Preventing problematic anxiety

Overview
What, me worry?

Review
Anxiety prevention programs: How well do they work?

Feature
Preventing anxiety with some help from our FRIENDS

Letters
Evaluating research: Who sets the bar?

About the Children’s Health Policy Centre
As an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University, we aim to connect research and policy to improve children’s social and emotional well-being, or children’s mental health. We advocate the following public health strategy for children’s mental health: addressing the determinants of health; preventing disorders in children at risk; promoting effective treatments for children with disorders; and monitoring outcomes for all children. To learn more about our work, please see www.childhealthpolicy.sfu.ca

Next Issue
Treating anxiety disorders
When anxiety disorders have not been prevented, children require effective treatment. We investigate what interventions can help.
About the Quarterly

In the Quarterly, we present summaries of the best available research evidence on children's mental health topics, using systematic review methods adapted from the Cochrane Collaboration, www.cochrane-handbook.org. The publication is funded by the British Columbia Ministry of Children and Family Development.

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We hope you enjoy this issue. We welcome your letters and suggestions for future topics. Please email them to chpc_quarterly@sfu.ca or write to the Children's Health Policy Centre, Attn: Jen Barican, Faculty of Health Sciences, Simon Fraser University, Room 2435, 515 West Hastings St., Vancouver, British Columbia V6B 5K3. Telephone (778) 782-7772.
What, me worry?

You’re stuck there [in a spider web] so you’re just waiting there knowing. It’s coming. It will numb you first and then eat you bit by bit.¹

I’m afraid of ghosts at night but not every time…. If I walk with my friend, I’m not afraid.²

— Elementary school children describing their fears

Everyone worries. In fact, our brains are hard-wired to respond to our fears. Whenever we detect danger — real or perceived — a brain structure called the amygdala immediately responds. The amygdala activates our sympathetic nervous system, which in turn ensures we are alert and prepared to take action. We then experience a cascade of physiological reactions: our heart and respiration rates increase and our muscles become tense. This “fight or flight” response, which occurs in all humans, helps us to protect ourselves from danger.

Our biology also allows us to respond to fear from our earliest days. For example, most newborns experience fear when they are physically separated from their primary caregiver.³ Infants react by crying, prompting their caregivers to respond. Many of our fears are therefore adaptive — helpful during particular stages of development.

Just as it is normal for children to experience fears, it is also normal for fears to change over time, as Table 1 highlights. While a loud thunderstorm may send a five-year-old running to his mother for comfort, a year later lightning may be nothing more than a distraction. Twelve-year-old girls, on their part, may spend hours ruminating over the critical comments they fear their friends might make. Fortunately, for most children these particular fears do not endure.⁴

Table 1: Normal Childhood Fears³,⁵

<table>
<thead>
<tr>
<th>Developmental Stage</th>
<th>Typical Fears</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late infancy</td>
<td>Loud noises, strangers</td>
</tr>
<tr>
<td>Early childhood</td>
<td>Darkness, storms, fire, water</td>
</tr>
<tr>
<td>Middle childhood</td>
<td>Animals, germs, natural disasters, injury</td>
</tr>
<tr>
<td>Adolescence</td>
<td>Peer rejection, school performance</td>
</tr>
</tbody>
</table>

Nevertheless, what begins as “normal” worry develops into an anxiety disorder for an estimated 6.4% of children.⁶ While a ten-month-old crying when his mother leaves the room would not be surprising to most adults, such behaviour from a ten-year-old could signal a problem such as separation anxiety disorder. Similarly, while it is typical for adolescents to experience occasional worries about peer rejection, if these worries become
so frequent and intense that a sixteen-year-old stops socializing with her friends, she may have social phobia. Typical worries can be distinguished from anxiety problems by evaluating their frequency, severity and persistence. Most common childhood fears naturally resolve over time.

**Building children’s resilience**

Because anxiety is a normal part of life, children typically find ways to manage it. Researchers have uncovered several factors that seem to encourage children’s resilience and protect them from developing anxiety problems. These factors include the following:

- Having strong cognitive abilities
- Using active coping strategies
- Developing good social skills
- Experiencing positive relationships with parents or other caregivers
- Being exposed to peers and adults who model positive behaviours

Fortunately, we can take steps to ensure that children develop and experience these protective factors.

At the same time, researchers have uncovered several risks associated with developing anxiety problems. These risks include:

- Being female
- Having a parent with an anxiety disorder
- Tending to be timid and to withdraw in new situations
- Experiencing significant adversities, such as maltreatment or the loss of a parent

Again fortunately, some of these risk factors can be modified. For example, as identified in a previous issue of the Quarterly, more can be done to protect children from preventable traumas like maltreatment. As well, investing in anxiety prevention programs in childhood should eventually lead to fewer adults having problematic anxiety, and therefore fewer parents having an anxiety disorder that could negatively affect their children.

**Applying research, reducing risks**

Understanding protective and risk factors can help to inform the development of programs for preventing anxiety. And, because most anxiety disorders start in childhood, prevention programs delivered early in life have the potential for great impact, averting distress and disability across the lifespan. Next, we examine the evidence for such prevention programs.

"Because anxiety is a normal part of life, children typically find ways to manage it."
Anxiety prevention programs: How well do they work?

Fisak and colleagues recently conducted a systematic review of studies evaluating anxiety prevention programs for children aged 18 years and under. Their goal was to determine which programs worked best and under what conditions. Here, we showcase their findings.

Learning from 31 studies, 7,735 children

In their review, Fisak’s group identified 31 studies evaluating 18 different programs (described in 35 different publications). Of the 31 studies, 25 evaluated programs that used cognitive-behavioural therapy (CBT) techniques. These programs included MoodGYM, Coping and Promoting Strength and the Penn Resiliency Program. However, the FRIENDS program stood out — being evaluated in 14 studies — making it the most intensively assessed and the only one examined in more than two studies. The remaining six programs used various techniques, including problem-solving and coping skills training and stress inoculation training.

All 18 programs aimed to prevent anxiety in children. Of these, 14 targeted generalized anxiety and four targeted specific disorders (social phobia and panic disorder) or symptoms (fear of public speaking and distress after traffic accidents). Notably, most programs were brief, comprising only eight to 12 sessions. Regarding delivery, there was a balanced mix of universal and targeted approaches. (Universal programs are delivered to all children regardless of individual risk while targeted programs are delivered only to those identified as high-risk.) Participating children ranged in age from four to 16 years and resided in diverse countries, including Canada, the United States, Australia, England, Hong Kong, Mexico and Norway.

While 21 of the 31 studies assessed effectiveness using randomized controlled trial methods, some used less rigorous approaches. The measures typically used — particularly for children’s self-reported anxiety symptoms — had well-established reliability and validity. However, only four studies corroborated findings by measuring outcomes using multiple informant sources (such as children, parents and/or teachers).

How strong were the benefits?

Fisak and colleagues did more than identify whether programs produced statistically significant effects. They also examined the magnitude of these effects — or the effect size (ES) of each program. Effect size (typically measured using “Cohen’s d”) identifies whether an intervention makes a clinically meaningful difference in children’s lives. Although interpretation

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i The Appendix describes our methods for identifying and appraising this review.
standards vary, an effect size of 0.4 or less is typically considered small, 0.4 to 0.7 is considered moderate, while 0.7 or higher is considered large.11

A large effect size is obviously desirable. Nevertheless, a small effect size can still result in clinically meaningful differences. For example, if a child no longer feels “slight butterflies” in her stomach during a thunderstorm as a result of a prevention program, her discomfort is diminished in important ways, even if the effect size is small. Note that even in successful prevention studies, effect sizes are often only in the small to moderate range.

Fisak’s group presented program effectiveness data organized by specific time points. Post-test was the only time point for which outcome data were available for all 31 studies. Table 2 identifies the programs producing positive effects, grouped by effect sizes at post-test. Most studies (18 of 31) showed small positive effects — meaning that although results were modest, children in these programs still had consistently lower anxiety scores than children not receiving the programs. Nine studies showed stronger results, indicated by their moderate and large effect sizes.

Table 2: Effects of Anxiety Prevention Programs at Post-Test

<table>
<thead>
<tr>
<th>Small (ES &lt; 0.4)</th>
<th>Moderate (ES 0.4–0.7)</th>
<th>Large (ES &gt; 0.7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive or behavioural techniques</td>
<td>Norwegian Universal Preventative Program for Social Anxiety</td>
<td>Cool Kids FRIENDS (2 studies)</td>
</tr>
<tr>
<td>Coping and Promoting Strength Program</td>
<td>Penn Resiliency Program</td>
<td>FRIENDS (2 studies)</td>
</tr>
<tr>
<td>Feelings Club CBT program*</td>
<td>Preschool Intervention Project</td>
<td>Parent-based skills training program*</td>
</tr>
<tr>
<td>FRIENDS (8 studies)</td>
<td>Primary Mental Health Project</td>
<td>Stress inoculation training program</td>
</tr>
<tr>
<td>MoodGYM</td>
<td>Psychosocial debriefing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REACH for RESILIENCE</td>
<td></td>
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</tbody>
</table>

ES Effect size
* Canadian evaluation

Beyond simply reporting post-test findings for each study, Fisak’s group also examined results in aggregate. When they pooled post-test data from all 31 studies, a small but significant combined effect (d = .18) was found. This suggests that most children participating in the prevention programs had less anxiety when programs ended than comparison children.

Because the enduring effectiveness of prevention programs is particularly important for assessing success, Fisak’s group also examined data from the 13 studies that conducted longer-term outcome evaluations. Table 3 identifies

Table 3: Effects of Anxiety Prevention Programs at Follow-Up

<table>
<thead>
<tr>
<th>Follow-Up</th>
<th>Small (ES &lt; 0.4)</th>
<th>Moderate (ES 0.4–0.7)</th>
<th>Large (ES &gt; 0.7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>FRIENDS (2 studies)</td>
<td>Cool Kids FRIENDS</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>MoodGYM</td>
<td>FRIENDS</td>
<td></td>
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<tr>
<td></td>
<td>REACH for RESILIENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 months</td>
<td>Coping and Promoting Strength Program</td>
<td>FRIENDS (2 studies)</td>
<td>Penn Resiliency Program</td>
</tr>
<tr>
<td></td>
<td>FRIENDS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ES Effect size
programs showing continued evidence of success grouped by effect size. Once again, most studies reported small positive effects.

Fisak’s group also performed a meta-analysis to determine the combined effectiveness of all 13 programs at final reported follow-up. The combined effects were small but still significant (d = .17). Because this was so similar to the post-test findings (d = .18), the authors concluded that the positive benefits of these prevention programs were indeed maintained over time.

**Program characteristics matter**

Fisak and colleagues also analyzed whether specific program or participant characteristics influenced the outcomes. Two did. First, effect sizes were greatest when the programs were delivered by mental health practitioners. Second, FRIENDS had significantly greater effects than other programs overall.

In contrast, other program and participant characteristics — such as targeted versus universal delivery, the number of sessions, and children’s ages — did not significantly influence the outcomes.

**Implications for policy and practice**

The findings from Fisak’s review have important implications for policymakers and practitioners. First, the review provides evidence that anxiety prevention programs are effective for children such that new and continuing investments in prevention are warranted. FRIENDS stood out as being particularly effective, with evidence of success over 13 separate trials.

Second, because all anxiety cannot be prevented, any strategy to address childhood anxiety must be comprehensive, including early identification and treatment in addition to prevention. Prevention is nevertheless essential if much needless suffering in childhood is to be averted, as has been recognized in recent initiatives such as implementation of the FRIENDS program in BC (described in our Feature article).

Third, Fisak’s review highlights the importance of continually evaluating programs. FRIENDS provides a good example of why this is necessary. Despite its very strong findings from multiple studies, in one evaluation included in Fisak’s review, children participating in FRIENDS did not have significantly lower levels of anxiety than children in a control group. As well, a trial of FRIENDS in BC (published after Fisak’s review) did not produce positive outcomes for elementary school students with either universal or targeted delivery. By continually and carefully evaluating programs, policy-makers and researchers can learn about effectiveness in specific settings and can modify programs to serve children better.

Finally, of all the programs featured in this review, FRIENDS is the program supported by the strongest research evidence. Consequently, this program is recommended as the starting point for policy-makers considering new investments in childhood anxiety prevention programs.
Preventing anxiety with some help from our FRIENDS

An ounce of prevention is worth a pound of cure. Nowhere is that sentiment more true than when it comes to anxiety, according to representatives from the Ministry of Children and Family Development (MCFD). The ministry brought the FRIENDS anxiety prevention program to British Columbia as part of the provincial Child and Youth Mental Health Plan, launched in 2003.

“Our scope and our purpose has been to achieve a large reach — to affect as many children and youth as possible,” says Kelly Angelius, the BC manager for FRIENDS. “Anxiety is so prevalent. It’s critical that teachers are provided with the knowledge and skills necessary to respond effectively.”

Angelius views FRIENDS not only as an opportunity to reduce child anxiety in the province, but also as a chance to educate teachers, parents and communities about the importance of everyone working together to improve mental health for children.

Even children who do not have anxiety problems can benefit from FRIENDS. The program appears to increase children’s resiliency and self-esteem because of its ability to build social and emotional skills.

When FRIENDS was introduced in BC, it was delivered to Grade 4 and 5 classrooms. Because the program has been so successful, two expansions have already occurred. In 2008, the ministry launched a youth version (aimed at Grades 6 and 7), and this past September it started an early-years version called Fun FRIENDS (aimed at students in kindergarten and Grade 1). “With more research confirming that intervening earlier is better, it was a clear path,” Angelius says. “It’s been exceptionally well received by teachers and parents.”

How the program works

Some 4,000 BC teachers have completed the one day of special training required to deliver the program. The lessons for children are meant to be fun; they include games, problem-solving exercises, role-playing and various other approaches. “We’re looking at this from all angles,” says Angelius. “It’s a collaborative effort to reduce anxiety and teach the children life skills.”
But the real significance is the cross-ministry support for the program. In BC, FRIENDS is funded by MCFD, which provides a team of 27 certified trainers who travel the province to “teach the teachers.” But it is delivered by the Ministry of Education’s teachers. Additionally, each school district must provide a trained liaison to answer questions from teachers.

Program materials have been developed to include Aboriginal enrichment activities that make FRIENDS more culturally relevant for these students. As well, some materials have been translated to French.

Parents are also part of the team. FRIENDS includes parent workshops — both face-to-face and online — and other resources that parents can use to reinforce the anxiety-reduction skills at home. The provincial FORCE Society, a non-profit group that works to support and empower families affected by children’s mental health issues, manages this aspect of the program. When parents reinforce and practice FRIENDS activities at home, it helps children to integrate these skills into their daily life, Angelius says.

**News travels by word of mouth**

Although FRIENDS is available to all elementary schools free of charge, no schools are required to deliver it if they choose not to. Interestingly, the program has never needed paid advertising. Instead, news travels by word of mouth, and more schools sign up after hearing positive feedback from other teachers. Every school district in the province has participated, as have many independent schools and a number of First Nations schools. Teachers interested in implementing FRIENDS should contact the ministry at [www.mcf.gov.bc.ca/mental_health/friends.htm](http://www.mcf.gov.bc.ca/mental_health/friends.htm). Anyone interested in learning more about the FRIENDS Parent Program should go to [www.friendsparentprogram.com](http://www.friendsparentprogram.com).

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**Confronting anxiety: Why earlier is better**

Janet Smithson* is more intimately acquainted with childhood anxiety than most. Not only is she a trained and enthusiastic FRIENDS teacher for Grades 4/5 in Victoria, but she is also the mother of a boy, now 11 years old, who has grappled with severe anxiety for much of his life.

“By Grade 1, we were kind of at a crisis point,” she recalls. “His teachers weren’t adequately informed about what anxiety looked like and his behaviour was interpreted as wilful.” By the time the FRIENDS program reached him, in Grade 4, his anxiety was a major challenge for the whole family.

Her experience as a parent is one of the reasons Smithson became trained in FRIENDS herself. It also explains why she’s such a big supporter of Fun FRIENDS, a newly launched early program that starts in kindergarten or Grade 1. “If the dialogue about anxiety between parents, teachers and students is started earlier,” she says, “my hope is that some of these [anxiety] issues might not present themselves.”

In Smithson’s own Grade 4/5 class, she says, some seven of 30 children have been diagnosed with or had counselling relating to anxiety this year. “There’s a stigma attached to mental health issues,” Smithson says. “We need to support kids to be honest with the fact that they have worry or anxiety and help them learn how to deal with it.

“Kids spend the majority of their time at school, and that’s where a lot of their stresses and anxieties come from,” she says. “The earlier you can reach them, the better.”

* Name of the teacher has been changed to protect the privacy of her child.
Evaluating research: Who sets the bar?

To the Editors:
In the last issue of the Quarterly, you presented a systematic review of early child development programs and focused on eight studies deemed to be of higher quality based on “accepted critical appraisal standards.” Can you provide more information about the criteria used to make this determination?

Pam Singh, Kelowna, BC

The review authors used the Quality Assessment Tool for Quantitative Studies (QATQS). This instrument was created by the Effective Public Health Practice Project at McMaster University’s Faculty of Health Sciences. Its aim is straightforward: to provide a systematic approach for evaluating research studies. In particular, this instrument addresses important methodological questions, such as:

- Were study participants truly representative of the population they were selected from?
- Did the study use a randomized controlled trial (RCT) design?
- Were individuals assessing outcomes “blinded” to which groups participants were assigned to?
- Were outcome measures reliable and valid?
- Did a high percentage of participants who started the study complete it?

In assessing any given study, users rate the methodology by employing 18 clearly defined criteria. For example, a study that has 80 to 100% of selected individuals agree to participate receives a superior score over a study with a participation rate of 60 to 79%. Applying these ratings, users then assign the study an overall value of strong, moderate or weak. Additional information about the QATQS is available at http://www.ephpp.ca/Tools.html.

Policy-makers and practitioners who know the quality of the studies they use can be reassured that their decisions are based on good evidence.

We welcome your questions
If you have a question relating to children’s mental health, please email it to chpc_quarterly@sfu.ca or write to the Children’s Health Policy Centre, Attn: Jen Barican, Faculty of Health Sciences, Simon Fraser University, Room 2435, 515 West Hastings St., Vancouver, BC V6B 5K3.
Appendix

Research methods

To identify the best systematic reviews on the topic of anxiety prevention, we adapted methods from the Cochrane Collaboration, www.cochrane-handbook.org.11 We first searched the following databases:

- Campbell Collaboration Library
- Cochrane Database of Systematic Reviews
- Medline
- PsycINFO

We limited our search to systematic reviews published between 2007 and 2011, because our previous issue on anxiety prevention and treatment included randomized controlled trials published up to 2007. We also searched recent issues of key journals in the field. Using this approach, we identified one systematic review, which was accepted based on meeting all of the inclusion criteria detailed in Table 4.

Table 4: Acceptance Criteria

<table>
<thead>
<tr>
<th>Basic Criteria</th>
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<tbody>
<tr>
<td>• Peer-reviewed articles published in English about children aged 0 to 18 years</td>
</tr>
<tr>
<td>• Articles relevant to the prevention of anxiety disorders</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Systematic Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Methods clearly described, including database sources and inclusion criteria</td>
</tr>
<tr>
<td>• Original study designs described</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Original Studies within the Systematic Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Interventions were primarily focused on prevention of anxiety disorders</td>
</tr>
<tr>
<td>• At least two included studies used randomized controlled trial methods</td>
</tr>
<tr>
<td>• At least two included studies were published within the past five years</td>
</tr>
<tr>
<td>• Detailed information reported on children’s anxiety outcome measures</td>
</tr>
<tr>
<td>• Levels of statistical significance reported for primary outcomes</td>
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</tbody>
</table>
Overview


