Quarterly

Preventing child maltreatment

OVERVIEW
Why it is possible to prevent maltreatment

REVIEW
Effective programs for preventing maltreatment

About the Children's Health Policy Centre

We are an interdisciplinary research group in the Faculty of Health Sciences at Simon Fraser University. We focus on improving social and emotional well-being for all children, and on the public policies needed to reach these goals. To learn more about our work, please see childhealthpolicy.ca.

About the *Quarterly*

We summarize the best available research evidence on a variety of children's mental health topics, using systematic review and synthesis methods adapted from the *Cochrane Collaboration* and *Evidence-Based Mental Health*. We aim to connect research and policy to improve children's mental health. The BC Ministry of Children and Family Development funds the *Quarterly.*

***Quarterly* Team**

Scientific Writer
Christine Schwartz, PhD, RPsych

Scientific Editor
Charlotte Waddell, MSc, MD, CCFP, FRCPC

Research Manager
Jen Barican, BA, MPH

Senior Research Assistant
Donna Yung, BSc, MPH

Production Editor
Daphne Gray-Grant, BA (Hon)

Copy Editor
Naomi Pauls, MPub

Photos: Bigstock.com

SFU
SIMON FRASER UNIVERSITY

NEXT ISSUE

Helping children who have been maltreated

It is not always possible to prevent child maltreatment. To guide treatment practice and policy, we review interventions designed to help children recover from maltreatment.

Disclosure

None of the authors have a personal financial interest in any of the programs described in this issue of the *Quarterly*. Charlotte Waddell is, however, co-leading a randomized controlled trial of Nurse-Family Partnership, one of the programs discussed.

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:

Why it is possible to prevent maltreatment

All children need safety, stability and nurturing in order to flourish. These crucial principles are built into international agreements on children's rights that Canada has long agreed to.[1] Yet many children continue to experience maltreatment — defined as adults not meeting children's basic needs through neglect, emotional abuse including exposure to intimate partner violence, physical abuse or sexual abuse.[2–3] These avoidable adverse events can cause immense distress and harm to children, with the impact being worse when exposure is chronic or severe, or when children are exposed to multiple forms of maltreatment.[4]

How many children are affected? It turns out to be surprisingly difficult to answer this question. One reason is that child maltreatment may not be witnessed by anyone outside the family and may be kept hidden by family members.[5] Another reason is that children are dependent on the adults who care for them and may be afraid to disclose maltreatment by a caregiver. Adding to these challenges, reported child maltreatment rates can vary depending on the definitions used, which can change over time. That said, child maltreatment rates are estimated in several different ways, each with its own limitations.[6]
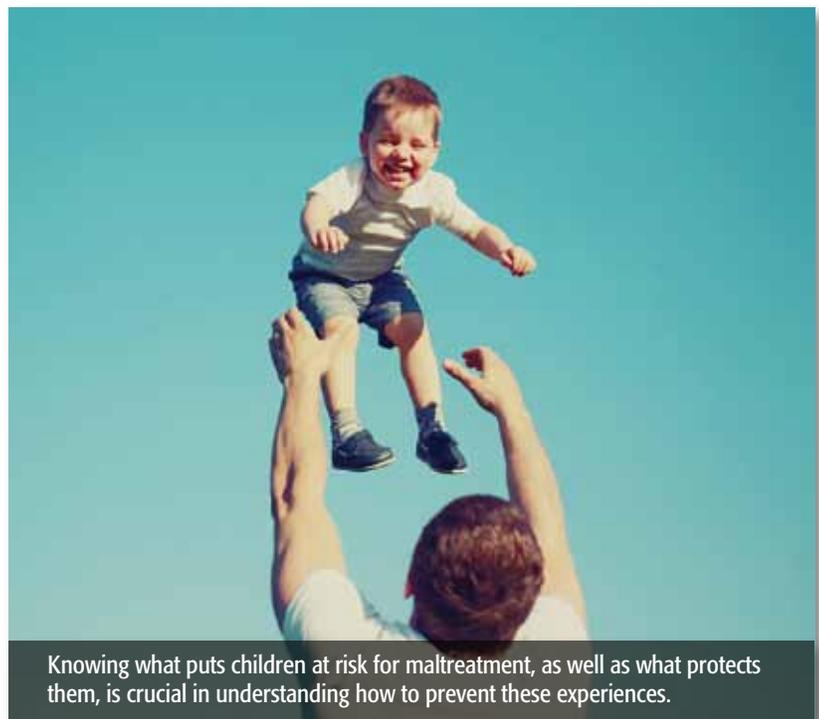
Knowing what puts children at risk for maltreatment, as well as what protects them, is crucial in understanding how to prevent these experiences.

Reports from police and child protection agencies

One approach involves looking at child maltreatment cases that come to police attention. But this approach captures only a small number of cases and therefore greatly underestimates the real prevalence.[7] Even so, police data are alarming. In 2016, more than 16,000 Canadian children aged 17 years or younger were victims of violence perpetrated by a family member (or approximately 233 children per 100,000).[8] This figure includes all types of violent offences under the Criminal Code, ranging from uttering threats to physical and sexual violence to homicide.[8] In 59% of these cases, parents were the perpetrators.[8]

Another approach involves tracking cases that are reported to and confirmed by child protection agencies. This approach, too, only captures a small number of cases and therefore greatly underestimates the real prevalence.[7] Even so, reports from the Public Health Agency of Canada, the organization that tracks child protection data, are also alarming. In 2008 (the most recent data available), there were an estimated 85,440 substantiated child maltreatment investigations (1,419 children per 100,000).[7] Types of child maltreatment were exposure to intimate partner violence (486 children per 100,000); neglect (481 children per 100,000); physical abuse (286 children per 100,000); emotional maltreatment (123 children per 100,000); and sexual abuse (43 children per 100,000).[7]

> 93% of people who reported being maltreated as children said they had told neither police nor child protection services.

Asking people to share their stories

A more comprehensive approach to assessing the prevalence of child maltreatment involves having people recount their experiences through surveys in samples that are representative of the general population. By ensuring that everyone has a chance to be included, this approach can capture events that never come to the attention of police or child protection agencies — addressing the issue of under-reporting. High levels of under-reporting were confirmed in a recent representative survey of more than 33,000 Canadians. In this survey, 93% of people who reported being maltreated as children said they had told neither police nor child protection services.[9] In fact, 67% said they had told no one at all.[9]

Given how seldom people disclose maltreatment, it is not surprising that rates derived from surveys in the general population are much higher than those derived from police and child protection reports. In the Canadian survey noted above, people were asked about maltreatment before age 15 — and one-third reported being physically assaulted, exposed to intimate partner violence or sexually abused.[9] This finding translated to almost 10 million Canadians experiencing these forms of maltreatment (or 33,000 children per 100,000).[9] Notably, these rates did not include childhood neglect or other forms of emotional abuse, which are also common.

Another representative survey of Canadians found very similar self-reported rates of child maltreatment occurring before age 16 for physical abuse, exposure to intimate partner violence and sexual abuse. Close to one-third of respondents reported experiencing at least one of these three types of abuse (32,100 children per 100,000).[10]

Retrospective self-reported data does have problems. People may not accurately recall their past experiences, or surveys may have poor response rates. But this approach nevertheless gives more realistic estimates, capturing instances of child maltreatment never otherwise reported.

> A number of factors, many associated with socio-economic disadvantage, significantly increased the risk for child maltreatment.

What increases risk, and what protects?

Knowing what puts children at risk for maltreatment, as well as what protects them, is crucial in understanding how to prevent these experiences. We identified four studies that tracked large groups of children and families over extended time periods. While all four studies identified risk factors for maltreatment, two also identified protective factors.

What 14,000 British babies can teach us

The first study followed more than 14,000 infants born between 1991 and 1992 in the United Kingdom (UK).[11] A number of factors, many associated with socio-economic disadvantage, significantly increased the risk for child maltreatment. These factors included the following:

- Parents being under age 20 (more than three times the odds)
- Parents having less than high-school education (five times the odds)
- Children being raised by single-mothers (more than two times the odds)
- Families living in poverty (11 times the odds)
- Families having limited social networks (almost two times the odds)
- Parents having a diagnosed mental disorder (almost three times the odds)
- Parents having been maltreated as children themselves (almost two times the odds)
- Mothers having negative perceptions of their child (almost two times the odds)[11]

This study also identified one protective factor. Children whose parents had higher levels of education had reduced odds of experiencing maltreatment.[12]

Learning from three American states

Three other studies examined maltreatment in American children. Two followed large groups of children from birth: a Florida study tracked approximately 190,000 children through to age one, and a California study tracked more than 530,000 children through to age five.[13–14] Both studies found risk factors related to socio-economic disadvantage, similar to those identified in the British study, as well as other factors. These factors included the following:

- Mothers being younger than age 20 (more than one times the risk in Florida and more than two times the risk in California)
- Mothers having limited education (almost two times the risk in Florida with less than high-school education and three to almost four times the risk in California with high-school education or less)
- Children being raised by single mothers (two times the risk in Florida and almost two times the risk in California)
- Mothers being socio-economically disadvantaged (more than two times the risk in Florida and almost two times the risk in California)
- Mothers having limited prenatal care (almost two times the risk in both Florida and California)
- Mother having another pregnancy less than 16 months prior, having adversities during pregnancy such as frequent moves and high stress levels, and using nicotine during pregnancy (increased risks by 1.2, 1.4 and 2.8 times, respectively; only studied in Florida)[13–14]

> Being highly satisfied in their relationship with their partner, being highly satisfied in their role as a parent, and having strong attachments to their children each reduced the odds of maltreatment.

The third US study, conducted in New York, took a different approach, following more than 700 people from age 14 through to age 30, by which point many had become parents. Being maltreated when they themselves were children increased more than two times the odds of these parents abusing their own children. Yet three protective factors also emerged. Being highly satisfied in their relationship with their partner, being highly satisfied in their role as a parent, and having strong attachments to their children each reduced the odds of maltreatment.[15] Table 1 summarizes outcomes for the one UK and three US studies.

Table 1: Risk and Protective Factors for Child Maltreatment	
Risk factors	**Protective factors**
Young parental age	High parental education
Limited parental education	Strong attachment to child**
Single parenthood	High satisfaction with parenting**
Low family income	High satisfaction with relationship with partner**
Limited family social support	
Parental mental health problems	
Parent maltreated as a child	
Limited prenatal care	
Multiple adversities during pregnancy*	
Maternal nicotine/cigarette use	
Pregnancy interval ≤ 15 months	
Negative maternal perceptions of child	

Bold indicates factors shown to be significant in multiple studies.
* Included items such as illnesses, frequent moves, and high stress levels.
** For parents who had been maltreated in their childhood.

Applying findings to help kids

As these four studies illustrate, the risk for child maltreatment increases when families experience socio-economic disadvantage, including inter-related adversities such as limited parental education and social supports and limited family income. Yet crucially, these adversities may be avoidable.

Regarding the proportion of children living in low-income households, for example, Canada currently ranks near the middle — 24 of 41 — among the world's wealthy countries.[16] Yet Canada ranks far more poorly — 34 of 37 — when it comes to effectively intervening to reduce income disparities, for example, by instituting social benefits paid through taxation.[16] Such redistributive interventions have worked well in countries such as Finland, Iceland, Norway and Denmark, suggesting that Canada could indeed do more.[16–17] As well, reducing socio-economic disparities may have the added benefit of reducing a number of mental health problems for children.[18–19]

Beyond addressing social determinants that can lead to risk of child maltreatment, prevention programs are also important — because even one child experiencing child maltreatment is one too many. We examine three such programs in the Review article that follows. ✋

How we can promote truth and reconciliation for Indigenous children

In a Public Health Agency of Canada survey, child protection investigations were found to occur four times more often for Indigenous children compared with non-Indigenous.[20] These findings are concerning, yet they must be viewed in historical context. With the arrival of large numbers of non-Indigenous peoples in Canada, and the concomitant implementation of colonial and racist policies, Indigenous child rearing systems were disrupted, causing families and communities much harm. Grievous practices included the forced removal of many tens of thousands of Indigenous children from their families and communities, with negative mental health and other effects over multiple generations.[21]

Efforts have begun to address this problem, for example, with Indigenous peoples creating their own governance structures and running their own service agencies.[21] But far more needs to be done to support these efforts. A starting point is for governments to address the long-standing underfunding of basic health and social services for Indigenous children and families compared with other Canadians.[21–22] As well, all Canadians can recognize the importance of truth and reconciliation and of having ongoing conversations about our country's history. For a comprehensive overview of this history and for more information on how to participate in rectifying inequities affecting Indigenous peoples, please see the final summary report of the Truth and Reconciliation Commission of Canada.[21]
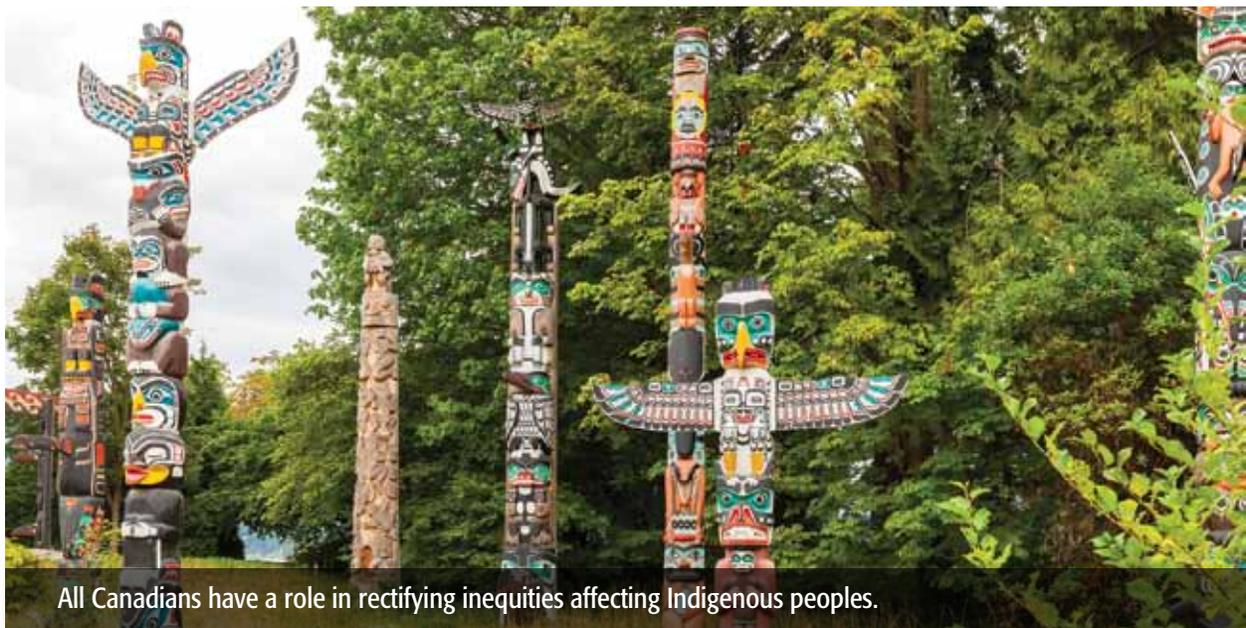
All Canadians have a role in rectifying inequities affecting Indigenous peoples.

Effective programs for preventing maltreatment

Preventing maltreatment for all children is crucial to ensuring healthy development — and is a child rights obligation that all Canadians share. To this end, many prevention programs have been developed, including several interventions featured in our Spring 2009 issue. Among them, we found strong evidence supporting Nurse-Family Partnership (previously known as Nurse Home Visitation). The program, which had nurses supporting first-time mothers during home visits from early pregnancy through to their child's second birthday, resulted in significantly reduced child maltreatment.[23]

The real goal is to help all children by ensuring that everyone has a fairer start in life.

Building on prior knowledge

To update our previous issue, we conducted a new systematic review of child maltreatment prevention programs. We began by searching for randomized controlled trials (RCTs) published in the past 10 years. Because our focus was prevention, we only accepted RCTs where fewer than 50% of families had prior involvement with child protection services (CPS). We built quality assessment into our inclusion criteria to ensure that we only reported on the best available evidence. For example, we required that maltreatment reports included at least one external source, such as child protection or hospital records, rather than relying on parent self-reports. (Please see our Methods for further details on our search strategy and inclusion criteria.)

We retrieved and assessed 43 studies, finding three RCTs that met our inclusion criteria. These RCTs evaluated three different interventions: Child FIRST,[24] Nurse-Family Partnership[25] and SafeCare+.[26] Although each program had unique features, all focused on preventing at-risk parents from maltreating their young children through delivery of services in their homes.

Reaching out to families in need

Child FIRST aimed to help at-risk families in the United States with specific challenges. For parents, these challenges included depression, intimate partner violence, substance use, homelessness, incarceration, social isolation, single and teen parenthood, low education and employment concerns. For children, these challenges included emotional and behaviour problems.[24] Approximately one-third of participating families also had prior CPS involvement.

Nurse-Family Partnership aimed to help at-risk first-time mothers in the Netherlands — these woman had limited education and at least one additional risk factor, including single parenthood, intimate partner violence, psychosocial symptoms, unwanted pregnancy, financial problems, housing difficulties, unemployment or substance abuse.[25] Due to the focus on first-time mothers, none had prior CPS involvement.

> Child FIRST and Nurse-Family Partnership both successfully prevented child maltreatment.

Meanwhile, SafeCare+ aimed to help at-risk rural parents who were experiencing a substance use disorder, other mental health issues or intimate partner violence.[26] Most study participants had no prior CPS contact. (Exact percentage was not provided.) As well, families with current, recent or more than two prior CPS reports were excluded from participating.

Bringing help home

Child FIRST offered weekly home visits from a mental health practitioner and a case manager — mostly to mothers and their young children, ranging in age from three months to 36 months, although other important individuals in the child's life were encouraged to participate.[24] The mental health practitioner focused on

> Children's mental health practitioners can play a role in preventing maltreatment.

helping mothers explore connections between their past and current relationships and their feelings and responses toward their child. The case manager facilitated family engagement with community services. The practitioner and case manager also provided telephone consultations. Families participated in Child FIRST for five months, on average.

Nurse-Family Partnership provided 10 home visits from a nurse during pregnancy, followed by approximately 20 home visits during each of the child's first and second years. Nurses also communicated with mothers outside of the home visits via text, telephone and social media. Nurses provided health education, taught parenting skills, and encouraged the use of additional social and community resources. Mothers participated in Nurse-Family Partnership for an average of 29 months. The program was culturally adapted for use in the Netherlands, including renaming it VoorZorg (which translates as "precaution").[25]

SafeCare+ provided 36 hours of home visiting to US parents (most were mothers) of children up to age five years. Home visitors addressed child health, home safety and parent-child bonding using a skills-based, behavioural approach coupled with techniques from motivational interviewing.[26] Parents participated in SafeCare+ for approximately six months. Table 2 summarizes the three programs.

Table 2: Child Maltreatment Prevention Programs			
Program	**Approach**	**Sample size**	**Ages at start** (Country)
Child FIRST [24]	12 home visits (average) by mental health practitioner + case manager over 5 months	157	3–36 months (United States)
Nurse-Family Partnership [25]	50 home visits by nurses over 29 months (average)	460	Prenatal (Netherlands)
SafeCare+ [26]	36 hours (average) of home visits by practitioners over 6 months	105	Birth–5 years (United States)

Standard services varied considerably

In all three RCTs, control families could access standard services available to all eligible community members. In the Child FIRST evaluation, standard services available in the US city where the study took place were not specifically identified. However, eligible families were recruited from a pediatric primary care centre and a supplementary nutrition program serving mostly inner-city families living in poverty, suggesting that standard services may have been limited.[24]

In contrast, standard services in the Netherlands, where Nurse-Family Partnership was delivered, were more robust. These services included regular visits to a midwife or obstetrician during pregnancy, an in-home maternity care helper for one week after the child's birth, and involvement in a well-baby clinic that provided immunizations, health monitoring and two added home visits.[25]

In the SafeCare+ evaluation, which took place in the rural United States, control families could access home-based community mental health services that included individual and family therapy as well as case management services.[26] Families participated in eight hours of mental health services, on average.

Similar goals, different outcomes

All three programs assessed child maltreatment using official CPS records, with some variation in the data extracted for each study. For Child FIRST, researchers assessed whether there was any family CPS involvement by reviewing official records, regardless of whether maltreatment was substantiated.[24] As well, researchers accepted mothers' reports of CPS involvement, even if official records failed to confirm involvement. (Researchers did this because difficulty in locating maltreatment cases in the state's records was identified as a common problem.)

By two-and-a-half-year follow-up, Child FIRST families had significantly less CPS involvement compared to controls.[24] Among those with no CPS involvement prior to the study, approximately 15% of Child FIRST families were involved by final follow-up, compared to approximately 31% of controls. Among families with prior CPS involvement, about 55% of Child FIRST families were involved by final follow-up, compared to about 65% of controls. Overall, control parents had slightly more than twice the odds of having CPS involvement (odds ratio = 2.1).

For Nurse-Family Partnership, researchers reviewed CPS records to determine whether there were any reports, regardless of whether maltreatment was substantiated.[25] (According to CPS data in the Netherlands generally, apart from this RCT, 93% of all reports reflected confirmed cases of child maltreatment.)[25] By one-year follow-up, for Nurse-Family Partnership families, significantly fewer reports were made to CPS for maltreatment concerns compared with controls (11% vs. 19%).

For SafeCare+, researchers examined CPS reports and excluded any cases dismissed by CPS staff as being "clearly inappropriate or malicious."[26] Approximately 21% of SafeCare+ parents and 32% of controls had CPS reports. However, because there were few reports overall, researchers went on to use length of time to first CPS reporting for their analyses. By 18-month follow-up, there were no significant differences in reporting time between SafeCare+ and control parents. Table 3 summarizes outcomes for all three programs.

Table 3: Outcomes for Child Maltreatment Prevention Programs		
Programs	**Follow-up**	**Outcomes**
Child FIRST [24]	2½ years	↓ Involvement with child protection services
Nurse-Family Partnership [25]	1 year	↓ Involvement with child protection services
SafeCare+ [26]	1½ years	NS Time until first report to child protection services
↓ Statistically significant reductions for program families over controls.		
NS No statistically significant difference between program and control families.		

Not all home visiting programs are equal

Child FIRST and Nurse-Family Partnership successfully prevented child maltreatment in the United States and the Netherlands, respectively, according to CPS reports. Both programs supported high-risk mothers in their homes. Both also used highly qualified providers. Yet the programs diverged considerably in terms of onset, duration and intensity, with Nurse-Family Partnership starting in early pregnancy, involving as many as 50 home visits, and continuing until children reached age two years. In contrast, Child FIRST started after birth and involved roughly 12 home visits over five months.

Given its greater intensity and duration, not surprisingly, Nurse-Family Partnership has been shown to have many other benefits for both children and mothers, beyond the prevention of child maltreatment. For

example, previous American RCTs found that by adolescence, children experienced fewer serious behavioural problems such as arrests as well as less alcohol and cannabis use.[27–29] As well, mothers' life circumstances were improved.[30]

Despite positive findings for Child FIRST and Nurse-Family Partnership, researchers have limited information about preventing neglect. Although there are programs that can prevent intimate partner violence, including among teens, much less is known about preventing other forms of emotional abuse and about preventing sexual abuse.[31] Clearly, more work is needed on the primary prevention of child maltreatment.

Implications for practice and policy

Our current and previous reviews provide evidence that child maltreatment can be prevented. Child FIRST and Nurse-Family Partnership both successfully prevented child maltreatment — helping parents who were experiencing socio-economic disadvantage by providing skilled interventions in the home. Yet the two programs also diverged. Nurse-Family Partnership started earlier and provided more intensive supports over a longer time. It resulted in many more long-term benefits across multiple RCTs. These findings suggest the following practice and policy implications.

- *Recognize that child maltreatment can be prevented.* Knowing there are programs that can help children by helping parents should inspire a sense of hope.
- *Invest in prevention.* Awareness of effective prevention programs should also inspire new practice and policy commitments. This means offering and funding not only "trauma informed" screening or treatment programs, or protection services after child maltreatment has occurred, but also *preventive* services early on, so fewer children experience maltreatment.
- *Address underlying socio-economic disadvantage.*
  Although child maltreatment can occur in any population, research suggests that socio-economic disadvantage is a risk factor. Thus addressing socio-economic disadvantage could greatly help children — by reducing the social disparities that some families suffer. For example, targeted family support programs or programs that help parents obtain better employment may help by lifting many children and families out of poverty.[17–19] The real goal here is to help all children by ensuring that everyone has a fairer start in life.
- *Collaborate across disciplines and sectors to help children.*
  The two successful programs were delivered by different types of practitioners: mental health practitioners for Child FIRST, and nurses for Nurse-Family Partnership. The success of these programs suggests that collaboration is possible across the mental health, public health and child protection sectors. These findings also indicate that children's mental health practitioners can play a role in preventing maltreatment, for example, by providing effective programs or by collaborating and supporting others to provide effective programs. As well, these successes suggest that collaboration is an effective way to help prevent maltreatment.

As a society, we have a collective ethical responsibility to prevent childhood maltreatment. Given the research evidence on effective prevention programs, this is a duty we can fulfil. We owe it to children to invest in such programs. ✋

Evaluating Nurse-Family Partnership in BC

With policy, practice and academic partners, the Children's Health Policy Centre is co-leading a randomized controlled trial (RCT) evaluating Nurse-Family Partnership in BC, the first evaluation of its kind in Canada. Launched in 2011, the BC Healthy Connections Project aims to determine whether the program can improve children's mental health and development, while also reducing child maltreatment and improving mothers' circumstances — in comparison with BC's existing health and social services. Children and families are being followed until children reach age two years. In total, 739 mothers and 744 children are participating, with 500 now having completed the study. Initial data will be released later in 2018, and all outcome reports will be released in 2020–21. For more information, please visit the BC Healthy Connections webpage.

While RCT recruitment has ended, Nurse-Family Partnership continues to be offered to eligible families. If you live in BC and are interested in participating, please contact your primary care provider or your local health authority or public health unit.

We use systematic review (SR) methods adapted from the _Cochrane Collaboration_ and _Evidence-Based Mental Health_. We build quality assessment into our inclusion criteria to ensure that we report on the best available research evidence — requiring that intervention studies use randomized controlled trial (RCT) methods and also meet additional quality indicators. For this review, we searched for RCTs on preventing childhood maltreatment. Table 4 outlines our database search strategy.

Table 4: Search Strategy	
Sources	• Campbell, Cochrane, CINAHL, ERIC, Medline and PsycINFO
Search Terms	• Child abuse, maltreatment, neglect, physical abuse, emotional abuse, psychological abuse, sexual abuse or abandonment _and_ prevention or intervention
Limits	• Peer-reviewed articles published in English between 2008 and 2018 • Pertaining to children aged 18 years or younger • Systematic review, meta-analysis or RCT methods used

To identify additional RCTs, we also hand-searched reference lists from relevant published systematic reviews and from previous Children's Health Policy Centre publications. Using this approach, we identified 43 studies. Two team members then independently assessed each study, applying the inclusion criteria outlined in Table 5.

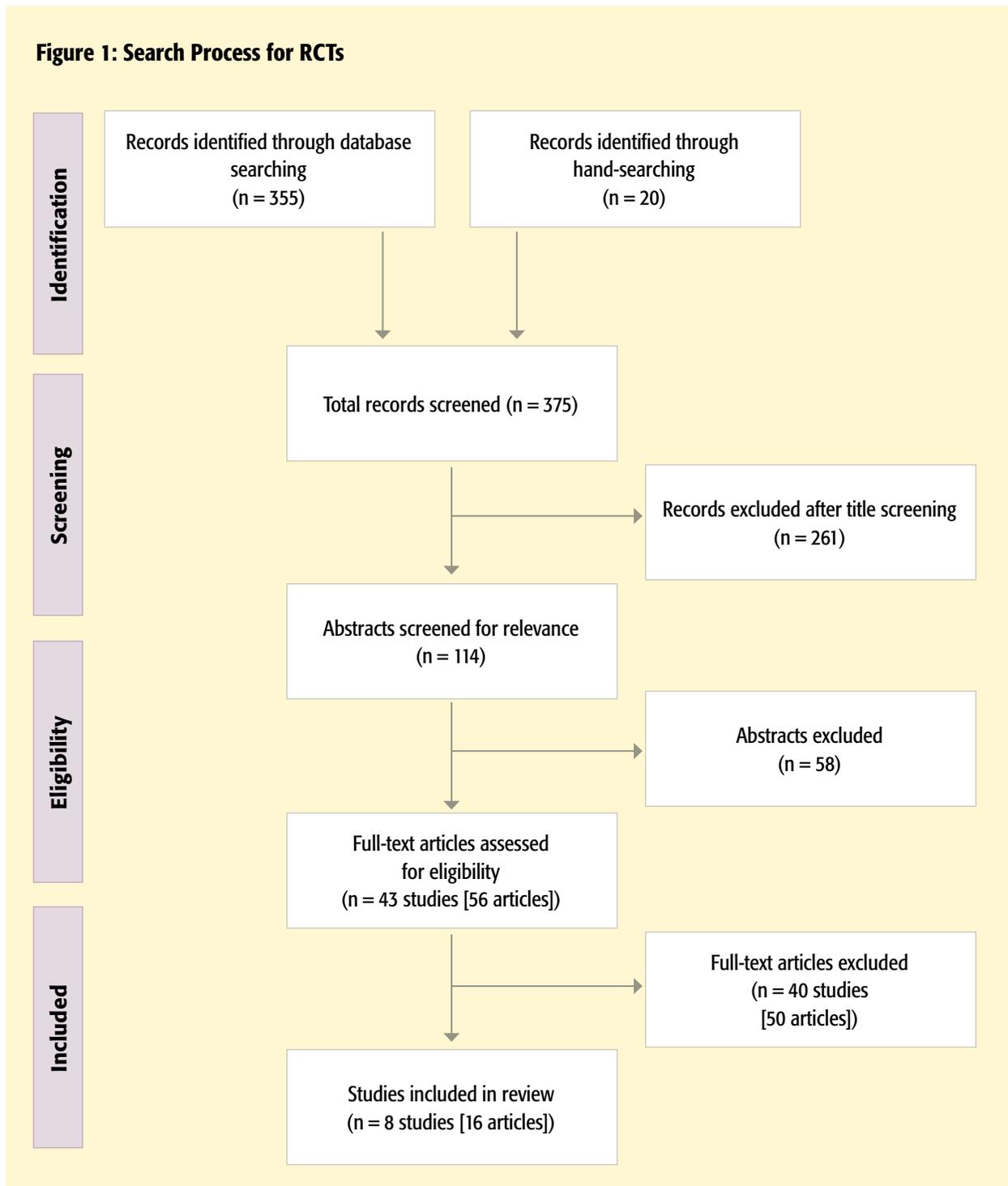| Table 5: RCT Inclusion Criteria |
| --- |
| • Participants were randomly assigned to intervention and control groups (i.e., no intervention or treatment-as-usual)
• Studies provided clear descriptions of participant characteristics, settings and interventions
• Interventions were delivered to parents and/or caregivers, aiming to prevent child maltreatment
• Interventions were evaluated in settings that were applicable to Canadian policy and practice
• At study outset, less than 50% of included families had prior involvement with child protection service (CPS) organizations
• Follow-up was three months or more (from the end of the intervention)
• Attrition rates were 20% or less at follow-up and/or intention-to-treat analysis was used
• Outcome indicators included maltreatment reports at follow-up from at least one independent source (e.g., CPS or hospital records)
• Levels of statistical significance were reported for primary outcome measures
• Studies were excluded where authors indicated lack of statistical power for assessing primary outcomes |

Three RCTs met all the inclusion criteria. Figure 1, adapted from PRISMA, depicts our search process. Data from these studies were then extracted, summarized and verified by two or more team members. Throughout our process, any differences between team members were resolved by consensus. ✋

Figure 1: Search Process for RCTs

Identification

Records identified through database searching
(n = 355)

Records identified through hand-searching
(n = 20)

Total records screened (n = 375)

Screening

Records excluded after title screening
(n = 261)

Abstracts screened for relevance
(n = 114)

Eligibility

Abstracts excluded
(n = 58)

Full-text articles assessed for eligibility
(n = 43 studies [56 articles])

Included

Full-text articles excluded
(n = 40 studies
[50 articles])

Studies included in review
(n = 8 studies [16 articles])

To best help children, practitioners and policy-makers need good evidence on whether a given intervention works. **Randomized controlled trials** (RCTs) are the gold standard for assessing if an intervention is effective. In RCTs, children are randomly assigned to the intervention group or to a comparison/control group. By randomizing participants — that is, giving every child an equal likelihood of being assigned to either group — researchers can help ensure the only difference between the two groups is the intervention. This process provides confidence that any benefits are due to the intervention rather than to chance or other confounding factors.

Then, to determine whether the intervention actually provides benefits to children, researchers analyze key outcomes. If an outcome is found to be **statistically significant,** it helps provide certainty the intervention was effective rather than it appearing that way due to a random error. In the studies that we review, researchers set a value enabling at least 95% confidence that the observed results are real.

Once an intervention has been found to have a statistically significant benefit, it is helpful to quantify the magnitude of difference it made, or its **effect size.** Beyond identifying that the intervention works, an effect size provides an indicator of how much of a clinically meaningful difference the intervention makes in children's lives.

Odds ratio is a frequently used measure of effect size. It indicates how many times greater or lesser the chances are of a given outcome occurring. For example, an odds ratio of 2.0 indicates that parents in the control group had double the odds of maltreating their child compared to parents who received the intervention.

REFERENCES

BC government staff can access original articles from BC's Health and Human Services Library. Articles marked with an asterisk (*) include randomized controlled trial data that was featured in our Review article.

1. United Nations General Assembly. (1989). Convention on the rights of the child. *Treaty series, 1577.* Accessed May 30, 2018, from https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=IV-11&chapter=4&lang=en

2. World Health Organization (WHO). (2016). *Child maltreatment* [Fact sheet]. Accessed April 9, 2018, from http://www.who.int/en/news-room/fact-sheets/detail/child-maltreatment

3. Drake, B., & Jonson-Reid, M. (2018). Defining and estimating child maltreatment. In J. B. Klika & J. R. Conte (Eds.), *The American Professional Society on the Abuse of Children (APSAC) handbook on child maltreatment* (4th ed., pp. 14–33). Thousand Oaks, CA: Sage Publications.

4. Erickson, M. F., Labella, M. H., & Egeland, B. (2018). Child neglect. In J. B. Klika & J. R. Conte (Eds.), *The APSAC handbook on child maltreatment* (4th ed., pp. 127–144). Thousand Oaks, CA: Sage Publications.

5. World Health Organization (WHO). (2016). *INSPIRE: Seven strategies for ending violence against children.* Luxembourg: WHO.

6. Klika, J. B., & Conte, J. R. (Eds.). (2018). *The APSAC handbook on child maltreatment* (4th ed.). Thousand Oaks, CA: Sage Publications.

7. Public Health Agency of Canada. (2010). *Canadian incidence study of reported child abuse and neglect 2008: Major findings.* Ottawa, ON: Public Health Agency of Canada.

8. Statistics Canada. (2018). *Family violence in Canada: A statistical profile, 2016.* Catalogue no. 85-002-X. Ottawa, ON: Statistics Canada.

9. Statistics Canada. (2017). *Family violence in Canada: A statistical profile, 2015.* Catalogue no. 85-002-X. Ottawa, ON: Statistics Canada.

10. Afifi, T. O., MacMillan, H. L., Boyle, M., Taillieu, T., Cheung, K., & Sareen, J. (2014). Child abuse and mental disorders in Canada. *Canadian Medical Association Journal, 186,* E324–332.

11. Sidebotham, P., Heron, J., & the ALSPAC Study Team. (2006). Child maltreatment in the "Children of the Nineties": A cohort study of risk factors. *Child Abuse and Neglect, 30,* 497–522.

12. Sidebotham, P., Golding, J., & the ALSPAC Study Team. (2001). Child maltreatment in the "Children of the Nineties": A longitudinal study of parental risk factors. *Child Abuse and Neglect, 25,* 1177–1200.

13. Wu, S. S., Ma, C. X., Carter, R. L., Ariet, M., Feaver, E. A., Resnick, M. B., & Roth, J. (2004). Risk factors for infant maltreatment: A population-based study. *Child Abuse and Neglect, 28,* 1253–1264.

14. Putnam-Hornstein, E., & Needell, B. (2011). Predictors of child protective service contact between birth and age five: An examination of California's 2002 birth cohort. *Children and Youth Services Review, 33,* 2399–2407.

15. Thornberry, T. P., Henry, K. L., Smith, C. A., Ireland, T. O., Greenman, S. J., & Lee, R. D. (2013). Breaking the cycle of maltreatment: The role of safe, stable, and nurturing relationships. *Journal of Adolescent Health, 53,* S25–31.

16. UNICEF Office of Research. (2017). *Building the future: Children and the sustainable development goals in rich countries.* Innocenti Report Card 14. Innocenti, Florence: UNICEF Office of Research.

17. Banting, K., & Myles, J. (2013). Canadian social futures: Concluding reflections. In K. Banting & J. Myles (Eds.), *Inequality and the fading of redistributive politics* (pp. 413–427). Vancouver, BC: University of British Columbia Press.

18. Costello, E. J., Erkanli, A., Copeland, W., & Angold, A. (2010). Association of family income supplements in adolescence with development of psychiatric and substance use disorders in adulthood among an American Indian population. *Journal of the American Medical Association, 303,* 1954–1960.

19. Reiss, F. (2013). Socioeconomic inequalities and mental health problems in children and adolescents: A systematic review. *Social Science and Medicine, 90,* 24–31.

20. Sinha, V., Trocme, N., Fallon, B., MacLaurin, B., Fast, E., Prokop, S. T. … Richard, K. (2011). *Kiskisik Awasisak: Remember the children.*

Understanding the overrepresentation of First Nations children in the child welfare system. Ottawa, ON: Assembly of First Nations.

21. Truth and Reconciliation Commission of Canada. (2015). *Honouring the truth, reconciling for the future: Summary of the final report of the Truth and Reconciliation Commission of Canada.* Retrieved from the TRC website: http://nctr.ca/reports.php

22. First Nations Child and Family Caring Society of Canada et al. v. Attorney General of Canada (for the Minister of Indian and Northern Affairs Canada). (2016). Retrieved from the Canadian Human Rights Tribunal website: https://decisions.chrt-tcdp.gc.ca/chrt-tcdp/decisions/en/item/143741/index.do

23. Eckenrode, J., Ganzel, B., Henderson, C. R., Jr., Smith, E., Olds, D. L., Powers, J., … Sidora, K. (2000). Preventing child abuse and neglect with a program of nurse home visitation: The limiting effects of domestic violence. *Journal of the American Medical Association, 284,* 1385–1391.

24. * Lowell, D. I., Carter, A. S., Godoy, L., Paulicin, B., & Briggs-Gowan, M. J. (2011). A randomized controlled trial of Child FIRST: A comprehensive home-based intervention translating research into early childhood practice. *Child Development, 82,* 193–208.

25. * Mejdoubi, J., van den Heijkant, S. C. C. M., van Leerdam, F. J. M., Heymans, M. W., Crijnen, A., & Hirasing, R. A. (2015). The effect of VoorZorg, the Dutch Nurse-Family Partnership, on child maltreatment and development: A randomized controlled trial. *PLoS One, 10,* 1–14.

26. * Silovsky, J. F., Bard, D., Chaffin, M., Hecht, D., Burris, L., Owora, A., … Lutzker, J. (2011). Prevention of child maltreatment in high-risk rural families: A randomized clinical trial with child welfare outcomes. *Children and Youth Services Review, 33,* 1435–1444.

27. Eckenrode, J., Campa, M., Luckey, D. W., Henderson, C. R., Jr., Cole, R., Kitzman, H., … Olds, D. (2010). Long-term effects of prenatal and infancy nurse home visitation on the life course of youths: 19-year follow-up of a randomized trial. *Archives of Pediatrics and Adolescent Medicine, 164,* 9–15.

28. Olds, D., Henderson, C. R., Cole, R., Eckenrode, J., Kitzman, H., Luckey, D., … Powers, J. (1998). Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-year follow-up of a randomized controlled trial. *Journal of the American Medical Association, 280,* 1238–1244.

29. Kitzman, H. J., Olds, D. L., Cole, R. E., Hanks, C. A., Anson, E. A., Arcoleo, K. J., … Holmberg, J. R. (2010). Enduring effects of prenatal and infancy home visiting by nurses on children: Follow-up of a randomized trial among children at age 12 years. *Archives of Pediatrics and Adolescent Medicine, 164,* 412–418.

30. Olds, D., Kitzman, H. J., Cole, R. E., Hanks, C. A., Arcoleo, K. J., Anson, E. A., … Stevenson, A. J. (2010). Enduring effects of prenatal and infancy home visiting by nurses on maternal life course and government spending: Follow-up of a randomized trial among children at age 12 years. *Archives of Pediatrics and Adolescent Medicine, 164,* 419–424.

31. Schwartz, C., Waddell, C., Barican, J., Gray-Grant, D., Gatto, S., & Nightingale, L. (2013). Promoting healthy dating relationships. *Children's Mental Health Research Quarterly, 7,* 1–16. Vancouver, BC: Children's Health Policy Centre, Faculty of Health Sciences, Simon Fraser University.