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The Prevention of Child Physical Abuse and Neglect: An Update

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The Prevention of Child Physical Abuse and Neglect: An Update

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Over the past 15 years, considerable attention has been devoted to the prevention of child physical abuse and neglect, resulting in a number of new programs, original studies, and reviews of the literature. In this paper, we review controlled studies of prevention programs that examined impacts on child physical abuse and neglect. We begin by briefly noting the prevalence, trends, and long-term consequences of physical abuse and neglect, as well as describing theoretical frameworks that have guided the prevention of child abuse and neglect.

Child Physical Abuse and Neglect

Wolfe¹ defined child abuse and neglect as follows:

the physical or mental injury, sexual abuse or exploitation, negligent treatment, or maltreatment of a child under the age of 18 years by a person who... is responsible for the child's welfare. The behavior must be avoidable and non-accidental... Based on these general criteria, *physical abuse* usually includes scalding, beatings with an object, severe physical punishment, slapping, punching, and kicking; acts constituting *neglect* include deficiencies in caretaker obligations, such as failure to meet the educational, supervisory, shelter and safety, medical, physical or emotional needs of the child, as well as physical abandonment. (pp. 108-109)

In a review, Gilbert et al² found that between 4 and 16% of children in higher income countries are physically abused and that 10% of children

are neglected every year. Studies using self-reported abuse and/or neglect measures yield even higher rates.³⁻⁵ The Ontario Incidence Study provides some data on trends in reported rates of child physical abuse and neglect over a 10-year period at three intervals: 1998, 2003, and 2008.⁶ While there were no significant increases in child protection placement rates over time, there was a significant increase in cases open for ongoing services from 1998 (7.85 per thousand children) to 2003 (12.96 per thousand children), with the rate appearing to level off by 2008 (13.29 per thousand children). Both physical abuse and neglect have negative long-term impacts on children's health, mental health, substance use, and criminal behavior.^{2,3,7} As well, Fang et al⁸ estimated the average lifetime monetary costs of child abuse or neglect to be in excess of \$200,000 per child. Given its high prevalence rate, the stubborn consistency of prevalence rates over time, its negative emotional and behavioral sequelae, and its long-term monetary costs, there is a need for effective prevention approaches for child physical abuse and neglect.

Theoretical Framework

Research on the prevention of child physical abuse and neglect has been guided primarily by two theoretical frameworks: ecological-transactional and public health models.

Ecological-transactional Model

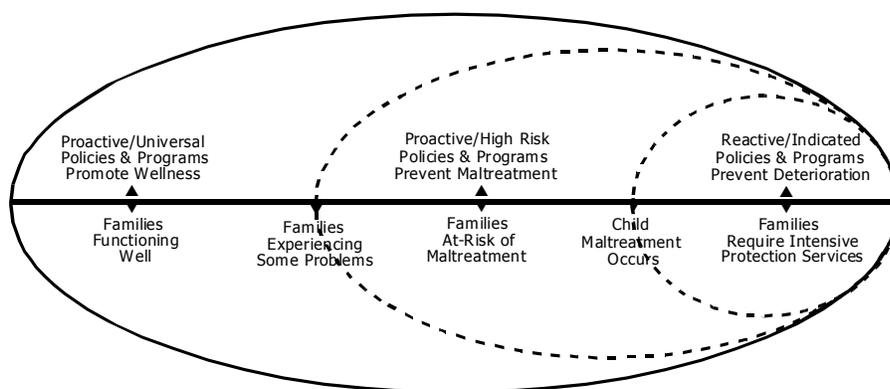
In early papers on this topic, Garbarino⁹ and Belsky¹⁰ argued that child abuse should be examined within multiple, nested levels of the environment, including micro-systems (eg, the family), meso-systems (two or more inter-related micro-systems, such as neighborhood and family), exo-systems (those in which the child does not directly participate, but which nonetheless have an impact on the child, such as the parents' place of work), and macro-systems (eg, society, culture). The ecological-transactional model suggests that multiple factors at different systems levels can impact families and parents, which, in turn, can increase or decrease the likelihood of child physical abuse and neglect. This ecological approach continues to influence research and prevention programs in this area.^{11, 12}

Public Health Model

Public health approaches have emphasized the need for population-wide, prevention approaches, as opposed to individual treatment approaches, because only prevention can reduce the incidence of child physical abuse and neglect. According to the Institute of Medicine,¹³ universal prevention focuses on the entire population; selective prevention, also known as the

“high-risk” approach, focuses on a sub-population identified as being at risk for a problem, such as low levels of income; while indicated prevention focuses on an even smaller sub-population that is showing early signs of abuse or neglect. Universal and selective approaches follow what used to be called primary prevention, while indicated prevention is more akin to what used to be called secondary prevention. See Figure 1 from Prilleltensky et al¹⁴ for a visual depiction of these approaches.

Figure 1. The Prevention Continuum and Populations Served



Source: Prilleltensky, I., Nelson, G., & Peirson, L. (Eds.) (2001). *Promoting family wellness and preventing child maltreatment: Fundamentals for thinking and action*. Toronto: University of Toronto Press.

Greeley¹⁵ has added a fourth type of prevention, what he calls primordial prevention:

Primordial prevention is directed at changing social or public policy to reduce not only the disease, but the risk factors for the disease. While not commonly employed, this strategy of prevention aligns well with the ecological model of

child abuse and represents a promising future direction. It highlights the importance of the context in which a child, family, or community exists.^(p.378)

Combining the Ecological-transactional and Public Health Models

In an earlier paper, we integrated the ecological-transactional and public health models into one framework with two axes. One axis represents the public health levels of prevention (universal, selective, indicated), while the other axis represents different ecological levels (from micro to macro) addressed by the intervention.¹⁶ At the micro-system level, home visitation programs aimed at families can be applied on either a universal or selective basis.¹⁷ Programs at the meso-system level often include both family and school interventions, and possibly others as well. These programs can be applied universally to an entire community or to groups at risk for child physical abuse and neglect. Intervention at the macro-system level is typically applied universally and includes community-wide educational campaigns, such as abusive head trauma education programs,¹⁸ parent training programs such as Triple P,¹⁹ home visitation,¹⁷ and enhanced pediatric care.²⁰ Macro-level interventions include policies that strive to reduce distal-level risk factors and enhance distal-level protective factors that give rise to child physical abuse and neglect.¹⁵

Overview of the Review and Research Questions

The review is organized into three main sections: (a) a summary of the findings of meta-analytic reviews, (b) a review of universal programs (parent education and training, home visitation, and enhanced pediatric care), and (c) a review of selective programs (parent education and training, home visitation, and multi-component programs). For the universal and selective program review sections, we first summarized the conclusions of previous reviews, and then we reviewed studies of specific program models. The review addressed two questions:

1. What is the evidence regarding the impacts of prevention programs in reducing child physical abuse and neglect?
2. What is the evidence regarding the impacts of specific prevention program models in reducing child physical abuse and neglect?

Methodology

Examination of Reviews

We examined 12 reviews of the literature on the prevention of child physical abuse and neglect published between 2000 and 2013 (see Table 1). Some reviews focus on one approach (eg, home visitation²¹), that may include information on the prevention of child physical abuse and neglect, but that do not focus exclusively on that outcome. In contrast, other

reviews focus specifically on child physical abuse and neglect.²² Some of these reviews include indicated or intervention programs, as well as primary prevention programs. Moreover, some reviews include only studies of randomized controlled trials (RCTs), while other reviews include those that use other designs. From these reviews, we focused only on research that examined prevention programs that used a controlled design and a child abuse or neglect outcome measure.

Table 1. Reviews of Research on the Prevention of Child Physical Abuse and Neglect in Chronological Order

Review	Type of Review, Time Period Covered, <i>k</i> =Number of Studies Reviewed that Examined Child Abuse Outcomes	Types of Programs
MacLeod & Nelson (2000)	Meta-analysis, 1979-1998, <i>k</i> =11	Home visitation
Sweet & Appelbaum (2004)	Meta-analysis, 1965-?, <i>k</i> =23	Home visitation
Geeraert, Van de Noortgate, Grietans, & Onghenea (2004)	Meta-analysis, 1975-2002, <i>k</i> =?	Primarily home visitation, but a few other programs
Lundahl, Nimer, & Parsons (2006)	Meta-analysis, 1970-2004, <i>k</i> =3	Parent training
Barlow, Simkiss, & Steward-Brown (2006)	Systematic review of reviews, up to 2005, <i>k</i> =15 reviews	A variety of programs
Klevens & Whitaker (2007)	Systematic review, 1980-2004, <i>k</i> =19	A variety of programs
Olds, Sadler, & Kitzman (2007)	Narrative review of randomized controlled trials, 1996-?, <i>k</i> =9	Preschool prevention programs
Mikton & Butchart (2009)	Systematic review of reviews, 2000-2008, <i>k</i> =26 reviews	Range of programs designed to prevent child maltreatment
Reynolds, Mathieson, & Topitzes (2009)	Meta-analysis, 1990-2007, <i>k</i> =15	Preschool programs
MacMillan, Wathen, Barlow, Fergusson, Leventhal, & Taussig (2009)	Narrative review, up to 2008, <i>k</i> =?	Home visitation, parenting programs, head trauma education programs, enhanced pediatric care programs
Greeley (2009)	Narrative review, period of review ?, <i>k</i> =?	Home visitation, child-parent centers, head trauma education programs, community-based initiatives, enhanced pediatric care
Selph, Bougatos, Blazina, & Nelson (2013)	Systematic review of randomized controlled trials, 2002-2012, <i>k</i> =11	Home visitation, enhanced pediatric care

The reviews also use different methods. Armitage and Keeble-Ramsay²³ have distinguished between a traditional narrative review and a systematic review. Unlike traditional narrative reviews, systematic reviews start with a clear hypothesis or question, have clear inclusion and exclusion criteria for studies that are reviewed, examine the quality of studies, and base their conclusion on those studies that are the most methodologically sound. A meta-analysis is a particular type of systematic review that quantifies, combines, and analyzes data from multiple studies.²⁴ For each study, the data are converted into a common metric called an effect size (ES), which is expressed in standard deviation (SD) units. A SD is a measure of how much scores vary or deviate from the mean or average score. An ES of 1 is equal to one SD difference between the prevention and control/comparison group. An ES of .2 is considered to be small; .5 is a medium ES; and .8 is a large ES.²⁵

Identification of Specific Studies

We relied on the 12 reviews to locate studies of specific prevention program models. We only selected studies that met the following inclusion criteria:

1. Children up to 12 years of age were the target population;

2. Only primary prevention programs (universal or selective) were included;
3. A controlled design (randomized or quasi-experimental) was used; and
4. An outcome measure pertaining to child physical abuse or neglect (ie, child welfare records for open cases and out-of-home placements, verified measures of abuse or neglect, injuries or ingestions requiring emergency room or hospital visits, childhood mortality) was used.

We focused only on universal or selective prevention programs, not indicated or treatment programs for families in which child maltreatment has already occurred. We also did not focus on the prevention of child sexual abuse or emotional maltreatment. Most reviews of the child abuse literature focus either on child physical abuse and neglect or on child sexual abuse, because the nature and risk factors for these problems and the program models that are used to address them are relatively distinct. Moreover, physical abuse and neglect are more likely to occur with younger children, whereas sexual abuse is more likely to occur with older children. Also, we decided not to focus on emotional maltreatment because of the dearth of studies that exclusively examine the prevention of emotional maltreatment. The reader is referred to other sources for reviews of indicated or treatment programs²⁶⁻²⁹ and the prevention of child sexual abuse.³⁰ Finally, studies were not included if they only examined risk factors for abuse, spanking, or harsh parenting.

Findings

Findings from the Meta-analyses

There have been five published meta-analytic reviews of the literature on the prevention of child abuse and neglect (see Table 2). While these reviews reported on the reduction of risk factors for abuse and neglect or the enhancement of well-being, we focused only on those studies in the meta-analyses that examined child abuse or neglect. MacLeod and Nelson³¹ reported an ES of .20 for child abuse and neglect and .36 for out-of-home placement for home visitation programs. In a subsequent review of home visitation programs, Sweet and Appelbaum²¹ reported similar findings to those of MacLeod and Nelson.³¹ They found an ES of .32 for abuse and .24 for injuries requiring hospitalization or emergency room visits. Similarly, in their review of different program models, Geeraert et al³² reported ESs of .20 for reports of abuse and .26 for indirect measures of abuse (eg, injuries, out-of-home placements). Lundahl et al³³ reported an ES of .45 for documented abuse, but this ES was based on only three studies. Finally, in a review of 15 studies of 14 preschool prevention programs, Reynolds et al³⁴ reported an ES of .20 for substantiated reports of child abuse, .27 for parent reports of abuse, and .21 for out-of-home placements. However, only half of the programs (7) were found to show a

significant difference on the abuse outcome measure compared with the control or comparison group. Overall, these reviews report very similar findings. They demonstrate that child abuse and neglect can be prevented, but that the impacts of different types of programs are small (ESs in the .2 to .3 range), with some programs showing no impact.

Table 2. Average Weighted Effect Sizes Reported in Meta-analytic Reviews of Research on the Prevention of Child Physical Abuse and Neglect

Review	Type of Program	Outcome Construct	Average Weighted Effect Size
MacLeod & Nelson (2000)	Home visitation	Out-of-home placements	.36
		Reports of abuse by child welfare agencies, hospital and emergency room reports of injuries	.20
Geeraert et al. (2004)	Variety of programs	Reports of abuse by child welfare agencies	.20
		Hospital and emergency room reports of injuries and out-of-home placements	.26
Sweet & Appelbaum (2004)	Home visitation	Reports or investigations of abuse	.32
		Hospital and emergency room reports of injuries	.24
Lundahl et al. (2006)	Parenting programs	Documented abuse by child welfare agencies	.45
Reynolds et al. (2009)	Preschool programs	Documented abuse by child welfare agencies	.20
		Parent reports of abuse	.27
		Out-of-home placement rates	.21

A few of these meta-analyses have also examined moderators of program impacts. Lundahl et al.³³ found that programs with a home visitation component had greater impacts than those that did not. Three of the

reviews examined program length and intensity, or what is referred to as “dosage,” as a moderator of outcomes. MacLeod and Nelson³¹ found that home visitation programs that were longer, had more visits, and had more program components had a greater impact in reducing abuse or neglect than programs that were less intense and had fewer components. On the other hand, Sweet and Appelbaum²¹ found that the intended length of the program was significantly inversely related to hospital and emergency room visits for injuries. The longer the program, the lower was the reported ES. However, program length was not a significant moderator of actual abuse in their review. Lundahl et al³³ found that the more parent training sessions, the greater was the reduction in attitudes linked to abuse. Reynolds et al³⁴ reported some impacts of dosage in enhancing program impacts, but they also noted some exceptions. In summary, the extant literature provides mixed evidence regarding the dosage of prevention programs as a moderator of child abuse and neglect outcomes.

Universal Programs

Parent education and training Parent education and training programs usually focus on parent child-rearing skills, parent knowledge of child development, and child management techniques in order to prevent child abuse and neglect. In Mikton and Butchart's³⁵ review of seven

reviews, they found that parent education programs showed mixed results with regards to preventing child maltreatment. Aside from the meta-analyses noted in the previous section, other reviews demonstrated that there is insufficient evidence of the impacts of parent education programs on actual child abuse, even though some programs show improvements of child abuse risk factors as a result of these programs. Another problem with these reviews is that universal and selective parent education and training programs are often grouped together in the review, so that one cannot clearly understand the impacts of universal parenting programs, which are less numerous than selective programs. There are, however, a few exemplary universal parent education and training programs that we highlight here.

Dias et al¹⁸ evaluated the effects of an educational program in reducing shaken baby syndrome in eight counties in western New York. Roughly 65,000 parents of newborns out of 94,000 births over a five-year period signed consent forms stating that they had read and understood the educational materials. The incidence of abusive head trauma decreased significantly by 47% compared with a six-year baseline period, and there was no comparable reduction in the adjacent state of Pennsylvania.

For older children, Sanders¹⁹ has argued for the universal application of evidence-based programs to promote parenting skills. Sanders' Positive Parenting Program (Triple P) was applied across the entire state of South Carolina.³⁶ A total of 18 counties were randomly assigned to Triple P or treatment as usual. The Triple P intervention was a multi-pronged approach, involving training of roughly 600 professionals in the use of the Triple P approach, as well as universal media and communication strategies. It was estimated that between 8,000 and 13,000 families participated in the Triple P intervention. This application of Triple P included universal, selective, and targeted programs. There were significant differences on three outcome measures, all favoring the intervention communities over the control communities: substantiated child maltreatment, out-of-home placements, and child abuse injuries reported in hospitals and emergency rooms. Moreover, the impacts of Triple P on these outcomes were large, with ESs exceeding 1.0 for each outcome.

Home visitation Home visitation includes visits from trained professionals or non-professionals to the homes of parents and their children in order to prevent child abuse and neglect by educating and supporting parents.³⁵ Based on the understanding that the first few years of life are crucial to later learning, development and school achievement, the Parents as Teachers (PAT) program began in Missouri in 1981. A

universal home visitation program designed to educate parents during pregnancy and the postnatal period, which continues until the child is three years of age, PAT consists of four components: home visitation, parent group meetings, child developmental screens, and service referral. In 1999, the PAT national office began a new PAT-based curriculum, called Born to Learn (BTL). Olds, Sadler, and Kitzman¹⁷ reviewed several RCTs and quasi-experimental evaluations of PAT programs, including: Northern California PAT, Teen PAT, multi-site PAT, PAT with the BTL curriculum, and BTL. Overall, evaluations of the various PAT home visitation trials have not shown many significant outcomes.¹⁷ One exception is the Wagner and Clayton³⁷ study that reported that a combination of the Teen PAT with case management had significantly fewer open cases of child abuse and neglect (0%) than a no-treatment control group and Teen PAT alone (2.4%).

Enhanced pediatric care Dubowitz and colleagues have evaluated the effectiveness of the Safe Environment for Every Kid (SEEK) program. SEEK consists of training health professionals to address parental risk factors, a parent screening questionnaire, and social work intervention. In one RCT study,³⁸ 558 parents of newborns to five-year-old children were randomly assigned to SEEK or a treatment as usual group. The findings showed significantly lower rates of child abuse and neglect

for the SEEK participants relative to control participants on several measures: fewer child protective service reports, fewer incidents of medical neglect, and less harsh punishment reported by parents. Another RCT evaluation of SEEK was implemented in 18 pediatric practices.²⁰ A total of 1,119 parents of children ages zero to five were randomly assigned to SEEK or treatment as usual. Similar to the previous evaluation, there were significantly lower rates of child protective service reports, significantly fewer minor physical assaults, and significantly less psychological aggression for SEEK participants relative to control participants.

Summary In summary, while there has not been a great deal of research on universal programs designed to prevent child abuse and neglect, the existing evidence shows promising findings for programs designed to prevent abusive head trauma resulting from shaking babies, for the Triple P parenting program, and for preventive intervention in pediatric practices.

Selective Programs

Parent education and training In a review of reviews, Barlow et al³⁹ reported on three reviews that examined the effectiveness of selective parenting programs in preventing abuse with targeted populations. With

the goal of changing parenting practices, the parenting programs included structured interventions delivered either one-to-one or in a group setting for up to 30 weeks. In their review, Barlow et al³⁹ concluded that while there is evidence to suggest the effectiveness of selective parenting programs in improving parent, child, and family functioning, there is insufficient evidence regarding their impacts on child abuse and neglect. In contrast, the Lundhal et al³³ meta-analytic review noted earlier did report positive impacts of selective parenting programs on actual abuse ($n=3$). One example of a successful selective parenting program is that of Britner and Reppucci.⁴⁰ In a quasi-experimental follow-up of a parent education program for teen moms, they found a significantly lower percentage of verified reports of child abuse or neglect for the program group ($n=125$) relative to participants in two comparison groups ($n=410$) when the children were three to five years of age. More recently, Spijkers et al⁴¹ reported on a RCT evaluation of the Triple P parenting program in the Netherlands, but they did not examine child abuse or neglect as an outcome. In summary, there appears to be mixed evidence that parenting programs alone are successful in reducing child abuse and neglect with high-risk parents.

Home visitation In a review of reviews, Barlow et al³⁹ reported on seven reviews of home visitation programs that focused either on home

visiting programs alone or those that assessed the impact of home visitation programs in conjunction with other interventions. These home visitation programs were delivered by professionals or trained non-professionals who provided structured one-to-one home visitations for high-risk populations of parents, beginning either prenatally or immediately in the postnatal period. One of the methodological issues identified in these reviews is that of surveillance bias, which is the increased likelihood of visitors reporting abuse that they learn about during home visits. There may be less likelihood of such bias in control families because they do not receive the same frequency of home visits, thus leading to an underestimation of finding positive outcomes.

Barlow et al³⁹ also examined a review of 40 studies of early intervention programs for at-risk families with young children, 17 of which evaluated the Healthy Families America (HFA) program, and 23 that examined other types of home visitation, parenting, and preventive programs. While there was some evidence showing positive outcomes of home visitation programs, Barlow et al observed that most studies used risk factors for abuse, rather than actual indicators of abuse, as the main outcome measures. The previously noted reviews by MacLeod and Nelson³¹ and Sweet and Appelbaum²¹ also reported small positive impacts of home visitation in preventing child abuse and neglect.

While the reviews noted above suggest the promise of home visitation as a strategy for preventing child abuse and neglect, there is a need to examine specific home visitation program models in terms of their effectiveness in preventing abuse and neglect since not all home visitation programs are created equal. Home visitation programs vary considerably in terms of their theoretical underpinnings, staff and training, and the timing, intensity, and nature of the home visits. Olds et al¹⁷ conducted a comprehensive review of the best-known and researched home visitation programs, and Selph et al⁴² have provided a review of more recent RCT evaluations of home visitation.

Hawaii Healthy Start and Healthy Families America One model, the Hawaii Healthy Start Program (HSP), is a home visitation program that began based on a recommendation from the United States Advisory Board on Child Abuse and Neglect that home visitation be available to all vulnerable families throughout the US. It was implemented as a pilot program in Hawaii and studied quasi-experimentally to determine its impact. Program participants were found to have much lower rates of child maltreatment than those of families with similar social characteristics to program participants.¹⁷ The HSP was scaled up to a national initiative, called Healthy Families America (HFA). With the primary goal of preventing child abuse and neglect statewide, HFA identifies at-risk

families during pregnancy or postpartum and offers voluntary home visitation services. Families are visited at home for three to five years by staff that helps parents become more competent in parenting.¹⁷ On average, 42 home visits are offered by staff who provide parent education, crisis support, and linking with other services over the course of the program.

Olds et al¹⁷ reported the findings from five RCTs: the original Hawaii HSP,^{43,44} Alaska HFP, New York State HFA,⁴⁵ San Diego HFA, and an enhanced version of HSP in Santa Barbara.⁴⁶ In the original RCT evaluation of the Hawaii HSP program, HSP families reported significantly fewer neglectful behaviors and verbal and corporal punishment than control families,⁴³ but there were no significant differences between HSP and control families on measures of abuse or neglect in a subsequent RCT evaluation.⁴⁴ Relative to the control group, Alaska HFP program participants did not show an impact on state-verified cases of child abuse and neglect, nor did they show an impact on rates of hospitalization and ambulatory care for preventable conditions for children. The evaluation of the New York State HFA reported that effects were found for self-reported abuse and neglect in the second year of the program, but there was no impact on verified child abuse. While the San Diego HFA trial showed trends for lower rates of physical abuse for program participants, these

differences were not significant. In a RCT of HFA Massachusetts, Eastabrooks et al⁴⁷ recently reported no significant differences in reports of child abuse for the program and control groups.

The Enhanced Healthy Families modified the HFA model to focus on helping parents accurately interpret their child's communicative signals, to reframe negative attributions that parents make to their child's behavior, and to help them develop specific plans to address various issues.⁴⁶ The program model combined the Hawaii HSP with the PAT parenting curriculum. There were three treatment conditions: no-treatment control group, HFA as usual, and Enhanced Healthy Families program. Mothers in the enhanced program showed significantly lower rates of physical abuse during the child's first year (no-treatment control, 26%; HFA as usual, 23%; and 4% in the enhanced program). The Enhanced Healthy Families program is the only one of the HSP or HFA programs that has shown major impacts in reducing child abuse and neglect.

Nurse-Family Partnership Consistently, reviews of the literature^{15,17,30,34,35} have concluded that the home visitation program that has shown the most promise in preventing child abuse and neglect is the Nurse-Family Partnership. This program, which is aimed at low-income, first-time mothers, is guided by three theoretical approaches: attachment theory, self-efficacy theory, and ecological theory. The goals are to

improve: mothers' prenatal health, child health and development, and mothers' self-sufficiency and life course. One-to-one, hour-long visits are conducted by nurses, beginning prenatally with weekly visits and lasting until the child reaches two years of age, with the last four visits conducted monthly. Three longitudinal RCTs in different cities (Elmira, NY; Memphis, TN; and Denver, CO) have been carried out by the same team of investigators.¹⁷

In the Elmira trial, when the children had reached age 15, mothers who participated in the program were 48% less likely than mothers in the control conditions to be identified as perpetrators of child abuse.⁴⁸ In the Memphis trial, by the time the children were two years old, the children in the program were 23% less likely to have health problems that involved injuries or ingestions, which were considered a proxy measure of abuse and neglect, and had a 79% reduction in days hospitalized for injuries and ingestions.⁴⁹ At age nine, significantly fewer children in the nurse home visitation program in Memphis had died compared with control children.⁵⁰ Abuse or proxy measure findings were not reported for the Denver trial.

The program founders have transferred this program to many other locales and have provided recommendations as to how the program can be strengthened in community practice.⁵¹ One study of the Nurse-Family Partnership program has been conducted by a different team of

investigators than the originators of this approach. Malone et al⁵² examined this program with high-risk families with first-born children in 24 Pennsylvania communities using a non-equivalent comparison group design. Contrary to their hypotheses, during the first two years of the children's lives, it was found that children whose mothers participated in the program had significantly higher rates of hospital visits for minor injuries than comparison children.

Colorado Adolescent Maternity Program The Colorado Adolescent Maternity Program (CAMP) is an enhanced home visitation program that combined weekly home visitation (for the first 16 weeks postpartum) with monthly clinic appointments (for the first six months) for at-risk teen-age mothers.⁵³ Home visitation and clinic appointments were reduced over time but lasted until the child reached two years of age. Participants were randomly assigned to CAMP ($n=84$) or treatment as usual ($n=87$). After two years of the program, there was no significant difference in rates of abuse, but the CAMP group did have a significantly lower rate of neglect (3.6%) compared with the control group (15.3%).

The Early Intervention Program Koniak-Griffin et al⁵⁴ conducted a RCT of the Early Intervention Program (EIP) in San Bernardino, California. Nurses provided home visits for two years for adolescent mothers following the birth of their first child in the EIP ($n=56$), while the mothers in

the control group received traditional public health nursing ($n=45$). After two years, they found that children in the EIP spent significantly fewer days in hospital for non-birth-related issues than the control group, and that the number of children with no emergency room visits was significantly higher for the EIP group than the control group.

Early Start Fergusson et al⁵⁵ reported on a RCT study of the Early Start program of selective home visitation in New Zealand. At-risk families were selected for the program and seen by family support workers with backgrounds in either Nursing or Social Work for up to three years. After three years, parents in the Early Start program ($n=220$) reported significantly lower levels of severe physical abuse and significantly fewer hospital episodes for child accidents, injuries, or accidental poisoning than control parents ($n=223$). However, there were no significant differences between the groups in terms of contact with agencies for child abuse or neglect. In a 9-year follow-up since entry into the trial, the researchers found a significantly reduced risk of hospital admission for unintentional injury, lower risk of parent-reported harsh parenting, and lower levels of physical punishment for the home visitation group (follow-up $n=199$) relative to the control group (follow-up $n=171$).⁵⁶ While the earlier positive effects on child abuse were sustained, the effect sizes were low.

UK Family Partnership Model In a RCT study in the UK, Barlow et al⁵⁷ randomly assigned vulnerable pregnant women to a health visitor home visitation program ($n=67$) or standard care ($n=64$). In the home visitation program, weekly home visits began six months before birth and lasted up until the child's first year of age. At six and 12 months, there were no significant differences between the groups on measures of involvement with child protection services.

Safe Care Plus Safe Care + was an enhanced home visitation program that was implemented in a rural setting in the southwestern US.⁵⁸ At-risk parents of children five years old or younger were randomly assigned to Safe Care + ($n=48$) or standard home-based mental health services ($n=57$). The Safe Care + program included home visitation and motivational interviewing, with attention paid to parent risk factors for abuse. Fewer of the Safe Care + group (20.8%) had reports to child welfare agencies than those in standard care (31.5%), but this difference was not statistically significant.

Summary Home visitation is the most common program approach for the prevention of child abuse and neglect. Overall, the outcomes for home visitation programs are mixed, with the exception of CAMP, the EIP, the Early Start program, and Nurse-Family Partnership program that provide the clearest evidence regarding the prevention of child abuse and

neglect. However, one attempt to replicate the Nurse-Family Partnership on a wider scale did not yield positive impacts on child abuse and neglect.

Multi-component Multi-component programs are usually community based and include a variety of elements, such as family support, preschool education, community development, training in parenting skills, and child care.^{35,39} Barlow et al³⁹ reported on reviews that examined multi-component programs. While they found one review that showed a large impact for multi-component programs,³¹ this review did not differentiate risk factors or family functioning outcomes from child abuse and neglect outcomes. Barlow et al³⁹ concluded that there is not yet a sufficient number of RCTs of multi-component programs to draw conclusions about their effectiveness in preventing child abuse and neglect.

Mikton and Butchart³⁵ identified four reviews that examined multi-component interventions. In addition to MacLeod and Nelson's meta-analytic review,³¹ noted above, they found a review by Kees and Bonner⁵⁹ that demonstrated the effectiveness of multi-component interventions in preventing child abuse and neglect, while two reviews found that there was insufficient evidence to make conclusions about the effectiveness of multi-component programs.^{39,60} Some evidence for the effectiveness of multi-component programs is provided in two studies.

Chicago Child-Parent Center One multi-component program that has shown long-term impacts on child physical abuse and neglect is the Chicago Child-Parent Center (CPC) and Expansion Program. The CPC is an ongoing longitudinal study that has followed children from socioeconomically disadvantaged backgrounds into their 20s.^{61,62} This study involves a preschool prevention program (ages three to four years), with multiple components, and an extended school-age program (ages three to nine years). Some children participated in both the preschool and school-aged program for four to six years, whereas other children participated for only one to three years in the preschool program. A quasi-experimental design was used to compare these two groups with a comparison group of participants who did not participate in either the preschool or school-age program. At age 17, 1,408 of the original sample of 1,539 children were followed up and court petitions for child maltreatment and child protective service records were examined. The preschool intervention group had significantly lower rates of court petitions (5.0%) compared with the treatment as usual group (10.5%), and the extended program participants also had significantly lower rates (3.6%) compared with the treatment as usual group (6.9%). Similar findings were reported from child protective service records.

Child FIRST The Child FIRST (Child and Family Interagency, Resource, Support, and Training) program is another multi-component program that combines a home-based therapy and visitation with a comprehensive, system of care approach that integrates community resources (eg, early education, housing, substance abuse treatment).⁶³ High-risk families with children ages six months to three years were randomly assigned to Child FIRST ($n=78$) or a treatment as usual control group ($n=79$). Family involvement in child protection services was not significantly different between the groups at six months, one-year, and two-year follow-ups, but there was a significant difference favoring the Child FIRST group over the control group at the three-year follow-up. Control group families were more than twice as likely as Child FIRST families to be involved with child protection services at the three-year follow-up.

Summary The reviews indicate mixed evidence for the effectiveness of multi-component programs in preventing child abuse and neglect. On the other hand, the CPC program⁶² and the Child FIRST program⁶³ have shown evidence for the prevention of child abuse and neglect.

Summary Overall, there is mixed evidence about the effectiveness of specific parenting, home visitation, and multi-component programs.

However, there are some particularly promising home visitation program models. The Nurse-Family Partnership program has longitudinal data on the effectiveness of the program in preventing abuse and neglect that has been demonstrated in two sites. The CAMP, EIP, and Early Start programs show promise but have yet to be replicated. As well, two multi-component programs, the CPC and Child FIRST, have evidence attesting to their effectiveness in preventing abuse and neglect, including longitudinal data for the CPC.

Conclusions and Implications

Evidence Regarding the Effectiveness of Programs in Preventing Child Abuse and Neglect

Overall, the meta-analytic, systematic, and narrative reviews suggest that there is some evidence that child physical abuse and neglect can be prevented. There are five meta-analyses that have reviewed controlled studies (RCTs of quasi-experiments) of prevention programs on actual reports of child abuse or neglect, proxy measures of emergency room or hospitalizations for injuries or ingestions, and involvement with child protection services.^{21,31-34} The ESs from these five reviews range between .20 and .45, indicating small effects of child abuse and neglect prevention programs. Systematic and narrative reviews also suggest

mixed evidence regarding program effectiveness. The most recent systematic review of studies conducted in the last 10 years came to the following conclusion:

Risk assessment and behavioral interventions in pediatric clinics reduced abuse and neglect outcomes for young children. Early childhood home visitation also reduced abuse and neglect, but results were inconsistent.^{43(p. 179)}

Moreover, the meta-analyses provide inconclusive evidence that longer, more intensive programs are more likely to be effective than shorter, less intensive programs.^{21,31,33,34} As well, some of the most robust and successful child abuse prevention programs, like the Nurse-Family Partnership⁶⁴ and the Chicago CPC,⁶⁵ have also been shown to be cost-effective, actually saving government money.

Evidence Regarding the Effectiveness of Specific Program Models in Preventing Child Abuse and Neglect

There has been considerably less research on universal prevention programs aimed at reducing child abuse and neglect than on selective prevention programs. However, the few universal educational and parenting programs that have been rigorously evaluated have shown positive impacts in reducing child abuse and neglect. These programs

include educational programs to prevent abusive head trauma of infants,¹⁸ the Triple P parenting program,³⁶ and enhanced pediatric care.^{20,38} More research is needed on these promising models and other universal programs.

Selective home visitation programs have received the most research attention. While the Nurse-Family Partnership,^{48,50} the Early Start program,⁵⁵ CAMP,⁵³ and the EIP⁵⁴ have been evaluated with RCTs and found to prevent child abuse and neglect, other home visitation models, including HFA, the UK Family Partnership program,⁵⁷ and Safe Care Plus⁵⁸ show little evidence supporting their effectiveness in preventing child abuse and neglect. Thus, the research shows that some home visitation models are more promising than others.

There are very few studies of parenting programs used as a selective prevention model.³³ Given the large body of evidence showing the impacts of Triple P in improving parenting skills,¹⁹ research is needed to determine if selective applications of Triple P can prevent child abuse and neglect with at-risk parents. Finally, there is some evidence that multi-component programs, like the Chicago CPC program⁶² and Child FIRST,⁶³ are successful in preventing child abuse and neglect. These programs hold particular promise because they can potentially address the multiple

risk factors that face impoverished families, rather than targeting only one risk factor (eg, problematic parenting).

Implementation, Fidelity, and Scaling Up Evidence-based Child Abuse and Neglect Prevention Programs

Research demonstration projects of prevention programs are often conducted under ideal conditions, with sufficient funding, well-trained staff, and close adherence to the components of the program model. However, when programs are implemented on a larger scale under less ideal conditions, the effectiveness of such programs may be jeopardized.⁶⁶ For example, when the Nurse-Family Partnership program was scaled up in Pennsylvania, the impacts of the program on proxy measures of child abuse and neglect were not observed.⁵² When programs are scaled up, there is a danger that they might be “watered down” or insufficiently resourced in terms of funding, staffing, and training. In spite of the cost savings findings noted earlier^{64,65} governments are sometimes reluctant or unwilling to provide adequate funding to ensure that effective prevention programs are implemented with fidelity to the key elements of the program model. For example, once the demonstration grant for the Elmira, New York Nurse-Family Partnership program ended, the level of funding was reduced, resulting in a doubling of the caseloads and the resignations of

all of the original nurses.⁶⁷

These examples suggest that there needs to be a closer alignment between researchers and policy-makers to help ensure that programs are scaled up and implemented in other contexts - contexts that include sufficient funding, resources for staff training, and accessibility of technical assistance to increase the likelihood that programs will be powerful enough to impact child abuse and neglect outcomes.^{51,68} Moreover, programs should not be widely disseminated until they have consistently demonstrated effectiveness, which has not always been the case in the area of child abuse and neglect. For example, HFA has been implemented in several states, but there is little evidence regarding the effectiveness of this home visitation model. Finally, researchers need to pay more attention to methods of assessing program fidelity, since fidelity is related to program effectiveness.⁶⁹ Many of the programs reviewed in this paper do not have established fidelity scales that can be used by researchers to determine implementation fidelity. Thus, there is a need for more implementation research in child abuse and neglect prevention programs.

Beyond Programs: Macro-level Interventions and Policy Change

Greeley¹⁵ noted conceptual limitations to current child abuse and neglect prevention initiatives. He stated that interventions are more likely to be

program-focused than policy-focused. Returning to the ecological, public health model presented earlier, most of the programs reviewed in this article are selective, rather than universal, and directed at the micro-level rather than the macro-level. Moreover, they are more ameliorative in their emphasis on working within existing systems rather than seeking more transformative systems change.⁷⁰ It is somewhat cynical to think that child abuse and neglect can be prevented on a wide scale through home visitation or other micro-level programs, no matter how scientifically validated the programs are, when low-income families face rising economic inequality, diminishing social capital, and the erosion of other social programs. This is like trying to plant a flower in an environment where the soil is poor and there is little water.

Unless child abuse and neglect prevention programs are accompanied by social policies that have an agenda of social justice and poverty reduction, children and families will continue to live in toxic communities that are characterized by poverty, substandard housing, violence, and crime,⁷¹ hardly a hospitable environment for the promotion of children's well-being. The rise of neo-liberalism as an ideology poses major challenges to the development of social policies that have a chance to reduce major social problems like child abuse and neglect.⁷² There are many excellent models of progressive policies in western and northern

Europe, as is illustrated by the case of Sweden,⁷³ that could benefit North American children and families. More fully implementing prevention programs, community interventions, and social policies to promote well-being and prevent child abuse and neglect will require a fundamental shift in North American values – from rugged individualism and blaming the victim to collective well-being, support for community structures, and social justice.⁷⁴

References

1. Wolfe DA. Prevention of child abuse and neglect. In: *Canada health action: Building on the legacy – Determinants of health, Vol. 1 – Children and youth*. Ste Foy, PQ: Editions Multimondes Inc; 1998:103-131.
2. Gilbert R, Widom CS, Browne K, Fergusson D, Webb E, Janson S. Burden and consequences of child maltreatment in high-income countries. *Lancet*. 2001;373:68-81. doi:10.1016/S0140-6736(08)61706-7
3. Hussey JM, Chang JJ, Kotch JB. Child maltreatment in the United States: Prevalence, risk factors, and adolescent health consequences. *Pediatrics* 2006;118:933-942. doi:10.1542/peds.2005-2452
4. MacMillan HL, Tanaka M, Duku E, Vaillancourt V, Boyle MH. Child physical and sexual abuse in a community sample of young adults: Results from the Ontario Child Health Study. *Child Abuse and Neglect*. 2013;37:14-21. doi:10.1016/j.chiabu.2012.06.005
5. May-Chalal C, Cawson P. Measuring child maltreatment in the United Kingdom: A study of the prevalence of child abuse and neglect. *Child Abuse and Neglect*. 2005;29:969-984. doi:10.1016/j.chiabu.2004.05.009

6. Fallon B, Trocme N, MacLaurin B, Sinha V, Black T, Felstiner C, Johnston A. *Ontario Incidence Study of Reported Child Abuse and Neglect-2008* (OIS-2008). Toronto, ON: Child Welfare Research Portal; 2010.
7. Afifi TO, MacMillan, HL, Boyle M, Taillieu T, Cheung K, Sareen J. (2014). Child abuse and mental disorders in Canada. *Canadian Medical Association Journal*. 2014. doi:10.1503/cmaj.131792
8. Fang X, Brown DS, Florence CS, Mercy JA. The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse and Neglect*. 2012;36:156-165. doi: 10.1016/j.chiabu.2011.10.006
9. Garbarino J. The human ecology of child maltreatment: A conceptual model for research. *Journal of Marriage and the Family*. 1977;39:721-732.
10. Belsky J. Child maltreatment: An ecological integration. *American Psychologist*. 1980;35:320-335.
11. Belsky J. Etiology of child maltreatment: A developmental-ecological analysis. *Psychological Bulletin*, 1993;114:423-434.
12. Cicchetti D, Toth SL, Rogosch FA. The development of psychological wellness in maltreated children. In: Cicchetti D, Rappaport J, Sandler I, Weissberg RP, eds. *The Promotion Of*

- Wellness In Children And Adolescents*. Washington, DC: Child Welfare League of America; 2000:395-426.
13. Institute of Medicine. *Reducing Risks For Mental Disorders: Frontiers For Prevention Intervention Research*. Washington, DC: National Academy Press; 1994.
14. Prilleltensky I, Peirson L, Nelson G. Mapping the terrain: Framework for promoting family wellness and preventing child maltreatment. In: Prilleltensky I, Nelson G, Peirson L eds. *Promoting Family Wellness And Preventing Child Maltreatment: Fundamentals For Thinking And Action*. Toronto: University of Toronto Press; 2001;3-40.
15. Greeley CS. Prevention of child physical abuse. In: Giardino AP, Lyn MA, Giardino ER, eds. *A Practical Guide To The Evaluation Of Child Physical Abuse And Neglect*. New York: Springer; 2009a:371-400.
16. Nelson G, Laurendeau M-C, Chamberland C. A review of programs to promote family wellness and prevent the maltreatment of children. *Canadian Journal of Behavioural Science*. 2001;33:1-13.
17. Olds DL, Sadler L, Kitzman H. Programs for parents of infants and toddlers: Recent evidence from randomized trials. *Journal of Child*

- Psychology and Psychiatry*. 2007;48:355-391. doi:10.1111/j.1469-7610.2006.01702.x
18. Dias MS, Smith K, deGuehery K, Mazur P, Li V, Shaffer M. Preventing abusive head trauma among infants and young children: A hospital-based parent education program. *Pediatrics*. 2005;115:470-477. doi:10.1542/peds.2004-1896
19. Sanders MR. Adopting a public health approach to the delivery of evidence-based parenting interventions. *Canadian Psychology*. 2010;51:17-23.
20. Dubowitz H, Lane WG, Semiatin JN, Magder LS. The SEEK model of pediatric primary care: Can child maltreatment be prevented in a low-risk population? *Academic Pediatrics*. 2012;12:259–268. <http://dx.doi.org/10.1016/j.acap.2012.03.005>
21. Sweet MA, Appelbaum MI. Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development*. 2004;75:1435-1456. doi:0009-3920/2004/7505-0009
22. Klevens J, Whitaker DJ. Primary prevention of child physical abuse and neglect: Gaps and promising directions. *Child Maltreatment*. 2007;12:364-377. doi:10.1177/1077559507305995

23. Armitage A, Keeble-Ramsay D. The rapid structured literature review as a research strategy. *U.S.-China Review of Education*. 2009;6:27-38.
24. Durlak JA, Pachan M. Meta-analysis in community-oriented research. In: Jason LA, Glenwick DS, eds. *Methodological Approaches To Community-Based Research*. Washington, DC: American Psychological Association; 2012:111-222.
25. Cohen J. *Statistical Power Analysis For The Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Erlbaum; 1988.
26. Al CMW, Stams GJJM, Bek MS, Damen EM, Asscher JJ, van der Laan PH. A meta-analysis of intensive family preservation programs: Placement prevention and improvement of family functioning. *Children and Youth Services Review*. 2012;34:1472-1479. doi:10.1016/j.childyouth.2012.04.002
27. Del Valle JF, ed. Out of home care in child protection: An international overview [Special issue]. *Psychosocial Intervention*. 2013;22(3):161-257. <http://dx.doi.org/10.5093/in2013a19>
28. Flynn RJ, Bouchard D. Randomized and quasi-experimental evaluations of program impact in child welfare in Canada: A review. *The Canadian Journal of Program Evaluation*. 2005;20:65-100.

29. Tanaka M, Jamieson E, Wathen N, MacMillan HL. Methodological standards for randomised controlled trials of interventions for preventing recurrence of child physical abuse and neglect. *Child Abuse Review*. 2010;19:21-38. doi:10.1002/car.1068
30. MacMillan HL, Wathen CD, Barlow J, Fergusson DM, Leventhal JM, Taussig HN. Interventions to prevent child maltreatment and associated impairment. *Lancet*. 2009;373:250-266. doi:10.1016/S0140-6736(08)61708-0
31. MacLeod J, Nelson G. Programs for the promotion of family wellness and the prevention of child maltreatment: A meta-analytic review. *Child Abuse and Neglect*. 2000;24:1127-1149.
32. Geeraert L, Van de Noortgate W, Grietans H, Onghenea P. The effects of early prevention programs for families with young children at risk for physical child abuse and neglect: A meta-analysis. *Child Maltreatment*. 2004;9:277-291. doi:10.1177/1077559504264265
33. Lundahl BW, Nimer J, Parsons B. Preventing child abuse: A meta-analysis of parent training programs. *Research on Social Work Practice*. 2006;16:251-262. doi:10.1177/1049731505284391
34. Reynolds AJ, Mathieson LC, Topitzes JW. Do early childhood interventions prevent child maltreatment? A review of research.

Child Maltreatment. 2009;14:182-206.

doi:10.1177/1077559508326223

35. Mikton C, Butchart A. Child maltreatment prevention: A systematic review of reviews. *Bulletin of the World Health Organization. 2009;87:353-361.* doi:10.2471/BLT.08.057075
36. Prinz RJ, Sanders MR, Shapiro CJ, Whitaker DJ, Lutzker JR. Population-based prevention of child maltreatment: The U.S. Triple P population trial. *Prevention Science. 2009;10:1-12.* doi:10.1007/s11121-009-0123-3
37. Wagner MM, Clayton SL. The Parents as Teachers program: Results from two demonstrations. *The Future of Children. 1999;9(1):91-115.*
38. Dubowitz H, Feigelman S, Lane W, Kim J. Pediatric primary care to help prevent child maltreatment: The Safe Environment for Every Kid (SEEK) Model. *Pediatrics. 2009;123:858–864.* doi:10.1542/peds.2008-1376
39. Barlow J, Simkiss D, Stewart-Brown S. Interventions to prevent or ameliorate child physical abuse and neglect: Findings from a systematic review of reviews. *Journal of Children's Services. 2006; 1(3):6-28.*

40. Britner PA, Reppucci ND. Prevention of child maltreatment: Evaluation of a parent education program for teen mothers. *Journal of Child and Family Studies*. 1997;6:165-175.
41. Spijkers W, Jansen DEMC, Reijneveld SA. Effectiveness of primary care Triple P on child psychosocial problems in preventive child healthcare: A randomized controlled trial. *BMC Medicine*. 2013;11:240.
42. Selph SS, Bougatsos C, Blazina I, Nelson, HD. Behavioral interventions and counseling to prevent child abuse and neglect: A systematic review to update the U.S. Preventive Services Task Force recommendation. *Annals of Internal Medicine*. 2013;158:179-190. doi:10.7326/0003-4819-158-3-201302050-00590
43. Duggan A, MacFarlane E, Fuddy L, et al. Randomized trial of a statewide home visiting program: Impact in preventing child abuse and neglect. *Child Abuse and Neglect*. 2004;28:597-622. doi:10.1016/j.chiabu.2003.08.007
44. Duggan A, Caldera D, Rodriguez K, Burrell L, Rohde C, Crowne SS. Impact of a statewide home visiting program to prevent child abuse. *Child Abuse and Neglect*. 2007;31:801-827. doi:10.1016/j.chiabu.2006.06.011

45. Dumont K, Mitchell-Herzfeld S, Greene R, et al. Healthy Families New York (HFNY) randomized trial: Effects on early child abuse and neglect. *Child Abuse and Neglect*. 2008;28:295-315. doi:10.1016/j.chiabu.2007.07.007
46. Bugental DB, Schwartz A. A cognitive approach to child mistreatment prevention among medically at-risk infants. *Developmental Psychology*. 2009;45:284-288. doi:10.1037/a0014031
47. Easterbrooks MA, Jacobs FH, Bartlett JD, et al. *Initial findings from a randomized, controlled trial of Healthy Families Massachusetts: Early program impacts on young mothers' parenting*. Medford, MA: Tufts University; 2012.
48. Zielinski DS, Eckenrode J, Olds DL. Nurse home visitation and the prevention of child maltreatment: Impact on the timing of official reports. *Development and Psychopathology*. 2009;21:441-453. doi:10.1017/S0954579409000248
49. Kitzman H, Olds DL, Henderson CR, et al. Effects of prenatal and infancy home visitation on pregnancy outcomes, childhood injuries, and repeated childbearing: A randomized controlled trial. *Journal of the American Medical Association*. 1997;278:644-652. doi:10.1001/jama.1997.03550080054039

50. Olds DL, Kitzman H, Hanks C, et al. Effects of nurse home visiting on maternal child functioning: Age-9 follow-up of a randomized trial. *Pediatrics*. 2007;120:e832. doi: 10.1542/peds.2006-2111
51. Olds DL, Donelan-McCall N, O'Brien R, et al. Improving the Nurse-Family Partnership in community practice. *Pediatrics*. 2013;132:S110-S117. doi: 10.1542/peds.2013-1021I
52. Malone M, O'Reilly ALR, Luan X, Localio AR, Rubin DM. Emergency department visits and hospitalizations for injuries among infants and children following statewide implementation of a home visitation model. *Maternal Child and Health Journal*. 2012;16:1754-1761. doi:10.1007/s10995-011-0921-7
53. Stevens-Simon C, Nelligan D, Kelly L. Adolescents at risk for mistreating their children – Part II: A home- and clinic-based prevention program. *Child Abuse and Neglect*. 2001;25:753-769.
54. Koniak-Griffin D, Verzemniekas IL, Anderson NLR, Brecht M-L, Lesser J, Kim S, Turner-Pluta C. Nurse visitation for adolescent mothers: Two-year infant health and maternal outcomes. *Nursing Research*. 2003;52:127-136.
55. Fergusson DM, Grant H, Horwood LJ, Ridder EM. Randomized trial of the Early Start program of home visitation. *Pediatrics*. 2005;116:803-809.

56. Fergusson DM, Boden JM, Horwood LJ. Nine-year follow-up of a home-visitation program: A randomized trial. *Pediatrics*. 2013;131(2):297-303. doi:0.1542/peds.2012-1612
57. Barlow J, Davis H, McIntosh E, Jarrett P, Mockford C, Stewart-Brown S. Role of home visiting in improving parenting and health in families at risk of abuse and neglect: Results of a multicentre randomised controlled trial and economic evaluation. *Archives of Disease in Childhood*. 2007;92:229-233. doi:10.1136/adc.2006.095117
58. Silovsky JF, Bard D, Chaffin M, et al. Prevention of child maltreatment in high-risk rural families: A randomized clinical trial with child welfare outcomes. *Children and Youth Services Review*. 2011;33:1435-1444. doi:10.1016/j.chilyouth.2011.04.023
59. Kees MR, Bonner BL. Child abuse prevention and intervention services. In: Steele RG, Roberts MC, eds. *Handbook Of Mental Health Services For Children, Adolescents, And Families*. New York: Kluwer Academic/Plenum; 2005:151-166.
60. MacMillan HL. Preventive healthcare, 2000 update: Prevention of child maltreatment. *Canadian Medical Association Journal*. 2000;163:1451-1458.

61. Mersky JP, Topitzes JD, Reynolds AJ. Maltreatment prevention through early childhood intervention: A confirmatory evaluation of the Chicago Parent-Child Center preschool program. *Children and Youth Services Review*. 2011;33:1454-1463. doi:10.1016/j.childyouth.2011.04.022
62. Reynolds AJ, Robertson D. School-based early intervention and later child maltreatment in the Chicago Longitudinal Study. *Child Development*. 2003;74:3-26.
63. Lowell DL, Carter AS, Godoy L, Paulicin B, Briggs-Gowan MJ. A randomized controlled trial of Child FIRST: A comprehensive home-based intervention translating research into early childhood practice. *Child Development*. 2011;82:193-208. doi:10.1111/j.1467-8624.2010.01550.x
64. Olds DL, Kitzman HJ, Cole RE, et al. Enduring effects of prenatal and early 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 Pediatric and Adolescent Medicine*. 2010;164:419-424. doi:10.1001/archpediatrics.2010.49
65. Reynolds AJ, Temple JA, White BAB, Ou S-R, Robertson DL. Age 26 cost-benefit analysis of the Child-Parent Center early education

program. *Child Development*. 2011;82:379-404. doi:10.1111/j.1467-8624.2010.01563.x

66. Rubin DM, Curtis ML, Malone M. Child abuse prevention and child home visitation: Making sure we get it right. *JAMA Pediatrics*. 2013;168(1):5-6. DOI:10.1001/jamapediatrics.2013.3865
67. Schorr L. *Within Our Reach: Breaking The Cycle Of Disadvantage*. Toronto: Doubleday; 1988.
68. Gormley WT. From science to policy in early childhood education. *Science*. 2011;333:978-981.
69. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*. 2008;41:327-350. doi:10.1007/s10464-008-9165-0
70. Greeley CS. The future of child maltreatment prevention. *Pediatrics*. 2009b;123:904-905.
71. Nelson G. The prevention of child maltreatment: Comments on Eckenrode, MacMillan, and Wolfe. In: Tremblay RE, Barr RG, Peters RD eds. *Encyclopedia on early childhood development*. Quebec: Centre of Excellence for Early Childhood Development;

2004:1-6. <http://www.excellence-earlychildhood.ca/documents/NelsonangXP.pdf>.

72. Nelson G. Community psychology and transformative policy change in the neo-liberal era. *American Journal of Community Psychology*. 2013;52:211-223.
73. Durrant JE, Janson S. Law reform, corporal punishment and child abuse: The case of Sweden. *International Review of Victimology*, 2005;12:139-158. doi:10.1177/026975800501200203
74. Nelson G, Prilleltensky I. *Community Psychology: In Pursuit Of Liberation And Well-Being*. 2nd ed. New York: Palgrave; 2010.