Children's Mental Health Research
Quarterly
Children's Health Policy Centre

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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

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Quarterly

This Issue

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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About the Quarterly

The *Quarterly* is a resource for policy-makers, practitioners, families and community members. Its goal is to communicate new research to inform policy and practice in children's mental health. The publication is funded by the British Columbia Ministry of Children and Family Development, and topics are chosen in consultation with policy-makers in the Ministry's Child and Youth Mental Health Branch.

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THINKING OF THE WORLD

Making childhood carefree — not hurtful

"A 3 year old girl was living with her biological mother and her mother's male common-law partner. The mother of the child was a victim of sexual abuse and had experienced domestic violence in her previous relationships. The family had moved many times in the recent past and did not have a support system in the community they were presently living in. The child did not attend daycare and was not visible in the community. On the evening of her death the child was left in the care of her mother's partner. Cause of death was determined to be as [a] result of both blunt force trauma and strangulation."[1]

Between 1998 and 2003, some 230 Canadian children were killed by family members.

Sadly, this case is not unique. Between 1998 and 2003, some 230 Canadian children were killed by family members.[2] These numbers represent just the most extreme examples of children's maltreatment experiences.

Defining the problem

Due to differences in legislation, in professional practices, and in social and cultural values, there is no universally accepted definition of child maltreatment.[3] The World Health Organization (WHO) classifies child maltreatment as physical, emotional or sexual abuse, or neglect or exploitation, which results in actual or potential harm to a child's health, survival, development or dignity.[4] In this issue, we examine all forms of maltreatment with the exception of sexual abuse, which we addressed in our previous report *Preventing and Treating Childhood Sexual Abuse*.

How to count what is often kept concealed

Measuring child maltreatment poses a surprisingly difficult challenge. Statistics from both child protection agencies and police underestimate actual rates because many incidents of abuse never come to official attention.[5] Caregivers' self-reports also tend to underestimate abuse, given many people's unwillingness to admit engaging in it.[6]

Despite challenges in accurately measuring the prevalence of maltreatment, its occurrence has been documented in all countries and in all cultures.[7] Although comparing rates between nations is difficult, due to different laws and child protection systems,[7] most evidence suggests higher rates in low- and middle-income countries[8] and in countries with large economic inequalities.[4] Some international studies have found that between 25% and 50% of children experience severe and frequent physical abuse by parents.[4]

In Canada, there is dramatic variation in the reported incidence of maltreatment. Among the lowest reported rates are police-reported physical assaults by parents, which were documented at 83 children per 100,000 in 2006.[9] In contrast, a 2003 national survey of child welfare agencies found a much greater incidence of substantiated physical abuse (531 children per 100,000).[3] This same study found an overall maltreatment rate of 1,867 cases per 100,000 children when all forms of abuse were considered. Even higher rates were found in a survey of 9,953 adults from Ontario.[10] Although 25% of participants reported experiencing physical abuse while growing up, only 5% of those who were physically abused and only 9% who were *severely* physically abused had contact with child protection services, suggesting that child maltreatment is under-reported overall.

> *"Child maltreatment typically results from complex interactions between multiple risk factors occurring in vulnerable families and communities over time."*

The first time is usually not the last time

When children are abused, they often experience multiple types of maltreatment.[11] In 2003, 19% of Canadian child protection investigations involved more than one category of maltreatment.[3] Table 1 details rates of substantiated maltreatment by specific subtypes. These rates do not include the 13% of investigations where abuse continued to be suspected even after it could not be substantiated.[3]

Table 1: Substantiated child maltreatment in Canada (excluding Quebec) in 2003

Type	Included Acts	Number of Cases Rate per 100,000
Neglect	Failure to supervise, failure to provide medical treatment, abandonment, inadequate nutrition or clothing, dangerous living conditions, permitting chronic truancy or criminal behaviour	30,366 (30%) 638
Exposure to domestic violence	Witness to violence between caregivers, overhearing violence or viewing injuries on caregiver	29,370 (28%) 617
Physical abuse	Shake, push, grab, throw, hit, punch, kick, bite, choke, strangle, burn, shoot, poison, stab or abusively use restraints	25,257 (24%) 531
Emotional maltreatment	Non-organic failure to thrive, inadequate nurturance or affection, extreme verbal abuse or overtly hostile treatment	15,369 (15%) 323

Source: Adapted from Trocmé et al. (2005).

Realizing the risks

Child maltreatment typically results from complex interactions between multiple risk factors occurring in vulnerable families and communities over time.[7] Risk factors at the levels of the caregiver, the community and the wider society are listed in the following table.

Table 2: Child maltreatment risk factors

Caregiver	Community	Society
Difficulty bonding with child Limited awareness of child development Unrealistic expectations of child Approving of physical punishment Limited parenting skills Personal history of being maltreated Physical and/or mental health problems Drug and alcohol misuse Criminal involvement Social isolation	Lack of adequate housing Lack of family supports and services High unemployment levels Poverty Transient neighbourhoods Easy availability of alcohol and drugs Tolerance of violence Gender and social inequalities	Norms diminishing the status of children Public policies leading to poor living standards or socio-economic instability or inequality Norms promoting violence, including physical punishment Rigid gender role norms

Source: Adapted from Butchart et al. (2006).

Although many risk factors for child maltreatment have been identified, little is known about factors that can protect children from being abused. That said, parents' recognition of problems, parents' willingness to seek help, supportive grandparents and accessible mental health care may help prevent children from experiencing abuse.[7] As well, there are parenting interventions — such as those featured in our review article — that can successfully prevent abuse.

Hampering healthy development

Maltreatment of any kind interrupts children's normal developmental processes. A recent review documented the numerous negative outcomes associated with childhood abuse,[12] listed in the next table. Because much of the information on the effects of child maltreatment is derived from cross-sectional surveys, prospective longitudinal studies are still needed to fully determine which effects are actually *caused* by abuse.[5] It is also important to recognize that a significant number of children show resilience in that they cope and thrive despite experiencing maltreatment.[12]

Table 3: Impairments correlated with child maltreatment

Emotions Deficits in recognizing, expressing and understanding emotions Socially inappropriate affect Labile affect Reduced empathy	**Behaviours** Aggressive behaviours Disruptive behaviours Fewer pro-social behaviours (e.g., sharing) Other problem behaviours, including stealing and cheating
Cognitive abilities Delayed language development Academic failure	**Individual perceptions** Lower self-esteem Lower sense of competence
Mental health concerns Anxiety, including posttraumatic stress disorder Depression Conduct disorder Attention-deficit/hyperactivity disorder Substance abuse Suicidal and self-injurious behaviours	**Relationships** Poor connections with caregivers Less popular and more disliked by peers Difficulties developing and maintaining friendships Less intimacy and more conflict in friendships Social withdrawal

Source: Adapted from Cicchetti & Toth (2005).

Although children who experience maltreatment can often go on to function well in adulthood, many others experience ongoing problems. Associations have been found between childhood abuse and physical health problems,[13] mental disorders[14] and health risk behaviours[14] in adulthood.

The financial costs of child maltreatment

In addition to its potentially devastating emotional and behavioural outcomes, child maltreatment also has financial costs. A study of the legal, social, educational, health, employment and personal expenditures resulting from abuse estimated the immediate and long-term costs in Canada approached $16 billion in 1998 alone.[15]

"A study of the legal, social, educational, health, employment and personal expenditures resulting from abuse estimated the immediate and long-term costs in Canada approached $16 billion in 1998 alone."

Advancing children's rights

As a society, we have a collective responsibility to prevent children from being abused. A multitude of advances have been made toward this end since the first child protection agency was established in Canada in 1891.[5] For example, in 1965, Ontario became the first province to make the reporting of abuse mandatory.[16] Today it is the legal obligation of every Canadian citizen to report known or suspected abuse.

The criminal justice system has also made adjustments to address children's unique needs, including allowing children to videotape statements rather than having to appear in court.[2] As well, interventions aimed at preventing maltreatment and helping children recover from abuse are becoming more commonplace. The most promising of these interventions are highlighted in our review and feature articles.

Despite these significant advances, more can be done to tackle this critical public health issue. In addition to targeting prevention efforts at caregivers, we can also address risk factors at community and societal levels. For example, ease of access to alcohol — a community-level risk — could be tackled through zoning ordinances.[17] National policies aimed at reducing income inequality and enhancing children's rights also have the potential to reduce maltreatment. While we wait for research on the impact of community and societal interventions to emerge, we can work toward creating healthy environments for children by targeting multiple risk factors — whether at the level of the individual, family, community or society — in our prevention efforts.

Stopping abuse before it starts

The best way to address child maltreatment is to prevent it from occurring. To meet this goal, many child abuse prevention programs have been developed and implemented. In deciding which programs to use, policy-makers and practitioners need information on the effectiveness of these interventions. Here we identify and present the highest-quality research on child maltreatment prevention programs.

Our systematic methods for selecting research

We used systematic methods adapted from the *Cochrane Collaboration*.[18] We limited our search to randomized-controlled trials (RCTs) published in peer-reviewed scientific journals.

To identify studies, we first applied the following search strategy:

The best way to address child maltreatment is to prevent it from occurring.

Sources	• Medline, PsycINFO, CINAHL, CENTRAL, C2-SPECTR & ERIC
Search Terms	• Child abuse, maltreatment, neglect, physical abuse, emotional abuse, psychological abuse, abandonment and prevention
Limits	• English-language articles published in 1998 through 2008 • Child participants aged 0 – 18 years

As well, we hand-searched previously published systematic reviews and RCTs for additional relevant publications.

Next we applied the following criteria to ensure we included only the highest-quality studies in this review:

- Clear descriptions of child characteristics, settings and interventions
- Interventions delivered to parents and caregivers aimed at preventing maltreatment
- Random assignment of participants to intervention and control groups at study outset
- At least one maltreatment outcome measure completed by ≥80% of participants
- Levels of statistical significance reported for all maltreatment outcomes at final measurement period

Two different team members assessed each retrieved study to ensure accuracy.

Finding the best studies

Five evaluations of four different prevention programs — *Healthy Families, Healthy Start, Nurse Home Visitation* and *Parent-Child Interaction Therapy* — met our acceptance criteria. Three trials aimed to prevent abuse among high-risk parents who had no history of maltreating their children (primary prevention),[19–21] while two aimed to prevent abuse from reoccurring among parents involved with child protection services (secondary prevention).[22, 23] The child abuse prevention programs are described in Table 4.

Table 4: Intervention program descriptions

Intervention
Healthy Families:[20] 42* home visits by paraprofessionals providing parent education, child safety promotion, crisis support and assistance to access other needed services
Healthy Start:[19,24] 13** home visits by paraprofessionals providing parent education and assistance in accessing other needed services, including housing, child care and vocational training
Nurse Home Visitation:[21,25] 32*[26] to 46*[23] home visits by public health nurses, including intensive family support, parent education, and referral to other health/social services (plus standard child protection services in one trial)[23]
Parent-Child Interaction Therapy (PCIT):[22] 23† behavioural parent training sessions, including alternatives to physical discipline, using direct coaching with one-way mirror and earphone ***PCIT Enhanced:*** Regular *PCIT* plus home visits for managing crises and helping parents implement skills, along with as-needed treatment for parental depression, substance use and domestic violence

* Average number of visits.
** Average number of visits *during the first year* of program participation.
† Number of sessions offered.

Of the primary prevention programs, *Nurse Home Visitation* began during pregnancy while *Healthy Families* and *Healthy Start* began soon after the child's birth. The secondary prevention programs both began after the abuse came to official attention and were limited to parents of children under age 13. All programs included a home visitation component for at least a portion of participants. Most programs lasted two years or longer.[19–21, 23]

All programs were delivered in the United States, except for one Canadian trial of *Nurse Home Visitation*.[23] As well, all programs were delivered within the past 15 years, with the exception of the American trial of *Nurse Home Visitation*, which began in the late 1970s.[21] The *Healthy Families* and *Healthy Start* programs had outcomes evaluated while the programs were still being delivered (after three years[19] or two years[20] of participation), and the remaining programs were evaluated at least six months after the programs ended.

Which ones worked?

Among the primary prevention programs, only *Nurse Home Visitation* was unequivocally successful in preventing abuse. All outcomes are presented in Table 5. Although the *Healthy Families* and *Healthy Start* trials both prevented

at least one form of parent-reported abuse, the study authors still found that the programs failed to prevent maltreatment, based on abuse and neglect rates documented in third-party child protection records.

Among the secondary prevention programs, the standard version of *Parent-Child Interaction Therapy*, but not the enhanced version, successfully prevented the recurrence of physical abuse. However, neither the standard nor the enhanced version of *Parent-Child Interaction Therapy* reduced the recurrence of neglect.

Similarly, the Canadian trial of *Nurse Home Visitation* failed to prevent the recurrence of abuse, based on child protection records. As well, program participants had significantly higher rates of secondary abuse and neglect, based on hospital records, compared to those receiving usual child protection services. These findings suggest that even programs such as *Nurse Home Visitation* that are effective in primary prevention may not be effective for higher-risk families where abuse has already occurred.

> *"Results from these high-quality trials demonstrate that many instances of child abuse can be prevented."*

Table 5: Child maltreatment outcomes by program

Program and Control (participant number)*	Child Maltreatment Outcomes
Primary prevention programs	
Healthy Families [20] (179) No service (185)	After 2 years of program participation, *Healthy Families* mothers had: • no significant difference in substantiated child abuse (16% vs. 17%) or neglect (12% vs. 13%) by CPS records • less frequent use of psychological aggression and mild physical assault by parent self-report • no significant difference in physical or psychological abuse or neglect in previous year by parent self-report
Healthy Start [19] (395) No service (335)**	After 3 years of program participation, *Healthy Start* parents† had: • no significant difference in child abuse or neglect by CPS records • significantly lower rates of neglect by parent self-report (22% vs. 27%) • no significant difference in physical or psychological abuse by parent self-report
Nurse Home Visitation [21] (116) Developmental screening (184)	At 15-year follow-up (after 2-year program), *Nurse Home Visitation* mothers had: • significantly fewer reports of child maltreatment by CPS records
Secondary prevention programs	
Nurse Home Visitation [23] (89) Standard child protective services (74)	At 1-year follow-up (after 2-year program), *Nurse Home Visitation* mothers had: • no significant difference in recurrence of physical abuse (33% vs. 43%) or neglect (47% vs. 51%) by CPS records • significantly higher recurrence of either physical abuse or neglect (24% vs. 11%) by hospital records
Parent-Child Interaction Therapy (PCIT) Enhanced [22] (36)‡ ***Regular PCIT*** (36) Parenting group (37)	At 22-month follow-up (after 6-month program), regular *PCIT* parents had: • significantly fewer re-reports of physical abuse (19%) compared to parenting group (49%), while *Enhanced PCIT* parents had no significant difference in re-reports of physical abuse (36%) by CPS records • no significant group differences in re-reports of neglect by CPS records

CPS Child protective services
* Number of participants at randomization.
** Families were not prohibited from accessing available community services. Within first year of program, 28% of control mothers reported having a home visitor from another program.
† Outcome data limited to intervention families receiving at least three-quarters of expected visits.
‡ Number of parents randomized was 110; however, numbers of parents per group are approximate.

Promoting further gains for children and their families

Four of the interventions also produced additional positive outcomes described in the following table. Although we include corporal punishment as a "non-abuse" outcome, it is important to recognize the many detrimental effects associated with physical punishments.

Calling a spank a spank, or calling it maltreatment?

When trying to change their children's behaviour, some parents resort to spanking and other forms of physical punishment. Although the point where discipline ends and abuse begins remains controversial, the research evidence has consistently found that physical punishment is ineffective in managing behaviour and puts children at risk for physical injury, poorer psychological adjustment and increased aggression.[28] In recognizing these detrimental effects, at least 13 countries have abolished all forms of physical punishment by parents.[28] Although physical punishment is not yet legally prohibited in Canada, there are increasing calls to protect children from experiencing it. To this end, the Children's Hospital of Eastern Ontario developed *The Joint Statement on Physical Punishment of Children and Youth*, endorsed by more than 300 Canadian organizations. This document advocates providing Canadian children with the same protection from physical assault afforded to adults under the Criminal Code of Canada. It also offers helpful and practical discipline alternatives for parents and caregivers.

Table 6: Additional positive outcomes by program

Program	Outcomes	
Healthy Families [20]	↓ impoverished home environments ↓ use of corporal punishment	
Healthy Start [19]	↓ threats to spank or hit child	
Nurse Home Visitation	Maternal:* [26] ↓ food stamps use ↓ criminal arrests and convictions ↓ impairment from drug and alcohol use	Child: [27] ↓ running away incidents* ↓ criminal arrests and convictions ↓ days of alcohol consumption* ↓ sexual partners*
Parent-Child Interaction Therapy [22]	↓ negative parent behaviours toward child (for both regular and enhanced program versions)	

* Positive outcomes limited to subsample of the highest-risk families.

Learning from the successes and the challenges

Despite the widespread use of *Healthy Families* and *Healthy Start* in the United States,[20] the evidence suggests that these programs have a limited effect in preventing child abuse. A number of potential reasons may account for their lack of impact. Specifically, both programs had significant difficulties retaining parents, with attrition rates of 51% (by 1 year)[19] and 68% (by 2 years).[20] (We included these studies in our review despite their high attrition rates because both had maltreatment outcome data for more than 80% of families.) As well, both these programs had lower than intended frequency of home visits — approximately every two to three weeks for "active families."[20] Finally, in the *Healthy Start* trial, home visitors were found to lack sufficient expertise and supervision in addressing family risk factors and in motivating families to change.[19]

The *Nurse Home Visitation* program successfully prevented child abuse and improved long-term maternal and child outcomes, including reducing criminal engagement and alcohol use among American families. Also, when the program failed to prevent maltreatment, the abuse tended to occur earlier in the children's lives and not continue over long periods of time.[29] In contrast, this program was not effective in reducing re-abuse rates in Canadian families. These data suggest that *Nurse Home Visitation* is most beneficial when it is offered before maltreatment occurs, and that different interventions are needed for families where prevention has not been offered early enough.

The standard version of *Parent-Child Interaction Therapy* effectively prevented physical re-abuse but not additional incidents of neglect. However, an enhanced version of the program, which included home visits, failed to prevent further incidents of abuse and neglect. In trying to explain these surprising findings, the study authors suggested that the added services, such as treatments for parental depression and substance use, may have shifted participants' focus from parenting goals to these other concerns.

Implementing the successful to help the vulnerable

Results from these high-quality trials demonstrate that many instances of child abuse can be prevented. Among primary prevention programs, *Nurse Home Visitation* was exceptionally effective in preventing abuse and achieving additional long-term positive outcomes for both children and their mothers. It has also been shown to be cost-effective. This program differed from the other, less successful home visitation programs reviewed here in its use of nurses to deliver the program (rather than paraprofessionals) and in its timing of delivery (beginning in pregnancy rather than postnatally).

Among the secondary prevention programs, only *Parent-Child Interaction Therapy* successfully prevented physical re-abuse. This program was unique in providing parents with direct coaching of specific skills and in encouraging daily practice of these skills.

By investing in these successful programs, we can prevent children from being abused. When we ensure that high-quality programs are available before abuse occurs, we can most effectively promote healthy children and healthy families.

Hot off the press: Prevention success at the population level

The *Positive Parenting Program (Triple P)* has accumulated strong evidence regarding its effectiveness in improving parenting skills and reducing child behaviour problems. *Triple P* has now also had its success in preventing child maltreatment documented. Using a unique population-level research design, Prinz and colleagues[30] randomly assigned 18 American counties to participate in *Triple P* or usual community services. *Triple P* included five different interventions with increasing levels of intensity, including media campaigns about positive parenting, group parenting seminars and individual parent training. After two years of intervention, *Triple P* counties had significantly lower rates of substantiated child maltreatment based on child protection service records and hospital records, as well as fewer out-of-home placements compared to counties receiving usual community services. The differences were substantial, with very large effect sizes ranging from 1.09 to 1.22.

Based on these findings, implementing *Triple P* in a community with 100,000 children could result in 688 fewer cases of child maltreatment substantiated by child protection services, 240 fewer out of home placements and 60 fewer injuries that require medical treatment. This new evidence suggests that when communities implement effective prevention programs, widespread gains for children and families can be achieved.

Feature

Neglected children: Healing the hurt

Despite efforts by policy-makers, practitioners and concerned citizens, not all cases of child abuse will be prevented. When maltreatment does occur, children must be protected from further abuse. As well, negative outcomes must be mitigated by providing effective treatments. Here we review the best available evidence on treatments for children who have experienced neglect — the most common form of child maltreatment.[7]

Four of the five treatments produced positive outcomes.

The search for treatments that work

To inform policy and practice, Allin, Wathen and MacMillan[31] recently conducted a systematic review evaluating treatments for child neglect. Although 14 articles met their inclusion criteria, we present findings from only the five studies rated as having good or fair methodological quality (see Table 7). All five studies included children with histories of neglect *and/or* physical abuse. In addition, one study included only children who were exhibiting social withdrawal.[32] All but one study [33] were limited to preschoolers.

Table 7: Program and study descriptions

Intervention and Control Group Descriptions (number of participants at randomization)		
Publication year	**Methodology**	**Study quality**
Directive Play Therapy plus Milieu therapy:[34] Fifteen 50-minute individual sessions including re-enacting abuse scenarios, facilitating expression of feelings regarding abuse, and teaching coping strategies (26) Milieu therapy only: Attendance at therapeutic nursery (15)		
1994	RCT	Fair
Imaginative Play Training:[35] Ten 30-minute small-group sessions focused on encouraging imaginative play using sensory-awareness exercises, puppets, stories and games with children in institutional care (17) Control: Play sessions without active make-believe training (17)		
1983	RCT	Good
Multisystemic Therapy:[33] Eight 90-minute individualized family sessions including parent education on child management strategies, coaching, emotional support, marital therapy and therapist advocacy (16)* Parent training group: Eight 90-minute group sessions including parent education on child management techniques and development of a behaviour management program for each family (17)*		
1987	RCT	Fair
Resilient Peer Training:[32] Fifteen sessions with "peer-play buddy" skilled in engaging in high levels of positive peer play, with parent volunteers engaging as play supporters (10) Attention control: Play with classmate of average interactive play ability (10)		
1996	RCT	Good
Therapeutic Day Program:[36] 195 six-hour sessions of multifaceted programming including speech therapy, play therapy, physical therapy, family therapy, individual therapy for parents, parent education services, 24-hour crisis line and emergency financial aid (17) Control: No treatment waitlist (17)		
1991	Prospective cohort	Fair

* Number of participants who completed treatment and post-test measures.

Outcomes: What's most effective?

Four of the five treatments produced positive outcomes — *Imaginative Play Training, Multisystemic Therapy, Resilient Peer Training* and the *Therapeutic Day Program* (for details, see Table 8). However, only *Multisystemic Therapy* improved both parents' and children's behaviours. Importantly, these gains were found using a rigorous outcome measure — observations by two raters who were unaware of which treatment the children had received. *Resilient Peer Training* also reduced problem behaviours and increased play skills among socially withdrawn low-income preschoolers. These improvements were large (with effect sizes ranging from .74 to 1.5) and based on both observations and teacher ratings.

Although *Imaginative Play Training* and the *Therapeutic Day Program* produced some positive results, the outcome measures used in these studies were troubling. Specifically, *Imaginative Play Training* used outcome measures with questionable relevance, such as the number of uses a child could find for a tin can and the use of imagination in play. The *Therapeutic Day Program* compared outcomes between treatment and control groups on only one measure: preschoolers' self-reported competence and social acceptance. Measures from other sources such as independent observers and parents were lacking. Finally, *Directive Play Therapy* failed to produce any positive outcomes.

> *"For neglected children displaying behavioural problems,* Multisystemic Therapy *can improve both parenting skills and children's behaviours."*

Table 8: Program outcomes

Therapy	Outcomes at Final Assessment Period	
Directive Play Therapy [34]	At 2-month follow-up: No significant differences on any of the eight intellectual and socio-emotional measures	
Imaginative Play Training [35]	At 1-month follow-up: ↑ imagination, positive affect, interaction and cooperation with peers during free play ↓ aggression during free play ↑ number of uses child produced for a tin can ↑ imagination, self-concept and fluency on projective measure ↑ non-verbal abilities (measured with draw-a-man test)	
Multisystemic Therapy [33]	At post-test: ↑ parental effectiveness in using actions, non-verbal attention and verbal attention to impact child's behaviour ↓ parental non-responsiveness to child ↓ child engaging in passive non-compliance	
Resilient Peer Training [32]	At post-test: ↑ interactive play ↓ solitary play	At 2-month follow-up: ↑ self-control and interpersonal skills ↓ internalizing and externalizing problems
Therapeutic Day Program [36]	At post-test: ↑ self-perceived cognitive competence, peer acceptance and maternal acceptance	

Nurturing the neglected

Neglected children can experience a variety of challenges, including behavioural, emotional and cognitive problems. Consequently, when deciding on an intervention for a given child, both presenting concerns and treatment effectiveness need to be considered. For neglected children displaying behavioural problems, *Multisystemic Therapy* can improve both parenting skills and children's behaviours. For socially withdrawn preschool children, *Resilient Peer Treatment* can improve play skills that foster positive interactions with others, including increasing interpersonal skills and reducing problem behaviours. This treatment has the added advantage of using individuals within the child's natural environment — peers and parents.

Allin and colleagues' systematic review provides crucial information for practitioners and policy-makers. It identifies effective treatments for many of the common problems experienced by neglected children, including social withdrawal and behaviour concerns. As well, the authors rightly stress the fundamental importance of ensuring that children are protected from exposure to further maltreatment before engaging in any therapy to address past neglect.

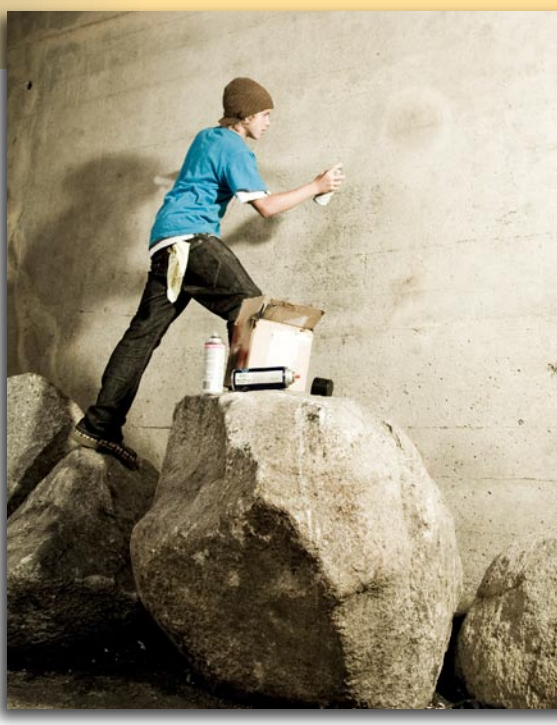
"Neglected children can experience a variety of challenges, including behavioural, emotional and cognitive problems."

Teen misconduct: What helps and at what cost?

To the Editors:

Your recent issue of the *Quarterly* provided helpful information about costs of interventions for conduct problems, particularly among younger children. Knowing that some youth continue to present with conduct problems despite prevention and early intervention programs, can you comment on the evidence about effectiveness and costs of programs targeting older youth who might have more serious antisocial behaviour and/or substance use problems?

Rob Lampard
Victoria, BC



***MST* is an intensive home-based intervention designed to target factors contributing to a youth's conduct problems.**

In our previously published report *Treating Concurrent Substance Use and Mental Disorders in Children and Youth*,[37] we identified one effective treatment for youth experiencing both conduct problems and substance abuse: *Multisystemic therapy (MST)*. *MST* is an intensive home-based intervention designed to target factors contributing to a youth's conduct problems. *MST* attempts to improve caregiver discipline, family relations and peer, school and recreational functioning for youth using techniques based on cognitive-behavioural and pragmatic family therapies.[38] Our report highlighted a 2002 study which found that youth who received *MST* had higher rates of marijuana abstinence and fewer criminal convictions for aggressive crimes four years after program participation than youth receiving usual treatment services.[39]

As well, our Spring 2007 issue of the *Quarterly* featured a Cochrane systematic review of eight *MST* trials (published between 1985 and 2003) targeted at youth engaging in criminal behaviours.[40] Although problem behaviours decreased with *MST* in five of the studies, when all study results were pooled, the average effects of *MST* were not significantly better than comparison services. As well, in the one Canadian study, there were no significant differences in disruptive behaviour outcomes between *MST* and usual services. Because of methodological limitations (including limited statistical power), the review authors could only conclude that *MST* is not consistently more effective than usual services.

Since the publication of the last Cochrane systematic review, additional RCT evaluations of *MST* have produced more encouraging results among American youth. These include reductions in self-reported externalizing

behaviours and criminal activity[41] and official rearrest rates.[42] Newly published findings have also documented the long-term effectiveness of *MST* among American youth. A 14-year follow-up study found *MST* participants were over four times less likely to be rearrested than youth who had received individual therapy. [43] Similarly, a nine-year follow-up evaluation found *MST* participants had 70% fewer arrests than youth who had been provided usual services.[44]

The results of *MST* among non-American youth have been less promising. In a sample of Norwegian youth, a reduction in externalizing behaviours achieved by *MST* participants (compared to usual child welfare services) did not reach statistical significance ($p = .07$).[45] Similarly, in a sample of Swedish youth, *MST* participants had reduced antisocial behaviours but the improvements were no greater than those produced by usual treatment services.[46]

Researchers have also examined the economic costs and benefits of *MST*. Using data from 10 studies conducted in the United States, Canada and Norway, Aos and colleagues [47] calculated the direct per participant cost of *MST* to be $4,264 (in 2006 $US). Based on *MST* producing an average 10.5% reduction in crime across the studies, the program was calculated as generating a per participant cost saving of $18,213 (in 2006 $US).

These research findings suggest that when behavioural problems are not effectively prevented or treated early in a child's life, successful cost-effective treatments can still be provided during adolescence. However, given *MST*'s mixed results, any new implementations in Canadian settings should include careful effectiveness and cost-effectiveness evaluations.

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We welcome your feedback and questions. Please email them to chpc_quarterly@sfu.ca or mail them to Daphne Gray-Grant, Children's Health Policy Centre, Faculty of Health Sciences, Simon Fraser University, Room 2435, 515 West Hastings St., Vancouver, British Columbia V6B 5K3

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B.C. government staff can access original articles from BC's Health and Human Services Library.

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