Welcome

Winter 2007 — Prevention of Mental Disorders

We are pleased to introduce this first issue of the Children’s Mental Health Research Quarterly, produced by the Children’s Health Policy Centre at Simon Fraser University. Funded by Child and Youth Mental Health (CYMH) at BC’s Ministry of Children and Family Development (MCFD), the Quarterly is a new venture in communicating high-quality research evidence to policy-makers, practitioners, families and community members. It represents a continuation of our six-year research-policy partnership with the Ministry.

The purpose of The Quarterly is to provide regular updates on the best currently available research evidence in children’s mental health. Each issue of The Quarterly will focus on a specific theme and will include updates to our previous reports (available on our website at www.childhealthpolicy.sfu.ca). Themes are chosen in consultation with CYMH and complement MCFD’s Child and Youth Mental Health Plan for BC. Each issue will contain:

In Commentary
a response to questions from policy-makers and practitioners

In Review
an original systematic review of recent research

In Focus
a synopsis of the best emerging research being published by others

In Practice
views from policy-makers and practitioners on using research to inform their work in BC.

The theme for this issue of The Quarterly is prevention. We chose this theme because many mental disorders can be prevented or greatly mitigated early in life, resulting in substantial improvements in children’s social and emotional well-being. These gains cannot be realized by focusing only on treatment after disorders emerge. In this first issue, for our commentary we outline the methods we use to evaluate research evidence on children’s mental health interventions. We then present findings from an original systematic review on effective programs for preventing conduct disorder, anxiety and depression, three of the most common mental disorders in children. Next, we highlight the best emerging research on school-based programs to prevent drug misuse. Finally, a policy-maker shares her experiences applying research evidence in the implementation of an anxiety prevention program in BC’s schools.
We want your feedback as we go. Please email us. We hope you find this first issue both enjoyable and useful.

**Upcoming Issues**

As part of our commitment to communicating high-quality research evidence to policy-makers, practitioners, families and community members, we will provide summaries of the best currently available research evidence in children’s mental health on a regular basis. Our Spring 2007 issue of the Children’s Mental Health Research Quarterly will focus on preventing and treating **behaviour (conduct) disorders**. Our Summer 2007 Quarterly will focus on preventing and treating **anxiety** disorders in children and our Fall 2007 Quarterly will focus on preventing and treating **depression** in children. Themes for future issues will be decided in consultation with CYMH at MCFD on a year-by-year basis.

**Current Articles**

**IN COMMENTARY**

**“Evidence-Informed” Policy and Practice**

We review the rationale for using the best available research evidence to guide policy and practice in children’s mental health. We then detail the criteria we use for evaluating research evidence and highlight how policy-makers and practitioners can use research evidence as a tool.

**IN REVIEW**

**Preventing Mental Disorders in BC’s Children**

We systemically review the latest high-quality research evidence on successful programs for preventing conduct disorder, anxiety and depression. The role of prevention is then highlighted in the context of a public health strategy to improve the mental health of BC’s children.

**IN FOCUS**

**School-based Drug Misuse Prevention Programs**

We summarize a recent high-quality systematic review examining school-based programs for preventing drug misuse. Characteristics and outcomes of effective programs are highlighted.

**IN PRACTICE**

**The Friends Program**

Kelly Angelius is the policy-maker responsible for overseeing the provincial implementation of the Friends program. *Friends* is a universal school-based program shown to prevent anxiety and is well supported by research evidence. Kelly shares her experiences implementing this program as part of MCFD’s Child and Youth Mental Health Plan for BC.
The Quarterly is prepared by an interdisciplinary team at the Children’s Health Policy Centre.

EDITOR
Erika Harrison, MA

WRITER
Christine Schwartz, MA, PhD, RPsych

SCIENTIFIC EDITOR
Charlotte Waddell, MSc, MD, CCFP, FRCPC

RESEARCH ASSISTANTS
Orion Garland, BA
Larry Nightingale, LibTech
Jenn Dixon, BScHP

We welcome people using The Quarterly as a reference (for example, in preparing educational materials for parents or community groups). Please cite our work as:

IN COMMENTARY

“Evidence-Informed” Policy and Practice

Over the six years we have been working in partnership with CYMH at MCFD, we have received many questions about using the best available research evidence to guide policy and practice in children’s mental health. Here we respond to these questions and outline the rationale for “evidence-informed” policy and practice.

Why “evidence-informed” policy and practice?

The goal of “evidence-informed” policy and practice is to improve the mental health of children by using interventions supported by scientific evidence consistently showing improved outcomes. This is consistent with the shared goal of researchers, policy-makers and practitioners of ensuring children and families have access to the most effective and efficient programs and services. Although research evidence does not yet exist for every topic or question policy-makers and practitioners may have, there are increasing numbers of high-quality studies available in children’s mental health, particularly on interventions to prevent or treat disorders.

To ensure children and families derive maximum benefit from public policies and programs, policy-makers and practitioners in BC and elsewhere are seeking to apply research evidence at the organizational and service delivery levels. At the same time, researchers are increasingly being called to learn about the needs of policy-makers and practitioners to ensure research is both relevant to those who need to use it and that research is informed by policy and practice concerns.

What kind of evidence?

The nature of “evidence” always varies dramatically by context. For example, the evidence a person applies in choosing a new vehicle is very different than the evidence applied in deciding on a new type of therapy. In the scientist-practitioner community, including in mental health, original quantitative studies are considered the gold standard in evidence for answering questions about whether interventions can or do work. We use systematic review methods to identify, select and appraise research reviews and original studies on prevention and treatment interventions for children.
The goal of “evidence-informed” policy and practice is to improve the mental health of children by using interventions supported by scientific evidence consistently showing improved outcomes.

Table 1 Criteria for Evaluating Intervention Reviews and Studies

<table>
<thead>
<tr>
<th>Basic Criteria</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Articles published in English about children aged 0 to 18 years</td>
<td></td>
</tr>
<tr>
<td>Articles on topics relevant to children’s mental health</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systematic Reviews</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the methods including sources for identifying literature reviewed</td>
<td></td>
</tr>
<tr>
<td>Statement of criteria used for selecting articles for detailed review</td>
<td></td>
</tr>
<tr>
<td>At least two studies reviewed meet criteria (below) for assessing original studies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Original Studies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptions of participant characteristics, study settings and interventions</td>
<td></td>
</tr>
<tr>
<td>Random allocation of participants to intervention and comparison groups</td>
<td></td>
</tr>
<tr>
<td>Maximum drop-out rates of 20% post-test</td>
<td></td>
</tr>
<tr>
<td>Follow-up of three months or more after post-test</td>
<td></td>
</tr>
<tr>
<td>For medication studies, double-blind placebo-controlled procedures used</td>
<td></td>
</tr>
<tr>
<td>Outcomes assessed according to two or more sources (child, parent, teacher, other)</td>
<td></td>
</tr>
<tr>
<td>Statistical and clinical significance of outcomes assessed and reported</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Evidence Based Mental Health. 2006. Purpose and procedure.

We first seek systematic reviews of high-quality studies. When these have not yet been done, we seek studies randomly assigning children to experimental and comparison groups so we can be sure any improvements are due to the active treatment rather than to chance. This approach also provides confidence outcomes are not unduly influenced by researchers selectively assigning children to interventions. Similarly, we seek studies where outcomes are measured according to at least two sources so that any reported improvements are not based exclusively on one individual’s information as viewpoints vary widely among children, parents, teachers, researchers and other informants. We also seek studies that fully report their findings to establish that outcomes are not only statistically significant, but also make a meaningful difference to children’s lives. Finally, we seek studies assessing outcomes at least three months after an intervention ends to be confident positive effects are maintained.

Table 2 outlines the way we prioritize the available research evidence. We first search for high-quality systematic reviews or original studies on a given topic. When these are not available, we then seek the best research evidence that is available, making note of the limitations in the research.
Table 2 Criteria for Prioritizing Research Evidence

<table>
<thead>
<tr>
<th>Levels of Research Evidence on Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I Systematic reviews summarizing multiple well-designed studies</td>
</tr>
<tr>
<td>Level II Well-designed randomized-controlled trials</td>
</tr>
<tr>
<td>Level III Prospective cohort studies</td>
</tr>
<tr>
<td>Level IV Retrospective case-control studies</td>
</tr>
<tr>
<td>Level V Case studies or expert opinion (including narrative reviews)</td>
</tr>
</tbody>
</table>

**How is research a tool for helping children?**

When making decisions about programs and services, policy-makers and practitioners strive to ensure they are making the best public investments and providing the most effective interventions for children. To meet this goal, it is important that policy and practice be informed by the best available research evidence. However, research evidence is only one component of good decision-making. It is always necessary to integrate research evidence with the individual views and experiences of policy-makers and practitioners, as well as those of children and families. Given the large volume research in children’s mental health, it is also unrealistic for most policy-makers and practitioners to continually review sizable numbers of research articles. Accordingly, our team identifies, summarizes and communicates the best emerging research evidence for policy-makers, practitioners, parents and others concerned with improving children’s mental health in BC. The effective use of research evidence is one more step we can take to reach our shared goal of advancing the well-being of all children.
IN REVIEW
Preventing Mental Disorders in British Columbia’s Children

Why promote prevention?

Mental health, or social and emotional well-being, is essential for all children to thrive and meet their potential. Unfortunately, for many children mental health is a goal rather than a reality. In BC at any given time, one in seven children (or over 100,000) experience mental disorders causing significant symptoms and impaired functioning. Fewer than 25% of these children are reached by our current array of programs and services predominantly focusing on treatment well after disorders develop. Treatment services alone cannot meet children’s needs in the population. To better address children’s mental health, a comprehensive public health strategy is required: promoting healthy development for all children; preventing disorders in children at risk; providing treatment for those with disorders; and monitoring outcomes to ensure the effective and efficient use of public resources. Figure 1 depicts this recommended public health strategy to improve children’s mental health. MCFD’s Child and Youth Mental Health Plan for BC similarly aims at improving children’s mental health not only by providing treatment and support, but also by reducing risk, building capacity and monitoring outcomes. When prevention is part of an integrated public health strategy, there is tremendous potential to reduce the number of children developing mental disorders.

Figure 1 - A Public Health Strategy for Children’s Mental Health

Different paths to a common goal

The goal of prevention programs is to modify risk and protective factors associated with the development of mental disorders. Risk and protective factors include characteristics at the individual, family and community levels. These factors tend to cluster and interact, affecting more than one mental health outcome. Although most prevention programs attempt to modify risk and protective factors, intended recipients vary. Universal programs are directed at entire populations while targeted programs are directed at children and families identified as high-risk. Both universal and targeted prevention programs have advantages and disadvantages. Universal programs avoid labelling particular children but can be expensive, while targeted programs may expose identified children to stigma but can be more efficient. A balance of both targeted and universal programs is likely necessary and should be determined by local needs.
Mental health, or social and emotional well-being, is essential for all children to thrive and meet their potential.

How we reviewed the research

Given the potential importance of prevention programs, we first identified there were no previous systematic reviews on the topic based on the criteria outlined in Tables 1 and 2. We then conducted a systematic review of the research on programs that could potentially be implemented in BC. We searched for randomized-controlled trials (RCTs) published over the last 20 years on programs for preventing conduct disorder, anxiety and depression — three of the most common and potentially preventable mental disorders in children. We searched the databases Medline, PsycINFO and Cochrane Database of Systematic Reviews. To ensure a strong focus on prevention, we only included studies that implemented interventions before children were diagnosed with a disorder. Because mental disorders can relapse and remit over a number of years, for this review we only included studies that followed children for at least one year after program completion. By doing so, we could be confident that results were sustained.

What we learned

Of 465 articles initially identified and assessed, 30 articles describing 15 RCTs met our criteria. These RCTs investigated prevention programs: nine on conduct disorder (Fast Track, Johns Hopkins, Nurse Visitation, Perry Preschool, Incredible Years, Montreal Prevention, School & Homes in Partnership and Tri-Ministry); one on anxiety (Friends); four on depression (Coping with Stress, Penn Prevention and Problem Solving for Life); and one on all three (Help Starts Here). Table 3 details program and participant characteristics and the outcomes for the six programs we found to be most noteworthy based on rigorous study designs and strong evidence of effectiveness at long-term follow-up.
### Table 3 - Effective Programs for Preventing Mental Disorders

<table>
<thead>
<tr>
<th>Program (Country)</th>
<th>Child Ages (yrs)</th>
<th>Intervention Description</th>
<th>Type</th>
<th>Follow-Up Period</th>
<th>Findings at Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conduct Disorder</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Visitation (US)</td>
<td>0-2</td>
<td>Individual PT delivered by nurses in homes</td>
<td>Targeted</td>
<td>15 yrs</td>
<td>Significantly reduced symptoms of conduct disorder</td>
</tr>
<tr>
<td>Perry Preschool (US)</td>
<td>3-4</td>
<td>Group child SST &amp; group PT delivered by teachers in preschools &amp; homes</td>
<td>Targeted</td>
<td>23 yrs</td>
<td>Significantly reduced symptoms of conduct disorder</td>
</tr>
<tr>
<td>Johns Hopkins (US)</td>
<td>5-7</td>
<td>Group child SST delivered by teachers in schools &amp; individual PT delivered by teachers &amp; clinicians in schools</td>
<td>Targeted</td>
<td>5 yrs</td>
<td>Significantly reduced symptoms &amp; new cases of conduct disorder</td>
</tr>
<tr>
<td>Fast Track (US)</td>
<td>6-7</td>
<td>Group child SST &amp; group PT delivered by teachers &amp; clinicians in schools &amp; homes</td>
<td>Targeted</td>
<td>3 yrs</td>
<td>Significantly reduced symptoms &amp; new cases of conduct disorder</td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends (Australia)</td>
<td>10-13</td>
<td>Group child CBT &amp; group PT delivered by teachers in schools</td>
<td>Universal</td>
<td>1 yr</td>
<td>Significantly reduced symptoms &amp; new cases of anxiety (&amp; depression)</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping with Stress (US)</td>
<td>13-18</td>
<td>Group child CBT delivered by clinicians in schools &amp; clinics</td>
<td>Targeted</td>
<td>2 yrs</td>
<td>Significantly reduced symptoms &amp; new cases of depression</td>
</tr>
</tbody>
</table>

Four programs were particularly effective at preventing conduct disorder (Nurse Visitation, Perry Preschool, Fast Track and Johns Hopkins). These four programs all targeted at-risk children in their early years using parent training (PT) or child social-skills training (SST). Notably, the Nurse Visitation program also yielded significantly lower rates of child maltreatment (see sidebar). PT primarily involved teaching disadvantaged parents about healthy child development and child-parent interactions. SST focused on teaching children problem-solving, communication, friendship-building and self-control skills. For preventing anxiety, Friends used universal cognitive-behavioural training (CBT) in school-aged children. For preventing depression, Coping with Stress also used CBT with school-age children, but in targeted rather than universal format. The CBT interventions involved teaching children positive coping skills such as relaxation, problem-solving and identifying and challenging unwarranted negative thoughts. The measured outcomes for all these programs were modest but meaningful. Symptoms and new cases of the three disorders were reduced between 8% and 17% overall. Positive outcomes were also sustained from one to 23 years following program completion.
Highlight

The Nurse Visitation program, originally designed to prevent child maltreatment, targeted young low-income pregnant women. At home visits during the pregnancy, nurses promoted behaviours associated with positive child development including reducing maternal substance use. After delivery, nurses helped women understand child communication signals and taught play skills promoting emotional and cognitive development. Multiple large-scale RCTs have now found long-term positive outcomes associated with program participation in domains including: prenatal health behaviours; pregnancy and birth outcomes; child neurodevelopmental functioning; child mental health and functioning; and parental lifecourse. Overall, program completion was also associated with significantly fewer cases of child abuse and neglect at 15-year follow-up. For many mothers, participation was associated with fewer pregnancies, reduced welfare use and fewer arrests. For many children, participation was associated with fewer episodes of running away, fewer arrests, fewer sexual partners and reduced substance use. In addition to these positive outcomes, the program as delivered reported net financial returns of $180 (US) per mother.


What we recommend

Based on this review, the current research evidence demonstrates investments in prevention can have the capacity to reduce unnecessary distress and disability associated with mental disorders. Large-scale prevention programs can ease the burden, particularly for the majority of children who are not (and cannot likely be) reached by existing treatment services focusing mainly on individuals. Prevention is also consistent with health-oriented approaches that emphasize building the strengths of children, families and communities.

Both prevention and treatment programs are needed to make a difference for children’s mental health in BC. However, new investments are needed in prevention. The importance of prevention is recognized within MCFD’s Child and Youth Mental Health Plan for BC; overall, prevention investments comprise 15% of Plan expenditures. This is a substantial improvement for children given that BC has typically devoted only 5% of overall health spending to prevention programs. The widespread implementation of the Friends program in BC is an example of this commitment to investing in prevention. If this program produces positive outcomes similar to those found in the research, given current prevalence estimates, it may be possible to prevent 3400 children in BC from developing an anxiety disorder. There is a similar potential to significantly reduce the number of children affected by conduct disorder and depression. Given current prevalence estimates, implementing the Fast Track program could result in approximately 3000 fewer children developing conduct disorder, while the Coping With Stress program could lead to 2500 fewer cases of depression in BC’s children. As well, the cost of not implementing prevention programs needs to be considered. For example, preventing one case of conduct disorder may save an estimated $1.5 million (US) in cumulative lifetime costs. Prevention programs clearly have strong potential as part of the spectrum of mental health interventions for children, particularly given the large numbers of children these programs can reach.
MCFD staff can access original articles cited in The Quarterly from the Health and Human Services Library.

References

IN FOCUS
School-based Drug Misuse Prevention Programs

What is misuse?

It is common for youth to experiment with substances. In a 2003 survey of BC youth, 37% reported using marijuana and 58% reported using alcohol on at least one occasion. For some, substance use ends with experimentation. For others, it becomes regular and may develop into a substance use disorder such as abuse or dependence. In BC, an estimated 7500 youth have a substance use disorder. Rather than focusing exclusively on treatment to combat this significant problem, a number of prevention programs have been developed for children and youth in order to intervene before serious problems develop.

Examining the studies

Faggiano, Vigna-Taglianti, Versino and others recently published a systematic review of school-based “illicit” drug prevention programs. Applying the strict methodological standards of the Cochrane Collaboration, the authors assessed 32 studies, mainly RCTs, published between 1988 and 2004. Participants included 46,539 elementary and high school students.

Table 4 Drug Use Prevention Programs Summary

<table>
<thead>
<tr>
<th>Program</th>
<th>Outcome Findings</th>
</tr>
</thead>
</table>
| **Skills-focused:** Enhance abilities in refusal, safety & other skills | Positive impact on actual drug use  
Improved drug knowledge, decision making, self-efficacy & peer pressure resistance skills |
| **Affect-focused:** Modify inner qualities (self-esteem, self-efficacy & motivation) | Inconsistent impact on actual drug use  
Improved drug knowledge & decision making skills; No effect on self-efficacy |
| **Knowledge-focused:** Enhance knowledge of substance effects & consequences of use | No impact on actual drug use  
Improved drug knowledge; No effect on decision making skills |
Highlight

One of the most noteworthy programs identified in Faggiano’s review on preventing substance use was Life Skills Training – a 25-session intervention for junior high school students. The program teaches cognitive-behavioural skills for building self-esteem, resisting advertising pressure, managing anxiety and communicating effectively. It uses various teaching methods including: group discussions, modeling, behavioural rehearsal, feedback, reinforcement and out-of-classroom behavioural assignments. It is taught by classroom teachers in the seventh grade with booster sessions typically provided the following year. Rather than focusing on long-term health consequences, students are taught about the prevalence and immediate negative consequences of drug use. Life Skills Training has effectively prevented drug use across varied student populations. One year after completing the program, ethnically diverse urban students from lower income families had significantly lower rates of cigarette, alcohol, inhalant and multiple drug use. The program effects have also been shown to last six years after program completion, many students had significantly lower rates of hallucinogen, narcotic and overall drug use.

MCFD staff can access original articles cited in The Quarterly from the Health and Human Services Library.

References

Many programs were effective

The prevention programs focused on three domains: skills, affect (emotion) and knowledge. Descriptions of program goals and main findings are detailed in the table below. Skills-focused programs were the most effective at preventing early drug use. These programs taught children and youth specific skills designed to reduce the likelihood of substance use including refusal and safety skills. Additionally, children and youth in these programs made gains in other areas including peer-pressure resistance and decision-making skills. The review authors recommended using skills-focused programs when planning community interventions. Within BC, such evidence-informed programs have the potential to prevent substance misuse and help to promote the healthy social and emotional development needed to ensure our children thrive.

MCFD staff can access original articles cited in The Quarterly from the Health and Human Services Library.

References
IN PRACTICE

The *Friends* Program

*FRIENDS For Life (Friends)* is an anxiety prevention and early intervention program now offered to all grade four and five students in BC. It teaches children how to cope with fears and worries through building emotional resilience using cognitive, behavioural and emotional skills. The ten-session program is delivered by teachers and counsellors in schools during regular class times.

The *Friends* program was launched as part of the *Child and Youth Mental Plan for BC* in August 2004. We recently spoke with Kelly Angelius, the policy-maker now responsible for overseeing *Friends*, about her experiences implementing this “evidence-informed” program. Kelly stressed the fundamental importance of the *Plan*, with evidence-informed policy and practice as a pillar, in making *Friends* an accessible prevention and risk reduction strategy.

Kelly described her positive experiences training school personnel proclaiming, “the collaboration involved with the program was simply amazing!” Kelly found school personnel receptive to the program because it is well supported by high-quality research evidence. She described the initial four-month pilot project as providing further evidence of the program’s merits to the teachers when they noticed gains and improvements made by their own students. Kelly also found teachers appreciated the easy-to-use format noting that “much of the teacher’s work is done with the *Friends* program.” Parents have also expressed their positive impressions of the program. To date, more than 47,000 children have successfully completed the program in BC. Overall, through the collaboration of many organizations and individuals, the *Friends* program is strengthening the social and emotional development of all children, while also being a successful example of using research evidence in practice.

For additional information about the *Friends* program, please contact *Friends* program staff:  
**MCF.CYMHFRIENDS@gov.bc.ca** or (250) 387 7056.
About the Children’s Health Policy Centre

We are an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University. Our work focuses on integrating research and policy to improve children’s social and emotional wellbeing, or children’s mental health. We promote a public health strategy for children’s mental health. Our work complements the mission of the Faculty of Health Sciences to integrate research and policy for population and public health locally, nationally and globally.

Public Health Strategy for Children’s Mental Health

Promote Healthy Development for All Children

Prevent Disorders in Children at Risk

Provide Treatment for Children with Disorders

Monitor Outcomes

About The Quarterly

The Children’s Mental Health Research Quarterly is an electronic publication prepared for Child and Youth Mental Health at the British Columbia Ministry of Children and Family Development. It provides regular research updates on the best currently available research evidence in children’s mental health for policy-makers, practitioners, families and community members.

Please visit www.childhealthpolicy.sfu.ca to learn more about our ongoing work integrating research and policy to improve children’s social and emotional wellbeing.