Preventing anxiety for children

OVERVIEW
Keeping fears from interfering

REVIEW
Preventing childhood anxiety problems
Keeping fears from interfering

Two Canadian surveys have shown that most children do not experience worries that interfere with their well-being. We review these surveys and identify factors that protect young people from developing problematic anxiety.

Preventing childhood anxiety problems

For children with mental health concerns, anxiety disorders are the most common. Effective prevention efforts are critical, and our systematic review identified programs shown to be successful in preventing childhood anxiety disorders.

Implications for practice and policy

Methods

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Next Issue

Helping children with anxiety

Children with problematic anxiety sometimes struggle to find effective treatments. We identify what works, and what doesn’t, when treating childhood anxiety.

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:

Having the occasional distressing worry is a normal part of growing up. In fact, everyone, regardless of age, is biologically prepared to experience fear. This is because being alert and responsive to danger is protective — from infancy through adulthood. By understanding typical experiences with fears and worries, adults can help ensure that healthy development is on track for children.

Our knowledge about children’s emotional well-being and ways to enhance it continues to grow. For example, researchers have learned how children’s fear levels change as they mature and what factors can protect young people from developing problematic anxiety.

Most children don’t have problematic anxiety

Much research assessing childhood anxiety has focused on determining the prevalence of anxiety disorders, by identifying those who meet diagnostic criteria. Recent prevalence studies suggest that approximately 3% of children meet this threshold at any given time.1 (Please note that the cited report includes diagnoses that are no longer classified as anxiety disorders.) Research also suggests that these rates have not increased over recent decades.1–2 (In our next issue, on treating childhood anxiety, we will examine some of the reasons why practitioners may nevertheless perceive that prevalence is on the rise.)

Yet while prevalence information is critical in identifying the need for clinical treatment services, it does not tell us how most children experience typical fears and worries. To address this, researchers have taken a different approach. This involves tracking young people, most who do not have anxiety disorders, to learn how anxiety levels change as children grow and develop.

Two recent studies stand out. In one survey of more than 10,000 Canadian children, parents rated their child’s anxiety levels over a six-year period, beginning when children were between two and 11 years old.3 Each time, parents were asked how often their children were too fearful or anxious, overly worried, or nervous or tense. While anxiety diagnoses were not assessed, researchers nevertheless uncovered four general patterns in children:
• consistent extremely low anxiety levels (6%)
• consistent low anxiety levels (46%)
• initial high anxiety levels that decreased over time (12%)
• initial high anxiety levels that increased over time (36%)

Researchers found a similar pattern when they tracked nearly 1,900 Quebec children. In this study, parents provided information about their child’s anxiety levels yearly from kindergarten through Grade 6. As in the previous study, parents were asked to report symptoms such as how much children feared new situations, worried a lot or cried readily. And also as with the previous study, anxiety diagnoses were not assessed. These researchers also uncovered four general patterns in children:
• initial low anxiety levels that decreased over time (10%)
• initial moderate anxiety levels that increased then declined (39%)
• initial high anxiety levels that remained relatively high despite some declines (41%)
• consistent high anxiety levels that slightly declined over time (10%)

Both studies confirmed that based on parent ratings, most children had low anxiety levels that remained stable, or they had anxiety that decreased over time.

What keeps kids’ fears in check?

Researchers have also found a number of factors that appear to protect children from developing problematic anxiety — across a range of developmental periods.

A study that tracked New Zealand children from age three to 15 uncovered the importance of social competence. More specifically, social confidence at age five — which included behaviours such as friendliness and eagerness to explore in new situations — predicted the absence of problematic anxiety in both late childhood and mid-adolescence, but only for boys.

An additional protective variable was found in a different New Zealand study that followed school-aged children until adulthood, assessing a variety of influences. Young people who had a positive relationship with their parents at age 15, including feeling accepted and respected by their parents, were less likely to develop an anxiety disorder when they were between ages 16 and 30. In fact, teens with the strongest relationships with their parents had anxiety disorder rates that were less than half of those with the weakest relationships.

Another study, of Western European children and teens, confirmed the importance of parents and peers in preventing problematic anxiety. In this study, young people who felt more connected to their parents and more cared for by friends were less likely to experience an increase in social anxiety over the ensuing three years.
Finally, a meta-analysis of 47 cross-sectional studies, which included data on nearly 13,000 young people from varying countries, further suggested the importance of parenting in protecting children from problematic anxiety.\textsuperscript{9} Two specific parenting variables were highly correlated with better outcomes for children: giving children autonomy and providing high levels of warmth.\textsuperscript{9} Examples of giving autonomy included encouraging children’s opinions and choices, acknowledging their independent perspectives, and soliciting their input on decisions and problem-solving. Examples of providing warmth included expressing positive regard for children, engaging in pleasant interactions with them, and being involved in their activities.\textsuperscript{9}

**Nurturing environments, nurturing relationships**

On balance, the current studies suggest that when children are provided with stable environments that foster social competence, they can learn to thrive with peers and adults — and may also be protected from problematic anxiety. And by building close connections, promoting children’s autonomy and providing high levels of warmth, parents and caregivers can also greatly promote children’s emotional health.

While all children benefit from nurturing environments and nurturing relationships, some young people may still be at risk of developing problematic anxiety, and so may benefit from prevention programs. In the Review article that follows, we identify programs shown to be successful in preventing childhood anxiety disorders.👋
Preventing childhood anxiety problems

Even though most children do not experience problematic anxiety, anxiety disorders are still the most common mental health concern that young people experience.1 Because of the frequency of these disorders and the considerable distress they cause, prevention efforts are greatly needed. We therefore conducted a systematic review to identify the latest research on effective prevention programs to help inform practitioners, policy-makers and others concerned with childhood anxiety.

We examined randomized controlled trials (RCTs) evaluating prevention programs published within the past 10 years. We included programs that either took a universal approach or concentrated on children at risk. To ensure a prevention focus, we excluded studies where the majority of children met diagnostic criteria for an anxiety disorder. To determine the benefits for children, we included only those studies that assessed relevant child anxiety outcomes using more than one informant (children, parents and/or researchers). For more information, please see our Methods.

We accepted five RCTs evaluating four interventions: Aussie Optimism Program — Positive Thinking Skills (one RCT), Coping and Promoting Strength (two RCTs), Dutch Anxiety Prevention (one RCT), and Feelings Club (one RCT).10–16 All four interventions used cognitive-behavioural therapy (CBT) techniques. These included:

• education about anxiety, including the link between anxiety-related thoughts, feelings and behaviours10, 12–14, 16
• relaxation exercises10, 12–14
• cognitive restructuring techniques, including teaching children to identify unhelpful, unrealistic worries and then challenge them with more accurate thinking10, 12–14, 16
• coaching children to identify anxiety-provoking situations and overcome them by facing them10, 13–14

Two of the three targeted programs prevented children from developing an anxiety disorder.

Where did FRIENDS go?

Some readers may wonder why the FRIENDS program did not turn up in our current systematic review, especially given that we featured it in an earlier Quarterly. There were two reasons. First, our present review focused on evaluations published in the past 10 years, so older FRIENDS studies were excluded. Second, although some evaluations of FRIENDS were published more recently, none met our current acceptance criteria. But FRIENDS, which uses cognitive-behavioural techniques, is backed by substantial high-quality research evidence. Consequently, FRIENDS is still an excellent choice for anxiety prevention.
Different programs for different levels of risk

Among the four interventions, only Aussie Optimism was universal, delivered to all students attending randomly selected elementary schools in socio-economically challenged communities. The remaining three programs focused on children at risk — based on either parental anxiety disorders or child anxiety symptoms. In both evaluations of Coping and Promoting Strength, one parent had an anxiety disorder. For Dutch Anxiety Prevention, all children had moderate to high anxiety symptoms. Meanwhile, for Feelings Club, all children had anxiety or depressive symptoms, but without meeting diagnostic criteria for either disorder.

Including parents when children are at risk

Parents played an important role in all three targeted programs. In both trials of Coping and Promoting Strength, parents participated in all sessions, including two without their children. In Feelings Club, parents received three educational sessions. And the Dutch Anxiety Prevention RCT compared two program versions — one parent-only and one child-only. In the parent-only version, mothers and fathers were trained as lay therapists so they could teach their child CBT techniques, while also addressing their own anxieties and their parenting strategies. In the child-only version, a trained practitioner taught children the CBT techniques. The universal Aussie Optimism was the only intervention that did not involve parents. Table 1 describes the four programs and their RCT evaluations.

Table 1: Cognitive-Behavioural Prevention Program + Evaluation Characteristics

<table>
<thead>
<tr>
<th>Program</th>
<th>Components</th>
<th>Country (Sample size)</th>
<th>Children’s ages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Universal</strong></td>
<td></td>
<td></td>
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<tr>
<td>Aussie Optimism</td>
<td>10 group child sessions delivered by teachers over 2¼ months</td>
<td>Australia (910)</td>
<td>9–10 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Targeted</strong></td>
<td></td>
<td></td>
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<tr>
<td>Coping and Promoting Strength I</td>
<td>9–11 family sessions* delivered by practitioners over 2 to 2½ months</td>
<td>US (40)</td>
<td>7–12 years</td>
</tr>
<tr>
<td>Coping and Promoting Strength II</td>
<td>11 family sessions* delivered by practitioners over 2½ months</td>
<td>US (136)</td>
<td>6–13 years</td>
</tr>
<tr>
<td>Dutch Anxiety Prevention</td>
<td>Child-only: 8 group sessions delivered by practitioners over 2 months OR Parent-only: 3 group sessions + 5 brief telephone sessions delivered by practitioners over 2 months</td>
<td>Netherlands (183)</td>
<td>8–13 years</td>
</tr>
<tr>
<td>Feelings Club</td>
<td>12 group child sessions + 3 group parent sessions delivered by practitioners over 3 months</td>
<td>Canada (148)</td>
<td>8–12 years</td>
</tr>
</tbody>
</table>

* The first two sessions included parents only; all subsequent sessions included all interested family members.
**What was measured?**

All RCTs measured a variety of child outcomes at follow-up periods ranging from six to 30 months. As well, three RCTs measured outcomes at more than one follow-up period. Given our purpose, we focused on *child anxiety outcomes* at the final assessment point(s) that met our criteria for each study. Notably, all studies assessed anxiety disorder *diagnoses*, which is a higher standard for intervention trials, compared with simply assessing symptoms.

We also identified if there were any statistically significant differences between intervention and comparison children on relevant outcomes for each study. Plus, we reported where possible the degree to which any statistically significant gains were clinically meaningful. Specifically, we identified “effect sizes” — whether benefits for children were classified as small, medium or large — for those studies that calculated them.

**Anxiety prevention program outcomes**

*Aussie Optimism*, the only universal program, made no significant difference in children's anxiety symptoms or diagnoses — relative to the control condition — at any of the three follow-up assessments, which ranged from six to 30 months.\(^{10-11}\)

In contrast, two of the three targeted programs prevented children from developing an anxiety disorder. With *Coping and Promoting Strength I*, intervention children had significantly fewer anxiety diagnoses than comparison children at seven-month follow-up.\(^{12}\) In fact, *no* children who participated in *Coping and Promoting Strength I* met criteria for an anxiety disorder over the course of the seven-month follow-up, compared to 30% of controls.\(^{12}\) The effect size for this diagnostic outcome was very large.\(^{12}\)

Similar positive outcomes were found for *Coping and Promoting Strength II*. Intervention children had significantly fewer anxiety diagnoses and less severe anxiety symptoms than controls at 12-month follow-up.\(^{13}\) Over the 12-month follow-up, only 5.3% of intervention children developed an anxiety disorder, compared to 30.7% of controls.\(^{13}\) This means that program children had over eight times lower odds of being diagnosed with an anxiety disorder. *Coping and Promoting Strength II* also had a moderate effect on the severity of anxiety symptoms.\(^{13}\)

Both the parent-only and child-only versions of *Dutch Anxiety Prevention* also produced important gains. At 21-month follow-up, children in both versions of the program had significantly lower scores on a measure assessing both the presence and severity of anxiety disorders compared to control.
children. Additionally, there were no significant differences in outcomes when the intervention was delivered to children via practitioners or via parents (who received training by a practitioners), suggesting the two methods were equally effective.

In contrast, the third targeted program, *Feelings Club*, had no impact on children’s anxiety disorder diagnoses or symptoms relative to the comparison group. Rather, all children experienced significant reductions in anxiety symptoms over time. Table 2 provides additional details on the outcomes for the four programs we reviewed.

### Table 2: Child Anxiety Outcomes for Cognitive-Behavioural Prevention Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Follow-up</th>
<th>Positive child outcomes*</th>
<th>No significant difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Universal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Aussie Optimism</em>&lt;sup&gt;10-11&lt;/sup&gt;</td>
<td>30 months</td>
<td>None</td>
<td>Anxiety symptoms</td>
</tr>
<tr>
<td></td>
<td>6 to 18 months</td>
<td>None</td>
<td>Anxiety diagnoses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Anxiety symptoms</td>
</tr>
<tr>
<td><strong>Targeted</strong></td>
<td></td>
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<tr>
<td><em>Coping and Promoting Strength I</em>&lt;sup&gt;12&lt;/sup&gt;</td>
<td>7 months</td>
<td>↓ Anxiety diagnoses</td>
<td>Anxiety symptoms</td>
</tr>
<tr>
<td><em>Coping and Promoting Strength II</em>&lt;sup&gt;13&lt;/sup&gt;</td>
<td>12 months</td>
<td>↓ Anxiety diagnoses</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓ Anxiety symptom severity</td>
<td></td>
</tr>
<tr>
<td><em>Dutch Anxiety Prevention</em>&lt;sup&gt;14&lt;/sup&gt;</td>
<td>21 months</td>
<td>Child-only version</td>
<td>Anxiety symptoms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓ Anxiety diagnoses + their severity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parent-only version</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓ Anxiety diagnoses + their severity</td>
<td>Anxiety symptoms</td>
</tr>
<tr>
<td><em>Feelings Club</em>&lt;sup&gt;16&lt;/sup&gt;</td>
<td>12 months</td>
<td>None</td>
<td>Anxiety diagnoses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Anxiety symptoms</td>
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</tbody>
</table>

* All listed outcomes were statistically significant compared with controls.

### Is prevention cost-effective?

For the *Dutch Anxiety Prevention* program, researchers also assessed cost-effectiveness at 21-month follow-up. For this analysis, they evaluated costs and clinical outcomes for the child-only, parent-only and control groups. Costs included direct program expenses; other health care costs, such as psychologist services and medications; and indirect expenses, such as school absences and parental work absences due to children’s anxiety. They determined that both the child-only and parent-only versions (which were similar in terms of their cost-effectiveness) were more cost-effective than the control condition. Overall, these findings suggest that *Dutch Anxiety Prevention* improved children’s outcomes without adding significant costs for families or society.
How well do childhood anxiety prevention programs work?

This review found that two prevention programs — *Coping and Promoting Strength* and *Dutch Anxiety Prevention* (both versions) — were highly successful. Each focused on at-risk children and significantly reduced anxiety disorder diagnoses. Each was also relatively brief, delivered over approximately two months. Notably, findings for *Coping and Promoting Strength* were also replicated (by the same research team). As well, researchers demonstrated cost-effectiveness for *Dutch Anxiety Prevention*. These findings add to the well-established body of evidence showing the effectiveness of CBT techniques in preventing childhood anxiety disorders.\(^{17}\)

Yet *Aussie Optimism* and *Feelings Club* also used CBT techniques delivered over similar time periods — without significantly improving children’s anxiety relative to the comparison conditions. The outcomes for *Aussie Optimism* may have been due to its universal delivery, to all children attending randomly selected schools. Universal programs have been recognized as being less likely to produce positive outcomes compared with targeted ones, because universal programs are inevitably delivered to many children who face little to no risk.\(^{18}\)

The fact that *Feelings Club* did not improve anxiety outcomes any more than the comparison condition was also likely related to children’s risk. Although this program did focus on children at risk, it was not limited to anxiety. Rather, children were required to have either anxiety or depressive symptoms at the outset. So some may have had little or no anxiety — limiting the program’s anxiety-related benefits. As well, for this RCT, comparison children participated in an intensive, structured and supervised after-school activity group, which may have had therapeutic effects. For example, children performed in front of peers during activities such as charades, which may have reduced social anxiety.\(^{16}\) Finally, *Feelings Club* was the only targeted program that did not expose children to feared situations, a crucial CBT activity in addressing anxiety.\(^{19}\)

Implications for practice and policy

The current review identified two effective programs — *Coping and Promoting Strength* and *Dutch Anxiety Prevention*. As well, four themes emerged, adding to our knowledge about preventing anxiety for children.

- **CBT is still the best approach for preventing childhood anxiety.**

  This review of the most recent research evidence confirms that CBT-based programs are highly effective in preventing childhood anxiety. This finding is in keeping with our previous review, which similarly found strong support for CBT-based programs, with the *FRIENDS* program in particular standing out.\(^{17}\) The two new successful programs identified here also used
CBT approaches. So the evidence continues to build that CBT is an effective approach for preventing childhood anxiety.

- **Practitioners can deliver programs in relatively brief formats.** *Coping and Promoting Strength* and *Dutch Anxiety Prevention* were both delivered by practitioners in just nine to 11 family sessions or eight group sessions over two months.

- **Preventing anxiety can be cost-effective.** For example, the cost of delivering *Dutch Anxiety Prevention* was equivalent to the cost of providing no intervention. This occurred because the program was able to reduce some avoidable expenses, such as medication and emergency room visits — with the important added benefit that anxiety was significantly reduced early in the lifespan for children in the program.

- **CBT training is likely to yield wide-ranging payoffs.** There is a role for practitioners in offering programs such as the ones described here. But CBT’s utility is not limited to anxiety prevention. It is also an effective approach for preventing depression, as well as treating anxiety, depression, substance use and conduct disorders. Unlike many other interventions, CBT is also not trademarked, so training can be provided at a relatively reasonable cost. CBT training for practitioners is therefore a wise investment — for child and youth mental health service organizations and for the children and families they serve.

We know how to prevent childhood anxiety — the most common group of mental disorders that Canadian children face. BC has made significant strides in achieving this goal. In particular, the CBT-based *FRIENDS* program has been implemented and maintained in BC schools. The two new programs identified in this review add to the choices that could be made available for children and families.

In BC and beyond, the aim is to ensure that all children in need can access evidence-based anxiety prevention programs. Over time, expanded prevention efforts will also ensure that more young people are reached — before anxiety disorders develop, and well before these disorders become needlessly entrenched.

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For more information on our research methods, please contact

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In BC and beyond, the aim is to ensure that all children in need can access evidence-based anxiety prevention programs.
We conducted a comprehensive search to identify high-quality research evidence on the effectiveness of programs aimed at preventing anxiety in children. We used methods adapted from the Cochrane Collaboration and Evidence-Based Mental Health and applied the search strategy outlined in Table 3.

We then hand-searched reference lists of systematic reviews, previous Quarterly issues, and the two recent Children’s Health Policy Centre research reports to identify additional RCTs. Using these approaches, we identified 57 potentially relevant RCTs. Two team members then independently assessed each RCT, applying the inclusion criteria outlined in Table 4, which were designed to limit our review to include only the highest-quality studies.

<table>
<thead>
<tr>
<th>Table 3: Search Strategy</th>
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<tbody>
<tr>
<td><strong>Sources</strong></td>
</tr>
<tr>
<td><strong>Search Terms</strong></td>
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<td><strong>Limits</strong></td>
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<th>Table 4: Inclusion Criteria for RCTs</th>
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<tbody>
<tr>
<td>• Participants were randomly assigned to intervention and comparison groups at study outset</td>
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<tr>
<td>• Clear descriptions were provided of participant characteristics, settings and interventions</td>
</tr>
<tr>
<td>• Interventions were evaluated in high-income countries (according to World Bank standards), for comparability with Canadian populations and practice and policy settings</td>
</tr>
<tr>
<td>• Interventions aimed to prevent childhood anxiety symptoms or disorders</td>
</tr>
<tr>
<td>• At study outset, most study participants did not have anxiety disorder diagnoses and had not been referred for treatment for anxiety problems</td>
</tr>
<tr>
<td>• Follow-up was three months or more (from the end of the intervention)</td>
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<tr>
<td>• Attrition rates were below 20% at follow-up and/or intention-to-treat analysis was used</td>
</tr>
<tr>
<td>• Child outcome indicators included symptoms and/or diagnoses of anxiety disorders</td>
</tr>
<tr>
<td>• Anxiety symptoms were assessed at follow-up using two or more informant sources (e.g., child, parent, teacher, researcher)</td>
</tr>
<tr>
<td>• Reliability and validity of all primary outcome measures or instruments was documented</td>
</tr>
<tr>
<td>• Levels of statistical significance were reported for primary outcome measures</td>
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</tbody>
</table>

Five RCTs met all the inclusion criteria. Data from these RCTs were then extracted, summarized and verified by two or more team members. Throughout our process, any differences among team members were resolved by consensus. ✋
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