 2 measures) NS Peer problems NS Quality of life (2 of 2 measures) NS Self-esteem
Strong African American Families–Teen (SAAF–T)[18]	1¾ years	↓ Depressive symptoms ↓ Behaviour problems ↓ Alcohol, marijuana + tobacco use (combined) ↓ Problematic substance use

NS No significant difference between intervention and control.
↓ or ↑ Statistically significant benefits favouring intervention over control.
* All outcomes were non-significant, regardless of whether there was parent involvement.

Programs can be offered in venues that are convenient and accessible for children and families.

Two targeted programs that work

Compared to the universal programs, which had mixed results, the two targeted programs yielded more consistent positive results. Super Skills for Life produced multiple benefits for young children with anxiety and/or depressive symptoms at one-year follow-up.[23] These benefits included significantly fewer anxiety symptoms overall as well as fewer anxiety symptoms that interfered with children's lives. The program also led to significantly fewer depressive and emotional symptoms (including both anxiety and depressive symptoms).[23]

High engagement, gratifying gains

Researchers set out to determine how children's participation in and satisfaction with Super Skills for Life influenced their outcomes.[25] First, they divided children into two groups based on their experiences with the program. The high-fidelity group included children who scored above 50% on three markers: attended seven or eight (of the eight) scheduled sessions, completed five to seven (of the seven) homework assignments, and rated their satisfaction with the program as nine or 10 (out of 10). This classification resulted in 61.2% of children being in the high-fidelity group and 38.8% in the low-fidelity group.

Children who participated in Super Skills for Life had significantly fewer anxiety and depressive symptoms compared to the control group, with no difference based on fidelity classification. However, for emotional symptoms and behavioural problems, only the high-fidelity group outperformed the control group at one-year follow-up.[25] These findings suggest that while children can experience benefits from prevention programs even when their engagement is more limited, maximum gains occur when maximum fidelity is achieved. The take-away message for practitioners is to continue their efforts to engage children, including encouraging children's attendance in sessions and their practice of skills outside of sessions, knowing the potential positive payoffs.

Super Skills for Life, however, did not outperform the control condition for behaviour, hyperactivity/inattention or peer relationship problems, or for prosocial behaviours. Researchers also evaluated how children's engagement in the program had an impact on outcomes; these findings are summarized in the adjacent sidebar.

The EMOTION program also led to benefits for children with anxiety and/or depressive symptoms at one-year follow-up.[11] These benefits included significantly greater declines in anxiety symptoms (by both parent ratings and child self-report) and in depressive symptoms (by parent ratings but not child self-report). Table 4 summarizes the outcomes for both of these targeted programs.

Table 4. Targeted Prevention Evaluation Outcomes

Intervention	Follow-up	Outcomes
Super Skills for Life[23]	1 year	↓ Anxiety symptoms ↓ Anxiety symptoms causing interference ↓ Depressive symptoms ↓ Emotional symptoms NS Behaviour problems NS Hyperactivity/inattention symptoms NS Peer relationship problems NS Prosocial behaviours
EMOTION program[11]	1 year	↓ Anxiety symptoms (2 of 2 measures) ↓ Depressive symptoms (1 of 2 measures)

↓ Statistically significant benefits favouring intervention over control.
NS No significant difference between intervention and control.

Findings recap

Our review found four programs that effectively prevented or reduced multiple mental health symptoms. Among them, the universal program Strengthening Families successfully prevented anxiety, depressive, somatization, hyperactivity and inattention symptoms. SAAF–T, another universal program, prevented depressive, behaviour and substance use concerns. And the targeted interventions Super Skills for Life and the EMOTION program reduced anxiety and depressive symptoms. In contrast, the three mindfulness programs (all universal) were unsuccessful.

Implications for practice and policy

Our findings demonstrate that transdiagnostic interventions can prevent or reduce symptoms of multiple childhood mental disorders. These results suggest six implications for practice and policy.

- *Consider effective transdiagnostic prevention programs for better efficiency.* Because multiple symptoms can be prevented using one intervention, greater efficiencies are possible. Efficiencies are also enhanced when programs address particularly common problems such as anxiety, depression, behaviour and substance use concerns. Such efficiencies, in turn, can help mitigate Canada's limited public prevention investments.[26]
- *Build on the power of parents.* Three of the four programs that produced beneficial outcomes for children included parents (or other caregivers). Consequently, including caregivers may be particularly helpful for prevention efforts.
- *Deliver interventions according to need.* To optimally support all children, a public mental health strategy should be employed. Such a strategy typically includes promoting healthy development for all children, preventing disorders for those at risk, providing treatment to those with disorders and monitoring outcomes.[27] This approach aligns with efforts to reduce inequities by supporting all children, with an intensity tailored to levels of need.[28]
- *Offer programs that build on solid underlying approaches.* Strengthening Families and SAAF–T both used parenting training, which is backed by many RCTs showing reduced child behaviour and substance use problems.[3] Similarly, Super Skills for Life and the EMOTION program used cognitive-behavioural therapy techniques, which are supported by many RCTs showing reduced child anxiety and depressive symptoms.[3] But there is only one high-quality RCT evaluating each of these four programs for preventing symptoms of concurrent disorders. So replication evaluations are warranted. As well, adaptations may be needed for the Canadian context, including ensuring that content is culturally safe and relevant.
- *Consider transdiagnostic interventions with children of varying ages.* The four successful interventions were delivered to children spanning ages six to 16. This shows it is possible to use these efficient interventions with children at various of developmental stages.
- *Know that effective program delivery can occur in a variety of settings.* The four successful programs were delivered to children, and to parents as well in some cases, in community settings including schools. This demonstrates that these programs can be offered in venues that are convenient and accessible for children and families.

The results of our systematic review indicate that transdiagnostic prevention programs can effectively and efficiently address multiple mental health needs…

Children with one mental health problem often have more than one — resulting in added challenges for them and for their families, and for society when avoidable problems impede young people from flourishing. The results of our systematic review indicate that transdiagnostic prevention programs can effectively and efficiently address multiple mental health needs, including symptoms associated with some of the most common childhood conditions. These programs should therefore be expanded so that more children can be helped. Expansion of transdiagnostic prevention programs may have the added benefit of reducing "downstream" treatment costs.

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 prevention programs that aimed to avert multiple disorders. Table 5 outlines our database search strategy.

Table 5. Search Strategy

Sources	• Campbell Systematic Reviews, Cochrane Database of Systematic Reviews, CINAHL, ERIC, Medline and PsycINFO
Search Terms	• Mental disorders and concurrent or comorbid *and* prevention, treatment or intervention
Limits	• Published between 2012 and 2022 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 86 articles describing 67 studies. Two team members then independently assessed each article, applying the inclusion criteria outlined in Table 6.

Table 6. Inclusion Criteria for RCTs

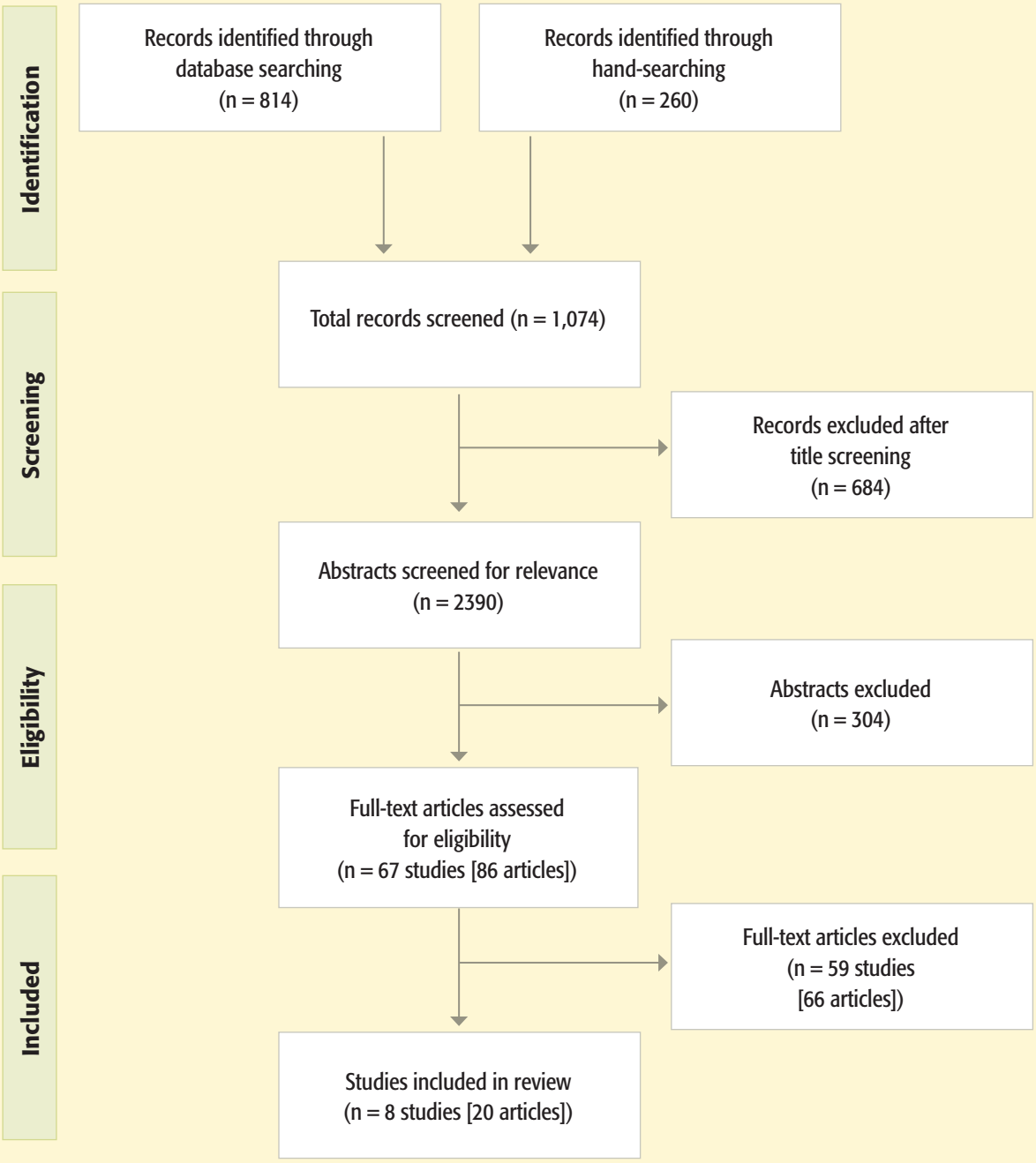
- Participants were randomly assigned to intervention and comparison groups (i.e., no-treatment, treatment-as-usual or active control) at study outset
- Study authors provided clear descriptions of participant characteristics, settings and interventions
- Interventions were evaluated in settings comparable to Canada
- Interventions aimed at preventing mental health symptoms of two or more concurrent disorders
- At study outset, most participants did not have a current mental disorder diagnosis*
- 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 symptoms and/or diagnostic outcomes
- 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

* Participants could have had elevated symptoms but must not have been referred for treatment.

Eight RCTs met all the inclusion criteria. Figure 1 depicts our search process, adapted from Preferred Reporting Items for Systematic Reviews and Meta-Analyses.[29] 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
Jen Barican, chpc_quarterly@sfu.ca
Children's Health Policy Centre, Faculty of Health Sciences
Simon Fraser University, Room 2435, 515 West Hastings St., Vancouver, BC V6B 5K3

Figure 1. Search Process for RCTs



RESEARCH TERMS EXPLAINED

Research evidence about how well interventions work for children can be helpful in guiding policy investments. **Randomized controlled trials** (RCTs) are the standard in the health sciences for assessing intervention effectiveness. In these studies, participants (or groups) are randomly assigned to intervention or control groups. By randomizing — that is, by giving every young person or group equal likelihood of being assigned to a given group — researchers can help ensure the only difference between the groups is the intervention. This process provides confidence that any benefits found are due to the intervention rather than to chance or other factors.

To determine how well an intervention works, researchers analyze relevant child outcomes. If an intervention outcome is found to be **statistically significant** compared to the control condition, there is more certainty that the intervention was effective rather than results appearing that way due to chance. In the studies we reviewed, researchers used the typical convention of having at least 95% confidence that the observed results reflected the intervention's real impact.

Beyond determining whether outcomes are statistically significant, studies often evaluate the degree of difference the intervention made in the young person's life. Such determinations, calculated with effect sizes, provide a quantitative measure of the strength of the relationship between the treatment and the outcome. While it is becoming increasingly common for studies to report on effect sizes, they were not provided in the RCTs featured in this issue that had statistically significant outcomes.

Policy-makers regularly rely on high-quality research evidence to ensure the most effective mental health interventions are available to children.

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REFERENCES

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.

1. Kieling C, Baker-Henningham H, Belfer M, et al. (2011). Child and adolescent mental health worldwide: Evidence for action. *Lancet, 378,* 1515–1525.
2. Barican JL, Yung D, Schwartz C, et al. (2022). Prevalence of childhood mental disorders in high-income countries: A systematic review and meta-analysis to inform policymaking. *Evidence-Based Mental Health, 25,* 36–44.
3. Schwartz C, Yung D, Barican J, et al. (2020). *Preventing and treating childhood mental disorders: Effective interventions*. Simon Fraser University, Faculty of Health Sciences, Children's Health Policy Centre. https://childhealthpolicy.ca/wp-content/uploads/2020/11/CHPC-Effective-Interventions-Report-2020.10.25.pdf
4. Jakobsen IS, Horwood LJ, Fergusson DM. (2012). Childhood anxiety/withdrawal, adolescent parent-child attachment and later risk of depression and anxiety disorder. *Journal of Child and Family Studies, 21,* 303–310.
5. MacDonald JP, Ford JD, Willox AC, et al. (2013). A review of protective factors and causal mechanisms that enhance the mental health of Indigenous Circumpolar youth. *International Journal of Circumpolar Health, 72,* 21775.
6. Schafer JO, Naumann E, Holmes EA, et al. (2017). Emotion regulation strategies in depressive and anxiety symptoms in youth: A meta-analytic review. *Journal of Youth and Adolescence, 46,* 261–276.
7. Garber J, Weersing VR. (2010). Comorbidity of anxiety and depression in youth: Implications for treatment and prevention. *Clinical Psychology, 17,* 293–306.
8. Brody GH, Murry VM, Gerrard M, et al. (2004). The Strong African American Families Program: Translating research into prevention programming. *Child Development, 75,* 900–917.
9. Forbes MK, Rapee RM, Krueger RF. (2019). Opportunities for the prevention of mental disorders by reducing general psychopathology in early childhood. *Behaviour Research and Therapy, 119,* 103411.
10. Johnson C, Burke C, Brinkman S, et al. (2016). Effectiveness of a school-based mindfulness program for transdiagnostic prevention in young adolescents. *Behaviour Research and Therapy, 81,* 1–11.
11. Loevaas MES, Lydersen S, Sund AM, et al. (2020). A 12-month follow-up of a transdiagnostic indicated prevention of internalizing symptoms in school-aged children: The results from the EMOTION study. *Child and Adolescent Psychiatry and Mental Health, 14,* 1–15.
12. Carlucci L, Saggino A, Balsamo M. (2021). On the efficacy of the unified protocol for transdiagnostic treatment of emotional disorders: A systematic review and meta-analysis. *Clinical Psychology Review, 87,* 1–22.
13. Martinsen KD, Rasmussen LMP, Wentzel-Larsen T, et al. (2019). Prevention of anxiety and depression in school children: Effectiveness of the transdiagnostic EMOTION program. *Journal of Consulting and Clinical Psychology, 87,* 212–219.
14. Johnson C, Burke C, Brinkman S, et al. (2017). A randomized controlled evaluation of a secondary school mindfulness program for early adolescents: Do we have the recipe right yet? *Behaviour Research and Therapy, 99,* 37–46.
15. Johnson C, Wade T. (2021). Acceptability and effectiveness of an 8-week mindfulness program in early- and mid-adolescent school students: A randomised controlled trial. *Mindfulness, 12,* 2473–2486.
16. García-Escalera J, Valiente RM, Sandin B, et al. (2020). Educational and wellbeing outcomes of an anxiety and depression prevention program for adolescents. *Revista de Psicodidactica, 25,* 143–149.

17. Ballester L, Sánchez-Prieto L, Orte C, et al. (2022). Preventing internalizing and externalizing symptoms in adolescents through a short prevention programme: An analysis of the effectiveness of the Universal Strengthening Families Program 11–14. *Child and Adolescent Social Work Journal, 39,* 119–131.
18. Brody GH, Chen YF, Kogan SM, et al. (2012). Family-centered program deters substance use, conduct problems, and depressive symptoms in black adolescents. *Pediatrics, 129,* 108–115.
19. Fernandez-Martinez I, Morales A, Espada JP, et al. (2020). Effects of Super Skills for Life on the social skills of anxious children through video analysis. *Psicothema, 32,* 229–236.
20. American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). Washington, DC: APA.
21. García-Escalera J, Valiente RM, Chorot P, et al. (2017). The Spanish version of the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A) adapted as a school-based anxiety and depression prevention program: Study protocol for a cluster randomized controlled trial. *JMIR Research Protocols, 6,* e149.
22. García-Escalera J, Valiente RM, Sandin B, et al. (2020). The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A) adapted as a school-based anxiety and depression prevention program: An initial cluster randomized wait-list-controlled trial. *Behavior Therapy, 51,* 461–473.
23. Fernandez-Martinez I, Orgiles M, Morales A, et al. (2020). One-year follow-up effects of a cognitive behavior therapy–based transdiagnostic program for emotional problems in young children: A school-based cluster-randomized controlled trial. *Journal of Affective Disorders, 262,* 258–266.
24. Ingels JB, Corso PS, Kogan SM, et al. (2013). Cost-effectiveness of the Strong African American Families–Teen program: 1-year follow-up. *Drug and Alcohol Dependence, 133,* 556–561.
25. Fernandez-Martinez I, Orgiles M, Espada JP, et al. (2021). Effects as a function of implementation fidelity of a transdiagnostic prevention program in young school-aged children. *Evaluation and Program Planning, 89,* 1–8.
26. Canadian Institute for Health Information. (2022). *National health expenditure trends, 2022 — Snapshot*. https://www.cihi.ca/en/national-health-expenditure-trends-2022-snapshot
27. Waddell C, Georgiades K, Duncan L, et al. (2019). 2014 Ontario Child Health Study findings: Policy implications for Canada. *Canadian Journal of Psychiatry, 64,* 227–231.
28. Francis-Oliviero F, Cambon L, Wittwer J, et al. (2020). Theoretical and practical challenges of proportionate universalism: A review. *Pan American Journal of Public Health, 44,* e110.
29. Page MJ, McKenzie JE, Bossuyt PM, et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Journal of Clinical Epidemiology, 134,* 178–189.

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The *Children's Mental Health Research Quarterly* Subject Index provides a detailed listing of topics covered in past issues, including links to information on specific programs.

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