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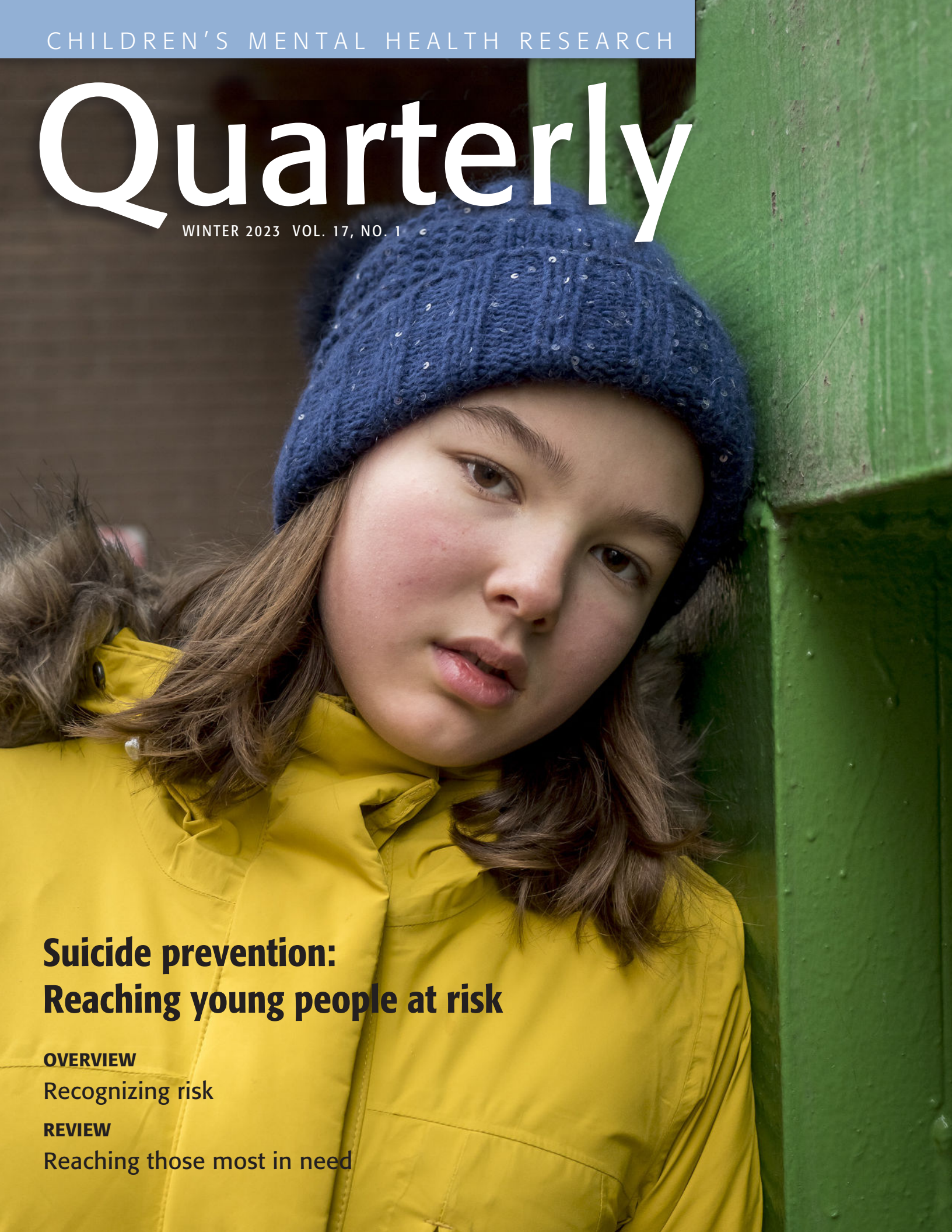

Suicide prevention: Reaching young people at risk

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Quarterly

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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.

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This Issue

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NEXT ISSUE

Preventing multiple mental health problems in children

Efforts to prevent childhood mental disorders have gone beyond trying to avert single disorders only. Researchers have developed interventions aimed at preventing multiple disorders. We look at how well these interventions work.

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.

OVERVIEW

Recognizing risk

Understanding what leads to suicidality in young people is essential in informing efforts to reduce this problem. Current approaches recognize suicidality as a complex phenomenon influenced by a wide range of individual, family, community, cultural and societal factors.[1–2] Building on this understanding, researchers are continuing to investigate potential risk and protective factors for suicide deaths, attempts and ideation. Here we highlight five recent reports that used particularly rigorous approaches to identifying risk and protective factors.

Suicidality is a complex phenomenon influenced by a wide range of individual, family, community, cultural and societal factors.

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The impact of mental disorders

To understand the relationships between mental disorders and suicide, a recent systematic review examined 24 longitudinal studies involving 12- to 26-year-olds from eight mostly high-income countries, including Canada.[1] Data on more than 25,000 individuals were combined and analyzed. Young people with mental disorders had more than 10 times greater odds of dying by suicide and more than three times greater odds of attempting suicide than those without these disorders. This systematic review also examined how having more than one mental disorder can increase the risk for suicide attempts. Young people with any concurrent mental disorders had nearly nine times greater odds of attempting suicide than those with no disorder. Among the specific diagnoses, young people with mood disorders, including depression, had 54% higher odds for suicide attempts than those with other disorders.[1]

More information on mental health and suicidality comes from a Canadian study that followed a representative sample of more than 6,700 children from ages 10 to 17.[3] The researchers found that when these young people reached adolescence, those with severe conduct disorder symptoms had more than four times greater odds of attempting suicide than those without these problems. Youth who developed severe depressive symptoms had 61% greater odds of experiencing suicidal ideation, and those who used cannabis at least once or twice a month had 74% higher odds.[3]

Young people with mental disorders had more than 10 times greater odds of dying by suicide than those without these disorders.

The role of adverse childhood experiences

A better understanding of the role of adverse childhood experiences in suicide deaths comes from an analysis of data relating to nearly 550,000 youth.[4] In this study, researchers followed all individuals born in Sweden between 1987 and 1991 from birth to age 24, assessing eight adverse experiences between birth and age 14. While all eight forms of adversity increased the likelihood of dying by suicide, risk was doubled or more for young people when they had experienced these adversities:

- a family member had died by suicide
- a parent had a criminal history, or
- a parent had a mental disorder.

Other adversities that significantly increased the risk for suicide death by between 40% and 90% included

- having a parent with problematic substance use
- experiencing a death in the family
- receiving public assistance
- experiencing residential instability, and
- living in a single-parent household.

Notably, suicide risk increased as the number of adversities increased — increasing 90% with two and 160% with three or more.[4]

The effects of other challenging stressors

Another study aimed to identify how a variety of challenging stressors affected suicide attempts, plans and ideation in a large representative sample of young people from multiple high-income countries.[5] Experiencing violence was a significant risk factor for all three. Specifically, being physically attacked, being a victim of bullying, being seriously injured and participating in physical fighting each increased the odds for suicide attempts, plans and ideation by between 50% and 73%. Feeling lonely most of the time approximately doubled the odds for attempts, plans and ideation, as did feeling anxious most of the time. Parents being unaware of what young people were doing in their free time also increased the odds for attempts, plans and ideation by between 49% and 82%. However, perceiving that parents did not understand one's problems and worries was predictive of suicide plans and ideation but not of attempts. Being hungry due to a lack of food in the home was also predictive of attempts and ideation but not of having a plan.[5]

The value in social connections

Risk factors are multiple, but what can protect young people from suicidality? A study that followed a representative sample of almost 5,000 American youth aged 12 to 21 over a one-year period examined the role of social connectedness in preventing suicide attempts and ideation.[6] Three types of connection were assessed: school relationships, including feeling close to others in this setting; social integration, including feeling accepted, loved and wanted; and connections with parents. All three forms of connection were found to protect young people. Specifically, feeling connected at school was protective against making a suicide attempt, and social integration was protective against suicidal ideation, as was feeling connected to one's parents.[6] For information on the importance of cultural connections in supporting Indigenous children and youth, please see the adjacent sidebar.

The power of cultural connections for Indigenous children

The most recent data from Statistics Canada found that Indigenous youth were at higher risk for suicide than their non-Indigenous counterparts; the relative risk was nearly nine times higher for those younger than 15 and slightly more than six times higher for those between 15 and 24.[7] Addressing suicide risk for Indigenous youth is therefore an urgent public health matter. And suicide must be understood within the historical context. The current reality for Indigenous youth stems from the many destructive legacies of colonization. These legacies include the forced removal of generations of children from their families and communities and ongoing exposure to racism and socio-economic disparities.[8]

While the ongoing effects of colonialism must be addressed, one step in lowering suicide rates for Indigenous children and youth is to strengthen cultural connections.[9] These connections include self-governance and settled land claims as well as traditional language teaching and culturally responsive education and health care.[9] So in addition to using effective interventions to prevent suicide, such as those outlined in the Review article that follows, practitioners can support Indigenous youth by encouraging life-affirming cultural connections.

Reducing risk and supporting strengths

These five reports suggest ways of better supporting young people. Preventing and treating childhood mental disorders is crucial, including providing timely access to effective interventions for all those in need. (Our report *Preventing and Treating Childhood Mental Disorders: Effective Interventions* offers comprehensive information on this topic.) Reducing childhood adversities is also crucial, given that most are avoidable. For example, parents with mental health concerns need to receive treatment (see previous *Quarterly* issues on parental depression and substance use), and family socio-economic disparities need to be reduced (see previous *Quarterly* issue on reducing family socio-economic disadvantage). Programs can be offered to prevent stressors; past *Quarterly* issues described programs to stop bullying and programs to help with parenting skills. As well, Indigenous youth may benefit from being connected to their culture, as the sidebar highlights.

Suicide risk increased as the number of adversities increased – increasing 90% with two and increasing 160% with three or more.

Suicide prevention programs also play a role. In our previous issue, we identified universal school-based programs — aimed at all children and youth, regardless of risk — that successfully reduced suicidal thoughts and suicide attempts. (That issue also gave information on the prevalence of suicide deaths, attempts and ideation in children and youth.) In the Review article that follows, we present studies on interventions designed to reduce suicide in young people most at risk.

INNAREZNIK / BIGSTOCK

Feeling connected to one's parents is protective against suicidal ideation.

REVIEW

Reaching those most in need

When a young person is struggling with suicide, their parents play a vital role by providing support, including in their treatment.

ALESSANDRO BIASCIOLI / BIGSTOCK

Comprehensive suicide prevention involves effective universal programs, reaching large numbers of young people regardless of risk, coupled with effective targeted interventions reaching those most at risk. While our previous *Quarterly* issue examined universal prevention, here we examine targeted prevention. We conducted a systematic review to identify intervention evaluations that used randomized controlled trial (RCT) methods and were conducted in high-income countries, for Canadian policy and practice relevance. (See the Methods section for more details.)

After screening 1,587 articles and applying the inclusion criteria, we accepted eight RCTs evaluating seven interventions. Four of these interventions were comprehensive, which we defined as thoroughly addressing suicide risk over several months or longer: Attachment-Based Family Therapy,[10] Dialectical Behaviour Therapy or DBT (two RCTs),[11–12] Family-Focused Cognitive-Behavioural Therapy or CBT,[13] and Multisystemic Therapy or MST.[14] One adjunctive program — Resourceful Adolescent Parent Program[15] — was designed to supplement the regular care provided to young people at risk. The two other interventions were brief, which we defined as addressing suicide risk using a concise approach (e.g., one or two sessions): Promoting CARE[16] and Suicidal Teens Accessing Treatment After an Emergency Department Visit or STAT-ED.[17]

Comprehensive interventions for youth at risk for suicide can effectively reduce suicide attempts and suicidal ideation.

Studies of comprehensive interventions

The Attachment-Based Family Therapy study included youth with clinically significant suicidal ideation as well as other depressive symptoms.[10] This intervention combined separate youth and parent sessions as well as family sessions aimed at strengthening parent-child bonds. Youth sessions focused on identifying family conflicts that were associated with suicidal thoughts and preparing young people to discuss these conflicts with their parents. Parent sessions focused on increasing empathy and promoting emotional responsiveness to children. Family sessions involved practising communication, problem-solving and emotional regulation skills while also promoting youth autonomy. This intervention was compared to enhanced usual care, which varied and could include individual, group or family therapy and/or case management.[10]

The first Dialectical Behaviour Therapy study focused on youth who were engaging in self-harm and who also had symptoms of borderline personality disorder.[11] DBT focused on teaching five core skills: mindfulness,

distress tolerance, emotional regulation, interpersonal effectiveness and "walking the middle path" (including using validation and behaviour change strategies to reduce family conflict).[18] These core skills were taught in individual youth sessions along with family therapy and multi-family skills training.[11] Youth and parents also received telephone coaching if needed. DBT was compared to enhanced usual care involving either psychodynamic or CBT-based individual therapy.[11]

The second DBT study focused on youth with previous suicide attempts, current suicidal ideation, multiple self-harm episodes and/or multiple symptoms of borderline personality disorder.[12] DBT involved the same core strategies described above. However, parents also received one session with a therapist (in addition to participating in family therapy and a multi-family skills training group). DBT was compared to Individual and Group Supportive Therapy that focused on acceptance, validation and connectedness.[12]

All the effective interventions provided therapeutic components for both young people and their parents.

The Family-Focused CBT study included young people with mood disorders (i.e., major depressive disorder, dysthymia, or mood disorder not otherwise specified) who had been hospitalized for a suicide attempt or self-injury and who had at least one other risk factor, such as prior suicide attempts, self-injury or a substance use disorder.[13] Youth and parents received both individual and family sessions. Youth sessions focused on four core skills: problem-solving, changing negative thinking patterns, regulating emotions and increasing pleasant activities. Parent sessions focused on caregiving skills, including setting limits, rewarding positive behaviours and responding empathically. Family sessions included safety planning, communication skills and skills practice. Substance use was addressed as needed. Family-Focused CBT was compared to enhanced treatment as usual.[13]

The Multisystemic Therapy study focused on children and youth needing hospitalization due to suicidal ideation or attempts, psychosis and/or threats of harming others.[14] Rather than being immediately admitted to hospital, young people randomized to MST and their families were supported to develop safety plans during sessions that typically occurred in the home. Then parents were supported to communicate, monitor and set healthy limits. Sessions also worked to reduce child and youth engagement with negative peers and to increase their involvement with responsible adults. MST was compared to hospitalization followed by typical community-based care.[14] Table 1 summarizes these interventions and their evaluations.

Table 1. Comprehensive Suicide Prevention Interventions

Intervention	**Components**	**Sample size**	**Child ages** (country)
Attachment-Based Family Therapy[10]	Individual sessions for youth, parents + family over 3 months	66	12–17 yrs (United States)
DBT-I[11]	Individual sessions for youth + families + multi-family skills training group + as-needed telephone coaching over 4½ months	77	12–18 yrs (Norway)
DBT-II[12]	As above plus 1 session for parents, duration 6 months	173	12–18 yrs (United States)
Family-Focused CBT[13]	Individual sessions for both youth + parents + family sessions over 1 year	147	12–18 yrs (United States)
MST[14]	Family sessions over 4 months	156	10–17 yrs (United States)

Comprehensive interventions, divergent outcomes

Attachment-Based Family Therapy significantly reduced suicidal ideation compared with usual care at the end of treatment.[10] And these reductions were clinically meaningful — producing a large effect size by youth self-report (Cohen's *d* = 0.95) and medium by clinician rating (*d* = 0.62). Improvements were maintained at three-month follow-up, again with a large effect size by youth self-report (*d* = 0.97) and medium by clinician rating (*d* = 0.64). As well, over the course of the study, 11.4% of youth receiving this therapy made a low-lethality suicide attempt, compared to 22.6% of youth receiving usual care. However, the small sample for this measure precluded researchers from assessing whether differences were statistically significant. Regarding depressive symptoms, no significant group differences were found at follow-up.[10]

In the first DBT study, researchers tested for differences between treatment and comparison groups regarding suicide attempts and self-harm episodes using a single, combined outcome.[11, 19–20] Significantly fewer youth receiving DBT had these experiences compared to those receiving usual care — both at the end of treatment and at one-year-follow-up.[11, 19] However, between one- and three-year follow-up, no significant group differences were found.[20] Regarding suicidal ideation, youth receiving DBT also fared better than those receiving usual care at the end of treatment.[11] However, at one-year follow-up the groups showed no differences for this outcome, a finding that persisted over the three-year follow-up.[20] Depressive symptoms including hopelessness, which was assessed separately, borderline personality disorder symptoms, overall functioning, hospital admissions and emergency department use were also similar between the groups at the final follow-up.[20]

Improving the detection and treatment of mental disorders in general has been identified as crucial to reducing child and youth suicide.

In the second DBT study, at the end of treatment, youth receiving this intervention had significantly fewer suicide attempts than those receiving usual care (9.7% vs. 21.5%, respectively).[12] In fact, youth receiving usual care had about three times higher odds of attempting suicide. At the end of treatment, DBT also led to significantly less suicidal ideation compared with usual care, with a small effect size (*d* = 0.34). However, at six-month follow-up, there were no differences between the groups for suicide attempts or ideation. As well, at six-month follow-up, there were no significant differences in rates of self-injury (38.0% for youth receiving DBT compared to 48.3% for those receiving usual care).[12]

Family-Focused CBT did not reduce suicide attempts by the end of treatment, compared to usual care.[13] In fact, 12.1% of youth receiving the intervention attempted suicide compared to only 6.6% of those receiving usual care, although this difference was not statistically significant. As well, no group difference in suicidal ideation was found at the end of treatment. By six-month follow-up, Family-Focused CBT continued to make no difference relative to usual care for either suicide attempts (with rates of 9.4% and 3.3%, respectively) or ideation. Also by six-month follow-up, Family-Focused CBT made no difference for the proportion meeting diagnostic criteria for depression or for rates of self-injury compared to usual outpatient care. And the one outcome with a significant difference actually favoured usual care. Specifically, at six-month follow-up, all youth had lower depressive symptoms; however, those receiving usual care had significantly lower depression scores than those receiving Family-Focused CBT.[13]

The fourth intervention, MST, significantly reduced suicide attempts according to child and youth self-report, but not parent report, at one-year follow-up.[14] However, compared to usual care, MST made no difference regarding suicidal ideation by either youth or parent report. The intervention also made no difference compared to usual care for depressive symptoms, depressive and anxiety symptoms combined or hopelessness. Regardless of whether study participants received MST or usual care, outcomes on these three measures improved over time.[14] Table 2 summarizes the outcomes for these four comprehensive suicide prevention interventions.

Table 2. Comprehensive Suicide Prevention Intervention Outcomes

Intervention	Outcomes	
	Suicide-Related*	**Other†**
Attachment-Based Family Therapy[10]	3-month follow-up ↓ Suicidal ideation (2 of 2 measures) End of 3-month treatment ↓ Suicidal ideation (2 of 2 measures)	3-month follow-up NS Depressive symptoms
DBT-I[11, 19–20]	3-year follow-up NS # of suicide attempts + self-harm episodes ‡ NS Suicidal ideation § 1-year follow-up ** ↓ # of suicide attempts + self-harm episodes NS Suicidal ideation End of 4½-month treatment ↓ # of suicide attempts + self-harm episodes ↓ Suicidal ideation	3-year follow-up NS Depressive symptoms (2 of 2 measures)§ NS Hopelessness § NS Borderline personality disorder symptoms § NS Overall functioning § NS Hospital admissions in past year NS Emergency department use in past year
DBT-II[12]	6-month follow-up†† NS # of suicide attempts NS Suicidal ideation End of 6-month treatment ↓ # of suicide attempts ↓ Suicidal ideation	6-month follow-up†† NS # of self-injury episodes
Family-Focused CBT[13]	6-month follow-up NS # of suicide attempts NS Suicidal ideation End of 1-year treatment NS Suicide attempts NS Suicidal ideation	6-month follow-up NS Self-injury NS Depression diagnosis SIG Depressive symptoms
MST[14]	1-year follow-up ↓ Suicide attempts (1 of 2 measures) NS Suicidal ideation (2 of 2 measures)	1-year follow-up NS Depressive symptoms NS Anxiety + depressive symptoms combined NS Hopelessness

↓ Statistically significant benefits favouring intervention over usual care.
NS No significant difference between intervention and usual care.
SIG Statistically significant benefits favouring usual care over intervention.
* Only outcomes that could be tested for statistical significance are reported.
† Only final follow-up outcomes are reported for non-suicide outcomes.
‡ Assessed from 1-year to 3-year follow-up.
§ Assessed from end of treatment to 3-year follow-up.
** Assessed from end of treatment to 1-year follow-up.
†† Assessed from end of treatment to 6-month follow-up.

The adjunctive intervention

The Resourceful Adolescent Parent Program was delivered to parents of teens who had recently experienced suicidal ideation or an attempt and had been diagnosed with depression, posttraumatic stress disorder or an anxiety disorder.[15] All youth in the study received routine care, which included combinations of crisis management, safety planning, counselling and medication. Parents received the adjunctive Resourceful Adolescent Parent Program or no added intervention. The program entailed four educational sessions in

the home or at a community centre. These sessions addressed suicide, self-injurious behaviours and child development as well as effective parenting strategies and ways to reduce family conflict and promote child self-esteem.[15] Table 3 summarizes this program and its evaluation.

Table 3. Adjunctive Suicide Prevention Intervention

Intervention	Components	Sample size	Child ages (country)
Resourceful Adolescent Parent Program[15]	Psychoeducation sessions for parents over 1–2 months	48	12–17 yrs (Australia)

The Resourceful Adolescent Parent Program produced significant benefits at six-month follow-up.[15] When parents participated in this program, youth had significantly fewer suicide attempts, plans, threats, ideation and self-harm events (all assessed using a single measure) compared with when parents were in the control group. When parents participated, youth also experienced better emotional and behavioural well-being based on both youth and parent reports, and better overall functioning based on clinician report. As well, the program significantly improved family functioning according to both parent and youth reports.[15] Table 4 summarizes the outcomes of this program.

Table 4. Adjunctive Suicide Prevention Intervention Outcomes

Intervention	Outcomes at Follow-up	
	Suicide-Related	Other
Resourceful Adolescent Parent Program[15]	6-month follow-up ↓ Suicidal attempts, plans, threats, ideation + self-harm*	6-month follow-up ↓ Emotional + behavioural well-being (2 of 2 measures) ↑ Overall functioning ↑ Family functioning (2 of 2 measures)

↓ or ↑ Statistically significant benefits favouring intervention over control.
* All listed outcomes were combined in a single measure.

Brief interventions

The Promoting CARE study focused on youth at risk based on a previous suicide attempt as well as current suicidal ideation and/or depression.[16] The study evaluated three different versions of the program: youth-only, parent-only, and combined. In the youth-only version, young people participated in two sessions, both including an interview and a brief intervention designed to facilitate connections with parents and school staff.[21] The parent-only version involved two home visits focused on teaching parents suicide prevention "first aid" followed by a booster phone call.[21] The combined intervention included both the youth and parent versions. All three versions were compared to interviewing youth and connecting them with resources.[16]

Given that social connectedness can reduce the likelihood of suicide attempts and ideation, helping youth build positive relationships is a helpful protective strategy.

The STAT-ED study focused on youth presenting at hospital for non–mental health concerns who were found to be at risk for suicide.[17] Youth and parents received motivational interviews designed to encourage scheduling of mental health care appointments. These interviews were followed by two to three phone calls with parents to reinforce the need for suicide risk reduction and to review plans for follow-up care. STAT-ED was compared to enhanced usual care, which involved mental health evaluation and referral.[17] Table 5 summarizes these two interventions and their evaluations.

Table 5. Brief Suicide Prevention Interventions

Intervention	Components	Sample size	Child ages (country)
Promoting CARE [16, 21]	*Youth-only version:* 2 individual sessions *Parent-only version:* 2 individual sessions + phone call *Youth + parent version:* as above	615	14–19 yrs (United States)
Suicidal Teens Accessing Treatment After an Emergency Department Visit (STAT-ED) [17]	Brief session with youth + parents followed by 2 or 3 phone calls with parents	159	12–17 yrs (United States)

No version of Promoting CARE proved more beneficial than usual care for reducing suicide attempts, threats of suicide or suicidal ideation by the end of treatment.[16] By six-and-a-half month-follow-up, the combined version did lead to significantly reduced threats of suicide and suicidal ideation, but not attempts, compared to usual care. However, by 12-and-a-half-month follow-up, no version of Promoting CARE outperformed usual care. The outcomes at this time point included the three suicide-related measures as well as depressive and anxiety symptoms, hopelessness, anger problems, problem-solving, perceived ability to cope, family problems and youth perceptions of family support.[16]

STAT-ED made no significant difference compared with usual care for suicidal ideation at two-month follow-up.[17] Likewise, the program had no impact on either suicidal ideation or attempts at six-month follow-up relative to usual care. Reductions in depressive symptoms were also comparable between the two groups. The only outcome favouring STAT-ED was engagement in mental health services. Youth receiving the program had more than double the odds of accessing these services by six-month follow-up.[17] Table 6 summarizes the outcomes of these two programs.

Table 6. Brief Suicide Prevention Interventions Outcomes

Intervention	Outcomes at Follow-up	
	Suicide-Related	**Other***
Promoting CARE [16]	<u>12½-month follow-up</u> NS Suicide attempts NS Threats of suicide NS Suicidal ideation <u>6½-month follow-up</u> *Youth + parent version* vs. usual care† NS Suicide attempts ↓ Threats of suicide ↓ Suicidal ideation <u>End of 2 sessions of treatment</u> NS Suicide attempts NS Threats of suicide NS Suicidal ideation	<u>12½-month follow-up</u> NS Depressive symptoms NS Anxiety symptoms NS Hopelessness NS Anger problems NS Problem-solving NS Perceived ability to cope with problems NS Family problems NS Perceived family support
Suicidal Teens Accessing Treatment After an Emergency Department Visit (STAT-ED) [17]	<u>6-month follow-up</u> NS Suicide attempts NS Suicidal ideation <u>2-month follow-up</u> NS Suicidal ideation	<u>6-month follow-up</u> NS Depressive symptoms ↑ Initiated mental health treatment (2 of 2 measures)

NS No significant difference between intervention and usual care.
↓ or ↑ Statistically significant benefits favouring intervention over usual care.
* Only final follow-up outcomes are reported for non-suicide outcomes.
† Outcomes for the youth-only and parent-only versions were not significantly different than usual care.

Recapping the results

The comprehensive interventions all provided intensive services involving young people and their parents over extended time frames, ranging from three months to a year. Regarding suicide attempts, MST led to significant improvements by one-year follow-up according to youth but not parent report.[14] While the second DBT evaluation showed reduced suicide attempts by the end of treatment, it failed to outperform usual care by six-month follow-up.[12] The first DBT evaluation took a different approach, using a combined measure of suicide attempts and self-harm. On this outcome, youth who received DBT significantly improved by the end of treatment and by one-year but not three-year follow-up.[11, 19–20] However, Family-Focused CBT failed to reduce suicide attempts at any assessed time point. Regarding suicidal ideation, Attachment-Based Family Therapy was effective at three-month follow-up.[10] As well, DBT reduced suicidal ideation in both evaluations by the end of treatment but not at later follow-ups.[11–12, 19–20] Meanwhile, Family-Focused CBT and MST did not outperform regular care at any time point regarding suicidal ideation.[13–14]

All mental health practitioners who care for young people need to be alert to the risks and assess for suicide potential.

The adjunctive Resourceful Adolescent Parent Program produced significant benefits at six-month follow-up.[15] Youth whose parents participated did better on a combined measure assessing suicide attempts, plans, threats, ideation and self-harm.[15] But results for the brief interventions were far less promising. Promoting CARE also failed to significantly reduce suicide attempts at any time point relative to usual care.[16] The version delivered to both youth and parents did, however, reduce threats of suicide and suicidal ideation at six-and-a-half-month follow-up, although not at later follow-up.[16] STAT-ED failed to produce significant improvements on any suicide-related outcomes relative to usual care.[17]

Implications for practice and policy

Findings from this systematic review suggest that comprehensive interventions for youth at risk for suicide can effectively reduce suicide attempts and suicidal ideation. Brief preventative interventions, however, had limited utility. (None of the studies we reviewed were able to conduct statistical analyses of suicide deaths.) These results suggest six implications for policy and practice.

- *Include parents in interventions for at-risk children and youth when feasible.* All the effective interventions provided therapeutic components for both young people and their parents, including MST, DBT, Attachment-Based Family Therapy and the Resourceful Adolescent Parent Program (the latter being teamed with regularly available community services for youth experiencing suicidality). So when intervening with children and youth at risk for suicide, parents should be included whenever possible.
- *Ensure sufficient intervention duration.* Results for the brief programs were generally poor, with all but one (the youth and parent version of Promoting CARE) failing to significantly improve any suicide outcome. These programs provided two sessions or fewer for youth and parents, compared with the successful comprehensive interventions, which lasted between three and six months. Young people with significant risk for suicide therefore likely require interventions that are long enough to enable them to learn and practise new skills.
- *Recognize the possibility of extending benefits by offering booster sessions.* For several of the more successful comprehensive interventions, impact waned over time. But it may be possible to extend positive benefits by offering booster sessions several months after the initial intervention has ended. The utility of booster sessions was highlighted in a systematic review of 53 studies showing that CBT interventions with booster sessions were more effective and had more enduring effects than those without for young people with mood or anxiety disorders.[22]

- *Address underlying mental health concerns that heighten the risk for suicide.* Children and youth with mental disorders, especially depression, are at greater risk for suicide than those without these conditions.[1] As well, improving the detection and treatment of mental disorders in general has been identified as crucial to reducing child and youth suicide.[1] Practitioners can help by conducting comprehensive assessments and by providing effective treatments for all children and youth with mental disorders. Policy-makers can help by ensuring adequate public resources to meet these needs.
- *Promote protective factors.* Given that social connectedness can reduce the likelihood of suicide attempts and ideation, helping youth build positive relationships is a helpful protective strategy. Strengthening connections with both parents and peers can be the focus.
- *Be alert for suicide risk in young people receiving mental health services.* Many children and youth who die by suicide have had contact with mental health professionals beforehand. A British study found that 26.3% of such young people had received mental health services within the three months before their death.[23] So all mental health practitioners who care for young people need to be alert to the risks and assess for suicide potential.

Effective ways to reduce the risk of child and youth suicide include offering comprehensive interventions and ensuring that young people have access to adequate mental health services and to adequate supports.

The suicide of any young person is a tragedy. It is a devastating loss reflecting great suffering for that child or youth and their family. It is also an exceedingly sad loss for others involved with the young person, including teachers and practitioners. (The sidebar below discusses the impact for mental health practitioners and what can be done to support them.) Further research will help define more and better suicide prevention interventions for young people. The studies we found can nevertheless still inform policy and practice. The main message of this review is that there are effective ways to reduce the risk of child and youth suicide — including offering comprehensive interventions and ensuring that young people have access to adequate mental health services and to adequate supports. It would be a catastrophic failure to not do everything possible to prevent child and youth suicide.

When helpers need support

A recent systematic review provided insights on how mental health practitioners were affected when someone they had been caring for died by suicide.[24] The most common personal reactions were guilt, blame, shock, anger and sadness. Changes in clinical practice following a suicide death were also common, including heightened awareness of risk factors and more frequent risk assessment. The review also identified what practitioners found beneficial following such a loss. Informal supports were identified as being the most helpful, including those from peers, family and friends. Formal supports, including supervision, were noted to be valuable as well.[24] These findings can be used to ensure that when a practitioner loses a young person to suicide, the right personal and professional supports are made available.

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 targeted prevention programs that aimed to reduce suicide among populations of young people identified to be at risk. Table 7 outlines our database search strategy.

Table 7. Search Strategy

Sources	• Campbell Systematic Reviews, Cochrane Database of Systematic Reviews, CINAHL, ERIC, Medline and PsycINFO
Search Terms	• Suicide *and* intervention, prevention or treatment
Limits	• Published between 2009 and 2022 in a peer-reviewed journal • Reported on children aged 18 years or younger* • Used systematic review, meta-analysis or RCT methods

* Studies that included individuals older than 18 had to have an overall participant mean age that was < 18 years.

To identify additional RCTs, we also hand-searched the reference lists from relevant systematic reviews and a previous issue of the *Quarterly*. Using this approach, we identified 111 articles describing 83 studies. Two team members then independently assessed each article, applying the inclusion criteria outlined in Table 8.

Table 8. 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 suicidal thoughts or attempts among at-risk youth
- Follow-up was three months or more (from the end of the intervention)
- Attrition rates were 20% or less at final assessment or intention-to-treat analysis was used
- Child outcome indicators included suicidal thoughts and/or attempts
- 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

Eight RCTs met all the inclusion criteria. Figure 1 depicts our search process, adapted from Preferred Reporting Items for Systematic Reviews and Meta-Analyses.[25] Data from these studies were then extracted, summarized and verified by two or more team members. Given the focus of this issue, we reported all suicide-related outcomes for all outcome periods. For outcomes related to mental health, we reported on the final follow-up period only. Throughout our process, any differences among team members were resolved by consensus.

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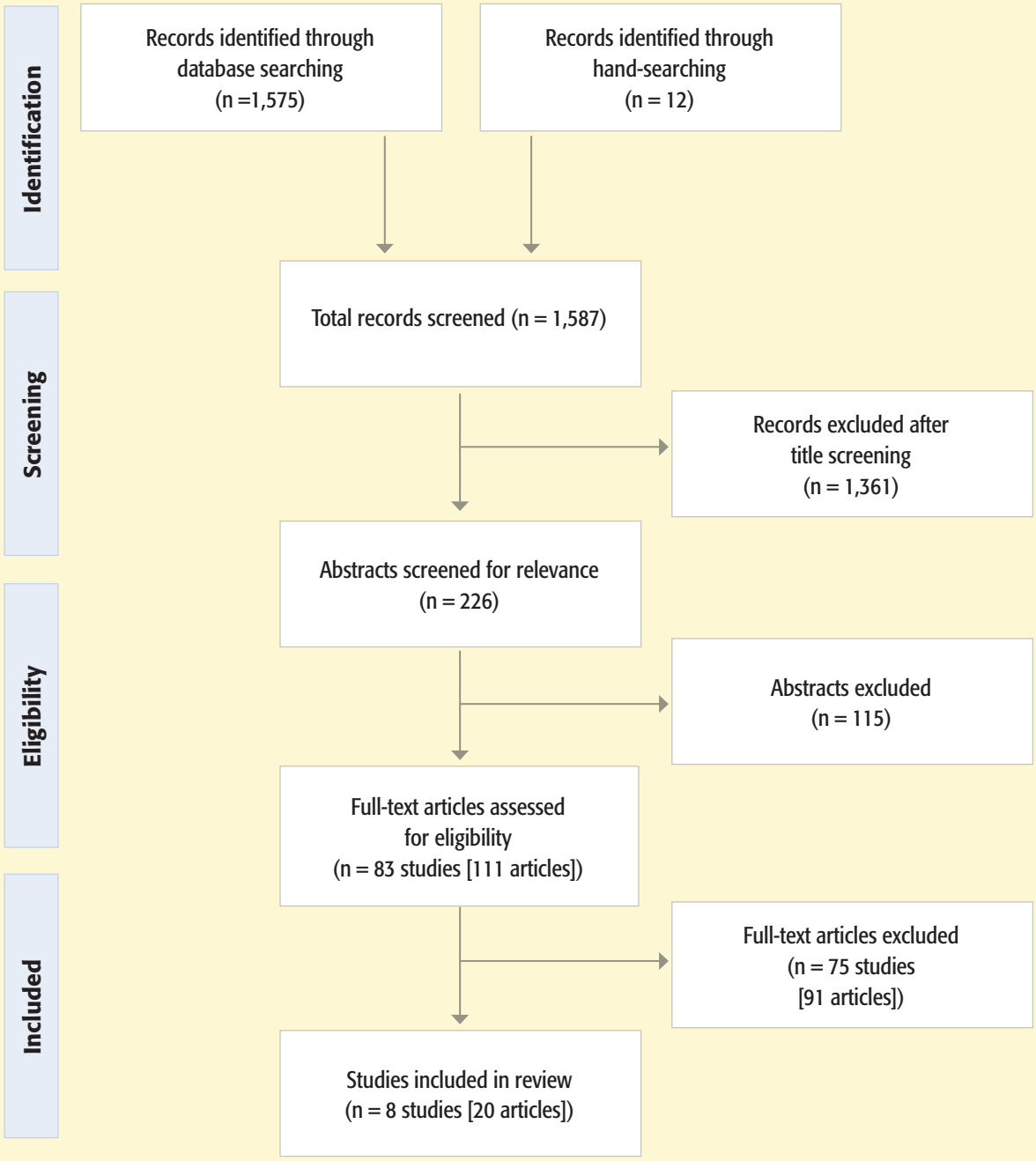
Figure 1. Search Process for RCTs



RESEARCH TERMS EXPLAINED

Practitioners and policy-makers need good evidence about whether a given intervention works to best help children. **Randomized controlled trials** (RCTs) are the gold standard for assessing whether an intervention is effective. In RCTs, children are randomly assigned to the intervention group or to a control group. By randomizing participants — that is, by giving every young person an 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 whether the intervention provides benefits, researchers analyze relevant outcomes. If an outcome is found to be **statistically significant,** it helps provide certainty 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 treatment's real impact.

Beyond determining whether outcomes were statistically significant, some studies also evaluated the degree of difference the intervention made in the young person's life. This was achieved by calculating the **effect sizes** of outcomes, which provide a quantitative measure of the strength of the relationship between the treatment and the outcome. The effect size reported in this issue was **Cohen's *d***, which can range from 0 to 2. Standard interpretations are 0.2 = small effect; 0.5 = medium effect; and 0.8 = large effect.

By calculating effect sizes, researchers provide crucial information regarding the degree of difference the intervention made in children's daily lives.

DEAN DROBOT / BIGSTOCK

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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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LINKS TO PAST ISSUES

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.

2022 / Volume 16
4 – Suicide prevention: Reaching the greatest number of young people
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3 – Fighting racism
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4 – Intervening after intimate partner violence
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2007 / Volume 1
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2 – Children's behavioural wellbeing
1 – Prevention of mental disorders

