

Moderating Role of the Form of Maltreatment Experienced by Children on the Effectiveness of a Parent Training Program

Child Maltreatment
1-10
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1077559518790695
journals.sagepub.com/home/cm



Roxanne Sicotte¹, Marie-Josée Letarte¹, Sonia Hélie²,
and Isabelle-Ann Leclair Mallette¹

Abstract

The study examines whether the form of maltreatment experienced by the child moderates the effects of a parent training program (PTP) on the probability that the child's case will be closed. This study involved 736 children on whom the Montreal child protective services (CPS) agency had an active file between 2007 and 2015. The experimental group was composed of all children with a parent who participated in the PTP Incredible Years ($n = 368$). A control group was matched with the experimental group based on a propensity score. Cox regression revealed that once parents have participated in the PTP, the probability that their children's cases will be closed increases more for children being followed because of neglect than for those being followed because of emotional maltreatment. Results show that a parent's participating in a PTP is associated with an increase of the probability that his or her child's CPS case will be closed and hence with a reduction of the length of time that the child must receive protective services.

Keywords

program evaluation, child maltreatment, intervention

Introduction

Child maltreatment “includes all types of physical and/or emotional ill-treatment, sexual abuse, neglect, negligence and commercial or other exploitation, which results in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power” (World Health Organization, 2016). The legal definitions of child maltreatment and the exact terms used to refer to it vary from one jurisdiction to another, which partly explains why the reported incidence of child maltreatment also varies. In the United States, 9.1 children in 1,000 are victims of maltreatment every year, based on child protective services (CPS) reports (U.S. Department of Health and Human Services, 2018). In the Canadian province of Quebec, where the present study was conducted, the official statistics include reports to CPS both of children who have been maltreated and of children with “serious behavioral disturbances,” and the combined incidence as of 2014 was 11.2 children per 1,000 (Hélie, Collin-Vézina, Turcotte, Trocmé, & Girouard, 2017). Given that only one third of all cases of child maltreatment come to the attention of CPS agencies (Sedlak et al., 2010), these figures are especially disturbing.

In Quebec, the primary reasons for which children are taken in charge by CPS break down as follows. For 49.0% of these children, the primary reason is neglect (the person having

custody of the child is not providing for the child's basic physical, health, or educational needs, or there is a serious risk that this is the case). For another 17.7%, the primary reason is emotional maltreatment (behaviors that could cause harm to the child's psychological integrity and cognitive, emotional, or social development, such as emotional rejection, exploitation, exposure to conjugal violence, separation conflicts, or denigration), and for 12.8%, it is physical abuse (actions directed toward a child that harm their physical integrity; Gouvernement du Québec, 2010, 2016; Institut national d'excellence en santé et en services sociaux [INESSS], 2016).

To address cases of child maltreatment, CPS agencies offer various types of programs to maltreated children, their parents, or their entire families. These programs may include behavioral

¹ Département de Psychoéducation, Université de Sherbrooke, Sherbrooke, Quebec, Canada

² Institut universitaire Jeunes en difficulté, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal, Montréal, Quebec, Canada

Corresponding Author:

Roxanne Sicotte, Département de Psychoéducation, Université de Sherbrooke, 2500, boul. de l'Université Sherbrooke, Sherbrooke, Quebec, Canada J1K 2R1.
Email: roxanne.sicotte@usherbrooke.ca

or cognitive behavioral interventions, support and social integration services, or family therapy (Dufour & Chamberland, 2003). In Quebec, 48.7% of all children whose cases are followed by CPS remain in their family settings (INESSS, 2016). In other cases, when children are placed in a foster family or facility, they may maintain relationships with their parents through parental visits or direct or indirect communication (Déprez & Wendland, 2015).

Parents who maltreat their children often place unrealistic expectations on them, perceive their behavior as a provocation, and apply more coercive, punitive parenting practices than the general population (Sanders & Pidgeon, 2011). CPS agencies therefore offer a variety of parent training programs (PTPs) with the goals of prevention, intervention, or family reunification; examples of such programs include Parent–Child Interaction Therapy, the Positive Parenting Program, and the Incredible Years (IY). As of 2005, it was estimated that every year in the United States, at least 400,000 parents who had been neglectful toward their children or had emotionally or physically maltreated them participated in a PTP (this figure includes both parents who had custody of their children and parents who did not; Barth et al., 2005). In Quebec, the empirically supported PTP most widely used in the provincial CPS system is IY, and its short-term effectiveness in this setting has been demonstrated (Letarte, Normandeau, & Allard, 2010).

PTPs assume that improving parenting skills may reduce the risk of maltreatment (Lundahl, Nimer, & Parsons, 2006). Thus, PTPs set the goals of improving parenting, parent–child interactions, and parent–child communication (Sanders & Pidgeon, 2011). A meta-analysis showed that PTPs do reduce the risk of maltreatment overall (Lundahl et al., 2006). After participating in PTPs, parents use less coercive discipline and report improvement in their emotional well-being (Lundahl et al., 2006). Some studies suggest that parents' participation in PTPs may also reduce their risk of being reported again to CPS (Chaffin, Hecht, Bard, Silovsky, & Beasley, 2012; Gershater-Molko, Lutzker, & Wesch, 2002; Lutzker & Rice, 1987).

Despite such observed improvements in parenting, some participants in PTPs benefit more than others: after their parents have participated in PTPs, some children are again reported for maltreatment while others are not (Chaffin et al., 2004). Many authors suggest that to increase the general effectiveness of PTPs, characteristics of the clients should be considered in evaluations of these programs (Kazdin, 2007; Tougas & Tourigny, 2013). The identification of moderating variables provides a means of verifying whether programs are just as effective for all participants or whether certain subgroups benefit from them more than others (Gardner, Hutchings, Bywater, & Whitaker, 2010). In program evaluation, moderators are variables that influence the presence, strength, or direction of the relationship between participation in the program and its observed effects (Tougas & Tourigny, 2013). Moderators may thus be used to guide the selection of participants who are most likely to benefit from a treatment program (Tougas & Tourigny, 2013).

For the present study, we reviewed the literature about the characteristics of participants in PTPs that predict how their parenting practices subsequently change, in other words, the characteristics that moderate the effects of parenting programs. Because there are so few studies dealing specifically with the moderators of PTPs offered through CPS, we reviewed studies of any PTPs provided with the goal of preventing or treating maltreatment. These studies show that parents who are less educated have more severe symptoms of depression or whose children have a history of involvement with CPS benefit less from these programs in terms of their parenting skills (Duggan, Berlin, Cassidy, Burrell, & Tandon, 2009; Green, Power, Steinbook, & Gaines, 1981). Parents who have themselves been maltreated as children, have low family incomes, experience high levels of stress or display impaired overall psychosocial functioning have a higher risk of maltreating their children again after participating in a PTP than parents who do not have these vulnerability factors (Lanier, Kohl, Benz, Swinger, & Drake, 2014). In contrast, parents who are older recognize the maltreatment situation, have more education, have a higher family income, or report a more satisfactory social support network show more improvement in their parenting skills (Asscher, Hermanns, Deković, & Reitz, 2007; Duggan et al., 2009; Green et al., 1981; Høivik et al., 2015; Knox & Burkhardt, 2014). Overall, these studies suggest that parents who are themselves more vulnerable receive less benefit from PTPs. However, information on all of these characteristics may not be available to child protection workers when determining the most appropriate intervention program for the parents.

The characteristics associated with variation in the benefits incurred from PTPs may also vary across the form of maltreatment observed. No study had examined whether the form of child maltreatment moderates the effectiveness of PTPs. This information is potentially useful for child protection workers for determining which type of intervention is best for families. Indeed, even though families where children are maltreated share many vulnerability factors such as low socioeconomic status, parents' mental health, or substance abuse problems, some factors more strongly characterize certain forms of maltreatment than others (Stith et al., 2009). For example, compared with families where children are abused, families where children are neglected are distinguished by social isolation, high stress levels, more financial problems, negative and infrequent parent–child interactions (Dubowitz, 2011), lack of knowledge regarding child development (Connell-Carrick & Scannapieco, 2006), and disturbances in the parent–child relationship (Lacharité, Éthier, & Nolin, 2006). Families where children are physically abused are strongly associated with parents' having been abused as children themselves (Clément & Bouchard, 2003) and displaying anger and hyperreactivity, as well as with family conflict and weak family cohesion (Stith et al., 2009). Families where children are emotionally abused are associated with higher levels of numerous stressors, such as depression, alcohol abuse, single parenting, and family conflict (Campbell & Hibbard, 2014). In addition, a considerable proportion of children experience more than one form of maltreatment; and

experiencing multiple forms of maltreatment is associated with families characterized by interparental conflict, lack of affection, and rigid, distant family relationships (Higgins & McCabe, 2001). In light of all these differences, one might well suppose that parents who inflict different forms of maltreatment have different needs and receive different benefits from PTPs, yet CPS recommendations that parents participate in PTPs are made without reference to the form of maltreatment that led to their involvement with CPS (Barth et al., 2005).

None of the studies that we found examined whether the form of maltreatment moderates the effectiveness of the PTPs. Moreover, the studies that we reviewed have various methodological shortcomings. First, half of these studies use small samples, which reduces their statistical power and hence their ability to reveal moderating effects (Cohen, 1988). Second, in these studies, there was high attrition between the pretest and the posttest, which prevents any cause-and-effect links from being established among the variables. Third, in half of the studies, there was no control group, so it was possible to determine only whether the participants had changed while participating in the programs and not whether their changes could be attributed to the programs (Guo & Fraser, 2014; Hacoun & McDuff, 2012). Fourth and finally, most of the studies used self-reported measures from just one respondent, which exposes the measurements of predictors, moderators, and effects to various kinds of bias, such as respondents' test-taking anxiety, social desirability bias, and familiarity with the questionnaire (Sattler & Hoge, 2006).

The present study addresses many of the limitations of these past studies, in order to determine whether the type of maltreatment experienced by the child—neglect, emotional maltreatment, physical abuse, or a combination thereof—moderates the effects of the PTPs that their parents attend. The French-language version of IY was used since it is recommended for parents who maltreat their children; the effectiveness of this French-language version has been demonstrated in Quebec's provincial CPS system (Letarte et al., 2010). The current study evaluated the effectiveness of this PTP in cases of maltreatment by assessing the probability that the child's case would be closed. We established a control group matched with the experimental group on the basis of a score for propensity to participate in the program. Lastly, by using administrative data generated by one regional CPS agency, we were able to consider all participants in this PTP between 2007 and 2015 and thus eliminate the problems of attrition and self-reported measures. In short, the goal of the present study was to determine whether the form of maltreatment experienced by the child moderates the effects of IY on the probability that the child's case will be closed.

Method

This study was conducted in the setting of the child protection system of the Canadian province of Quebec. Under Quebec's *Youth Protection Act*, whenever someone has cause to believe that the safety or development of a child aged 0–18 is in danger,

that person may report the situation to their regional CPS agency (Gouvernement du Québec, 2016). That agency then performs a brief analysis of the report. If it reveals that a situation exists corresponding to one of the forms of maltreatment covered by the Act (physical abuse, sexual abuse, neglect, emotional maltreatment, or abandonment) or that the child has serious behavioral disturbances, then the report is accepted, and the situation is investigated to determine whether the report is well-founded and the child's safety or development is in danger. If that is deemed to be the case, then the regional CPS agency takes charge of the case and offers various programs and services to put an end to the endangering situation and prevent it from recurring. When a periodic assessment indicates that the safety or development of the child is no longer endangered, the case is closed.

Participants

This study involved 736 children who had an active file between 2007 and 2015 for reasons of emotional maltreatment, neglect, or physical abuse in the largest urban CPS agency in the province of Quebec. This CPS agency is located in Montreal and provides services for over 13,000 children every year. The characteristics of the sample are summarized in Table 1. Of the 736 children in the sample, 44.3% were receiving protection services because of neglect, 4.4% because of physical abuse, 6.5% because of emotional maltreatment, and 44.8% for a combination of two or three of these forms of maltreatment.

Experimental group. The experimental group was composed of all children with a parent who participated in at least one meeting of IY ($n = 368$). This conservative approach ensures that the entire population exposed to the program is included in the study. Moreover, the inclusion criteria provide a complete picture of all those who were exposed to the intervention and reduce the biases associated with the exclusion of individuals who did not complete the program. To be eligible for this program through this agency, parents had to have a child aged 5–10 at the time of enrollment in the program. If their child was living in foster care or a residential facility, they had to have contact with this child at least once every 2 weeks. Lastly, the parents' ability to participate in the program could not be impaired by any mental health or substance abuse problems. The average number of parents per group was 7.21.

Control group. To match the 368 children in the experimental group with another 368 children who would constitute the control group, we estimated, for each of the remaining children on whom this CPS agency had an active file between 2007 and 2015 ($N = 17,435$), a score representing the propensity for their parent to have participated in IY. To estimate this score, we used a logistical regression model in which participation or nonparticipation in the program was the dependent variable and the independent variables consisted of the characteristics of the family and of the child protection services that it had received that were the most likely to influence participation in

Table 1. Comparison of the Characteristics of the Experimental and Control Groups.

Characteristic	Experimental Group (n = 368)	Control Group (n = 368)	X ² /T
	Mean ± SD/n (%)	Mean ± SD/n (%)	
Age of child at time of report			
0–5 years	172 (46.7)	175 (47.6)	0.1
6–12 years	196 (53.5)	193 (52.4)	
Age of child at the time of their parent's enrollment in IY	8 ± 2		
Child's sex			
Female	151 (41)	150 (40.8)	0.0
Male	217 (59)	218 (59.2)	
Child's ethnocultural self-identification			
Canadian/American	249 (67.7)	247 (67.1)	0.0
Other	119 (32.3)	121 (32.9)	
Adolescent parent	70 (19)	67 (18.2)	0.1
Capacity in which person reported maltreatment			
Professional	269 (73.1)	257 (69.8)	6.0*
Personal	63 (17.1)	40 (10.9)	1.0-
Other	36 (9.8)	71 (19.3)	13.4*
Year of report of episode leading to CPS involvement			
Before 2007	81 (22)	164 (44.6)	42.2*
2007 or later	287 (78)	204 (55.4)	
Number of days between report and first contact with the child protection worker	185.5 ± 179	150.2 ± 169.4	-2.8*
Form of maltreatment experienced			
Neglect	163 (44.3)	163 (44.3)	0.0
Physical abuse	16 (4.4)	16 (4.4)	0.0
Emotional maltreatment	24 (6.5)	24 (6.5)	0.0
Combination of forms of maltreatment	165 (44.8)	165 (44.8)	0.0

*p < .05.

the program (Williamson & Forbes, 2014). These variables were the child's age at the time of the report that caused the CPS agency to take charge of his or her case, the child's sex, the child's having an adolescent parent (i.e., either parent was aged 20 or less at the time of the child's birth), the child's case having been taken in charge because of multiple forms of maltreatment, and the child's having been placed outside the home within 30 days of the agency's having taken charge of his or her case. The form of maltreatment for which the agency took charge of the child and whether this was the first, second, or third time that this child had been taken in charge were also considered in the matching to ensure that both groups were statistically equivalent for these specific variables. Using these propensity scores, we matched each child in the experimental group with a child who had an identical propensity score and hence similar characteristics (Kim & Clark, 2013), which reduced the biases associated with the selection of the participants (Guo & Fraser, 2014).

Procedure

Ethical clearance. This study received ethical clearance from the research ethics committee of the Montreal CPS agency's research institute on troubled youth (*Institut universitaire Jeunes en difficulté*). The data were retrieved on May 1, 2015, and cover the period from 2007 to 2015.

PTP

The objectives of IY are to improve the parent-child relationship, increase parents' use of effective, consistent disciplinary strategies, and improve parents' problem-solving skills (Webster-Stratton, 2012). The achievement of these objectives should potentially reduce children's behavior problems, reduce the risks of maltreatment and recurrence, and thus break the intergenerational cycle of maltreatment (Webster-Stratton, 2012). Three studies have shown that IY is effective for improving parenting practices in a CPS setting. After participating in the program, parents report using more positive parenting practices, applying discipline that is less severe and more consistent (Letarte et al., 2010), playing more with their children (Hughes & Gottlieb, 2004), and being more empathic toward them (Marcynyszyn, Maher, & Corwin, 2011). Although IY was originally designed for preventing and treating children's behavior problems, it is also recommended for dealing with parents who maltreat their children (Barth et al., 2005; The California Evidence-Based Clearinghouse for Child Welfare, 2015; Webster-Stratton, 2012).

IY at the Montreal CPS agency was delivered by two child protection workers who had received the required 3 days of training. IY is provided to groups of parents who have been referred to the program by the child protection worker in

charge of their case. The BASIC version of the program, with some aspects of *Supporting your Child's Education*, is offered. More specifically, this program consists of 16 weekly 2-hr sessions and topics such as playing with one's children, providing them with positive reinforcement, setting clear limits, managing difficult behavior, and communicating are addressed. A previous study describing the fidelity of implementation of IY in this agency, from 2003 to 2013, showed an excellent dosage (number of sessions), good adherence to the protocol, and high satisfaction among the participants (Leclair, Paquette, & Letarte, 2017). This previous study showed that the parents attended 71.2% of the program sessions. On average, 92.1% of the 16 meetings ($SD = 9.3$) were offered to 38 groups. The workers who delivered the program reported that compliance with the protocols for session content averaged over 80%, and the participants' average satisfaction score was 87.5% ($SD = 10.1$).

Data Source

In Quebec's regional CPS agencies, information about child clients and the services that they receive are entered into a dedicated computer system (known as the PIJ system, short for its French name, *Projet intégration jeunesse*). Part of this information is then anonymized and transferred to a regional data warehouse that can be used for research (Nadeau & Lacerte, 2011). The data used in the present study come from the data warehouse maintained by the Montreal CPS agency. To make the information from each region's PIJ system more valid and reliable at both the regional and provincial levels, a number of steps have been taken (Lavergne, Clément, & Labrecque, 2005). They include preparing a manual of definitions of the information that the system contains, providing training activities and an online help system, and defining a validation protocol (Lavergne et al., 2005).

Definitions of Variables

Effect evaluated. The dependent variable that we studied was the date that the child's CPS case is closed, indicating that the safety and development of the child is no longer endangered.

Potential moderators. The form of maltreatment experienced is represented by the various forms of maltreatment recorded in the child's file (up to three forms may be recorded). Based on this information, we divided the children into four categories according to the reasons that the agency took charge of their cases: (1) neglect alone, (2) physical abuse alone, (3) emotional maltreatment alone, and (4) any combination of the preceding three forms of maltreatment.

Data Analysis

To analyze the data, we used SPSS Statistics 24 software. First, we performed t tests and χ^2 tests of the differences among the

groups, so that we could then statistically control for these variables in the multivariate analyses. Next, we performed Cox regressions to evaluate the effect of the program on the probability that a child's case would be closed. Cox regression estimates the probability that an event will occur while taking into account the censored data as well as the time that it takes for the event to happen. Since this type of regression considers unequal observation periods and censored data, it produces a more accurate prediction than a logistical regression in the current context (Hélie, Poirier, & Turcotte, 2014). Censored data indicate that the participants do not experience the targeted event during the observation period (Klein & Moeschberger, 2003). In the present study, we performed a Cox regression, which measured the probability of the CPS case's being closed by calculating the time, in days, between the date of the report that caused the case to be opened and the date that the case was closed. In cases where the case was not closed during the observation period (2007–2015; $n = 260$, 35.3%) or where the case was closed because the child reached the age of majority (age 18; $n = 17$, 2.3%), data were censored. We first incorporated into the Cox regression model the control variables, then added the principal effects (participation in the program and the forms of maltreatment). Lastly, we incorporated the terms for the interaction between the potential moderators and participation in the program. Separate models, in which each form of maltreatment was used as the referent category, were tested in order to examine every possible comparison across maltreatment category (for further details on these models, see Online Supplemental Material, Tables S1–S3). Moreover, the statistical power of the model was adequate and thus allowing for the detection of small to medium effects (power = 0.82).

Since the period between the case opening and the enrollment in the program differs from one case to another, we considered participation in the program as a time-dependent variable. Cox regressions with this time-dependent variable distinguished the period of exposure to IY, which corresponds to the period between the first session of the program and the end of the observation period, from the period of nonexposure to the program. For the experimental group, the nonexposure period covers the period between the opening of the case and the first session of the program. For the children in the control group, the nonexposure period covers the period between the opening of the case and the end of the observation period. This type of analysis also avoids survivor treatment selection bias (Shintani et al., 2009). In the present study, this means that the longer the CPS is in charge of a child's case, the greater the chances that that child's parents will be exposed to the program. Considering the time when the program occurs enables this bias to be avoided. Before performing the statistical analyses, we calculated correlations between the independent variables, as well as variance inflation factors. The resulting values were all less than 0.5 and 2, respectively, which indicates that there is no problem of multicollinearity between the variables included in the Cox regression models (Tabachnick & Fidell, 2013).

Results

Table 1 shows the results of the bivariate analyses. The experimental and control groups differ with respect to the capacity in which a person reported the situation that was subsequently taken in charge by CPS, the year that this report was made, and the number of days between this report and the first contact with the child protection worker in charge of the case. We therefore controlled for these variables in our statistical analyses.

Principal Effects of the PTP and the Forms of Maltreatment

Effects of the PTP. The results of the Cox regressions are reported in Table 2. The model presented considers the control variable. The first block of independent variables presents the principal effects. A parent's participation in the program significantly increases the probability that a child's case will be closed. More specifically, once parents have participated in IY, the probability that their children's cases will be closed within the observation period increases by 39% compared with the children in the control group (hazard ratio [HR] = 1.39; $p < .05$).

Effects of the forms of maltreatment. For the results presented in Table 2, the reference category for the forms of maltreatment is neglect, which means that the three other maltreatment categories were compared with neglect. The results show that the children who were followed for physical abuse (HR = 1.99; $p < .01$) or emotional maltreatment (HR = 1.63; $p < .05$) or a combination of forms of maltreatment (HR = 1.44; $p < .05$) had a greater likelihood that their case would be closed than children who were followed for neglect. No other differences were observed when the reference category was rotated.

Moderating Effect of the Forms of Maltreatment on the Effectiveness of the PTP

The second block of independent variables in Table 2 shows the interaction effects between the various forms of maltreatment and participation in IY. The results show that once parents have participated in IY, the probability that their children's cases will be closed increases more for children being followed because of neglect than for those being followed because of emotional maltreatment (HR = -0.79; $p < .05$). In other words, the effect of the program on the probability of the case's being closed is greater for children followed for neglect than for those who have been victims of emotional maltreatment. In cases of physical abuse or a combination of forms of maltreatment, there is no moderating effect, which means that parents who have inflicted physical abuse or more than one form of maltreatment benefit from the program just as much as parents who have been neglectful. No other differences were observed when the reference category was rotated.

Table 2. Moderating Effect of the Form of Maltreatment That a Child Has Experienced on the Probabilities That the Child's Case Will Be Closed.

Variable	Case Closed (n = 736)	
	B	Hazard Ratio
Block 1		
Participation in the PTP	.33	1.39**
Form of the maltreatment		
Physical abuse	.69	1.99**
Emotional maltreatment	.49	1.63*
Combination of forms of maltreatment	.36	1.44**
Block 2		
Participation in the PTP	.27	1.31
Form of the maltreatment		
Physical abuse	.64	1.90*
Emotional maltreatment	.90	2.46**
Combination of forms of maltreatment	.49	1.64**
Interaction effects		
Physical Abuse × Participation in the PTP	.11	1.12
Emotional Maltreatment × Participation in the PTP	-.79	0.46*
Combination of Form of Maltreatment × Participation in the PTP	-.26	0.77

Note. Participation in the PTP varies in time in the model for the case's being closed. Reference category = neglect. Control variables incorporated into the model: capacity in which a person reported the situation taken in charge by child protective services (as a professional in the public or private sector, in a personal capacity, or other), the year that this report was made, and the number of days between this report and first contact with the child protection worker in charge of the case.

* $p < .05$. ** $p < .01$.

Discussion

The findings from this study suggest that the form of maltreatment experienced by a child moderates the effectiveness of IY, a recommended PTP for families followed for maltreatment (Barth et al., 2005; The California Evidence-Based Clearinghouse for Child Welfare, 2015). First, the results show that IY is associated with a faster closure of the child's case. Overall, participation in IY increases the probability of children's cases being closed by 39%, above and beyond the effects of the other services usually provided by CPS. The moderation analyses suggest that participants in IY whose child is being followed by CPS for neglect or physical abuse or a combination of forms of maltreatment all benefit equally from IY, in terms of the probability of their children's cases being closed. However, neglectful parents benefit from this program more than parents who have subjected their children to emotional maltreatment.

One possible explanation for this result lies in the kinds of family needs that the PTPs' content can meet. As stated in the introduction, neglectful parents generally have problems with their parenting skills, their interactions with the children, their relationships with their children, and their knowledge of child development (Connell-Carrick & Scannapeico, 2006; Dubowitz, 2011; Lacharité et al., 2006). PTPs target such problems by improving the parents' child-rearing practices and the parent-

child relationship (Lundahl et al., 2006). Similarly, families in which physical abuse occurs have needs that are directly targeted by PTPs. Physical abuse often results from a cycle of escalating aggression between the parent and the child (Chaffin et al., 2004). The cycle begins when children react to inconsistent, unpredictable parenting practices by not complying with their parents' requests. Parents then react to the noncompliance by increasing the degree of coercion (Patterson, 2002), which can lead to the use of violence and hence to physical abuse (Chaffin et al., 2004). The skills that parents develop through PTPs enable them to end this cycle of violence (Chaffin et al., 2004). These programs thus meet important needs for families in which parents are neglectful or physically abusive or both. Although neglect is generally associated with many personal, family, economic, and social problems (Lacharité et al., 2006), our results suggest that PTPs are equally beneficial for these three forms of maltreatment.

Families in which emotional maltreatment is the only form of maltreatment present are characterized by mental health problems, substance abuse problems, and family conflict (Campbell & Hibbard, 2014). In Quebec, 73.5% of all children receiving protective services because of emotional maltreatment have been exposed to situations involving conflict within the couple, separation conflict, or exposure to violence (INESSS, 2016). PTPs do not address these kinds of parental problems. One can therefore assume that when children are being emotionally maltreated, other interventions focused on these particular problems are needed as well. However, IY offers the ADVANCE program, designed to teach parents how to manage couple conflict, depression, anger, and to learn how to problem solve. A future study should see if this population could benefit from adding the ADVANCE program to the current IY curriculum.

Strengths and Limitations of this Study

This study makes an important contribution to knowledge concerning PTPs offered in CPS settings. First, there have been very few studies to date dealing with the client characteristics that moderate the effects of PTPs in cases of substantiated maltreatment. Second, survival analyses such as the Cox regression analyses used in the present study provide far more accurate probabilities because they consider the censored data and the observation periods, which vary considerably from one child to another according to the time when they enter the study. This more sophisticated type of analysis is not used very often in program evaluation; it was employed in only one of the studies reviewed at the start of this article. The data that we used in these analyses come from the children's files, which avoid the biases associated with self-reported data, such as social desirability bias and missing data bias. However, the only potential moderator that we considered was the form of maltreatment, and the only indicator of the program's effect that we considered was the probability that the child's case would be closed, representing the presence or absence of maltreatment. Even though information regarding the form of

maltreatment can help the child protection worker to decide the most appropriate intervention program that should be offered to a family, other client characteristics may also act as moderators, such as parents' mental health problems, family income, and child's age. No information was available on the parents' progress regarding their disciplinary strategies, their parent-child relationships, and their problem-solving processes, all of which are more direct measures of their achievement of the PTPs' objectives. Moreover, various factors influence the child protection worker's decision to close a particular case (Taylor, 2013). For instance, in some cases, the parents' participation in a PTP may cause their workers to see their situations in a more positive light and hence close their cases prematurely. Future studies could benefit from using self-reported questionnaires and observational measures, in addition to administrative measures, to obtain a more complete understanding of potential moderators and effects of the PTPs.

This study is the first to evaluate the moderating effects of a PTP implemented in a practice setting, along with a control group. But we had to use a nonrandom distribution of the participants between the groups. An experimental design with a random distribution would be the best way to ensure that the effects observed in the participants could actually be attributed to the program. However, such a design is not always realistic, ethical, or even desirable (Guo & Fraser, 2014). To offset this limitation, we matched our groups on propensity scores, which increased the study's internal validity while ensuring the equivalence of the two groups for several variables related to participation in PTP. Some variables could not be measured or were not available for propensity score matching, such as the clinical judgment of the child protection worker or parent availability for participation. Only a randomized controlled trial could ensure equivalence of groups. Lastly, even though there were 768 families in the study, there were few participating parents who had engaged in certain forms of maltreatment, such as physical abuse, which may have limited the study's ability to detect certain small differences (Cohen, 1988).

Conclusion and Implications for Practice

This study has shown that providing PTPs to highly vulnerable parents not only improves their child-rearing practices (Letarte et al., 2010) but is also associated with how quickly their children's cases are closed (above and beyond the impact of other typical CPS interventions). This finding also supports the underlying assumption of PTPs: that improving parenting skills reduces the risk of maltreatment (Lundahl et al., 2006). Moreover, the study shows that child protection workers should favor PTPs for families in which parents are neglectful or physically abusive or both. For parents who maltreat their children emotionally, perhaps they should receive services that address their more central problems, such as conjugal conflicts and conjugal violence before they participate in PTPs.

In order to better understand how and why these programs work, future studies should be conducted on the mediators of PTPs offered in a maltreatment context (Hinshaw, 2002). For

example, a study could explore the therapeutic process that explains the association between participation in a PTP and closing of a case. Future studies could also differentiate clients on the basis of profiles that combine several of their characteristics. Such studies could provide a better understanding of the client characteristics that may have an impact on the effectiveness of these programs. After that, to obtain a better understanding of the components that are essential for the effectiveness of PTPs (Kazdin, 2007), the modalities of the program, the fidelity with which it is implemented, and the characteristics of the workers delivering it could all be examined as additional moderators. Just like the present study, such an evaluation not only would make it possible to improve the program's effectiveness and to go beyond traditional program evaluations—which look only at the change in the clients from before they participate in the program to after (Tougas & Tourigny, 2013)—but also would provide a more comprehensive view of the client and program characteristics that influence the effects of PTPs.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Institut universitaire Jeunes en difficulté, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal and Faculté d'éducation, Université de Sherbrooke.

Supplemental Material

Supplemental material for this article is available online.

References

- Asscher, J. J., Hermanns, J. M. A., Deković, M., & Reitz, E. (2007). Predicting the effectiveness of the Home-Start parenting support program. *Children and Youth Services Review, 29*, 247–263. doi:10.1016/j.chilgyouth.2006.07.002
- Barth, R. P., Landsverk, J., Chamberlain, P., Reid, J. B., Rolls, J. A., Hurlburt, M. S., . . . Kohl, P. L. (2005). Parent-training programs in child welfare services: Planning for a more evidence-based approach to serving biological parents. *Research on Social Work Practice, 15*, 353–371. doi:10.1177/1049731505276321
- Campbell, A. M., & Hibbard, R. (2014). More than words: The emotional maltreatment of children. *Pediatric Clinics of North America, 61*, 959–970. doi:10.1016/j.pcl.2014.06.004
- Chaffin, M., Hecht, D., Bard, D., Silovsky, J. F., & Beasley, W. H. (2012). A statewide trial of the SafeCare home-based services model with parents in child protective services. *Pediatrics, 129*, 509–515. doi:10.1542/peds.2011-1840
- Chaffin, M., Silovsky, J. F., Funderburk, B., Valle, L. A., Brestan, E. V., Balachova, T., . . . Bonner, B. L. (2004). Parent-child interaction therapy with physically abusive parents: Efficacy for reducing future abuse reports. *Journal of consulting and clinical psychology, 72*, 500–510. doi:10.1037/0022-006X.72.3.500
- Clément, M. È., & Bouchard, C. (2003). Liens intergénérationnels des conduites parentales à caractère violent: Recension et résultats empiriques. *Revue de psychoéducation, 32*, 49–77. Retrieved from <http://psycnet.apa.org/psycinfo/2003-99487-003>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Connell-Carrick, K., & Scannapieco, M. (2006). Ecological correlates of neglect in infants and toddlers. *Journal of Interpersonal Violence, 21*, 299–316. doi:10.1177/0886260505282884
- Déprez, A., & Wendland, J. (2015). La visite parentale chez l'enfant placé, une revue de la littérature. *Annales Médico-Psychologiques, 173*, 494–498. doi:10.1016/j.amp.2013.07.009
- Dubowitz, H. (2011). Epidemiology of child neglect. In C. Jenny (Ed.), *Child abuse and neglect: Diagnosis, treatment and evidence* (pp. 28–34). St. Louis, Missouri: Elsevier Saunders.
- Dufour, S., & Chamberland, C. (2003). *L'efficacité des interventions en protection de l'enfance*. Recension des écrits. Montréal, Canada: Centre d'excellence pour la protection et le bien-être des enfants. Retrieved from <http://cwrp.ca/sites/default/files/publications/fr/SKRNoAppF.pdf>
- Duggan, A. K., Berlin, L. J., Cassidy, J., Burrell, L., & Tandon, S. D. (2009). Examining maternal depression and attachment insecurity as moderators of the impacts of home visiting for at-risk mothers and infants. *Journal of Consulting and Clinical Psychology, 77*, 788–799. doi:10.1037/a0015709
- Gardner, F., Hutchings, J., Bywater, T., & Whitaker, C. (2010). Who benefits and how does it work? Moderators and mediators of outcome in an effectiveness trial of a parenting intervention. *Journal of Clinical Child & Adolescent Psychology, 39*, 568–580. doi:10.1080/15374416.2010.486315
- Gershater-Molko, R. M., Lutzker, J. R., & Wesch, D. (2002). Using recidivism data to evaluate project safecare: Teaching bonding, safety, and health care skills to parents. *Child maltreatment, 7*, 277–285. doi:10.1177/1077559502007003009
- Gouvernement du Québec. (2010). *Manuel de référence sur la protection de la jeunesse*. Québec, Canada: Ministère de la santé et des services sociaux.
- Gouvernement du Québec. (2016). *Loi sur la protection de la jeunesse*. Retrieved from <http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/P-34.1>
- Green, A. H., Power, E., Steinbook, B., & Gaines, R. (1981). Factors associated with successful and unsuccessful intervention with child abusive families. *Child Abuse and Neglect, 5*, 45–52. doi:10.1016/0145-2134(81)90077-6
- Guo, S., & Fraser, M. W. (2014). *Propensity score analysis: Statistical methods and applications* (Vol. 11). Thousand Oaks, CA: Sage.
- Haccoun, R. R., & McDuff, P. (2012). Attribution and causalité des effets. In V. Ridde & C. Dagenais (Ed.), *Approches et pratiques en évaluation de programme* (pp. 109–124). Montréal, Canada: Les Presses de l'Université de Montréal [in French].
- Hélie, S., Collin-Vézina, D., Trocmé, N., Turcotte, D., & Girouard, N. (2017). *Étude d'incidence québécoise sur les signalements évalués en protection de la jeunesse en 2014 (ÉIQ-2014)* (p. 124). Rapport final déposé à la Direction des jeunes et des familles du Ministère de la Santé et des services sociaux. Montréal, Institut universitaire

- sur les Jeunes en difficulté, Centre intégré universitaire de santé et services sociaux-Centre sud de l'Île-de-Montréal.
- Hélie, S., Poirier, M. A., & Turcotte, D. (2014). Risk of maltreatment recurrence after exiting substitute care: Impact of placement characteristics. *Children and Youth Services Review, 46*, 257–264. doi:10.1016/j.childyouth.2014.09.002
- Higgins, D. J., & McCabe, M. P. (2001). Multiple forms of child abuse and neglect: Adult retrospective reports. *Aggression and Violent Behavior, 6*, 547–578. doi:10.1016/S1359-1789(00)00030-6
- Hinshaw, S. P. (2002). Intervention research, theoretical mechanisms, and causal processes related to externalizing behavior patterns. *Development and Psychopathology, 14*, 789–818. doi:10.1017/S0954579402004078
- Høivik, M., Lydersen, S., Drugli, M., Onsoien, R., Hansen, M., & Nielsen, T. (2015). Video feedback compared to treatment as usual in families with parent-child interactions problems: A randomized controlled trial. *Child and Adolescent Psychiatry and Mental Health, 9*, 3. doi:10.1186/s13034-015-0036-9
- Hughes, J. R., & Gottlieb, L. N. (2004). The effects of the Webster-Stratton parenting program on maltreating families: Fostering strengths. *Child Abuse and Neglect, 28*, 1081–1097. doi:10.1016/j.chiabu.2004.02.004
- Institut national d'excellence en santé et en services sociaux. (2016). *Bilan des directeurs de la protection de la jeunesse-directeurs provinciaux 2016*. Québec, Canada: Centres intégrés de santé et de services sociaux et Centres intégrés universitaires de santé et de services sociaux [in French].
- Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology, 3*, 1–27. doi:10.1146/annurev.clinpsy.3.022806.091432
- Kim, R. H., & Clark, D. (2013). The effect of prison-based college education programs on recidivism: Propensity Score Matching approach. *Journal of Criminal Justice, 41*, 196–204. doi:10.1016/j.jcrimjus.2013.03.001
- Klein, J. P., & Moeschberger, M. L. (2003). *Survival analysis: Techniques for censored and truncated data*. Berlin, Germany: Springer Science & Business Media.
- Knox, M., & Burkhart, K. (2014). A multi-site study of the ACT Raising Safe Kids program: Predictors of outcomes and attrition. *Children and Youth Services Review, 39*, 20–24. doi:10.1016/j.childyouth.2014.01.006
- Lacharité, C., Éthier, L., & Nolin, P. (2006). Vers une théorie écosystémique de la négligence envers les enfants. *Bulletin de psychologie, 59*, 7–8. doi:10.3917/bupsy.484.0381
- Lanier, P., Kohl, P. L., Benz, J., Swinger, D., & Drake, B. (2014). Preventing maltreatment with a community-based implementation of parent-child interaction therapy. *Journal of Child and Family Studies, 23*, 449–460. doi:10.1007/s10826-012-9708-8
- Lavergne, C., Clément, M. È., & Labrecque, S. (2005). *PIBE: l'information au service de la recherche pour le bien-être et la protection des enfants* (p. 20). Centre d'excellence pour la protection et le bien-être des enfants. Retrieved from <http://cwpr.ca/sites/default/files/publications/fr/PIBE20F.pdf>
- Leclair, M. I. A., Paquette, G., & Letarte, M. J. (2017). La fidélité D'implantation d'un programme probant au-delà de son implantation initiale: l'exemple de Ces années incroyables en protection de l'enfance de 2003 à 2013. *Revue canadienne d'évaluation de programme, 32*, 90–108. doi:10.3138/cjpe.31142
- Letarte, M. J., Normandeau, S., & Allard, J. (2010). Effectiveness of a parent training program “Incredible Years” in a child protection service. *Child Abuse and Neglect, 34*, 253–261. doi:10.1016/j.chiabu.2009.06.003
- Lundahl, B. W., Nimer, J., & Parsons, B. (2006). Preventing child abuse: A meta-analysis of parent training programs. *Research on Social Work Practice, 16*, 251–262. doi:10.1177/1049731505284391
- Lutzker, J. R., & Rice, J. M. (1987). Using recidivism data to evaluate project 12-ways: An ecobehavioral approach to the treatment and prevention of child abuse and neglect. *Journal of Family Violence, 2*, 283–290. doi:10.1007/BF00993295
- Marcynyszyn, L. A., Maher, E. J., & Corwin, T. W. (2011). Getting with the (evidence-based) program: An evaluation of the incredible years parenting training program in child welfare. *Children and Youth Services Review, 33*, 747–757. doi:10.1016/j.childyouth.2010.11.021
- Nadeau, D., & Lacerte, D. (2011). *Étude exploratoire: Quand les comportements suicidaires ou les problèmes de santé mentale affectent la prise en charge en protection*. Québec, Canada: Projet d'exploitation des BDI(BDC) pour documenter le vécu d'utilisateurs de services des jeunes.
- Patterson, G. (2002). The early development of coercitive family process. In J. B. Reid, G. R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 25–44). Washington, DC: American Psychological Association.
- Sanders, M., & Pidgeon, A. (2011). The role of parenting programmes in the prevention of child maltreatment. *Australian Psychologist, 46*, 199–209. doi:10.1111/j.1742-9544.2010.00012.x
- Sattler, J. M., & Hoge, R. D. (2006). *Assessment of children: Behavioral, social, and clinical foundations* (5th ed.). San Diego, CA: Jerome M. Sattler.
- Sedlak, A. J., Mettenburd, J., Basena, M., Petta, I., McPherson, K., Greene, A., . . . Li, S. (2010). *Fourth National Incidence Study of child abuse and neglect (NIS-4): Report to congress*. Washington. Retrieved from https://www.acf.hhs.gov/sites/default/files/opre/nis4_report_congress_full_pdf_jan2010.pdf
- Shintani, A. K., Girard, T. D., Eden, S. K., Arbogast, P. G., Moons, K. G. M., & Ely, E. W. (2009). Immortal time bias in critical care research: Application of time-varying Cox regression for observational cohort studies. *Critical Care Medicine, 37*, 2939–2945. doi:10.1097/CCM.0b013e3181b7fbbb
- Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., . . . Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior, 14*, 13–29. doi:10.1016/j.avb.2006.03.006
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson Education.
- Taylor, B. (2013). *Professional decision making and risk in social work* (2nd ed.). New Delhi, India: Learning Matters.
- The California Evidence-Based Clearinghouse for Child Welfare. (2015). *The Incredible Years (IY)*. Retrieved from <http://www.cebc4cw.org/program/the-incredible-years/>
- Tougas, A., & Tourigny, M. (2013). L'étude des mécanismes de changement, une avenue de recherche prometteuse pour optimiser les

- programmes de traitement destinés aux jeunes en difficulté: enjeux conceptuels et méthodologiques. *Revue canadienne d'évaluation de programme*, 27, 61–86. Retrieved from <http://search.proquest.com/openview/084ef169824f2a7079fecb12f52ca943/1?pq-origsite=scholar&cbl=44049>
- U.S. Department of Health and Human Services. (2018). *Child Maltreatment 2016*. Washington, DC: U.S. Department of Health and Human Services.
- Webster-Stratton, C. (2012). *Collaborating with parents to reduce children's behavior problems: A book for therapists using the incredible years programs*. Seattle, WA: Incredible Years.
- Williamson, E. J., & Forbes, A. (2014). Introduction to propensity scores. *Respirology*, 19, 625–635. doi:10.1111/resp.12312
- World Health Organization. (2016). *Child Maltreatment*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs150/en/>