Corporal Punishment: National Trends, Longer-Term Consequences, and Parental Perceptions of Physical Discipline

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Abstract

Corporal punishment is a controversial form of discipline. To inform the debate on corporal punishment, one of the objectives of the current dissertation was to characterize parental use of this disciplinary strategy and to examine its long-term developmental outcomes. The dissertation drew on data from the National Longitudinal Survey of Children and Youth (NLSCY) to understand potential social change in corporal punishment and to characterize parents who continue to use this strategy. Over a 14-year period (1994-1995 to 2008-2009), results revealed a significant decrease in the use of corporal punishment and other negative strategies (e.g., psychological aggression), as well as a significant increase in the use of positive strategies (e.g., reward/praise and explain/teach). Nevertheless, approximately 25% of Canadian parents still use corporal punishment with children aged 2–11 years; therefore, it remains an issue that merits continued attention. While several socio-demographic factors significantly distinguished parents who use corporal punishment, other more dynamic variables may be important to consider, such as parental stress and their attitudes toward corporal punishment. For the outcomes associated with corporal punishment, NLSCY data revealed that experiences of corporal punishment at 2-3 years are associated with increased externalizing behaviours at 8-9 years. Results also indicated that, within a certain disciplinary context (more hostile and punitive parenting), early corporal punishment is associated with increased externalizing behaviours at 14-15 years, increased internalizing behaviours at 8-9 and 14-15 years, and reduced prosocial behaviours at 8-9 and 14-15 years. Overall, results confirmed that corporal punishment represents a small but non-trivial risk factor for child development. The second objective of the current dissertation was to address one of the central limitations of the existing literature on corporal punishment by clarifying what parents self-label as corporal punishment. Using a sample of 338 Canadian caregivers, the study

assessed the relation between responses to a general question on corporal punishment and responses to questions on specific physical disciplinary strategies. Predictors (e.g., cultural norms, attitudes toward and childhood experiences of corporal punishment) of this relation were then investigated. Results suggested that questions such as the one used in the NLSCY may reflect parental use of milder forms of corporal punishment. Results also revealed that some caregivers remain undetected by general questions on corporal punishment. Factors such as attitudes toward corporal punishment can help identify those caregivers who use physically punitive strategies but who do not endorse corporal punishment. Results from the current dissertation offers support for the anti-corporal punishment perspective and calls for the de-legitimatization of this disciplinary strategy across society.

Keywords: corporal punishment, discipline, prevalence, developmental outcomes

Résumé

La punition physique représente une stratégie disciplinaire controversée. Pour informer le débat entourant la punition physique, un des objectifs de la présente dissertation était de caractériser l'emploi de cette stratégie disciplinaire et d'évaluer à long-terme les conséquences développementales qui lui sont associées. Cette dissertation a utilisé les données de l'Enquête nationale longitudinale sur les enfants et les jeunes (ELNEJ) pour comprendre le changement social survenant potentiellement en ce qui a trait à la punition physique, et pour caractériser les parents qui continuent à utiliser cette stratégie. Les résultats ont révélé la présence d'une réduction significative au niveau de l'emploi de la punition physique et d'autres stratégies négatives (p.ex., agressivité psychologique) ainsi qu'une augmentation au niveau des stratégies positives (p.ex., renforcement positif, explication et raisonnement) au cours d'une période de 14 ans (1994-1995 à 2008-2009). Néanmoins, approximativement 25% des parents canadiens utilisent encore la punition physique auprès d'enfants âgés de 2-11 ans. La punition physique demeure donc une problématique qui nécessite une attention continue. Bien que plusieurs facteurs sociodémographiques ont significativement permis de distinguer les parents qui utilisent la punition physique, d'autres facteurs plus dynamiques sont importants à considérer tels que le stress parental et les attitudes entretenues à l'égard de la punition physique. Quant aux conséquences développementales associées à la punition physique, l'analyse des données de l'ELNEJ a révélé que la punition physique auprès d'enfants de 2-3 ans est associée à une augmentation des comportements d'externalisation à 8-9 ans. Les résultats ont également indiqué que la punition physique, lorsqu'elle survient dans un certain contexte disciplinaire (hostile et punitif), est associée à une augmentation des comportements d'externalisation à 14-15 ans, une augmentation des comportements d'internalisation à 8-9 et 14-15 ans, et une réduction

des comportements prosociaux à 8-9 et 14-15 ans. Globalement, les résultats confirment que la punition physique représente un facteur de risque développemental petit, mais non négligeable. Finalement, le deuxième objectif de la présente dissertation était d'adresser une des limites centrales de la littérature portant sur la punition physique en clarifiant ce que les parents auto-rapportent comme étant de la punition physique. Grâce à un échantillon de 338 parents canadiens, la relation entre les réponses à une question générale sur la punition physique et les réponses à des questions portant sur des stratégies spécifiques de discipline physique a été évaluée. Les prédicteurs de cette relation (p.ex., normes culturelles, attitudes envers la punition physique, et expérience de punition physique à l'enfance) ont ensuite été examinés. Les résultats ont suggéré que des questions telles que celle employée par l'ELNEJ reflètent l'emploi de formes de punition physique qui sont plus légères. Les résultats ont aussi révélé que certains parents ne sont pas détectés par des questions générales sur la punition physique. Des variables telles que les attitudes envers la punition physique pourraient aider à identifier les parents qui emploient des stratégies de discipline physique, mais qui n'endossent pas la punition physique. Les résultats de la présente dissertation appuient une perspective qui va à l'encontre de la punition physique et encouragent que cette pratique disciplinaire soit délégitimée à travers l'ensemble de la société.

Mots clés : punition physique, discipline, prévalence, conséquences développementales

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General Introduction

Parenthood is a joyful, rewarding, and exciting experience, but it is also a constant challenge. Parents have to promote and support not only the physical development of their child but also his/her intellectual, emotional and social development over the course of many years. In order for children to develop the ability to function adaptively in the larger social context, parents' primary responsibility is the socialization of their child (Maguire-Jack, Gromoske, & Berger, 2012). Inherent to this parental responsibility is discipline, defined as conveying knowledge and skills to teach children self-control and acceptable behaviours (Canadian Paediatric Society, 2004; Papalia, Olds, & Feldman, 2006).

There are a number of different disciplinary strategies that parents may use, one of which is corporal punishment. Corporal punishment is a corrective form of discipline defined, by the United Nations (UN), as "any forms of punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light" (p.4; Committee on the Rights of the Child, 2006). The most common form of corporal punishment is spanking, which involves using an open hand to hit a child on the buttocks or extremities (MacLoyd & Smith, 2002). Spanking and other forms of corporal punishment (e.g., shoving a child roughly, pinching, hitting with an object such as a hair brush or belt) cause a child to feel pain or physical discomfort, and it is done with the intent of punishing a behaviour in order to decrease its likelihood of recurrence (Gershoff, 2013).

Corporal punishment is a topic that has generated and continues to generate much controversy. Since 1979, 48 countries (e.g., Finland, Norway, Austria, Cyprus, Italy) have

followed Sweden's lead to prohibit corporal punishment, covering about 10% of the global child population (Global Initiative to End All Corporal Punishment of Children, 2016). However, this practice remains lawful in the U.S. and Canada. In the U.S., 49 states offer a legal protection for parental use of corporal punishment (Gershoff, 2008). In Canada, Section 43 of the Canadian Criminal Code offers legal defense to parents who use reasonable force for purposes of correcting their child's behaviour. Section 43 specifically states that:

> Every schoolteacher, parent or person standing in the place of a parent is justified in using force by way of correction toward a pupil or child, as the case may be, who is under his care, if the force does not exceed what is reasonable under the circumstances (Criminal Code, RSC 1985, c C-46, s.43).

In 2004, the Supreme Court of Canada set limits on this definition in an attempt to protect children from physical abuse. According to these limits, corporal punishment may only be used: (1) by parents; (2) on children aged between 2-12 years; (3) on children that have the ability to learn from the punishment; (4) as a minor corrective force; (5) without objects, blows, or slaps to the head; (6) if it is not a result of abusive personality, frustration, or loss of temper; and (7) if it is not degrading, inhuman, or harmful (*Canadian Foundation for Children, Youth and the Law v. Canada [Attorney General]*, 2004).

While corporal punishment is still lawful in several countries, many organizations concerned with children's well-being have deemed that this practice compromises children's healthy development and have advocated against its use. In Canada, more than 540 organizations have to this date endorsed the *Joint Statement on Physical Punishment of Children and Youth* which adopts the position that corporal punishment is an ineffective disciplinary

strategy and which asks that children receive the same protection as adults against violence (Durrant, Ensom, & Coalition on Physical Punishment of Children and Youth, 2004).

Nevertheless, the ongoing debate over the use of child corporal punishment remains present in and reflected by public attitudes on the subject. In fact, this debate was poignantly captured by findings from a nation-wide Canadian survey conducted approximately one year before the constitutionality of the law was upheld and limits to child corporal punishment were established by the Supreme Court of Canada. At that time, half (51%) of Canadians agreed with the statement that *Section 43 of the Criminal Code that allows parents to use corporal punishment to correct children should be ended* (Toronto Public Health, 2003). In other words, in 2003, Canadians were divided as to whether parents should have the right to use corporal punishment for purposes of child discipline. Similarly, more recent data revealed that, in 2012, 43.5% of Quebec mothers (of 0-18 year old children) believed *it's wrong for parents to slap their children* (Clément & Chamberland, 2014).

The debate over corporal punishment can be characterized by three perspectives, the first of which is the unconditional pro-corporal punishment point of view. This perspective, largely unrepresented in the empirical literature and found primarily in public opinion, holds that corporal punishment teaches respect for authority and is essential for maintaining control over a child (Benjet & Kazdin, 2003). The second perspective, that is the anti-corporal punishment view, maintains that the use of corporal punishment is not justified under any circumstances. Its proponents state that corporal punishment violates children's basic rights to physical integrity and dignity, and compromises a range of developmental outcomes over a short- and long-term period (Benjet & Kazdin, 2003; Durrant & Ensom, 2012; Gershoff, 2002a, 2013). Indeed, research has found that corporal punishment is associated with greater social and emotional

problems in children and youth, such as impaired parent-child relationships, poorer internalization of moral values, internalizing problems (e.g., depression, anxiety), and externalizing difficulties (e.g., aggression, impulsiveness; Durrant & Ensom, 2012; Ferguson, 2013; Gershoff, 2002a, 2013; Paolucci & Violato, 2004). Corporal punishment also appears to increase a child's risk of experiencing physical abuse (Fréchette, Zoratti, & Romano, 2015; Gonzalez, Durrant, Chabot, Trocmé, & Brown, 2008; Heilmann, Kelly, & Watt, 2015; Zolotor, Theodore, Chang, Berkoff, & Runyan, 2008). In fact, a nationally representative Canadian study that examined maltreatment incidence data found that approximately three-quarters (76.8%) of child physical abuse cases occurred within a disciplinary context, specifically as a form of punishment to correct a child's misbehaviour (Durrant, Trocmé, Fallon, Milne, & Black, 2009).

The third perspective on corporal punishment is that of conditional corporal punishment, which believes that the use of physical force for disciplinary purposes may be beneficial under certain conditions (Benjet & Kazdin, 2003). Through literature reviews and meta-analyses, Larzelere (1996; 2000; Larzelere & Kuhn, 2005) found that mild and occasional spanking under certain circumstances was associated with an increase in children's immediate compliance and a decrease in their oppositional and antisocial behaviours. Mild and occasional spanking was also found to enhance the effectiveness of other disciplinary strategies, such as explanation and time-out. Larzelere (2000) suggested that corporal punishment is effective and appropriate for children aged 2-6 years if it is not overly severe and if it is used in a controlled manner, privately, and flexibly after a single warning and in combination with reasoning or other disciplinary strategies. Conditional corporal punishment advocates suggest that research on the detrimental effects of corporal punishment has focused too heavily on severe forms which may

not apply to the more common scenario in which parents occasionally use milder corporal punishment, such as spanking (Larzelere & Kuhn, 2005).

Nonetheless, it is important to note that the various conditions set forth by conditional corporal punishment proponents are not necessarily followed. For example, parent-reported data reveal that corporal punishment tends to be used on an occasional to frequent basis, including up to once a week (Durrant et al., 2004; Holden, Williamson, & Holland, 2014; Straus & Donnelly, 2001). A significant number of parents also begin using corporal punishment during infancy and continue into the adolescent years (Straus & Donnelly, 2001; Straus, Douglas, & Medeiros, 2014). Moreover, studies have found that about one third of parents reported spanking impulsively or feeling angry when they spanked (Vittrup & Holden, 2010; Vittrup, Holden, & Buck, 2006).

The debate over child corporal punishment and the different perspectives held on the issue may be a reflection of the varying research findings on its developmental impact. While several findings link corporal punishment to a variety of negative developmental outcomes, others suggest that it might be associated with positive outcomes under certain circumstances. In addition, existing research is limited by a number of methodological factors, such as the reliance on parent-report measures, the problem of shared method variance, the use of retrospective recall, and the failure to include confounding and/or moderating variables (e.g., child's age, larger disciplinary context, and mode of implementation; Ferguson, 2013; Larzelere & Kuhn, 2005). In order to inform the debate over corporal punishment, the current dissertation represented an attempt to characterize parental use of this disciplinary strategy by addressing some of the methodological limitations that have plagued the research to date.

Dissertation Objectives

Study one. The goal of the first study was to characterize the use and impact of corporal punishment and co-occurring disciplinary strategies within a Canadian nationally-representative context. Legal reforms, public awareness campaigns, and public education efforts in Canada to limit the use of corporal punishment and to promote the use of positive disciplinary strategies may be resulting in a social change. To examine this possibility, data from the National Longitudinal Survey of Children and Youth (NLSCY) were used to examine potential changes in the prevalence of corporal punishment and co-occurring disciplinary strategies, as well as in its frequency of use from 1994-1995 to 2008-2009. The study also used NLSCY data to characterize the context in which corporal punishment occurs by examining the occurrence of corporal punishment alongside other disciplinary strategies and by comparing caregivers who use and do not use corporal punishment on socio-demographic characteristics. Finally, NLSCY data were used to examine the longer-term impact of corporal punishment on children while taking into account different circumstances surrounding its use. Specifically, the impact of corporal punishment at 2-3 years on externalizing, internalizing, and prosocial behaviours at 8-9 and 14-15 years was investigated while taking into account the use of other disciplinary strategies, general parenting style, and contextual factors (i.e., child, parent and family characteristics, and social and cultural factors). Potential interaction effects between corporal punishment and its broader disciplinary context were also explored.

Study two. The goal of the second study was to investigate one of the limits of parent-report measures by clarifying what parents self-label as corporal punishment. Most questionnaires and surveys on corporal punishment, including the NLSCY, do not provide a clear definition of corporal punishment. Therefore, parents are required to self-label their

disciplinary behaviours by invoking their own definitions of corporal punishment. Benjet and Kazdin (2003) suggested that there is variability in what parents perceive as corporal punishment; while some parents may consider that corporal punishment refers to more severe types of punishment, others may consider it to refer to more common and accepted forms of discipline (e.g., spanking). Such definitional variability may potentially influence the prevalence and outcomes of corporal punishment reported in different studies. Moreover, it is possible that behaviours self-labeled as corporal punishment may vary systematically from one parent to another according to various factors, such as socio-demographics or parents' own history of punishment (Benjet & Kazdin, 2003). As such, the second study used a convenience sample of 338 caregivers of children aged 2-11 years to examine the relationship between caregivers' response to a general question on corporal punishment and their responses to questions on specific physical disciplinary strategies, including severe forms of punishment approaching definitions of abuse. Potential predictors of caregivers' endorsement of corporal punishment were also investigated (i.e., cultural norms, own childhood experiences of corporal punishment, and attitudes toward corporal punishment).

Study One

Change Over Time and Developmental Outcomes of Corporal Punishment in a Representative Sample of Canadian Children[1]

Childhood refers to a socially and historically created notion. For a long time, children were perceived as immature, less civilized, and less developed than adults (Bélanger & Farmer,

[1]Information pertaining to the objectives 1 and 3 of this study was published in the Journal of Family Psychology. Citation: Fréchette, S., & Romano, E. (2015). Change of corporal punishment over time in a representative sample of Canadian parents. *Journal of Family Psychology, 29,* 507-517. http://dx.doi.org/10.1037/fam0000104

2010). Nowadays, children tend to be perceived as both in need of protection but also as independent and active beings. Nonetheless, children are still often seen as possessions rather than individuals with rights (Global Initiative to End All Corporal Punishment of Children, 2014), and a dichotomy between the world of adults and that of children seems to remain. From the Christian belief that children are innately bad to John Locke's conception of the child as a *tabula rasa* to Jean-Jacques Rousseau's view of the child as good, innocent, and in need of protection to the representation of children as adults in development, the differences that exist between adults and children introduce a hierarchical relationship where adults create, name, and control those identified as children (Bélanger & Farmer, 2010; Saunders & Goddard, 2010). As a way of controlling children, of ensuring their own good, of teaching them civilized behaviours, and of getting rid of their "evil" tendencies, child corporal punishment has been present since the beginning of history in almost all societies (Saunders & Goddard, 2010; Straus & Donnelly, 2001). Even today, corporal punishment remains part of the disciplinary strategies used by many parents world-wide. The sociologist Murray Straus has described corporal punishment as the primordial violence because being slapped or spanked by a parent in the context of discipline represents for almost everyone a first experience as a victim of violence (Straus et al., 2014).

Indeed, as young as 12 months of age, about a third of U.S. children have already been spanked by their parents (Maguire-Jack et al., 2012; Regalado, Sareen, Inkelas, Wissow, & Halfon, 2004). Corporal punishment then tends to increase from infancy to age 2 years (Mackenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2011; Vittrup et al., 2006) and reach its peak in the preschool years, following which it decreases from 5 years onward (Straus & Stewart, 1999; Vittrup et al., 2006). Despite the declining frequency of corporal punishment with

increasing age, this disciplinary strategy remains common even among older children and adolescents.

Overall prevalence data reveal that, in low- and middle-income countries, about 75% of children aged 2-14 years experienced home violent discipline (UNICEF, 2010). Similarly, recent U.S. epidemiological studies suggest that about two thirds of young children (1-3 years) are spanked by their parents (Regalado et al., 2004; Taylor, Lee, Guterman, & Rice, 2010), and that 85% of adolescents have been physically punished at some point (Bender et al., 2007). In Canada, different national surveys have indicated that approximately 50% of parents report using corporal punishment (Canadian Press & Leger Marketing, 2002; Oldershaw, 2002).

It is important to note that corporal punishment rates are most likely underestimates because self-reports of corporal punishment may be influenced by limits of long-term recall (i.e., in the previous year) and by the fact that corporal punishment is a controversial form of discipline (Straus et al., 2014). An example of the underestimation of self-reported corporal punishment was revealed in a pilot study using audio recording of parent-child conflict in the home of 33 families (recruited in daycares and Head Start Centres in a large American city) of 2-5 year-old children (Holden et al., 2014). Based on observed rates of corporal punishment over a 4 to 6-day period, this study estimated that mothers would strike their child at a median frequency rate of 18 times per week. The authors highlighted the fact that this rate far exceeds the self-reported mean frequency rate of 18 times per year indicated in previous studies (Straus & Stewart, 1999).

Holding favourable attitudes towards corporal punishment has been identified as the factor that most consistently influences parental corporal punishment (Jackson et al., 1999; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Socolar & Stein, 1995; Vittrup et al., 2006).

Approval of corporal punishment has been found to account for approximately one-third of the variance in its actual use (Ateah & Durrant, 2005; Durrant, Rose-Krasnor, & Broberg, 2003). Findings support the cognitive-instrumental view of corporal punishment according to which parents engage in this form of discipline because they believe it is a useful and appropriate strategy for teaching children how to behave (Gagné, Tourigny, Joly, & Pouliot-Lapointe, 2007). Findings also suggest an intergenerational transmission of parenting practices where the type of childhood discipline one experienced influences later child-rearing practices and attitudes. In fact, the frequency of corporal punishment that parents experienced when they were children has been found to be positively associated with their approval and use of corporal punishment with their own children (Holden & Zambarano, 1992; Rodriguez & Sutherland, 1999; Socolar & Stein, 1995). However, this intergenerational link was not found in two Canadian studies (Ateah & Durrant, 2005; Durrant, Broberg, & Rose-Krasnor, 1999), suggesting that there may be change in parents' attitudes due to growing public awareness of the possible harm associated with the use of corporal punishment and of the availability of alternative disciplinary strategies (Ateah & Parkin, 2002; Ateah & Durrant, 2005). This change in attitudes towards corporal punishment may be resulting in a decline in its prevalence.

Change in Prevalence of Corporal Punishment

Parenting practices and disciplinary strategies develop within a cultural belief system that influences attitudes toward corporal punishment (Durrant et al., 2003). Micro-processes of this system include child-rearing attitudes and parent-child interactions, and they manifest themselves in parenting behaviours. These micro-processes occur within a macro-structure of institutions and social rules, and they interact with the macro-structure in a way that is mutually

influential. The interconnectedness between the micro and the macro levels of the cultural belief system can best be illustrated through Sweden's ban of corporal punishment.

In 1979, Sweden became the first country to ban all forms of corporal punishment by caregivers. The primary objectives of this legal reform were to alter public attitudes toward corporal punishment, provide clear guidelines for parents and professionals on unacceptable forms of discipline, and lead to earlier intervention and prevention strategies with the intent of decreasing child physical abuse rates (Durrant, 2003). Widespread educational campaigns were conducted following the ban, and the resulting public support for corporal punishment decreased dramatically from 35% in 1971 to 11% in 1994 (Durrant, 1999). This decline in support was also followed by a reduction in its actual use (Durrant, 2003). In line with these findings, results of a systematic review on the impact of legislative corporal punishment bans in 24 countries indicated that each of them was associated with a decrease not only in support of corporal punishment but also in its use (Zolotor & Puzia, 2010).

In Canada, the legal structure provides no clear message to parents as it still offers a defense for the use of corporal punishment. Therefore, one would expect parenting processes to be different from those in countries where corporal punishment is not legal. This hypothesis was confirmed in a study by Durrant and collaborators (2003), which compared parenting processes of Canadian and Swedish mothers. Results indicated that Canadian mothers reported more frequent use of corporal punishment; they were more likely to believe that corporal punishment is a necessary and appropriate way of controlling children's behaviours and less likely to believe that corporal punishment is harmful. Nonetheless, despite these results, there appears to be a deceasing trend in corporal punishment use by Canadian parents (Ateah, Durrant, & Mirwaldt, 2004). For example, a significant decline in its prevalence has been observed in population-

based surveys of mothers in the province of Quebec. In 1999, 48% of mothers reported using corporal punishment but this rate decreased to 35% in 2012 (Clément & Chamberland, 2014). This decline in prevalence was also accompanied by a significant reduction in the percentage of mothers who believed that slapping and spanking are appropriate and effective forms of discipline (Clément & Chamberland, 2014).

A similar decline has been suggested in U.K and U.S. epidemiological studies. U.K. surveys indicated that in 2009, 43% of young adults (18-24 years) reported childhood spanking as compared to 61% in 1998 (Heilmann et al., 2015). Zolotor and collaborators (2011) compared U.S. population-based data and found an 18% decline in spanking and slapping from 1975 to 2002 for 6-11 year-olds, but not for preschool-aged children. In an earlier U.S. epidemiological study, Straus and Donnelly (2001) found that there was no change over time in the prevalence of corporal punishment between 1975 and 1985; however, they did observe a decline in its frequency and severity of use. Although this latter information is dated, it illustrates the fact that an absence of change in the prevalence of corporal punishment does not necessarily mean an absence of social change. Rather, the social change may first have an impact on various aspects of corporal punishment, such as its frequency of use.

This decreasing trend in the use of corporal punishment may be partially explained by increasing discussion and public awareness of the issue (Ateah & Parkin, 2002). In the Canadian context, Section 43 of the Canadian Criminal Code has been legally challenged on several occasions (i.e., in 1999, 2002 and 2004). Moreover, public education campaigns, such as "What's Wrong with Spanking" by the Public Health Agency of Canada and "Spanking Hurts More Than You Think" by Toronto Public Health, have discouraged the use of corporal

punishment and have instead promoted the use of alternative disciplinary strategies in a way that may be resulting in the emergence of a social change.

However, there is no Canadian nationally-representative study that has captured an accurate picture of corporal punishment to understand the social change that may be happening in a way that can inform public education efforts encouraging positive disciplinary strategies. In addition, even though some results on the social change have been adjusted to account for sampling differences (Zolotor, Theodore, Runyan, Chang, & Laskey, 2011), the observed decline in corporal punishment may still be due to confounding and methodological factors associated with the comparison of cohorts of different populations (e.g., face-to-face vs. phone interview; different questions on corporal punishment; mother vs. father respondent; survey restricted to two-parent households). This may affect the prevalence of corporal punishment and thus the comparison of results over time. With such limitations, it is difficult to conclude whether a change is really happening at a societal level and to calculate the magnitude of the observed change in corporal punishment to determine its meaningfulness from an applied perspective. Finally, given the social change that appears to be occurring in regards to corporal punishment, one can ask whether this change might also be associated with change in parents' use of other disciplinary strategies.

The broader disciplinary context. Much research to date has focused on parents' use of corporal punishment because it is such a widely used and controversial form of discipline (Fauchier & Straus, 2007; Gershoff, 2002a; Regalado et al., 2004). However, corporal punishment should be examined as part of a broader disciplinary context (Gershoff, 2002a) because parents concurrently make use of a variety of disciplinary strategies. To encourage desired behaviours and to decrease undesired behaviours, parents use a wide array of practices,

such as diverting, reasoning, ignoring, negotiating, taking away privileges, yelling, and spanking (Gershoff et al., 2010; Regalado et al., 2004; Socolar, Savage, & Evans, 2007). The different disciplinary strategies can be characterized by a number of dimensions in that they can be physical or nonphysical, and they may involve verbal techniques and/or manipulation of privileges (Gershoff et al., 2010).

Correlational studies have suggested that parents who endorse corporal punishment tend to use more psychological aggression with their child ($r = .54$; Gamez-Guadix, Straus, Carrobles, Munoz-Rivas, & Almendros, 2010). Even though the correlation between yelling and hitting appears stronger (Wissow, 2001), corporal punishment was also found to be positively correlated with all the other examined forms of discipline (i.e., time out, removing privileges, and explaining). In fact, by the time children are aged 12 months, different disciplinary strategies frequently co-occur in many families (Vittrup et al., 2006). By that age, the most commonly-used techniques revealed by 132 U.S. mothers included diverting (100%), reasoning (85%), ignoring (64%) and negotiating (50%), followed by yelling (36%), slapping a child's hand (21%) and spanking (14%; Vittrup et al., 2006).

While an overall stability in the disciplinary strategies adopted by parents is found in the first four years of life, an increase in the variety of strategies used is apparent as children become older (Socolar et al., 2007; Vittrup et al., 2006). For example, more detailed and convincing explanations are necessary with children aged 5-12 years in order to obtain the same impact achieved earlier with distraction and warning (Collins, Madsen, & Susman-Stillman, 2002). The change in disciplinary strategies used by mothers of school-aged children versus those of younger children has been confirmed by different studies. One study on more than 2,000 U.S. parents revealed that parents of 6-11 year olds were 25% less likely to use time-out and

spanking, compared to parents of 2-5 year olds, but more likely to remove privileges and yell at their child (Barkin, Scheindlin, Ip, Richardson, & Finch, 2007). Canadian data from the first cycle (1994) of the NLSCY indicated that parents' use of reasoning strategies (i.e., discussion and teaching) increased from birth to 4 years and remained steady until age 11, while the level of responsiveness (i.e., praising and engaging in activities that interests the child) gradually decreased for parents of 2-11 year old children (Chao & Willms, 2002). The increased diversity in parents' disciplinary strategy may be a reflection of parents' attempt to adjust to the ever-growing changes in children's cognitive competence, knowledge, social contexts, and relationships. In addition, children's self-concept, self-regulation, and social responsibility develop with age (Collins et al., 2002).

To my knowledge, no nationally-representative population-based study has captured an accurate picture of the variety of disciplinary strategies used by Canadian parents across child development. Moreover, no study has examined whether these strategies have also been influenced by the social change suggested in regards to corporal punishment. Obtaining such epidemiological data appears important to inform public education efforts and prevention strategies that not only focus on the reduction of corporal punishment, but also on the use of alternative and positive strategies in Canadian families.

Study objective 1. The first research objective was to use a nationally-representative population-based survey, that is the National Longitudinal Survey of Children and Youth (NLSCY), to examine potential epidemiological change in corporal punishment and other disciplinary strategies (i.e., reward/praise, explain/teach, psychological aggression, non-physical punishment) over time from 1994-1995 to 2008-2009. Both the prevalence (number of parents who endorsed any use of the disciplinary strategy) and frequency of use (how often parents

reported using the disciplinary strategy) of the various disciplinary strategies were examined. This was done separately for three age cohorts (2-5, 6-9, and 10-11 year-olds) because corporal punishment use appears to be higher for younger children (Straus & Stewart, 1999; Vittrup et al., 2006) and because co-occurring disciplinary strategies also change across child development. Moreover, the distinction between the age cohorts was important given that past U.S. studies have identified a decline in corporal punishment only for older children (Zolotor et al., 2011).

Hypotheses. Based on past research, the prevalence and frequency of corporal punishment were expected to be higher for 2-5 year-olds compared with older children. As well, following the social change that seems to be occurring in Canada (Ateah & Durrant, 2005; Ateah & Parkin, 2002; Clément & Chamberland, 2014) and other countries (Heilmann et al., 2015; Straus & Donnelly, 2001; Zolotor et al., 2011), it was hypothesized that there would be a significant decrease in its prevalence and/or frequency of use from 1994-1995 to 2008-2009.

Similarly, given the change in disciplinary practices across child development, it was hypothesized that the prevalence of other disciplinary strategies (i.e., reward/praise, explain/teach, psychological aggression, non-physical punishment) would be different for the three age cohorts. Based on past research, it was expected that parents of younger children would use more rewarding/praising, and parents of older children would use more explaining/teaching and psychological aggression (e.g., yelling). As for non-physical punishment, because the NLSCY question confounds time-out and removal of privileges, no specific hypotheses could be put forth. Indeed, past research suggests that parents of younger children tend to use more time-out whereas parents of older children tend to use more removal of privileges (Barkin et al., 2007).

Finally, change over time in the use of other disciplinary strategies was also anticipated. While there is no past research on this topic, it was nonetheless expected that there would be an increase in the prevalence and/or frequency of use of positive disciplinary strategies (i.e., reward/praise; explain/teach; non-physical punishment) and a decrease in the prevalence and/or frequency of use of negative strategies (i.e., psychological aggression).

Study objective 2. Because parents concurrently make use of different disciplinary strategies, the second research objective attempted to characterize the broader disciplinary context in which corporal punishment occurs. Specifically, it determined the frequency of all possible combinations of corporal punishment with the other disciplinary strategies. This objective was addressed using the most recent available NLSCY data, namely 2008-2009 for 2-5 year-olds, 2006-2007 for 6-9 year-olds, and 2004-2005 for 10-11 year-olds.

Hypotheses. Based on past correlational studies, it was expected that while corporal punishment would co-occur with all disciplinary strategies, it would occur more frequently with corrective (i.e., non-physical punishment) and/or negative (i.e., psychological aggression) forms of discipline than with positive and preventive forms (i.e., reward/praise, explain/teach).

Factors Predicting Corporal Punishment Use

Despite the suggested decline in corporal punishment, many parents continue to physically punish their children. As such, it appears important to understand the factors influencing and predicting its use. Although there are different parenting or developmental models that can help identify the factors associated with child corporal punishment (e.g., Sameroff, 2009; Straus et al., 2014), Gershoff's (2002a, 2002b) process-context model offers a parsimonious integration of different theories (e.g., social learning, social coercion) as well as an ecological and transactional perspective on the issue.

The process-context model. Elizabeth Gershoff (2002a, 2002b) developed the process-context model as a way to understand (1) the factors that motivate parents' use of corporal punishment and (2) the impact of this corrective strategy on child developmental outcomes. Based on this model, child, parent, and family characteristics (the stable individual and relational context in Gershoff's model), as well as the social-cultural context (e.g., socioeconomic status, ethnicity, religion), can motivate parents' use of corporal punishment. The model also elaborates on the mediational/moderating processes through which corporal punishment exerts its consequences.

Figure 1 presents a general view of the process-context model, which first illustrates the *interactional context* that refers to the situational factors (i.e., characteristics of the child's misbehaviour, parent and child emotional state, parent attributions) that influence whether a parent uses corporal punishment and/or other disciplinary strategies. The process-context model then specifies *meditational processes* by which corporal punishment and/or other disciplinary strategies exerts their consequences. These include child physical (e.g., pain or stress), emotional (e.g., fear or anger), and sensory (e.g., hearing the parent's message) reactions as well as cognitive processes (e.g., observational learning, internal vs. external attributions, negative reinforcement).

Finally, the process-context model suggests that more distal *contextual factors* can motivate parents' use of corporal punishment and/or moderate its effect (Gershoff, 2002a). These factors can be part of the stable individual and relational context or the social-cultural context. The *stable individual and relational context* represents child, parent, and family characteristics that have an influence on parents and child behaviours during disciplinary moments (i.e., the interactional context). As for the *social-cultural context*, it refers to the social

and cultural systems within which families are embedded and that can influence parents' discipline and childrearing practices by determining parents' beliefs, goals and expectations (Gershoff, 2002a). These factors also influence how children respond emotionally to corporal punishment and whether it is perceived as normative, acceptable, and beneficial (Gershoff, 2002a).

Table 1 presents a brief discussion on the predictive and moderating effects of the contextual factors identified in the process-context model. If we pay a specific attention to the predictive effects observed for the various contextual factors, it is possible to notice different trends emerging from past research. First, findings suggest that child temperament (e.g., higher level of activity and higher aggressiveness), parent temperament (i.e., higher aggressiveness) and psychological functioning (i.e., anxiety and depression), as well as higher level of stress and lower social support can increase parents risk of using corporal punishment in disciplinary moments. Second, certain socio-demographic factors tend to be associated with corporal punishment in a way that can help characterize parents who use this form of discipline.

Specifically, results suggest that younger children and boys are more likely to experience corporal punishment. Moreover, mothers, younger parents, single parents, parents in stepfamilies, and parents in larger households are more likely to use corporal punishment. Low socio-economic status, characterized by lower household income, unemployment and lower education level, has also been associated with increased corporal punishment use. Finally, the broader cultural context in which families evolve has been found to influence corporal punishment, with its prevalence varying across different ethnicity, religion and geographic region of residence. Similarly, immigration status could also impact corporal punishment use as families who have immigrated may experience more stress (Thomas, 1995). It is also possible to

speculate that living for a longer period of time in a country where there are some social and educational efforts to reduce corporal punishment may influence its use.

Despite the observed trends regarding the various contextual predictors, results on the link between corporal punishment and socio-demographic factors remain inconsistent. This inconsistency in the literature may perhaps be due to methodological variability (e.g., sample characteristics, selection and definition of variables), but it calls into question the predictive role of the different socio-demographic factors identified in Gershoff's process-context model.

Study objective 3. To replicate past findings and most importantly to assess for the predictive relevance of the socio-demographic factors in a large representative cohort of children, socio-demographic characteristics that distinguish parents who use corporal punishment from those who do not was examined using the most recent NLSCY data, namely 2008-2009 for 2-5 year-olds, 2006-2007 for 6-9 year-olds, and 2004-2005 for 10-11 year-olds. Because many parents seem to continue to physically punish their children, this had the potential to inform education efforts that target further reduction of corporal punishment. Examination of socio-demographic variables in different age cohorts also allowed for a developmentally-informed perspective of corporal punishment. This appears relevant since corporal punishment peaks during the preschool years and gradually decreases from 5 years onward (Vittrup et al., 2006). Finally, results from this objective informed analyses for the fourth objective of the current study by confirming which socio-demographic factors should be controlled for when predicting developmental outcomes of corporal punishment.

Hypotheses. Results from past studies on the socio-demographic characteristics associated with corporal punishment are inconsistent. Nevertheless, based on research trends (see Table 1), the following hypotheses were made:

1. Boys would be at greater risk of corporal punishments than girls.
2. Younger parents, single parents, parents in stepfamilies, and parents in larger households were expected to be more likely to report corporal punishment use.
3. Low socioeconomic status, as characterized by lower household income, parental unemployment, and lower parental education level, was expected to increase the risk of corporal punishment use.
4. Differences in corporal punishment use between parents of varying ethnicities were expected. However, because of past inconsistent findings, hypotheses regarding specific ethnic differences were not made.
5. Immigration status was hypothesized to have an impact on corporal punishment. Specifically, Canadian-origin families or second generation families were expected to be at reduced risk of using corporal punishment.
6. Parents living in Canadian geographic regions characterized by a more conservative culture (e.g., Prairies) were expected to be more likely to report corporal punishment use as compared to parents in less conservative cultures (e.g., Quebec, Maritimes).
7. Parents from conservative religious backgrounds were hypothesized to be more likely to report corporal punishment use, compared to parents from either no or less conservative religious backgrounds. Given that religiosity was found to be associated with child-oriented discipline (Pearce & Axinn, 1998; Wilcox, 1998), it was anticipated that this variable would be associated with reduced likelihood of corporal punishment use.
8. No specific hypotheses were made in regards to age-specific differences in the socio-demographic predictors of corporal punishment. These analyses were largely exploratory because of the inconsistent findings and the very limited research on this topic. To my

knowledge, age-specific differences have only been examined in one study that compared corporal punishment use with 1-4 and 5-11 year olds. This study found a greater effect of the sex of the child in older children and a greater effect of the sex of the parent in younger children (Day, Peterson, & McCracken, 1998). In addition, researchers suggested that early in a child's life, mothers may spank out of frustration and lack of experiences or knowledge, whereas later in life, they may spank because of ideology and moral obligation (Day et al., 1998). Because parental stress is associated with more intense cognitive-emotional processes (e.g., negative attribution of child's behaviour, intense negative affect, low perceived control) which lead to more reactive and punitive parenting (Pinderhughes et al., 2000), it is possible to expect that proxies of stress (e.g., SES, family structure, family size) would be stronger predictors of corporal punishment in younger age cohorts. As for older children, the cultural context (e.g., ethnicity, religion, geographic region of residence) in which parents evolve may be a better predictor of corporal punishment experiences.

Corporal Punishment and Developmental Outcomes

Corporal punishment has been identified as a developmental risk factor. It has consistently been associated with increased child externalizing behaviours across time (Durrant & Ensom, 2012; Ferguson, 2013; Gershoff, 2002a, 2013; Heilmann et al., 2015; Paolucci & Violato, 2004; Straus et al., 2014) as well as with reduced moral internalization (Gershoff, 2002a), important to the development of social and emotional competence (Kochanska & Thompson, 1997). Moreover, research suggests that corporal punishment may be associated with increased internalizing difficulties and reduced cognitive functioning (Durrant & Ensom, 2012; Ferguson, 2013; Gershoff, 2002a, 2013; Heilmann et al., 2015; Paolucci & Violato, 2004; Straus et al., 2014).

The adverse effects of corporal punishment are observed not only in childhood and adolescence but they can continue into adulthood (Gershoff, 2002a). In Canada, data from the Ontario Health Supplement suggested that childhood history of slapping or spanking (without a history of physical or sexual abuse) was significantly and positively associated with lifetime rates of anxiety disorders, alcohol abuse or dependency, and externalizing difficulties in a sample of 4,888 individuals aged 15-64 years (MacMillan et al., 1999). Similarly, in the U.S., a 30-year longitudinal study found that self-reported corporal punishment experiences in childhood and adolescence were significantly associated with adult interpersonal difficulties (e.g., intimate partner violence), even after controlling for a number of child- and family-related variables (McLeod, Fergusson, & Horwood, 2014). In the same vein, a U.S. longitudinal study conducted in 2004-2005 with more than 34,000 adults (i.e., Adverse Childhood Experiences study) revealed that experiences of childhood harsh corporal punishment were associated with an increased risk of mood and anxiety disorders, alcohol/drug abuse, and personality disorders in adulthood, even after controlling for sociodemographic factors and family dysfunction (e.g., family member with alcohol/drug problems, family member with a history of mental illness; Afifi, Mota, Dasiewicz, MacMillan, & Sareen, 2012). Interestingly, harsh corporal punishment, in the absence of maltreatment, was also found to be associated with physical health difficulties such as cardiovascular disease, arthritis, and obesity (Afifi, Mota, MacMillan, & Sareen, 2013).

Results on the detrimental outcomes associated with child corporal punishment have been replicated across different age groups and cultures in several studies (Alyahri & Goodman, 2008; Aucoin, Frick, & Bodin, 2006; Bordin, Duarte, Peres, Nascimento, Curto, & Paula, 2009; Deater-Deckard, Dodge, Bates, & Pettit, 1996; de Zoysa, Newcombe, & Rajapakse, 2008; Eamon, 2001; Gamez-Guadix, Straus, Carrobles, Munoz-Rivas, & Almendros, 2010; Gershoff et

al., 2010; Grogan-Kaylor, 2004; Gunnoe & Mariner, 1997; Hecker, Hermenau, Isele, & Elbert, 2014; Ma, Han, Grogan-Kaylor, Delva, & Castillo, 2012; McLoyd & Smith, 2002; Slade & Wissow, 2004; Stormshak, Bierman, McMahon, & Lengua, 2000; Straus, Sugarman, & Giles-Sims, 1997; Verhoeven, Junger, Van Aken, Dekovic, & Van Aken, 2010). However, despite the strong case made in the literature about the risks associated with corporal punishment, there is still an on-going debate which often cites methodological limitations of the existing research (Larzelere, 2000; Larzelere & Kuhn, 2005). Specifically, a focus on severe and uncommon forms of corporal punishment, an overreliance on retrospective recall and correlational studies, a paucity of longitudinal studies, problems related to shared-method variance, and the presence of potential confounding variables have all been noted as limitations of corporal punishment research (Ferguson, 2013). Using data from the NLSCY, Larzelere, Ferre, Kuhn, and Daniela (2010) suggested that significant links between corporal punishment and negative outcomes become non-significant with better statistical control. Similarly, in a meta-analysis of longitudinal studies, Ferguson (2013) highlighted that more conservative part correlation coefficients controlling for initial differences on outcome variables (externalizing, internalizing and cognitive outcomes) rendered the effect sizes of corporal punishment to small and even trivial; however, these effect sizes remained statistically significant.

While the increased reliance on longitudinal studies has advanced knowledge in the area of corporal punishment since the publication of Gershoff's (2002a) meta-analysis, the lack of empirical attention to the full array of potential confounding and moderating variables remains a limitation in the literature. In order to address this limitation, it is important to understand the factors that determine when, whether, and for whom corporal punishment may have beneficial or detrimental impacts. Gershoff's (2002a, 2002b) process-context model can be helpful in

achieving this objective. As aforementioned, this model (Figure 1) proposes different mediational and moderating processes contributing to the association between corporal punishment and developmental outcomes.

For example, based on the *meditational processes* suggested in the process-context model, corporal punishment might initiate parent-child coercive cycles whereby negative reciprocity (i.e., aversive behaviours elicit aversive reactions) and negative reinforcement act to increase parental use of corporal punishment and children's misbehaviours (Patterson, 1982). Furthermore, through observational learning, children may think it is acceptable to use violence and aggressive behaviours when others behave in ways they do not like (Bandura, 1969). Through external attribution of their behaviours, corporal punishment may also motivate children to comply in order to avoid future punishment rather than because they are themselves responsible for acting in a morally and socially acceptable way (Hoffman, 1983). Finally, based on attachment theory (Bowlby, 1982), experiences of corporal punishment by a caregiver may lead to the development of internal models of others as rejecting and of self as unworthy of help and support (Maguire-Jack et al., 2012; Posada & Pratt, 2008). Because corporal punishment is a form of violence and is often used in the context of impulsiveness and loss of emotional control (Vittrup & Holden, 2010; Vittrup et al., 2006), it may also model poor emotion regulation skills.

According to the process-context model, the different mediational processes leading to child developmental outcomes can be initiated and shaped not only by the characteristics of corporal punishment (i.e., frequency and severity) but also by co-occurring discipline and the interaction that exists between them (Gershoff, 2002a, 2002b). As previously discussed, it is important to view corporal punishment as part of a broader disciplinary context. Parents who use corporal punishment also employ other disciplinary strategies. In and by themselves, these

strategies can be associated with developmental outcomes. For example, a study of 574 U.S. families revealed that positive verbal discipline (e.g., explaining, teaching), negative verbal discipline (e.g., yelling, scolding, shaming), and non-physical punishment (e.g., time-out, removal of privileges, giving extra chores) in grades 1 to 3 were positively associated with concurrent externalizing behaviours (Wager, 2009). After controlling for child age and sex, Gershoff et al. (2010) also found that using corporal punishment, expressing disappointment, and yelling were associated with increased child aggressive behaviours, whereas time-out, corporal punishment, the expression of disappointment, and shaming were associated with higher anxiety symptoms in 8-12 year old children. Similarly, using a sample of 131 parents of 6-17 year olds, Gryckowski (2010) found that greater father and mother corporal punishment, less positive parenting (i.e., reward/praise) from both parents, and greater mother inconsistent discipline predicted greater child externalizing behaviours. Conversely, greater prosocial behaviours were predicted by less father and mother corporal punishment and less mother inconsistent discipline.

Co-occurring disciplinary strategies may also moderate the developmental consequences of corporal punishment. Thompson and collaborators (1999) identified two groups of parents who used corporal punishment with similar frequency but who differed in their use of non-physical disciplinary strategies (e.g., explanation and time-out), which could impact the outcomes associated with corporal punishment. As well, Wissow (2001) confirmed the presence of several combinations of spanking with other forms of parent-child interactions and added that these combinations occurred in different sociodemographic contexts, which may also lead to different long-term outcomes.

Indeed, as discussed and presented earlier in Table 1, the process-context model suggests that the more distal and *contextual factors* (i.e., the stable individual and relational context, and

the social-cultural context) can moderate the effect of corporal punishment (Gershoff, 2002a) by influencing behaviours, reactions, attributions and attitudes in disciplinary interactions. As illustrated in Table 1, findings on variables that might moderate the impact of corporal punishment have been inconsistent. This could be explained in part by the various characteristics of study samples and by the different combinations of variables that have been tested.

Given that environment, parent, and child factors reciprocally interact with one another to influence child development (Cicchetti & Valentino, 2006), it is important to understand the complex interplay and cumulative nature of risk factors associated with corporal punishment in order to gain a solid understanding of its consequences. As such, studies should endeavour to take into account all the distal factors identified in Gershoff's (2002a, 2002b) process-context model when examining the effects of child corporal punishment. However, to my knowledge, no studies to date have included the wide and complex array of factors presented in Gershoff's (2002a, 2002b) model.

Three Canadian population-based studies conducted with the NLSCY (Landy & Tam, 1998; Miller, Jenkins, & Keating, 2002; Thomas, 2004) have examined the effects of harsh, hostile, and punitive parenting on behavioural outcomes but none have specifically examined the effects of corporal punishment. Two of the studies (Landy & Tam, 1998; Miller et al., 2002) used data from the first NLSCY cycle (1994-1995) and found that harsh and hostile parenting increased the risk of negative developmental outcomes (i.e., hyperactivity, conduct disorder, emotional disorder, relationship problems, academic difficulties, anxiety, and physical aggression), even after controlling for risk (i.e., single-parent family, teenage-parent family, maternal depression, family dysfunction, low income, low education) and protective (i.e., social

support, positive parenting, consistent parenting) factors. Similarly, the third study (Thomas, 2004) found that child aggressive behaviour was associated with concurrent punitive parenting practices at age 2-3 years (cycle 1 in 1994-1995) and 8-9 years (cycle 4 in 2000-2001) after controlling for low income, child sex, regional differences, and initial level of aggressive behaviours (i.e., at 2-3 years, for analyses on 8-9 year olds).

More recent studies have specifically focused on the longitudinal impact of corporal punishment while taking into account other contextual factors. Table 2 presents a summary of longitudinal studies published in the last decade, and there are several noteworthy points. While results have been mixed, they highlight possible moderating effects of contextual variables on corporal punishment outcomes (e.g., child sex, age, and temperament; parent sex, ethnicity, and religion; parental warmth). However, it is important to note that most studies have not examined the broader disciplinary context in which corporal punishment occurs. Specifically, about 47% of studies took into account the parenting style (e.g., parental warmth, support, responsiveness or consistency), but only several longitudinal studies (12%) have examined co-occurring disciplinary strategies. Also, none of these studies assessed for the interaction effects of corporal punishment with co-occurring strategies. Parenting style, such as parental warmth/support, is important as it refers to the emotional climate in which parental behaviours are expressed (Darling & Steinberg, 1993). However, consideration of specific parenting strategies may be more informative because parents engage in different behaviours in their day-to-day interactions with children, and these behaviours may be more directly related to children's behavioural outcomes (Darling & Steinberg, 1993). Parenting strategies are not only stronger predictors of child behaviours (Carlo, McGinley, Hayes, Batenhorst, & Wilkinson, 2007) but more

importantly, they can be the object of focused or targeted interventions (Michalcio & Solomon, 2002).

Another observation from Table 2 is that the majority of studies have examined the shorter-term (1-3 years) association between corporal punishment and behavioural outcomes (60% of studies). In addition, most have focused on externalizing behaviours (88% of studies) with less attention on internalizing behaviours (38% of studies), cognitive functioning (14% of studies), and children's level of social and emotional competence (.02% of studies). Therefore, it would seem important to better understand the longer-term impact of early experiences of corporal punishment (i.e., during the preschool years when it is most prevalent) on school-age children and adolescents not only in terms of externalizing behaviours but also in terms of internalizing and social behaviours. Given the different mediational processes that can account for the impact of corporal punishment, early experiences of corporal punishment could be associated with different behavioural outcomes and these outcomes may change over time. As such, it is important to adopt a developmental perspective in understanding corporal punishment risks by examining different developmental periods.

Finally, externalizing behaviours have been the focus of past research perhaps because they are readily observable, disruptive, and negatively perceived (Tandon, Cardeli, & Luby, 2009). Whereas internalizing difficulties may be more difficult to detect, a better understanding of possible etiological factors of depression and anxiety is essential because they are common in youth (lifetime anxiety disorders prevalence rates of 6-15%, Chorpita & Shoutham-Gerow, 2006; lifetime depressive disorders prevalence rates of 15-20%, Rudolph & Lambert, 2007) but mostly because they tend to be chronic and recurrent across developmental periods (Pahl & Barrett, 2010; Rudolph & Lambert, 2007; Stark et al., 2006). Internalizing difficulties have also been

associated with significant psychosocial impairments in children and later in adulthood (Chorpita & Shoutham-Gerow, 2006; Kendall, Furr, & Podell, 2010; Pahl & Barrett, 2010; Rudolph & Lambert, 2007; Stark et al., 2006).

As for the impact of corporal punishment on prosocial behaviours (e.g., helping, sharing, giving, cooperation, responding to distress; Weir & Duveen, 1981), its study also appears critical given that central to discipline and parenting is the child's socialization and development of social and emotional competence. As such, it would be interesting to determine whether corporal punishment helps achieve or impedes this disciplinary goal. While existing research on corporal punishment has focused on maladjustment, the study of positive outcomes is important. In fact, the absence of problem behaviours does not necessarily equal the presence of positive behaviours (Gryczkowski, 2010). The development of such positive behaviours as positive peer relationships and prosocial skills is imperative in fostering future psychosocial functioning (for a review, see Gryczkowski, 2010).

Study objective 4. Given the gaps in past research, the fourth research objective was to use NLSCY data to prospectively examine the impact of early corporal punishment (2-3 years) on externalizing, internalizing, and prosocial behaviours during the school-age (8-9 years) and adolescent (14-15 years) developmental periods, while taking into account several contextual factors that might mediate or moderate corporal punishment outcomes.

Gershoff's (2002a, 2002b) process-context model was used to ensure that an exhaustive array of factors was included in the analyses. In particular, the longitudinal influence of early corporal punishment was examined in conjunction with co-occurring disciplinary strategies (i.e., psychological aggression, non-physical punishment, reward/praise, and explain/teach) and with the majority of factors included in the stable individual/relational context and the social-cultural

context, including parenting style (i.e., positive interactions, hostility/ineffectiveness, and consistency). It should be noted that the only factors from the process-context model that were not examined were parental social support because of the large number of missing NLSCY data, as well as parent temperament and stress since these two latter variables were not included in the NLSCY. Nevertheless, parental stress may be captured by such proxy socio-demographic variables as household income, family structure, and household size, which were included in the study. Finally, the impact of legal statutes and public policies was not directly examined.

As previously mentioned, the use of corporal punishment depends on the child's age. Different corporal punishment trajectories across child development have also been associated with different behavioural outcomes (Lansford et al., 2009). As such, this study also took into account corporal punishment use after the time of the initial assessment (including when the outcomes were assessed). As well, due to the transactional and reciprocal relationship between corporal punishment and child behavioural functioning (Berlin et al., 2009; Coley, Kull, & Carrano, 2014; Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012; Lee, Altschul, & Gershoff, 2013; Mackenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2014; Maguire-Jack et al., 2012, Sheehan & Watson, 2008; Wang & Kenny, 2014; Xing, Wang, Khan, He, & Zhang, 2011), initial level of behavioural functioning was taken into account in the longitudinal analyses. Finally, interaction effects of corporal punishment with co-occurring disciplinary strategies and parenting style were explored. The current study specifically focused on these interactions because they have rarely been tested in recent longitudinal studies yet they can inform the debate on corporal punishment by addressing the conditional corporal punishment point of view.

Hypotheses. Based on previous research, the following results were anticipated:

1. Corporal punishment experiences at 2-3 years were expected to be associated with greater externalizing and internalizing behaviours as well as with lower prosocial behaviours at both 8-9 years and 14-15 years.
2. It was expected that these effects would remain significant even after taking into account initial levels of behavioural functioning and the use of corporal punishment over time.
3. The impact of corporal punishment at 2-3 years on later behavioural domains was expected to remain significant even after controlling for contextual variables and taking into consideration co-occurring disciplinary strategies and parenting style.
4. It was hypothesized that covariate variables would also be associated with outcome variables.
    a. Based on past findings, it was expected that corrective forms of discipline (i.e., psychological aggression and non-physical punishment) would be associated with increased externalizing and internalizing behaviours and reduced prosocial behaviours over time. One exception to this was anticipated for non-physical punishment, which has been found to be an appropriate intervention to reduce child externalizing difficulties (Everett, Hupp, & Olmi, 2010; Kazdin, 2005; Patterson, Chamberlain, & Reid, 1982).
    b. As for positive and preventive forms of discipline (i.e., reward/praise and explain/teach), it was hypothesized that they would be associated with reduced externalizing and internalizing, and increased prosocial behaviours over time.
    c. Positive interactions and consistent parenting were expected to be negatively associated with externalizing and internalizing behaviours, and positively associated with prosocial behaviours.

d. It was anticipated that hostile and ineffective parenting would be positively associated with externalizing and internalizing behaviours, but negatively associated with prosocial behaviours.

5. In line with the process-context model, interaction effects of corporal punishment with co-occurring disciplinary strategies and parenting style were expected. These analyses were largely exploratory because of inconsistent findings in the very limited research on this topic.

Method

Data Set

The current study relied on data from cycles 1 (1994-1995) to 8 (2008-2009) of the NLSCY, a nation-wide survey conducted by Statistics Canada and Human Resources and Social Development Canada (HRSDC) that follows the development and well-being of Canadian children from birth to early adulthood (Statistics Canada, 2009). The NLSCY began in 1994-1995 (cycle 1) with a sample of 22,831 caregivers of 0-11 year old children from 13,439 households, representing an overall response rate of 86.3%. The NLSCY collected longitudinal and cross-sectional data on children every two years until 2008-2009. Households targeted by the NLSCY were selected from the National Population Health Survey (NPHS) as well as from Statistics Canada's Labour Force Survey (LFS), which uses a stratified multistage probability sample design to conduct monthly surveys of Canadian households that are representative of Canada's population. The NLSCY excluded children living in institutional facilities, on Aboriginal reserves (approximately 0.5% of 0-11 year-olds), and in the Canadian territories because they are not targeted by the Labour Force Survey (Statistics Canada, 2009).

From each identified household, a maximum of four children were selected in the first cycle of the NLSCY. Because of budgetary restrictions, households from the NPHS sample were dropped after cycle 1, and the maximum number of children per household was decreased to two, thereby reducing the original cohort to a sample of 16,903 children. These children represent the original longitudinal cohort that was followed on a biennial basis until cycle 8 (in 2008-2009) when children were aged 14-25 years (Statistics Canada, 2009). In addition to the original longitudinal cohort followed at each cycle, an early childhood development (ECD) cohort of 0-1 year old children was added in cycle 2 (1996-1997) to cover younger age cohorts. A new ECD cohort was added at every subsequent data collection cycle and was followed for a minimum of three cycles. ECD cohorts were limited to one child per household (Statistics Canada, 2009). Table 3 presents the ages of the children at each cycle and the different cohorts followed from cycles 1 to 8.

For each NLSCY cycle, data were collected from the fall of a given year to the spring/early summer of the following year. Surveys were conducted by Statistics Canada interviewers; methods of computer-assisted interviewing (in person or telephone) and paper-pencil questionnaires were combined (Statistics Canada, 2009). Participants could provide information in either English or French, according to their language of preference (Statistics Canada, 2009). Prior to participation, individuals were given a complete description of study procedures after which they provided written consent. The survey covered a number of areas, including socio-demographics, child (e.g., temperament, behaviour, education), parent (e.g., depression, social support), and family functioning (Statistics Canada, 2009). The person most knowledgeable about the child completed the survey, herein referred to as caregiver. In the vast majority of cases (85.8% in cycle 6 to 90.8% in cycle 3), the participating caregiver was the

child's biological mother. Note that the interview was conducted with the biological father in approximately 9.6% of cases (7.5% in cycle 3 to 12.1% in cycle 6), another mother figure in 1.7% of cases (1.3% in cycle 7 to 2.1% in cycle 2), and another father figure in 0.3% of cases (0.1% in cycle 3 to 0.5% in cycle 2). Older children (starting at age 14) completed their own in-person or phone interview as well as questionnaire measures (Statistics Canada, 2009). Ethics approval for secondary data analyses was received from the University of Ottawa Research Ethics Board.

Participants

For the analyses on disciplinary strategies over time (*study objective 1*) as well as on the disciplinary and socio-demographic context in which corporal punishment occurs (*study objectives 2 and 3*), the present study relied on cross-sectional data from both the ECD and original cohorts for 2-11 year olds across cycle 1 (1994-1995) to cycle 8 (2008-2009). To ensure that no more than one child per household was present in each cross-sectional sample, only data from the youngest child in each household were examined. This strategy avoided the confounding of one caregiver reporting for more than one child in the same household. The youngest child was selected in order to ensure a sufficient sample of younger children, who are at increased risk of experiencing corporal punishment from their caregivers. Furthermore, participants with missing data across all disciplinary strategies were removed from the analyses; this only represented 1.2%-3.1% of participants for the different samples. The final sample size and the characteristics of each cross-sectional sample are presented in Table 4. Sample characteristics were similar at each NLSCY cycle.

Table 4 indicates that children were on average aged 5.8 years (M = 4.5 years [SD = 1.7] in cycle 8 to 6.4 years [SD = 3.1] in cycle 5), and that child sex was equally represented (male:

50.8% in cycle 3 to 51.4% in cycle 6). Caregivers were on average aged 35.7 years (*M* = 35.0 years [*SD* = 6.0] in cycles 1 and 8 to 36.2 years [*SD* = 6.4] in cycle 5), and the large majority were female (89.0% in cycle 5 to 92.4% in cycle 3). The majority of caregivers and their partners (when applicable) had higher than high school education (caregiver: 62.4% in cycle 5 to 76.6% in cycle 8; partner: 60.7% in cycle 5 to 73.7% in cycle 8) and were employed outside the home (caregiver: 72.7% in cycle 1 to 79.1% in cycle 5; partner: 94.5% in cycle 5 to 95.8% in cycles 3 and 4). Respondents had average to high household income (65.5% in cycle 2 to 76.6% in cycle 8). Households comprised an average of four individuals (*M* = 4.1 [*SD* = 1.2] in cycle 1 to 4.3 [*SD* = 1.2] in cycles 7 and 8), and the majority included two biological parents (75.2% in cycle 2 to 82.1% in cycle 8). The majority of respondents were non-immigrants (80.2% in cycle 7 to 90.5% in cycle 3) and from European-Canadian descent (80.6% in cycle 8 to 89.8% in cycle 1). The most frequent religion was Roman Catholicism (40.8% in cycle 8 to 47.1% in cycle 4), and respondents reported attending religious services or meetings approximately 3-4 times per year (*M* religiosity = 1.6 [*SD* = 1.6] in cycle 8 to 2.0 [*SD* = 1.5] in cycle 1). Finally, respondents were from different Canadian regions, namely Ontario (36.9% in cycle 1 to 40.9% in cycle 7), Quebec (21.8% in cycle 7 to 24.8% in cycle 1), Prairies (17.5% in cycle 4 to 19.4% in cycle 8), British Columbia (11.8% in cycle 5 to 12.9% in cycle 3), and Maritimes (6.3% in cycle 8 to 8.1% in cycle 1).

For the analyses on developmental outcomes associated with corporal punishment (*study objective 4*), children aged 2-3 years at cycle 1 (1994-1995) and 2 (1996-1997) from the original cohort were followed longitudinally until they were 8-9 years (cycle 4 in 2000-2001 and cycle 5 in 2002-2003) and 14-15 years (cycle 7 in 2006-2007 and cycle 8 in 2008-2009). Again, to avoid confounding caregiver reports for multiple children in the home, only data from the

youngest child of each household were examined. Here, the youngest child was selected in order to ensure a sufficient sample of children with data throughout the longitudinal analysis, that is from 2-3 years until 14-15 years. Note that about 1% of participants were removed from the sample due to the presence of a significant amount of missing data (i.e., more than 30%, including corporal punishment and all disciplinary strategies). For outcomes at 8-9 years, longitudinal attrition was of 49.9% and the final sample size was 3,203 children. For outcomes at 14-15 years, longitudinal attrition was of 59.5% and the final sample size was 2,602 children. Results from t-test and chi-square analyses suggested that children included in both longitudinal samples were more likely to be from less challenging backgrounds (e.g., older caregivers, higher SES, smaller households, household composed of two biological parents; $p<.001$). In addition, children in the longitudinal sample for outcomes at 8-9 years were significantly more likely to be girls and to live in Quebec or the Maritimes ($p<.001$). These children were also significantly less likely to have caregivers with no religion or from a conservative Protestant religious background ($p<.001$). As for children in the longitudinal sample for outcomes at 14-15 years, results suggested that they were significantly more likely to be from European-Canadian descent and to live in the province of Quebec ($p<.001$). They were also significantly less likely to have caregivers with no religious background ($p<.001$). To address these differences, longitudinal NLSCY-developed weights were applied to all data to adjust for possible bias resulting from attrition and to maintain sample representation (Statistics Canada, 2009).

Measures

Corporal punishment. Corporal punishment was assessed using one item ("How often do you do each of the following when your child breaks the rules or does things that s/he is not supposed to: use physical punishment?") from the Parent Practices Scale (Strayhorn &

Weidman, 1988). The Parent Practices Scale has good test-retest reliability (6-month stability: *r* = .70-.79) and was found to be significantly correlated with other parenting measures (including direct observations of parent behaviours; *r* = .33; Strayhorn & Weidman, 1988). Responses for the corporal punishment item are on a 5-point scale from 0 to 4 (0 = "never"; 1 = "rarely"; 2 = "sometimes"; 3 = "often"; 4 = "always"). Higher scores indicated greater corporal punishment use. The presence or absence of corporal punishment was examined by coding any response other than 0 ("never") as indicating the presence of corporal punishment. This method is consistent with previous research (e.g., Taylor, Manganello, Lee, & Rice, 2010; Vittrup et al., 2006) and takes into account caregivers' tendency to underreport corporal punishment use (Straus et al., 2014). This method also reflects the NLSCY data, which showed that the vast majority of caregivers who endorsed the presence of corporal punishment reported using it *rarely* (approximately 75%), and almost no caregiver reported using it *often* or *always* (≤ 0.03%).

For purposes of the longitudinal analyses (*study objective 4*), the dynamic nature of corporal punishment use across time was captured by calculating the total number of cycles where caregivers endorsed using corporal punishment (after the initial time point). Specifically, for 2-3 year olds at cycle 1, the number of cycles where corporal punishment was endorsed was calculated from cycles 2-4 (when examining outcomes at 8-9 years) and from cycles 2-5 (when examining outcomes at 14-15 years). For 2-3 year olds at cycle 2, the number of cycles where corporal punishment was endorsed was calculated from cycles 3-5 (when examining outcomes at 8-9 years) and from cycles 3-6 (when examining outcomes at 14-15 years). It should be noted that information on corporal punishment use between ages 12-15 years was not captured and included in the analyses on the developmental outcomes at 14-15 years because this information was only collected in the NLSCY until the age of 11 years.

Co-occurring disciplinary strategies. Co-occurring disciplinary strategies were assessed with items from the Parent Practices Scale (Strayhorn & Weidman, 1988). Selected items represent disciplinary strategies consistent with those examined in previous research (Fauchier & Straus, 2007; Regalado et al., 2004; Socolar et al., 2007; Vittrup et al., 2006). Specifically, the present study examined parental use of *reward/praise* (1 item: "How often do you praise your child, by saying something like 'Good for you!' or 'What a nice thing you did!' or 'That's good going!'?"), *explain/teach* (2 items: "Please tell me how often you do each of the following when your child breaks the rules or does things that s/he is not supposed to: (1) Calmly discuss the problem; (2) Describe alternative ways of behaving that are acceptable."), *psychological aggression* (2 items: (1) "How often do you tell your child that s/he is bad or not as good as others?" (2) "Please tell me how often you do each of the following when your child breaks the rules or does things that s/he is not supposed to: raise your voice, scold or yell at him/her."), and *non-physical punishment* (1 item: "Please tell me how often you do each of the following when your child breaks the rules or does things that he/she is not supposed to: take away privileges or put him/her in his/her room."). Even though some of the disciplinary strategies are measured by more than one item, items were examined separately in the present study because they all represent different parental behaviours. Caregivers rated each item on a 5-point scale from 0 ("never") to 4 ("always; many times a day"), with higher scores indicating greater use of the particular disciplinary strategy. The presence or absence of each disciplinary strategy was examined by coding any response other than 0 ("never") as indicating the presence of the particular strategy.

Stable individual and relational context. Child, parent, and family characteristics were examined in accordance with the stable individual and relational context of Gershoff's (2002a, 2002b) process-context model.

Child characteristics. Caregivers reported information on the *age* and *sex* of the child. The *temperament of the child* was assessed using caregiver scores on 10 items adapted from the Infant Characteristics Questionnaire (ICQ; Bates, Bennett Freeland, & Lounsbury, 1979). The ICQ is a short screening tool for infant (6-13 months) difficultness (i.e., fussiness, unsoothability, emotional lability). Results on this measure and adapted versions for older children (i.e., Child Characteristics Questionnaire; Preschool Characteristics Questionnaire,) suggested stability of scores overtime (12-month stability: r = .71, Lee & Bates, 1985; 42-month stability: r = .43, Finegan, Niccols, Zacher, & Hood, 1989). The ICQ was also found to significantly converge with other measures of temperament (r = .22-.39) and independent observations (r = .34-.40; Bates et al., 1979). Responses are on a 7-point scale from 0 ("very little; very easy") to 6 ("a lot; very difficult"). Items were summed to obtain a total score ranging from 0-60, with higher scores indicating more difficult temperament. Appendix A presents a list of the items as well as the Cronbach alphas and average inter-item correlations that were calculated for the present study. Appendix A indicates that the temperament scale had adequate internal consistency.

Parent characteristics. Caregivers provided information on their *sex* and current *age*. Caregiver *psychological functioning* was assessed using 12 items from the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a short self-report scale that assesses symptoms of depression in the general population; it was found to have adequate test-retest reliability (4-week stability: r = .67) and to correlate with other self-report measures of depression (r = .51-.72) as well as with clinical ratings of depression (r = .44-.75;

Radloff, 1977). Responses are on a 4-point scale from 0 (“rarely or none of the time/less than 1 day”) to 3 (“most or all of the time/5-7 days”). Items were summed to obtain a total score ranging from 0-36, with higher scores indicating greater depressive symptoms. Cronbach alphas and average inter-item correlations presented in Appendix A indicate that the caregiver depression scale had good internal consistency.

To examine *parenting style*, items from the Parent Practices Scale (Strayhorn & Weidman, 1988) were used. There are 4 positive interaction items, 7 hostility/ineffectiveness items, and 5 consistency items. Caregivers rated each item along a 5-point scale from 0 (“never”) to 4 (“many times each day; all the time”). Items were summed to obtain a positive interaction score ranging from 0-16, an hostility/ineffectiveness score ranging from 0-28, and a consistency score ranging from 0-20. Higher scores indicated greater use of the particular parenting style. Items included in the different scales were based on factor analyses conducted by Statistics Canada methodologists (Statistics Canada, 2009). Note that one item from the positive interaction scale (i.e., “How often do you praise your child, by saying something like 'Good for you!' or 'What a nice thing you did!' or 'That's good going!'?”) was removed from the scale in the present study because it was used to assess the reward/praise disciplinary strategy (see section above on co-occurring disciplinary strategies).

Cronbach alphas presented in Appendix A indicate that the hostility/ineffectiveness scale had adequate internal consistency but that the internal consistency for the positive interaction and consistency scales was lower. However, given that alpha coefficients are influenced by the number of items within a scale, Clark and Watson (1995) suggested that average inter-item correlations may be a more useful index of internal consistency. Based on their guidelines (i.e.,

average inter-item correlation between .15-.50), average inter-item correlations suggest that all parenting style scales had adequate internal consistency.

Family characteristics. Caregivers provided information on their *household size* and *family structure* (two married or cohabitating biological parents, single biological parent, or stepfamily).

Social-cultural context. To examine variables from Gershoff's (2002a, 2002b) social-cultural context, the present study included socio-economic status, race/ethnic origin, immigration status, religion, religiosity, and region of residence.

Socio-economic status. Caregivers provided information on their *education* (up to and including high school or higher than high school), *employment status* in the last 12 months (employed or not employed outside the home), and *household income*. For income, Statistics Canada's low income cut-off (LICO) was used. The LICO suggests a threshold below which a family would devote 20% or more of its income to basic necessities (e.g., food, shelter, clothing), compared to the average family (Statistics Canada, 2013). LICOs vary according to household size and community size. Using the Statistics Canada thresholds, LICO scores were dichotomized into "low" or "average to high" for the current study. A LICO below 1.25 was used to represent low household income. A LICO of 1.25 was selected as a conservative proxy for poverty as it represents income level that are a little higher than that needed to meet basic needs. Finally, information provided by caregivers on the education and employment of any partner living in the household was also examined.

Race/ethnicity, immigration status, religion, religiosity, and geographic region. Caregivers provided information on their *race/ethnicity* (European-Canadian, Black, South and West Asian, East Asian, or other), *immigration status* (immigrated or non-immigrated), and

geographic region of residence (Maritimes, Quebec, Ontario, Prairies, or British Columbia). Information on caregivers' *religion* and *religiosity* was also examined. For religion, a recommended classification scheme was used (Ellison, Musik, & Holden, 2011; Ellison & Sherkat, 1993). Specifically, parent religion was classified as follows: no religion; Roman Catholic; mainline Protestant (e.g., Anglican, Lutheran); conservative Protestant (e.g., Baptist, Evangelical); or other religious background. Religiosity referred to the frequency of attendance to religious services or meetings in the past 12 months other than on special occasions such as weddings or funerals. This was assessed on a 5-point scale from 0 ("never") to 4 ("at least once a week"), with higher scores indicating greater religiosity.

Domains of behavioural functioning. Child externalizing, internalizing, and prosocial behaviours were assessed with items adapted from the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1981). The CBCL is a widely-used measure that assesses behavioural difficulties as well as social competence. This measure has good test-retest reliability (12-month stability: r = .81 for 6-18 year olds; r = .76 for 1.5-5 year olds), and it is significantly correlated with other measures of behavioural functioning (r = .38-.89 for 6-18 year olds; r = .56-.77 for 1.5-5 year olds; Achenbach & Rescorla, 2000, 2001).

In the present study, caregivers provided information for children aged 2-3 and 8-9 years, whereas 14-15 year olds reported on their own behavioural functioning. Items included in the different behavioural functioning scales were selected based on the factors identified by Statistics Canada methodologists (Statistics Canada, 2009). *Externalizing behaviours* were assessed with 8 items targeting physical aggression and oppositional behaviours for 2-3 year olds. For 8-9 and 14-15 year olds, 6 items targeting physical aggression and conduct problems assessed externalizing behaviours. The *internalizing behaviour* scale was comprised of 6 items for 2-3

year olds and 7 items for 8-9 and 14-15 year olds. Internalizing behaviour items assessed for the presence of emotional difficulties and anxiety symptoms. *Prosocial behaviours* were assessed with 4 items at 2-3 years and 14 items at 8-9 years and 14-15 years. Note that one item from the prosocial scale at 2-3 years was removed from the analyses due to the large amount of missing data. Responses for all items are on a 3-point scale ranging from 0 ("never or not true") to 2 ("often or very true"). Items were summed in order to obtain total externalizing, internalizing, and prosocial behaviour scores, with higher scores indicating greater presence of the examined behaviour.

Cronbach alphas presented in Appendix A suggest adequate to good internal consistency for the externalizing and prosocial behaviour scales as well as for the internalizing behaviour scale at age 14-15 years. Cronbach alphas for the internalizing behaviour scale at 2-3 and 8-9 years are lower (Hunsley & Mash, 2008). Nevertheless, examination of the average inter-item correlations indicates that internalizing behaviour scales for the present study have adequate internal consistency; according to Clark and Watson (1995), mean correlations of .15-.20 are desirable for broader and more general constructs, such as domains of behavioural functioning.

Data Analysis

Analyses were conducted using the Statistical Package for Social Sciences – Version 23.0 (SPSS 23.0). A probability level of .05 was used to establish statistical significance. Because of the large sample, effect sizes were calculated for the different analyses to assess whether statistically significant results represented meaningful effects from an applied perspective.

Data cleaning was conducted, and statistical assumptions were verified prior to running analyses. Data were screened for univariate and multivariate outliers, normality, linearity, multicollinearity, homoscedasticity, and homogeneity of variance. If assumptions were not met,

corrections were made accordingly (see below for assumptions and necessary transformations for the different analyses). Finally, analyses made use of both cross-sectional and longitudinal NLSCY-developed weights to ensure sample representation (Statistics Canada, 2009).

Study Objective 1: Corporal Punishment and Co-Occurring Disciplinary Strategies Across Time

NLSCY cross-sectional data from cycle 1 (1994-1995) to cycle 8 (2008-2009) were used to describe the use of corporal punishment and co-occurring disciplinary strategies with children aged 2-11 years over time. The percentage of missing data was low (<0.5%) across the different disciplinary strategies and were deleted from analyses. For each NLSCY cycle, descriptive analyses determined the *prevalence* and *frequency of use* of the different disciplinary strategies. Analyses were conducted separately for 2-5, 6-9, and 10-11 year olds. Note that, because of the NLSCY sampling strategy, there were missing data for certain age groups within the 6-9 and 10-11 year old cohorts from cycles 5 (2002-2003) to 8 (2008-2009; see Table 3 for more information).

To assess *age differences* in the strategies' prevalence and frequency, chi-square tests of independence and Wilcoxon *Z* tests (non-parametric test accounting for non-normally distributed data and adapted for large sample size) were conducted, respectively. To do so, the most recent cycle for which there were complete data for the specific age comparison was used. This corresponded to: cycle 7 for 2-5 vs. 6-9 year olds; cycle 6 for 2-5 vs. 10-11 year olds; and cycle 4 for 6-9 vs. 10-11 year olds.

To assess cross-sectional *change in prevalence over time*, chi-square tests of independence were conducted to compare prevalence at cycle 1 (1994-1995) to that at cycle 4 (2000-2001) and cycle 8 (2008-2009) for 2-5 year olds. For 6-11 year olds, cycle 1 prevalence

was compared with that at cycle 4, and with that at the most recent cycle for which there was complete data, specifically cycle 7 (2006-2007) for 6-9 year olds and cycle 6 (2004-2005) for 10-11 year olds. Examination of data at three time points was necessary to be able to discuss epidemiological trends (Bernard & Lapointe, 1995). Cycles 1 and 4 were selected because they represent the first and middle point of the NLSCY and because they provide complete data for the three age groups. For the last data point, the cycle was determined based on the availability of data according to the different age groups. Note that change over time in the prevalence of reward/praise (1 item) and explain/teach (2 items) was not assessed because almost all caregivers (>98%) endorsed the use of these disciplinary strategies. Finally, to assess cross-sectional *change in the frequency of use over time* for the different disciplinary strategies, Wilcoxon *Z* tests compared cycle 1 mean frequency of use with that at cycle 4 and then at cycle 8 (2-5 year olds), cycle 7 (6-9 year olds), and cycle 6 (10-11 year olds). For all analyses, Cramer's Φ was calculated to assess effect sizes for the chi-square results, and *r* ($Z/\sqrt{N}$) assessed effect sizes for the Wilcoxon *Z* tests' results. Effect sizes of .10 were considered small, .30 medium, and .50 large (Cohen, 1992).

Study Objective 2: Broader Disciplinary Context of Corporal Punishment Use

To understand the disciplinary context in which corporal punishment occurs, analyses were conducted on data from the most recent NLSCY cycle for which there were complete cross-sectional data according to the age group. This corresponded to cycle 8 for 2-5 year olds, cycle 7 for 6-9 year olds, and cycle 6 for 10-11 year-olds. Descriptive analyses identified the prevalence of the various patterns of corporal punishment use (yes vs. no) with co-occurring disciplinary strategies (1 item for reward/praise; 2 items for explain/teach; 2 items for psychological aggression; 1 item for non-physical punishment). The frequencies of all 64

possible combinations were calculated (2^6 = yes/no response for 6 co-occurring disciplinary strategies) for caregivers who reported using corporal punishment and for those who reported no such use. The overall percentage of missing data was again low (<0.5%) so they were deleted from the analyses.

Study Objective 3: Socio-Demographic Predictors of Corporal Punishment

To compare caregivers who use and do not use corporal punishment on socio-demographic characteristics, analyses used the most recent NLSCY cycle for which there were complete cross-sectional data according to the age group (cycle 8 for 2-5 year olds; cycle 7 for 6-9 year olds; and cycle 6 for 10-11 year-olds). Chi-square tests of independence were conducted for dichotomous/categorical variables, while Wilcoxon *Z* tests were used for continuous variables. Wilcoxon *Z* tests were appropriate because of the data's non-normal distribution and the large sample size. Effect sizes (Cramer's Φ for chi-square analyses and r [$Z/\sqrt{N}$] for Wilcoxon *Z* tests) were also calculated. Effect sizes of .10 were considered small, .30 medium, and .50 large (Cohen, 1992). The percentage of missing data for the socio-demographic variables was low overall (< 5.5%) and they were deleted from the analyses. Note that for ethnicity and religion, participants in the *other* category were removed from the analyses. The heterogeneity of this category would have rendered results uninterpretable.

Socio-demographic variables that significantly distinguished caregivers who use corporal punishment from those who do not were then included in logistic regression models (one regression for each age group). These multivariate analyses made it possible to characterize the direction of any associations between variables and corporal punishment prevalence while taking into account the impact of all other variables. Categorical variables were dummy coded for the regression analyses. Given that partner variables were only available for intact or stepfamilies,

single-parent families initially had to be removed from the multivariate analyses, but models including single-parent families (without partner variables) were also examined. Since results were similar across both sets of analyses, the current study presented models that included all three family types.

For the different logistic analyses (at 2-5 years, 6-9 years, and 10-11 years), patterns of missing data were random and the overall percentage was low (< 1.9%). Missing data were deleted (listwise) from the analyses. Logistic regression assumptions (Tabachnick & Fidell, 2007) were tested and met. The ratios of case to variables were adequate, and no multicollinearity was found between predictor variables (as examined with Pearson's *r)*. Univariate outliers were found for household size at cycle 7 and cycle 8. For these cycles, data on this variable were transformed for 7 (cycle 7) and 15 (cycle 8) participants and brought back to 3.29 *SD* from the mean. Examination of standardized residuals revealed no outliers in the solution. For the logistic regression on data from cycle 8 (2-5 year olds), transformation of the religiosity variable to ensure linearity in the Logit did not improve the statistical model; it was therefore kept untransformed for the analysis.

Study Objective 4: Association Between Corporal Punishment and Developmental Outcomes

The present study used longitudinal data to follow children aged 2-3 years at cycles 1 (1994-1995) or 2 (1996-1997) until the age of 8-9 years (at cycles 4 or 5) and, then again, until the age of 14-15 years (at cycles 7 or 8). For both longitudinal analyses (outcomes at 8-9 years and 14-15 years), patterns of missing data were random and the overall percentage was low (<1.2%). Missing data on the different variables (examined separately) were also low (<5.2%). Missing data on predictor, covariates and control variables (except socio-demographic variables)

were imputed using the fully conditional Markov Chain Monte Carlo (MCMC) method. The MCMC method can handle categorical variables and arbitrary missing data patterns. It assumes an iterative approach that fits a single variable using all other variables in the model as predictors and then imputes missing data for the single variable being fit. The method continues for each variable in the model to the maximum number of iterations specified, which was 10 (default setting) in the present study.

Six different hierarchical linear regressions were conducted to assess the impact of corporal punishment at 2-3 years on externalizing, internalizing, and prosocial behaviours at both 8-9 years and 14-15 years. Regression models controlled for initial level of behavioural functioning at 2-3 years, corporal punishment after the initial time of assessment, and contextual factors from Gershoff's (2002a, 2002b) stable individual/relational context and social-cultural context. To encourage model parsimony, socio-demographic variables that were not significantly associated with corporal punishment at a univariate level (results from study objective 3) were not included as control variables in the longitudinal analyses. Predictors and covariates were entered in the regression models in the three following blocks: (1) corporal punishment at 2-3 years; (2) co-occurring disciplinary strategies (psychological aggression 1, psychological aggression 2, non-physical punishment, explain/teach 1, explain/teach 2, reward/praise) and parenting style (positive interaction, hostility/ineffectiveness, consistency) at 2-3 years; and (3) interactions of corporal punishment with co-occurring disciplinary strategies and with parenting style. Significant interactions were plotted in order to assess directionality. To determine whether corporal punishment had a significant effect at the different levels of each moderator, simple slope analyses were conducted following a procedure developed by Aiken and West (1991). Finally, part correlations were examined to assess the unique contribution and

effect size of each significant variable. Effect sizes of .02 were considered small, .15 medium, and .35 large (Cohen, 1992).

Assumptions for multiple linear regressions (Tabachnick & Fidell, 2007) were tested and met. The ratios of case to independent variables were adequate, and no univariate or multivariate multicollinearity was found between predictor variables (as examined with Pearson's *r* and with tolerance and VIF index). Univariate outliers were transformed and brought back to 3.29 *SD* from the mean. No multivariate outliers were identified. To ensure normality of the distributions, log transformations were used for externalizing behaviours and internalizing behaviours at 2-3, 8-9, and 14-15 years, as well as for caregiver depressive symptoms. Corporal punishment and psychological aggression 1 (i.e., *telling child s/he is bad or not as good as others*) at 2-3 years were dichotomized. Since analyses conducted with and without data transformation produced different results, results with transformed data were retained. Given that all caregivers (except one) reported rewarding/praising their child at a high frequency, this variable was excluded from analyses. Religiosity was also removed from the analyses due to the large amount of missing data. Finally, examination of the residuals confirmed the presence of linearity, normality, and homoscedasticity.

Results

Study Objective 1: Corporal Punishment and Co-Occurring Disciplinary Strategies Across Time

The *prevalence* of corporal punishment and co-occurring disciplinary strategies is presented in Figures 2 to 5. Note that the prevalence of reward/praise and explain/teach was not presented in a figure as almost all caregivers (> 99% for reward/praise and > 97% for

explain/teach) reported using these strategies across all eight data collection cycles. The mean *frequency of use* of the disciplinary strategies is presented in Table 5.

Corporal punishment. Results at cycle 1 (1994-1995) revealed that corporal punishment prevalence was highest for 2-5 year olds, followed by 6-9 year olds, and then 10-11 year olds (Figure 2). These differences in prevalence by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). Effect sizes for age differences were small ($\Phi \leq .20$), with the greatest difference between children of 2-5 and 10-11 years. Findings also suggested a decrease in the prevalence of corporal punishment over time. Specifically:

- For 2-5 year olds, the prevalence was 49.9% in 1994-1995 (cycle 1). It decreased to 38.1% in 2000-2001(cycle 4) and then to 26.3% in 2008-2009 (cycle 8).
- For 6-9 year olds, the prevalence was 38.2% in 1994-1995 (cycle 1). It decreased to 29.1% in 2000-2001 (cycle 4) and then to 23.2% in 2006-2007 (cycle 7).
- For 10-11 year olds, the prevalence was 25.3% in 1994-1995 (cycle 1). It decreased to 17.5% in 2000-2001 (cycle 4) and 17.1% in 2004-2005 (cycle 6).

For the three age groups, the decrease in prevalence of corporal punishment over time was statistically significant (Table 7), except for the prevalence between cycles 4 and 6 that remained stable for 10-11 year olds. Effect sizes for change over time were small ($\Phi \leq .24$), with the greatest change between cycles 1 and 8 for 2-5 year olds.

For corporal punishment frequency of use, results at cycle 1 (1994-1995) revealed that it was highest for 2-5 year olds, followed by 6-9 year olds, and then 10-11 year olds (Table 5). These differences in frequency of use by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data

(Table 6). Effect sizes for age differences were small ($r \leq$ -.20), with the greatest observed difference between children of 2-5 and 10-11 years. Findings also indicated a decrease in the frequency of use of corporal punishment over time. Specifically:

- For 2-5 year olds, corporal punishment frequency of use was 0.64 (on a 5-point scale) in 1994-1995 (cycle 1). It decreased to 0.48 in 2000-2001 (cycle 4) and then to 0.33 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency of use was 0.47 in 1994-1995 (cycle 1). It decreased to 0.34 in 2000-2001 (cycle 4) and then to 0.27 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency of use was 0.28 in 1994-1995 (cycle 1). It decreased to 0.21 in 2000-2001 (cycle 4) and 0.20 in 2004-2005 (cycle 6).

For the three age groups, the decrease in the frequency of use of corporal punishment over time was statistically significant, except for 10-11 year olds where the frequency of use remained stable after cycle 4 (Table 8). Effect sizes for change over time were small ($r \leq$ -.23), with the greatest change between cycles 1 and 8 for 2-5 year olds.

Co-occurring disciplinary strategies. Cycle 1 (1994-1995) results indicated that the prevalence of *psychological aggression 1* (i.e., telling a child s/he is bad or not as good as others) was highest for 2-5 year olds, followed by 6-9 year olds, and then 10-11 year olds (Figure 3). These differences in prevalence by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). Effect sizes for age differences were low ($\Phi \leq .10$). Findings also revealed a decrease in the prevalence of *psychological aggression 1* over time. Specifically:

- For 2-5 year olds, the prevalence was 20.5% in 1994-1995 (cycle 1). It decreased to 18.4% in 2000-2001 (cycle 4) and 18.2% in 2008-2009 (cycle 8).

- For 6-9 year olds, the prevalence was 16.9% in 1994-1995 (cycle 1). It decreased to 13.3% in 2000-2001 (cycle 4) and 13.2% in 2006-2007 (cycle 7).
- For 10-11 year olds, the prevalence was 14.4% in 1994-1995 (cycle 1). It decreased to 10.5% in 2000-2001 (cycle 4) and 11.3% in 2004-2005 (cycle 6).

For the three age groups, the decrease in prevalence of *psychological aggression 1* over time was statistically significant, but no significant change was observed after cycle 4 (Table 7). Effect sizes for change over time were low for all age groups ($\Phi \leq .06$).

For *psychological aggression 1* frequency of use, results at cycle 1 (1994-1995) revealed that it was highest for 2-5 year olds, followed by 6-9 year olds, and then 10-11 year olds (Table 5). These differences in frequency of use by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). Effect sizes for age differences were low ($r \leq -.11$). Findings also suggested a decrease in the frequency of use of *psychological aggression 1* over time. Specifically:

- For 2-5 year olds, the frequency of use was 0.34 (on a 5-point scale) in 1994-1995 (cycle 1). It decreased to 0.29 in 2000-2001 (cycle 4) and 0.28 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency was 0.24 in 1994-1995 (cycle 1). It decreased to 0.18 in 2000-2001 (cycle 4) and 0.17 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency was 0.19 in 1994-1995 (cycle 1). It decreased to 0.12 in 2000-2001 (cycle 4) and 0.13 in 2004-2005 (cycle 6).

For the three age groups, the decrease in the frequency of use of *psychological aggression 1* over time was statistically significant, but no significant change was observed after cycle 4. Effect sizes for change over time were low for all age groups ($r \leq -.05$)

Results at cycle 1 (1994-1995) suggested that the prevalence of *psychological aggression 2* (i.e., raise your voice, scold, or yell at your child) was similar for the three age groups (Figure 4). However, starting in 1996-1997 (cycle 2), *psychological aggression 2* prevalence appeared to be lowest for 2-5 year olds compared to 6-9 and 10-11 year olds. These differences in prevalence by child age were observed across all subsequent NLSCY cycles, but a statistically significant difference using the most recent available data emerged only between the prevalence at 2-5 years and at 6-9 years (Table 6). Effect size for this age difference was low ($\Phi = .04$). As for change over time, findings revealed a decrease in prevalence. Specifically:

- For 2-5 year olds, *psychological aggression 2* prevalence was 95.4% in 1994-1995 (cycle 1). It decreased to 93.2% in 2000-2001 (cycle 4) and then to 89.3% in 2008-2009 (cycle 8).
- For 6-9 year olds, the prevalence was 95.0% in 1994-1995 (cycle 1). It was 95.1% in 2000-2001 (cycle 4) and decreased to 92.4% in 2006-2007 (cycle 7).
- For 10-11 year olds, the prevalence was 95.6% in 1994-1995 (cycle 1). It was 95.5% in 2000-2001 (cycle 4) and decreased to 92.3% in 2004-2005 (cycle 6).

For the three age groups, the decrease in prevalence of *psychological aggression 2* over time was statistically significant, but no significant change was observed between cycles 1 and 4 for 6-9 and 10-11 year olds (Table 7). Effect sizes for change over time were small for all age groups ($\Phi \leq .11$).

For *psychological aggression 2* frequency of use, results at cycle 1 (1994-1995) suggested that it was highest for 2-5 year olds, compared to 6-9 and 10-11 year olds (Table 5). Starting in cycle 2 (1996-1997), the frequency of use became lowest for 2-5 year old children, compared to 6-9 and 10-11 year olds. These differences in frequency of use by child age were

observed across all subsequent NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). Effect sizes for age differences were low ($r \leq$ -.08). Findings also suggested a decrease in the frequency of use of *psychological aggression 2* over time. Specifically:

- For 2-5 year olds, *psychological aggression 2* frequency of use was 1.90 (on a 5-point scale) in 1994-1995 (cycle 1). It decreased to 1.76 in 2000-2001 (cycle 4) and then 1.62 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency was 1.99 in 1994-1995 (cycle 1). It decreased to 1.82 in 2000-2001 (cycle 4) and then 1.73 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency was 2.00 in 1994-1995 (cycle 1). It decreased to 1.80 in 2000-2001 (cycle 4) and 1.73 in 2004-2005 (cycle 6).

For the three age groups, the decrease in the frequency of use of *psychological aggression 2* over time was statistically significant, except for the frequency that remained stable after cycle 4 for 10-11 year olds (Table 8). Effect sizes for change over time were small for all age groups ($r \leq$ -.15).

For *non-physical punishment* (i.e., take away privileges or put child in his/her room), cycle 1 (1994-1995) results suggested that its prevalence was highest for 6-9 year olds as compared to 2-5 and 10-11 year olds (Figure 5). These differences in prevalence by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). Age comparisons using the most recent available data also revealed that *non-physical punishment* prevalence was significantly lower at 2-5 years than at 10-11 years. Effect sizes for age differences were low ($\Phi \leq .08$). As for change in prevalence over time, findings indicated a significant increase for 2-5 and 6-9 year

old children between cycle 1 and 4 (Table 7). After cycle 4, the prevalence then significantly decreased. Specifically:

- For 2-5 year olds, *non-physical punishment* prevalence was 90.8% in 1994-1995 (cycle 1) and increased to 92.3% in 2000-2001 (cycle 4). It then decreased to 87.7% in 2008-2009 (cycle 8).
- For 6-9 year olds, the prevalence was 93.4% in 1994-1995 (cycle 1) and increased to 95.8% in 2000-2001 (cycle 4). It then decreased to 93.3% in 2006-2007 (cycle 7).

Effect sizes for these changes over time were low (Φ = .08). For 10-11 year olds, *non-physical punishment* prevalence remained constant over time (between 90.3%-92.2%).

Results at cycle 1 (1994-1995) suggested that *non-physical punishment* frequency of use was highest for 6-9 year olds, compared to 2-5 and 10-11 year olds (Table 5). These differences in frequency of use by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). Effect sizes for age differences were low ($r \leq$ -.09). Findings also revealed a statistically significant change in the frequency of use of *non-physical punishment* over time (Table 8). Specifically:

- For 2-5 year olds, the frequency of use was 2.19 (on a 5-point scale) in 1994-1995 (cycle 1), and it significantly increased to 2.30 in 2000-2001 (cycle 4). The frequency then significantly decreased to 2.17 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency of use was 2.36 in 1994-1995 (cycle 1). It increased to 2.38 in 2000-2001 (cycle 4) and then to 2.40 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency was 2.00 in 1994-1995 (cycle 1). It increased to 2.18 in 2000-2001 (cycle 4) and then to 2.31 in 2004-2005 (cycle 6).

The changes for 6-9 and 10-11 year olds were statistically significant only after cycle 4 (Table 8). Effect sizes for changes over time were low ($r \leq -.09$).

The prevalence of *reward/praise* was between 99.7% and 100.0% across NLSCY cycles and for the three age groups. As for its frequency of use, results at cycle 1 (1994-1995) suggested that it was highest for 2-5 year olds, followed by 6-9 and then 10-11 year olds (Table 5). These differences in frequency of use by child age were observed across all NLSCY cycles (where data were available) and were statistically significant using the most recent available data (Table 6). The effect size was large for the difference between 2-5 and 10-11 year olds ($r = -.50$), medium for the difference between 2-5 and 6-9 year olds ($r = -.35$), and low for the difference between 6-9 and 10-11 year olds ($r = -.15$). Findings also revealed an increase in the frequency of use of *reward/praise* over time. Specifically:

- For 2-5 year olds, *reward/praise* frequency of use was 3.58 (on a 5-point scale) in 1994-1995 (cycle 1). It increased to 3.66 in 2000-2001 (cycle 4) and then to 3.72 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency was 3.07 in 1994-1995 (cycle 1). It increased to 3.18 in 2000-2001 (cycle 4) and then to 3.25 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency was 2.86 in 1994-1995 (cycle 1). It increased 2.91 in 2000-2001 (cycle 4) and 2.92 in 2004-2005 (cycle 6).

For the three age groups, the increase in the frequency of use of *reward/praise* over time was statistically significant (Table 8). Note that for 10-11 year olds, change was only significant between cycles 1 and 6. Effect sizes for change over time were low ($r \leq -.09$).

For both explain/teach strategies, their prevalence was between 97.5% and 99.4% across all NLSCY cycles and for the three age groups. At cycle 1 (1994-1995), *explain/teach 1* (i.e.,

calmly discuss the problem) frequency of use was highest for 6-9 year olds, followed by 10-11 and then 2-5 year olds (Table 5). This pattern of differences in frequency of use by child age changed through the different NLSCY cycles (where data were available). Using the most recent available data, results revealed that the frequency of use was significantly higher for 10-11 year olds, compared to the younger age cohorts. In addition, the frequency at 6-9 years was lower than at 2-5 years of age (Table 6). Effect sizes were low ($r \leq -.04$) for these age differences. As for change over time, results confirmed an increase in the frequency of use of *explain/teach 1*. Specifically:

- For 2-5 year olds, *explain/teach 1* frequency of use was 2.68 (on a 5-point scale) in 1994-1995 (cycle 1). It then increased to 2.82 in 2000-2001 (cycle 4) and 2.94 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency was 2.80 in 1994-1995 (cycle 1). It was 2.78 in 2000-2001 (cycle 4) and then increased to 2.92 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency was 2.77 in 1994-1995 (cycle 1). It increased to 2.84 in 2000-2001 (cycle 4) and 2.88 in 2004-2005 (cycle 6).

For the three age groups, the increase in the frequency of use of *explain/teach 1* over time was statistically significant, but there were two exceptions (Table 8). For 6-9 year olds, the frequency was stable between cycles 1 and 4. For 10-11 year olds, the frequency was stable between cycles 4 and 6. Effect sizes for change over time were small ($r \leq -.14$).

Results at cycle 1 (1994-1995) revealed that *explain/teach 2* (i.e., describe alternative ways of behaving that are acceptable) frequency of use was highest for 10-11 year olds, followed by 6-9 and then 2-5 year olds. Differences in frequency of use by child age were observed across all NLSCY cycles (where data were available). Using the most recent available data

(Table 6), statistically significant differences emerged between the frequency at 2-5 years and that at 6-9 and 10-11 years. Effect sizes for age differences were low ($r \leq -.07$). Results also revealed an increase in the frequency of use of *explain/teach 2*. Specifically:

- For 2-5 year olds, *explain/teach 2* frequency of use was 2.78 (on a 5-point scale) in 1994-1995 (cycle 1). It increased to 2.94 in 2000-2001 (cycle 4) and 3.05 in 2008-2009 (cycle 8).
- For 6-9 year olds, the frequency was 2.94 in 1994-1995 (cycle 1). It was 2.96 in 2000-2001 (cycle 4) and then 3.09 in 2006-2007 (cycle 7).
- For 10-11 year olds, the frequency was 2.96 in 1994-1995. It was 2.98 in 2000-2001 (cycle 4) and then 3.09 in 2004-2005 (cycle 6).

For the three age groups, the increase in the frequency of use of *explain/teach 2* over time was statistically significant, but there were two exceptions (Table 8). For 6-9 and 10-11 year olds, the frequency was stable between cycles 1 and 4. Effect sizes for change over time were small ($r \leq -.15$).

Summary. Results revealed that corporal punishment prevalence and frequency of use was highest for 2-5 year olds, and lower for 6-9 and then 10-11 year olds. Findings also confirmed a significant decrease in both corporal punishment prevalence and frequency of use over a 14-year period. Nevertheless, in 2008-2009, between 1 in 5 and 1 in 4 caregivers still reported using corporal punishment. For corporal punishment frequency of use, it was low across time for all three age cohorts, with mean frequencies ranging from 0.20-0.64 on a 5-point scale.

With regard to co-occurring disciplinary strategies, a minority of caregivers ($\leq 20.5\%$) reported telling their child s/he is bad or not as good as others (psychological aggression 1), and

they reported almost never using this strategy. Conversely, a majority of caregivers ($n \geq 89.3\%$) reported raising their voice, scolding, or yelling at their child to discipline them (psychological aggression 2), but the frequency of use was low. In terms of age differences, telling a child s/he is bad or not as good as others (psychological aggression 1) appeared more prevalent and frequent with younger children, and this strategy decreased with age. On the contrary, raising one's voice, scolding, and yelling (psychological aggression 2) was less prevalent and/or frequent in the younger age group. As for change over time, statistical analyses revealed an overall significant decrease in the prevalence and frequency of use across time in both psychological aggression tactics across all age groups.

For all age groups and across cycles, descriptive statistics indicated that a majority of caregivers ($n \geq 87.7\%$) reported moderate use of non-physical punishment, that is time-out and removal of privileges to correct child misbehaviour. Non-physical punishment prevalence and frequency increased with age but peaked at 6-9 years. Use of non-physical punishment was somewhat inconsistent across time. Specifically, analyses of change suggested an initial increase followed by a decrease in its prevalence for 2-5 and 6-9 year olds. This trend was also observed for the frequency of use of non-physical punishment with 2-5 years-old children. On the other hand, an overall significant increase in the frequency of use of this strategy was observed over time for 6-9 and 10 year olds.

Finally, the vast majority of caregivers reported frequent use of reward/praise and explain/teach for all age groups. Nonetheless, rewarding and praising appeared more frequently used with younger children whereas explaining and teaching was more frequent among older children. For reward/praise and explain/teach, even though their prevalence remained high

across time, the frequency with which caregivers used these strategies overall significantly increased across time, for all age groups.

Study Objective 2: Broader Disciplinary Context of Corporal Punishment Use

Descriptive analyses identified profiles of co-occurring disciplinary strategies used by caregivers who reported using corporal punishment and those who did not report such use. Out of the 64 possible combinations (2^6 = yes/no response for 6 co-occurring disciplinary strategies), eight profiles (with a frequency other than 0) emerged. From these eight profiles, there were two main patterns (Figure 6). For both groups of caregivers, a minority (21.1 % to 27.9% of those who use corporal punishment, and 6.7% to 11.7% of those who do not use corporal punishment) indicated using all six co-occurring disciplinary strategies, whereas a majority (65.6% to 72.6% of those who use corporal punishment, and 64.2% to 77.3% of those who do not use corporal punishment) reported using all co-occurring strategies except telling their child s/he is bad or not as good as others (i.e., psychological aggression 1). These two patterns applied equally to 2-5, 6-9, and 10-11 year olds. Finally, profiles grouped within the *other* category included 4-5 out of the 6 possible disciplinary strategies, with no discernable pattern. In particular, 0% to 11.1% of caregivers who reported using corporal punishment, and 15.5% to 24.1% of those who reported not using this strategy, endorsed the profiles within the *other* category

Summary. Profiles of corporal punishment use with co-occurring disciplinary strategies indicated that (across the three age groups) a minority of caregivers, whether they use corporal punishment or not, also use all six co-occurring disciplinary strategies. In contrast, a majority of caregivers report using all co-occurring disciplinary strategies except psychological aggression 1.

Study Objective 3: Socio-Demographic Predictors of Corporal Punishment

The third objective was to understand how socio-demographic characteristics might work together to predict corporal punishment use. To build the predictive model, univariate analyses were first conducted to eliminate any non-significant effects. Table 9 presents these analyses on socio-demographic data for caregivers who reported using corporal punishment and for those who did not.

Findings revealed that household size, immigration status, ethnicity, religiosity, and geographic region of residence distinguished caregivers who reported using corporal punishment from those who did not, across all age groups. The following differences between caregivers who reported using corporal punishment and those who did not also emerged: (1) child sex for 2-5 and 10-11 year olds; (2) caregiver employment status and religion for 2-5 and 6-9 year olds; (3) household income for 2-5 year olds; (4) family structure and caregiver age for 6-9 year olds; and (5) partner employment status for 6-9 year olds. Effect sizes for all significant socio-demographic variables were small.

Based on these findings, statistically significant socio-demographic variables were retained for the multivariate logistic regressions (Table 10). Multivariate models significantly contributed to predicting corporal punishment ($\chi 2$ (16) 2-5 years = 401.0, $p < .001$; $\chi 2$ (17) 6-9 years = 334.9, $p < .001$; $\chi 2$ (11) 10-11 years = 95.1, $p < .001$). The following variables were statistically significant across the three age groups: (1) household size; (2) geographic region of residence; and (3) religiosity. Every 1-unit increase in household size resulted in a 14% to 20% increased likelihood of corporal punishment use. For geographic region, caregivers living in the Canadian Prairies had a 35% to 69% greater likelihood of reporting corporal punishment than caregivers from other Canadian regions. However, this regional difference was not observed

between the Prairies and British Columbia for 6-9 and 10-11 year old children, and it was not observed between the Prairies and Quebec for 10-11 year olds. For religiosity, every 1-unit increase resulted in an 11% to 17% decreased likelihood of corporal punishment use.

The following variables were statistically significant across two age groups: (1) religion and (2) child sex. For religion, compared to caregivers from a conservative Protestant background, those with no identified religion or other religious backgrounds had a 28% to 58% decreased likelihood of using corporal punishment for 2-5 and 6-9 year olds. For child sex, boys were significantly more likely than girls to experience corporal punishment for the 2-5 year old age group (38% increased likelihood) and the 10-11 year old age group (67% increased likelihood).

Finally, there were significant findings specific to certain age groups. For 2-5 year old children, caregivers from Black and East Asian ethnicities had a 109% and 45% greater likelihood than European-Canadian caregivers of using corporal punishment, respectively. For 6-9 year olds, the following significant findings emerged: (1) every 1-unit increase in caregiver age resulted in a 2% lower likelihood of corporal punishment use; (2) step families had a 26% decreased likelihood of corporal punishment, compared to families which included two biological parents; (3) employed caregivers were 27% more likely to report corporal punishment than unemployed caregivers; and (4) caregivers who immigrated to Canada had a 26% increased risk of using corporal punishment, compared to caregivers who were born in Canada.

Nagelkerke's Pseudo R^2 indicated that socio-demographic variables explained 7-10% of the variance in corporal punishment use for 2 to 11 year olds. The Hosmer and Lemeshow Goodness of Fit Chi Square test suggested that the models (for the different age groups) did not adequately fit the data ($p < .05$). This may be due to the measure's sensitivity to large sample

size (Allison, 2013); however, classification tables revealed that the accuracy of prediction only improved by a maximum of 0.7% over the null model with the inclusion of these socio-demographic variables.

Summary. Overall, results from the logistic regressions indicated that the following socio-demographic variables predicted the use of corporal punishment: child sex (boys); caregiver age (younger); caregiver employment outside the home; caregiver immigration to Canada; caregiver ethnicity (Black, East Asian); caregiver religion (conservative) and religiosity (less religious); household size (larger) and composition (two biological parents); and geographic region of residence (Canadian Prairies). However, taken together, socio-demographic variables only explained 7-10% of corporal punishment use for 2 to 11 year olds.

Study Objective 4: Association Between Corporal Punishment and Developmental Outcomes

Table 11 presents descriptive data on outcome, predictor, and covariate variables for the longitudinal analyses predicting behavioural functioning at 8-9 years and 14-15 years. For 8-9 year olds, 44.7% had experienced corporal punishment at 2-3 years while the prevalence of corporal punishment for 14-15 year olds was 46.5%. For both 8-9 and 14-15 year olds, mean scores for externalizing and internalizing behaviours were at the low end of the possible range of scores. Mean scores for prosocial behaviours were in the middle to high range of possible scores. As for co-occurring disciplinary strategies and parenting style, 17.4% of 8-9 year olds and 18.7% of 14-15 year olds were told by their caregivers they were bad or not as good as others (psychological aggression 1) at 2-3 years of age. For both age cohorts, mean psychological aggression 2 and non-physical punishment scores were in the middle range of possible scores. Mean scores for positive forms of discipline and parenting (i.e., both

explain/teach strategies, positive interaction and consistency) were in the higher end of possible scores, whereas hostile/ineffective parenting was in the lower end of scores across age groups.

Table 12 presents correlations between outcomes, predictors, and covariates. For 8-9 year olds, correlations between predictor/covariate variables and externalizing behaviours were statistically significant (except for psychological aggression 1) and in the expected direction. There were no significant correlations between predictor/covariate variables and internalizing behaviours, except for a positive correlation with explain/teach 2. For prosocial behaviours, most of the correlations were statistically significant (except for corporal punishment and non-physical punishment) and in the expected direction.

For 14-15 year olds, externalizing behaviours were significantly and positively associated with corporal punishment, other punitive forms of discipline, and hostile/ineffective parenting (all measured at 2-3 years). Internalizing behaviours were significantly and positively associated with explain/teach 1, and they were significantly and negatively associated with psychological aggression 2, non-physical punishment, and hostility/ineffectiveness. Most of the correlations between prosocial behaviours and predictor/covariate variables were statistically significant (except for explain/teach 2) and in the expected direction.

For both 8-9 and 14-15 year olds, corporal punishment was significantly and positively associated with other forms of punitive discipline and hostility/ineffectiveness. Corporal punishment was also significantly and positively associated with consistent parenting for 8-9 year olds. Statistically significant and negative correlations emerged between corporal punishment experiences, explain/teach, and positive interaction.

Behavioural outcomes at 8-9 years. Tables 13, 14, and 15 present unstandardized coefficients (β), standard errors (*SE*), confidence intervals (95% CI), and part correlations (part *r*)

from hierarchical linear regression analyses for externalizing, internalizing, and prosocial behaviours at 8-9 years. Note that, based on results from study objective 3, caregiver age, sex, education, and family structure were not included as control variables in the regression models because they were not found to be significantly associated with corporal punishment at the time of the initial assessment (i.e., 2-3 years).

Externalizing behaviours. Each step of the regression significantly contributed to the prediction of externalizing behaviours at 8-9 years (F (12, 3102) $_{\text{Step}}$ 0/Controls = 23.1, $p < .001$, $R^2 = .082$; F (13, 3101) $_{\text{Step}}$ 1 = 21.8, $p < .001$, $R^2 = .084$; F (21, 3093) $_{\text{Step}}$ 2 = 16.8, $p < .001$, $R^2 = .102$; F (29, 3085) $_{\text{Step}}$ 3 = 12.4, $p < .001$, $R^2 = .104$). After accounting for the level of externalizing behaviours at 2-3 years, corporal punishment experiences after the time of the initial assessment, contextual variables, co-occurring disciplinary strategies, and parenting style, results revealed that corporal punishment at 2-3 years of age was significantly associated with greater externalizing behaviours at 8-9 years (Table 13, step 3; $\beta = .021$; $p<.05$). Corporal punishment explained 0.14% of the variance in the outcome. Results also indicated that greater non-physical punishment (Table 13, step 3; $\beta = .017$; $p<.001$) and greater hostility/ineffectiveness (Table 13, step 3; $\beta = .005$; $p<.05$) at 2-3 years were associated with greater externalizing behaviours at 8-9 years. Non-physical punishment and hostility/ineffectiveness explained 0.38% and 0.19% of the variance in externalizing behaviours, respectively. Finally, more consistent parenting at 2-3 years was associated with fewer externalizing behaviours at 8-9 years (Table 13, step 3; $\beta = -.004$; $p<.05$), explaining 0.18% of the variance in this outcome. There were no significant interaction terms of corporal punishment with co-occurring disciplinary strategies or parenting style. After removing the variance explained by control variables, findings indicated that corporal punishment, non-physical

punishment, hostility/ineffectiveness, and consistency together accounted for 2.20% of the variance in externalizing behaviours when children were 8-9 years old.

Internalizing behaviours. Each step of the regression significantly contributed to predicting internalizing behaviours at 8-9 years (F (12, 3100) $_{\text{Step}}$ 0/Controls = 15.2, p< .001, R^2 = .056; F (13, 3099) $_{\text{Step}}$ 1 = 14.1, p< .001, R^2 = .056; F (21, 3091) $_{\text{Step}}$ 2 = 10.8, p< .001, R^2 = .068; F (29, 3083) $_{\text{Step}}$ 3 = 8.6, p< .001, R^2 = .075). After accounting for the level of internalizing behaviours at 2-3 years, corporal punishment experiences after the time of the initial assessment, contextual variables, co-occurring disciplinary strategies, and parenting style, results revealed no main effect of corporal punishment at 2-3 years. Interestingly, greater use of explain/teach 2 (describe alternative ways of behaving that are acceptable) was significantly associated with greater internalizing behaviours at 8-9 years (Table 14, step 3; β = .053; p<.001). The effect of explain/teach 2 accounted for 1.17% of the variance in this outcome.

There was an interaction of corporal punishment with explain/teach 2 (Table 14, step 3; β = -.047; p<.001), which is illustrated in Figure 7. Children who experienced corporal punishment at 2-3 years of age displayed significantly greater internalizing behaviours at 8-9 years if their caregivers also engaged in less explaining and teaching of alternative ways of behaving (β = .042; p<.01). Conversely, children who experienced corporal punishment at 2-3 years exhibited significantly lower internalizing behaviours at 8-9 years if their caregivers described alternative ways of behaving more frequently (β = -.029; p<.05). This interaction accounted for 0.40% of the variance in internalizing behaviours at 8-9 years. Finally, after removing the variance explained by control variables, explain/teach 1 and its interaction with corporal punishment together accounted for 1.90% of the variance in internalizing behaviour scores at 8-9 years.

Prosocial behaviours. Each step of the regression significantly contributed to the prediction of prosocial behaviours at 8-9 years (F (12, 2952) $_{\text{Step}}$ 0/Controls = 33.1, p< .001, R^2 = .119; F (13, 2951) $_{\text{Step}}$ 1 = 30.8, p< .001, R^2 = .119; F (21, 2943) $_{\text{Step}}$ 2 = 21.2, p< .001, R^2 = .131; F (29, 2935) $_{\text{Step}}$ 3 = 16.8, p< .001, R^2 = .143). After accounting for the level of prosocial behaviours at 2-3 years, corporal punishment experiences after the time of the initial assessment, contextual variables, co-occurring disciplinary strategies, and parenting style, results revealed no main effect of corporal punishment at 2-3 years. Results suggested that telling a child s/he is bad or not as good as others (psychological aggression 1; Table 15, step 3; β = -.567; p<.05) and more frequently describing alternative ways of behaving (explain/teach 2; Table 15, step 3; β = -.278; p<.05) were associated with fewer prosocial behaviours at 8-9 years. Conversely, more frequent positive interactions (Table 15, step 3; β = .205; p<.001) were significantly associated with greater prosocial behaviours at 8-9 years. The effect of psychological aggression 1, explain/teach 2, and positive interaction accounted for 0.12%, 0.18%, and 0.74% of the variance in this outcome, respectively.

Results also revealed interactions of corporal punishment with psychological aggression 2 (Table 15, step 3; β = .394; p<.05), non-physical punishment (Table 15, step 3; β = -.390; p<.01), and positive interaction (Table 15, step 3; β = -.236; p<.01). While the interaction effect was significant for psychological aggression 2 and positive interaction, simple slope analyses indicated that the effect of corporal punishment at 2-3 years for the different levels of the moderator variables was not significantly different than 0 (p>.05). As such, these interaction effects could not be interpreted. For non-physical punishment, simple slope analyses confirmed that children who experienced corporal punishment at 2-3 years had significantly fewer prosocial behaviours at 8-9 years if their caregiver used non-physical punishment more frequently (β = -

.661; p<.01). The effect of corporal punishment was not significant at low levels of non-physical punishment (Figure 8). The interaction effect of corporal punishment with non-physical punishment explained 0.29% of the variance in prosocial behaviours at 8-9 years. Finally, after removing the variance explained by control variables, findings indicated that positive interaction, hostility/ineffectiveness, and the interaction of corporal punishment with non-physical punishment together accounted for 2.40% of the variance in prosocial behaviours at 8-9 years.

Behavioural outcomes at 14-15 years. Tables 16, 17, and 18 present unstandardized coefficients (β), standard errors (*SE*), confidence intervals (95% CI), and part correlations (part *r*) from the hierarchical linear regression analyses for externalizing, internalizing, and prosocial behaviours at 14-15 years. As previously explained, caregiver age, sex, education, and family structure were not included as control variables in the regression models because they were not significantly associated with corporal punishment at the time of the initial assessment (i.e., 2-3 years) based on results from study objective 3.

Externalizing behaviours. Each step of the regression significantly contributed to predicting externalizing behaviours at 14-15 years (F (12, 2516) $_{\text{Step}}$ 0/Controls = 9.4, p< .001, R^2 = .038; F (13, 2515) $_{\text{Step}}$ 1 = 8.8, p< .001, R^2 = .038; F (21, 2507) $_{\text{Step}}$ 2 = 7.4, p< .001, R^2 = .058; F (29, 2499) $_{\text{Step}}$ 3 = 5.9, p< .001, R^2 = .065). After accounting for the level of externalizing behaviours at 2-3 years, corporal punishment experiences after the time of the initial assessment, contextual variables, co-occurring disciplinary strategies, and parenting style, results revealed no main effect of corporal punishment at 2-3 years. More frequent use of non-physical punishment was significantly associated with greater externalizing behaviours at 14-15 years (Table 16, step 3; β = .018; p<.001). The effect of non-physical punishment explained 0.59% of the variance in this outcome.

There were interaction effects of corporal punishment with psychological aggression 2 (Table 16, step 3; $\beta = .036$; $p<.01$) and with hostility/ineffectiveness (Table 16, step 3; $\beta = -.005$; $p<.05$). Figure 9 shows that children who experienced corporal punishment at 2-3 years displayed significantly greater externalizing behaviours at 14-15 years if their caregiver also raised their voice, scolded them, or yelled at them more frequently (psychological aggression 2; $\beta = .041$; $p<.001$). The effect of corporal punishment at 2-3 years was not significant at low levels of psychological aggression 2. For the interaction between corporal punishment and hostility/ineffectiveness, Figure 10 indicates that children who experienced corporal punishment at 2-3 years exhibited significantly greater externalizing behaviours at 14-15 years at both levels of hostility/ineffectiveness ($p<.05$). However, the effect of corporal punishment was somewhat greater when the caregiver displayed more hostile and ineffective parenting ($\beta_{High} = .025$ vs. $\beta_{Low} = .021$). The interactions of corporal punishment with psychological aggression 2 and hostility/ineffectiveness accounted for 0.44% and 0.15% of the variance in externalizing behaviours at 14-15 years, respectively. Finally, after removing the variance explained by control variables, findings indicated that non-physical punishment and both interaction effects together explained 2.70% of the variance in externalizing behaviour scores at 14-15 years.

Internalizing behaviours. Each step of the regression significantly contributed to predicting internalizing behaviours at 14-15 years (F (12, 2506) $_{Step}$ 0/Controls = 21.9, $p< .001$, $R^2 = .095$; F (13, 2505) $_{Step}$ 1 = 20.4, $p< .001$, $R^2 = .096$; F (21, 2497) $_{Step}$ 2 = 13.9, $p< .001$, $R^2 = .105$; F (29, 2489) $_{Step}$ 3 = 10.9, $p< .001$, $R^2 = .112$). After accounting for the level of internalizing behaviours at 2-3 years, corporal punishment experiences after the time of the initial assessment, contextual variables, co-occurring disciplinary strategies, and parenting style, results suggested that experiences of corporal punishment at 2-3 years were associated with

significantly greater internalizing behaviours at 14-15 years (Table 17, step 3; β = .043; p<.01). The effect of corporal punishment explained 0.28% of the variance in the outcome. Results also indicated that greater hostile/ineffective parenting was significantly associated with fewer internalizing behaviours at 14-15 years (Table 17, step 3; β = -.009; p<.01). This main effect accounted for 0.32% of the variance in internalizing behaviours.

There were interaction effects of corporal punishment with psychological aggression 1 (Table 17, step 3; β = -.073; p<.05) and with hostility/ineffectiveness (Table 17, step 3; β = .013; p<.01). While the interaction effect was significant for psychological aggression 1 (telling child s/he is bad or not as good as others), simple slope analyses indicated that the effect of corporal punishment at 2-3 years for the different levels of the moderator variable was not significantly different than 0 (p>.05). As such, this interaction effect could not be interpreted. Figure 11 shows that children who experienced corporal punishment at 2-3 years had significantly greater internalizing behaviours at 14-15 years if their caregiver displayed greater hostility/ineffectiveness (β = .040; p<.05). The effect of corporal punishment was not significant at low levels of hostility/ineffectiveness. The interaction effect of corporal punishment with hostility/ineffectiveness explained 0.38% of the variance of internalizing behaviours at 14-15 years. Finally, after removing the variance explained by control variables, findings indicated that the main effects of corporal punishment and hostility/ineffectiveness as well as their interaction together accounted for 1.70% of the variance in internalizing behaviour scores at 14-15 years.

Prosocial behaviours. Each step of the regression significantly contributed to predicting prosocial behaviours at 14-15 years (F (12, 2496) $_{\text{Step}}$ 0/Controls = 28.9, p< .001, R^2 = .122; F (13, 2495) $_{\text{Step}}$ 1 = 26.9, p< .001, R^2 = .123; F (21, 2487) $_{\text{Step}}$ 2 = 18.5, p< .001, R^2 = .135; F (29, 2479) $_{\text{Step}}$ 3 = 14.2, p< .001, R^2 = .142). After accounting for the level of prosocial behaviours at

2-3 years, corporal punishment experiences after the time of the initial assessment, contextual variables, co-occurring disciplinary strategies, and parenting style, results revealed no main effect of corporal punishment at 2-3 years. However, results suggested that more frequently describing alternative ways of behaving (explain/teach 2) at 2-3 years was associated with fewer prosocial behaviours at 14-15 years (Table 18, step 3; $\beta = -.440$; $p<.01$), whereas greater positive interactions were associated with greater prosocial behaviours (Table 18, step 3; $\beta = .117$; $p<.05$). The effect of explain/teach 2 and positive interaction accounted for 0.30% and 0.17% of the variance in this outcome, respectively.

There were interaction effects of corporal punishment experiences with non-physical punishment (Table 18, step 3; $\beta = -.489$; $p<.01$) and with explain/teach 2 (Table 18, step 3; $\beta = .698$; $p<.01$). Figure 12 shows that children who experienced corporal punishment at 2-3 years displayed significantly fewer prosocial behaviours at 14-15 years if their caregiver made greater use of non-physical punishment ($\beta = -.857$; $p<.01$). The effect of corporal punishment at 2-3 years was not significant at low levels of non-physical punishment. For the interaction between corporal punishment and explain/teach 2, Figure 13 indicates that children who experienced corporal punishment at 2-3 years exhibited significantly fewer prosocial behaviours at 14-15 years if their caregiver described alternative ways of behaving less frequently ($\beta = -.914$; $p<.001$). The effect of corporal punishment at 2-3 years was not significant at high levels of explain/teach 2. The interactions of corporal punishment with non-physical punishment and explain/teach 2 accounted for 0.34% and 0.37% of the variance in prosocial behaviours at 14-15 years, respectively. Finally, after removing the variance explained by control variables, findings indicated that positive interaction, explain/teach 2, as well as the interactions of corporal

punishment with non-physical punishment and explain/teach 2 together accounted for 2.00% of the variance in prosocial behaviours at 14-15 years.

Summary. These analyses explored the influence of corporal punishment, co-occurring disciplinary strategies, and parenting style on developmental outcomes while taking into account several contextual factors. Results from regression analyses revealed that several variables independently contributed to predicting behavioural outcomes. However, results mostly underscored the fact that the impact of corporal punishment, co-occurring disciplinary strategies, and parenting style cannot be understood in isolation because of the interactions that exist among them.

In terms of independent contributions at 8-9 years, results indicated that corporal punishment, greater non-physical punishment, and greater hostility/ineffectiveness at 2-3 years were significantly and positively associated with externalizing behaviours at 8-9 years. Conversely, more consistent parenting at 2-3 years was significantly and negatively associated with externalizing behaviours at 8-9 years. For prosocial behaviours, results revealed that greater psychological aggression 1 (telling child s/he is bad or not as good as others) and more frequent explaining/teaching 2 (describing alternative ways of behaving) at 2-3 years were associated with lower prosocial behaviours at 8-9 years. In contrast, greater positive interactions at 2-3 years were significantly associated greater prosocial behaviours at 8-9 years. There were no statistically significant findings for internalizing behaviours at 8-9 years.

For interaction effects at 8-9 years, results confirmed that corporal punishment at 2-3 years contributed to greater internalizing behaviours at 8-9 years if it occurred in the context of low explaining/teaching by describing alternative behaviours to the child. However, corporal punishment was associated with lower internalizing behaviours in the context of high

explaining/teaching. The impact of corporal punishment also depended on the broader disciplinary context in predicting prosocial behaviours. Specifically, corporal punishment at 2-3 years was associated with fewer prosocial behaviours at 8-9 years if it occurred in the context of higher use of non-physical punishment.

Patterns of results were similar for behavioural outcomes at 14-15 years. Greater non-physical punishment at 2-3 years was significantly associated with greater externalizing behaviours at 14-15 years. Greater positive interactions at 2-3 years predicted greater prosocial behaviours at 14-15 years. The effect of corporal punishment varied depending on the broader disciplinary and parenting context. Specifically, corporal punishment at 2-3 years was significantly associated with greater externalizing behaviours at 14-15 years if it occurred in the context of frequent yelling (psychological aggression 2). Also, the positive association between corporal punishment and externalizing behaviours was amplified in the context of more hostile/ineffective parenting. Similarly, corporal punishment at 2-3 years was significantly associated with greater internalizing behaviours at 14-15 years if it occurred within the context of greater parenting hostility/ineffectiveness. Corporal punishment at 2-3 years also contributed in predicting fewer prosocial behaviours at 14-15 years if caregivers also used high non-physical punishment and low explaining/teaching by describing alternative ways of behaving.

Discussion

Inspired by the controversy surrounding child corporal punishment, the current study had several aims. First, social change appears to be resulting from legal reforms, public awareness campaigns, and public education efforts in Canada to limit corporal punishment use and to promote positive disciplinary strategies. As such, one study objective was to examine nationally representative data over a 14-year period to determine whether change in parent disciplinary

strategies is occurring at a societal level and to assess the magnitude of this change (*study objective 1*). Because corporal punishment does not occur in isolation, another objective was to characterize the disciplinary context in which it occurs by examining the frequency of corporal punishment with other disciplinary strategies (*study objective 2*). Since many parents use corporal punishment, socio-demographic factors that distinguish parents who use corporal punishment from those who do not were examined (*study objective 3*). Finally, the potential impact of early corporal punishment experiences on later behavioural functioning was investigated (*study objective 4*).

Corporal Punishment and the Broader Disciplinary Context (Study Objectives 1 and 2)

As hypothesized and consistent with previous studies (Straus & Stewart, 1999; Vittrup et al., 2006), both the prevalence of corporal punishment as well as its frequency of use was significantly higher among caregivers of preschool-age children than those of older children. For example, in 2004-2005 (cycle 6), the prevalence of corporal punishment was 35.6% for 2-5 year olds but 17.1% for 10-11 year olds. These results suggest that education efforts around alternatives to corporal punishment may be especially important for caregivers of young children.

While the use of corporal punishment was higher for younger than older children from 1994-1995 to 2008-2009, findings also confirmed the hypothesis that a significant change in corporal punishment would be observed across time. In particular, there was a statistically significant decrease in both the prevalence of corporal punishment and its frequency of use. For example, the prevalence of corporal punishment was 49.9% in 1994-1995 for 2-5 year olds but 26.3% for this age cohort in 2008-2009. This decreasing pattern in corporal punishment prevalence and frequency of use is consistent with that observed in U.S. (Straus & Donnelly,

2001; Zolotor et al., 2011), U.K. (Heilmann et al., 2015) and Quebec (Clément & Chamberland, 2014) population-based surveys.

Having said this, in 2008-2009, results indicated that about one-quarter of caregivers (25.3%) still reported using corporal punishment with their 2-7 year old children (data for 8-11 year olds were missing in 2008-2009). This percentage corresponds to 504,500 Canadian caregivers. Similarly, the most recent data collected as part of Statistics Canada's Survey of Young Canadians (SYC; Statistic Canada, 2012) revealed that, in 2010-2011, 20.7% of caregivers reported using corporal punishment with their 2-9 year old children; however, the frequency of use was low (*M* =.20-.25 on a scale ranging from 0-4). These findings are in line with some more recent Canadian data which have found that 25.4% of parents (mainly from Ontario and Alberta) report spanking their 2-12 year olds (Perron et al., 2014), and 35% of Quebec mothers report using corporal punishment (defined as spanking, slapping, pinching, or shaking) with their child (6 months to 17 years; Clément & Chamberland, 2014). Therefore, even if a social change does appear to be underway, many caregivers are still using corporal punishment, and the prevalence seems to have stabilized in the last few years.

The examination of frequency data was important because it indicated that caregivers who reported using corporal punishment did so on an infrequent basis. This finding is consistent with past research (Oldershaw, 2002; Straus et al., 2014) and may indicate a decreasing trend in the frequency with which caregivers are using corporal punishment. Nonetheless, it may also be that the data are biased because parents tend to under-report their use of corporal punishment due to limits of retrospective recall and to the fact that corporal punishment is a controversial form of discipline (Straus et al., 2014). The study's low observed frequencies may have also been due to

caregivers interpreting the NLSCY question as referring to more severe punishment rather than to more commonly-used methods, such as spanking.

Importance of the broader disciplinary context. Results confirmed the importance of conceptualizing corporal punishment within a broader disciplinary context. The majority of caregivers in this study (whether they endorsed corporal punishment or not) reported using all co-occurring disciplinary strategies that were assessed (scolding or yelling, time-outs or removal of privileges, reward/praise, and explain/teach), except telling their child s/he is bad or not as good as others (i.e., psychological aggression item). This result confirms that caregivers of all children engage in a wide array of disciplinary practices to encourage desired behaviours and decrease undesired ones (Gershoff et al., 2010; Regalado et al., 2004; Socolar et al., 2007; Straus et al., 2014).

As for telling a child s/he is bad or not as good as others, it was endorsed by a minority of caregivers, whether they use corporal punishment or not. Nevertheless, this disciplinary strategy appears to distinguishing both groups of caregivers as it was reported by 21.1 % to 27.9% of those who use corporal punishment compared to 6.7% to 11.7% of those who do not use corporal punishment. Interestingly, post-hoc cluster analysis confirmed that a significant number (20.6-25.7%) of caregivers who use corporal punishment also tell their children they are bad or not as good as others, whereas no such statistically significant group was revealed among caregivers who do not use corporal punishment. This suggests that this strategy is not typically used by caregivers who do not engage in corporal punishment, but that it used by a significant number of caregivers who physically punish their child. This result is consistent with one of the study's hypotheses indicating that corporal punishment would co-occur more frequently with corrective/negative forms of discipline; it is also consistent with previous findings suggesting

that parents who use corporal punishment tend to use more psychological aggression with their child (Gamez-Guadix et al., 2010; Wissow, 2001).

Change in disciplinary practices across child development. As hypothesized and consistent with past research (Barkin et al., 2007; Chao & Willms, 2002; Collins et al., 2002), there are developmental differences in terms of the types of strategies used by caregivers for children of various ages. As expected, reward/praise was more frequent among younger children (2-5 years) whereas scolding, raising one's voice or yelling, and explaining/teaching were more prevalent and frequent with older children (6-9 and 10-11 years). Interestingly, non-physical punishment prevalence and frequency of use peaked for 6-9 year olds. These age differences may reflect caregivers' attempts to adjust their disciplinary practices to their child's developmental stage. Indeed, children are faced with many developmental tasks during childhood, which necessarily have an influence on parent-child interactions. As such, parents need to make use of a greater variety of strategies as their children grow older and to modify their interactions with their children (Edwards & Liu, 2002). For the use of non-physical punishment, it should be noted that the NLSCY question confounds two different disciplinary strategies, namely taking away a privilege and giving a time-out. This may have impacted the observed findings. For example, it is possible that caregivers of younger children endorsed this item because of their greater use of time-outs to discipline their 2-5 year olds. In contrast, caregivers of older children may have endorsed this item because of their greater use of removal of privileges. In fact, this latter disciplinary strategy has been found to be more frequent than time-outs in older children (Barkin et al., 2007; Gershoff et al., 2010).

Change over time in co-occurring disciplinary strategies. Given that corporal punishment occurs within a broader disciplinary context, it was hypothesized that the social

change observed with this disciplinary strategy would also have an impact on other strategies. This hypothesis was confirmed in that overall study results revealed a significant decrease over time in the prevalence and frequency of other negative strategies (e.g., psychological aggression) and an increase in the frequency of positive strategies (e.g., reward/praise, explain/teach). Interestingly, results from the current study revealed that telling children they are bad or not as good as others (the disciplinary strategy that appeared to distinguish caregivers who use corporal punishment from those who do not) remained somewhat stable from 2000-2001 until 2008-2009. This is congruent with the fact that the prevalence and frequency of corporal punishment seems to have stabilized in the last few years.

For non-physical punishment, findings were somewhat inconsistent over time. Analyses suggested a significant decrease in its prevalence for 2-5 year olds. While the prevalence was stable for older age cohorts, results surprisingly revealed a significant increase in its frequency of use for these children. As aforementioned, the NLSCY question confounds two different disciplinary strategies, namely time-out and removal of privileges. Time-out is a strategy recommended in most evidence-based parent training programs, but it has also often been criticized by practitioners and program developers because it may dismiss children's needs and feelings, model control and power, and lead to further parent-child conflict and child confusion (Arnall, 2007; Gartrell, 2001; Morawska & Sanders, 2011). Given that the effectiveness of time-out has been questioned and that this strategy is used primarily with preschool-age children (Barkin et al., 2007), this may explain the decrease in prevalence over time observed only for younger children. Nevertheless, the variability observed over time in the prevalence and frequency of use of non-physical punishment for the different age groups may also reflect the presence of no specific epidemiological trend for this strategy. To assess real developmental

trend in non-physical punishment, the distinction between caregivers' use of time-out and removal of privileges will need to be further explored in additional studies.

Processes underlying change over time. Underlying the observed change over time in corporal punishment and co-occurring disciplinary strategies may be processes occurring at an institutional and legal level. Durrant and colleagues (2003) noted that parenting practices develop within a cultural belief system that is influenced by institutions and social rules and that influences parenting attitudes, including those toward corporal punishment. In Canada, the legal system offers no clear message to caregivers as it still provides a defense for the use of corporal punishment. However, there may still be a decreasing trend in the use of corporal punishment as a result of the increasing discussion and public awareness of the issue that resulted from the legal challenges that occurred in Canada over the last decade (Ateah & Parkin, 2002). The growth of education campaigns may also be resulting in the emergence of a social change and disconnect between legal structures and individual behaviours.

The examination of effect sizes in the current study brought into question whether the observed changes in corporal punishment (and other disciplinary strategies) are truly meaningful from an applied perspective. However, it seems important to keep in mind that even a small decrease in corporal punishment and other negative strategies, as well as a small increase in positive strategies, may impact a significant number of caregivers if one considers these changes at a population level. Also, the largest obtained effect size (Φ = .24) revealed that the change in corporal punishment prevalence was greatest for 2-5 year olds as the prevalence decreased from 49.9% in 1994-1995 to 26.3% in 2008-2009.

A study on Sweden's prohibition of corporal punishment and on countries that have followed Sweden's lead suggests that change can be accelerated by an unambiguous legal ban

(Bussman, Erthal, & Schroth, 2011). However, it is important to remember that such legislation is not only a cause but also a manifestation of social change (Straus et al., 2014). To enact legal prohibition, it is thus necessary that an important proportion of society believes that corporal punishment is not appropriate under any circumstances and that it can be replaced by more positive disciplinary behaviours (Straus et al., 2014).

Different factors may help explain why some caregivers have not internalized the message that disciplinary strategies other than corporal punishment are available and more effective. According to the Theory of Planned Behaviour (TPB; Ajzen, 2012), perceived social norms, expectations for the outcome of corporal punishment (or other disciplinary strategies), and perceived behavioural control or self-efficacy are linked with attitudes toward and use of corporal punishment or other disciplinary strategies (Taylor, Hamvas, Rice, Newman, & DeJong, 2011). Indeed, perceived norms around the use of corporal punishment, perceived approval by professionals, family, and friends, as well as positive expected outcomes have been found to be significant predictors of positive attitudes toward corporal punishment. Similarly, negative expected outcomes and increased knowledge of child development have been associated with less favourable attitudes toward corporal punishment (Taylor et al., 2011). Interestingly, while corporal punishment is becoming less accepted, data from Quebec population-based surveys revealed that more mothers in the last 13 years believe that "parents are too soft on their children" (Clément & Chamberland, 2014, p.25). This may reflect the presence of a low sense of self-efficacy in their childrearing skills. As such, continued efforts will be necessary not only to increase public awareness of child development, risks of corporal punishment, and effectiveness of other strategies, but also to support caregivers in strengthening their childrearing skills.

In terms of promoting alternative positive disciplinary strategies, such as rewarding/praising and explaining/teaching, the prevalence and frequency of use are already high. To increase caregivers' sense of efficacy, future interventions could focus on the quality with which those strategies are implemented and delivered. In fact, questions used in the NLSCY (as in all studies using self-report methods) cannot assess the quality of implementation of the different disciplinary strategies. In addition to targeting caregivers' specific disciplinary behaviours, a focus on the broader parenting style (e.g., warmth, consistency), on knowledge about child development, and on the goals of discipline (e.g., decreasing noncompliance versus promoting the internalization of moral/social values) will be important in future research studies as well as in intervention and prevention efforts.

Socio-Demographic Predictors of Corporal Punishment (Study Objective 3)

Given that approximately one in four caregivers continues to use child corporal punishment, one of the study objectives was to characterize the socio-demographic context in which this disciplinary strategy occurs. Results indicated that child sex, caregiver age, employment status, family structure, household income, household size, immigration status, ethnicity, religion, religiosity, and geographic region of residence independently and significantly distinguished caregivers who reported using corporal punishment from those who did not. When examined together by way of multivariate analyses, these socio-demographic variables remained significant except for household income. These results are in line with several past findings but not with others, as conflicting results have been presented in the literature (Gershoff, 2002a).

Based on the multivariate analyses, the most consistent results found across age groups were for child sex, household size, religious background, religiosity, and geographic region of

residence. As in other studies (Day et al., 1998; Taylor, Manganello et al., 2010) and consistent with study hypotheses, boys were more likely to experience corporal punishment. As hypothesized, caregivers from larger households were more likely to report corporal punishment use. This finding may be partially due to the level of stress experienced by parents who are caring for multiple children. Having a large household is associated with an increased need for resources in the home and with increased complexity in the distribution and sharing of these resources, which most likely places a greater burden on parents (Day et al., 1998; Regalado et al., 2004; Straus & Stewart, 1999). This increased level of burden and stress has been found to be associated with harsher parental disciplinary strategies (Zielinski & Bradshaw, 2006).

With regard to religion, parents from a conservative Protestant background had a significantly increased likelihood of reporting corporal punishment, compared to parents from no or other religious backgrounds. This result, in line with study expectations and past research (Grogan-Kaylor & Otis, 2007; Taylor, Manganello et al., 2010), may be due to specific child rearing beliefs anchored in conservative Protestant religions (Gershoff, Miller, & Holden, 1999). However, one should be cognizant of the difference between specific religious affiliations and the concept of religiosity (e.g. attendance at religious services or level of endorsement of religious beliefs without consideration of any specific type of beliefs), which has been found to have positive effects on the parent-child relationship and to be associated with child-oriented discipline (Pearce & Axinn, 1998). Indeed, consistent with study hypotheses, results revealed that religiosity was associated with a reduced likelihood of corporal punishment use.

In a similar fashion, ethnicity and the geographic region of residence offer a cultural context that can influence corporal punishment attitudes and normativeness. Consistent with study expectations and with U.S. results that observed higher corporal punishment prevalence in

American states characterized by a more conservative culture (Flynn, 1994; Giles-Sims, Straus, & Sugarman, 1995; Straus & Stewart, 1999), current results revealed that overall, caregivers from the Canadian Prairies tended to endorse corporal punishment use more frequently than parents from other regions of Canada. Cultural differences were also suggested for children aged 2-5 years from Black and East Asian cultures; caregivers were more likely to report corporal punishment than caregivers of European Canadian background. This difference was also observed for East Asian parents of 10-11 year olds. Several past studies but not in others (Gershoff et al., 2012; Grogan-Kaylor & Otis, 2007; MacKenzie et al., 2011; Regalado et al., 2004) have observed this cultural difference which may reflect parents' positive attitudes towards corporal punishment, a factor consistently identified as influencing corporal punishment use (Gagné et al., 2007). Cultural upbringing provides opportunities for the development of childrearing beliefs (Lansford et al., 2005; Taylor et al., 2011), with corporal punishment normativeness and attitudes varying across cultures.

The current study suggests that socio-demographics have a greater association with corporal punishment for caregivers of younger children, as significant results generally appeared for 2-5 and 6-9 year olds, compared to 10-11 year olds. Such age-specific differences were found by Day et al. (1998), who compared corporal punishment use in 1-4 and 5-11 year olds. However, to my knowledge, no other studies have examined corporal punishment for specific developmental periods even though this appears relevant since corporal punishment peaks during the preschool years and gradually decreases from 5 years onward (Vittrup et al., 2006). It should be noted that the age-specific differences observed in this study may be due to the fact that the sample size for younger children was greater than that for older children in 2008. Nevertheless, the statistical power was sufficiently strong in all analyses for small effects to appear significant.

Consistent with study expectations, it is interesting to note that several variables which were statistically significant only in the younger age cohort (i.e., caregiver younger age, employment, immigration) may be considered proxies of stress, which is associated with harsher disciplinary strategies (Zielinski & Bradshaw, 2006). Oldershaw (2002) suggested that parents of older children engage in less corporal punishment because they may be more confident in their parenting role, having had the chance to put into place support systems and to develop a variety of parenting strategies. This may help buffer the effect of stress on parenting practices. Parents who continue to use corporal punishment with older children may do so more out of ideology rather than out of reactivity and frustration (Day et al., 1998).

While the majority of the results regarding socio-demographic factors followed expected trends, differences emerged for variables used as proxies of SES. Indeed, household income and education level were not significant predictors of corporal punishment use, and the effect of employment status was opposite to the expected direction. These results first suggest that caregivers from all income and educational level may report using corporal punishment. As for the employment status that appeared significant only for children aged 6-9 years (in the multivariate models), it is possible that employed caregivers experience more stress due to work-life balance. This would be especially true in a period when their parenting strategies and sense of confidence may be undermined by the new set of challenges they face as their child enters a new developmental stage (Oldershaw, 2002), characterized for example by the beginning of school, peer influence, and extra-curricular activities. Another interesting result concerned single-parent and step-family households where reports of corporal punishment were less frequent than those from intact families. This result may at first appear surprising based on a stress-mediated hypothesis, because these families tend to report more stress than intact families

(Bray & Berger, 1993; Zeppa & Norem, 1993). However, past studies observed similar results. For example, an examination of 258 parents and children aged 0-19 years revealed that mothers in a new relationship tend to raise their voice and use corporal punishment less often (Thomson, Mosley, Hanson, & McLanahan, 2001). It is possible that parents in step-families report less corporal punishment because of (1) a reduced level of child supervision due to the stress related to family transitions and to the parents' investment in a new relationship and/or (2) reduced time in the presence of their biological children as compared to parents in intact families (Thomson et al., 2001). A similar explanation could also apply to single-parent families as research indicates a stronger association with poorer parental supervision (Loeber et al., 2000), perhaps because these parents are trying to manage on their own the many demands of caregiving (Day et al., 1998). Alternatively, reduced marital conflict, better quality of communication in the family, stronger parent-child alliance, and increased positive interactions between the parent and the child are other factors that could contribute to resiliency in these families (Saint-Jacques, Drapeau, & Parent, 2009), and potentially by associated with a reduction in corporal punishment.

Finally, one should be cognizant that socio-demographics were found to explain only a small percentage of the variability in corporal punishment. Therefore, socio-demographics may not represent the best predictors of corporal punishment (Durrant, Ensom, & Coalition on Physical Punishment of Children and Youth, 2006). Stress and other parental characteristics, such as attitudes toward corporal punishment, childhood experiences with corporal punishment, and social support, are variables that need to be more directly and closely investigated in future studies. In order to further guide public education efforts, future studies should not only characterize those parents that continue to use corporal punishment but also identify profiles of

parents that are more likely to report changes in corporal punishment use, based on an array of socio-demographic and parent process factors (e.g., attitudes, norms).

Corporal Punishment and Developmental Outcomes (Study Objective 4)

Based on past findings and in line with Gershoff's (2002a, 2002b) process-context model, it was hypothesized that experiences of corporal punishment at 2-3 years would be associated with greater externalizing and internalizing behaviours as well as with lower prosocial behaviours at both 8-9 years and 14-15 years. These effects were expected to remain significant even after taking into account the following: initial levels of behavioural functioning; use of corporal punishment over time; contextual variables (i.e., child sex, child temperament, caregiver age, caregiver depression, household size, family structure, caregiver employment status, household income, immigration status, ethnicity, religion, and geographic region of residence); co-occurring disciplinary strategies (i.e., psychological aggression, non-physical punishment, reward/praise and explain/teach); and parenting style (i.e., positive interactions, hostility/ineffectiveness, and consistency). Note that the strategy reward/praise had to be removed from the analyses because of the absence of variance on this variable; almost all caregivers reported frequently using reward and praise.

Results partially confirmed the study hypotheses. Based solely on main effects, results suggested that experiences of corporal punishment at 2-3 years were significantly associated with increased externalizing behaviours at 8-9 years and with increased internalizing behaviours at 14-15 years. It is quite remarkable that after such a lengthy period of time and after controlling for such a wide array of contextual variables, several associations still emerged as significant. However, to truly understand the association of corporal punishment with behavioural outcomes,

it is essential to consider the broader disciplinary context because corporal punishment does not occur in isolation.

As expected, study results revealed that all co-occurring disciplinary strategies and parenting style were directly associated with at least one of the behavioural outcomes. More importantly, these variables moderated the effect of corporal punishment. After including interactions of corporal punishment with co-occurring disciplinary strategies and parenting style, corporal punishment at 2-3 years was in fact associated with all examined outcomes at both 8-9 and 14-15 years. Specific results are detailed below, with a focus on the independent and moderating effects observed for the different behavioural outcomes. Note that main effects of variables included within statistically significant interactions were not further discussed because these main effects are secondary to the interactions (Aiken & West, 1991; Keith, 2006). Finally, there is a discussion on how results from the current study inform the debate surrounding corporal punishment.

Externalizing behaviours. Results indicated that corporal punishment at 2-3 years was independently associated with increased externalizing behaviours at 8-9 years. This replicates past findings (Durrant & Ensom, 2012; Fergusson, 2013; Gershoff, 2002a, 2013; Heilmann et al., 2015; Paolucci & Violato, 2004; Straus et al., 2014) and is consistent with the fact that corporal punishment may initiate parent-child coercive cycles and model interpersonal aggression as well as poor emotion regulation. Greater hostility/ineffectiveness and lower consistency at 2-3 years were also independently associated with greater externalizing behaviours at 8-9 years. This result was expected because harsh, hostile, and punitive parenting has been linked with more adverse child outcomes (Baumrind, Larzelere, & Owens, 2010; Gershoff et al., 2010; Knutson, DeGarmo, & Reid, 2004; Landy & Tam, 1998; Miller et al., 2002; Wager, 2009) and has been

found to increase the stress experienced by children (Bugental, Martorell, & Barraza, 2003). In contrast, it is known that consistent, sensitive, and child-oriented parenting practices promote children's overall positive adjustment (Newland, 2015) and reduce externalizing behaviours more specifically (Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010; Huang, Wang, & Warrener, 2010).

Consistent with these results, experiences of corporal punishment at 2-3 years were also associated with increased externalizing behaviours at 14-15 years in the context of harsher discipline and parenting style. Specifically, 2-3 year olds who experienced corporal punishment reported significantly greater externalizing behaviours at 14-15 years if their caregivers also frequently raised their voice, scolded, or yelled at them (psychological aggression). Moreover, the association with externalizing behaviours at 14-15 years was greater when caregivers also displayed more hostile/ineffective parenting. A similar moderating effect was observed in a longitudinal study of young children where spanking at 3 years was associated with externalizing behaviours at 5 years in the context of low maternal sensitivity or high maternal harshness (Clincy, 2013). For the current study, it is possible that psychological aggression (i.e., yelling and scolding) and hostility/ineffectiveness at 2-3 years exacerbated the impact of corporal punishment on child emotional and cognitive processes (i.e., parent-child coercive cycles, modeling of interpersonal aggression, emotion regulation difficulties) in a way that its effect remained present even into adolescence. Altogether, corporal punishment, psychological aggression, and hostility/ineffectiveness could also contribute to the development of an insecure attachment, which has been found to be positively associated with increased externalizing behaviours (Fearon et al., 2010).

Finally, results from the current study revealed that non-physical punishment independently contributed to the prediction of greater externalizing behaviours at 8-9 years and 14-15 years. While this result was contrary to study expectations, it has been observed in past studies (Lansford, Wager, Bates, Dodge, & Pettit, 2012; Wager, 2009) and could be related to the fact that non-physical punishment (such as time-out) may dismiss children's needs and lead to power struggles and child confusion (Arnall, 2007; Gartrell, 2001). Nevertheless, it is important to note that non-physical punishment has been associated with a reduction in externalizing behaviours in research on treatment outcomes (Everett et al., 2010; Kazdin, 2005; Patterson et al., 1982). However, in community samples such as the one in this study, parents most likely do not receive explicit training and instructions as offered in treatment programs (Wager, 2009). As such, it is possible to question the effectiveness with which caregivers in the current sample implemented non-physical punishment. Depending on their implementation, various forms of non-physical punishment could be functionally different, thus influencing the observed association with development outcomes (Lansford, Wager, Bates, Dodge, & Pettit, 2012). Moreover, the impact of non-physical punishment may differ in a supportive versus harsh parental context (Baumrind et al., 2010). Future studies will need to continue exploring the differential impact of non-physical punishment depending on the targeted population (community vs. clinical sample), the effectiveness of implementation, and the broader parenting context. It is also necessary to distinguish between removal of privileges and time-out as these two strategies were confounded in the current study.

Internalizing behaviours. Past research has revealed a positive association between child corporal punishment and internalizing behaviours (Durrant & Ensom, 2012; Ferguson, 2013; Gershoff et al., 2002a, 2013; Heilmann et al., 2015; Straus et al., 2014). Results from the

current study are consistent with these findings but also suggest that the broader disciplinary context must be considered. Specifically, results showed that children who experienced corporal punishment at 2-3 years displayed significantly greater internalizing behaviours at 8-9 years if their caregivers also engaged in fewer descriptions of alternative ways of behaving. In contrast, these children exhibited significantly lower internalizing behaviours at 8-9 years if explaining/teaching was high. Based on this latter interaction effect, teaching children by describing alternative ways of behaving appears to buffer the negative effect of corporal punishment. While no studies have specifically examined the moderating effect of explaining/teaching on internalizing behaviours, this result is consistent with findings suggesting that positive parenting can attenuate the negative consequences of corporal punishment (Aucoin et al., 2006; Clincy, 2013, Lansford et al., 2010; Ma et al., 2012; McLoyd & Smith, 2002). Indeed, corporal punishment may not be perceived by a child as unjust or indicative of rejection if administered by a caregiver who takes the time to explain and teach (Wang & Kenny, 2014). Discussing alternatives way of behaving may also reduce the distress experienced by children, thus moderating its impact on child development.

One surprising result was that the level of internalizing behaviours at 8-9 years was highest for children who experienced no corporal punishment coupled with high explain/teach and lowest for children who experienced no corporal punishment coupled with low explain/teach (Figure 7). This result contradicts past findings which have demonstrated that positive discipline and authoritative parenting, characterized by reasoning and explanations, foster stronger parent-child relationships and are associated with greater child well-being across domains of functioning (Newland, 2015; Passini, Pihet, & Favez, 2014). There may be various explanations for the current study results. It may be that discussing alternative ways of behaving could

contribute to increasing a child's anxiety, especially if explaining/teaching is done in a shameful way or within a harsh/hostile parenting context. In fact, expressing disappointment and shaming have been associated with higher anxiety symptoms in 8-12 year old children (Gershoff et al., 2010). Moreover, challenging techniques of explaining and teaching that go beyond the child's developmental level could contribute to increased anxiety (Newland, 2015). To better understand the effect of explaining/teaching, future studies should endeavour to assess the quality of this strategy's implementation. Another potential explanation for the current results may be due to shared method variance and to caregivers' limited ability to report the presence of internalizing symptoms in their child, which is normally quite difficult because child sadness and anxiety are not always readily observable. One may speculate that caregivers who do not use corporal punishment and who make frequent use of positive parenting may be more responsive, sensitive, and attuned to their child's emotions and needs. This increased emotional awareness may contribute in improving their ability to report internalizing symptoms in their child. This hypothesis would need to be further explored in future studies. However, it is interesting to note that the association between explaining/teaching and internalizing behaviours was not observed at 14-15 years. It may be that the effect of explaining/teaching at 2-3 years does not continue over an extended period of time, or it may be due to the fact that internalizing behaviours were self-reported at 14-15 years. As such, shared method variance and the potential impact of greater parental emotional awareness would not be factors at this point in time.

Finally, corporal punishment at 2-3 years was positively associated with self-reported internalizing behaviours at 14-15 years if caregivers also displayed greater hostility and ineffectiveness. This result is congruent with that obtained for externalizing behaviours in the present study. As previously discussed, harsh, hostile, and punitive parenting has a detrimental

impact on child outcomes (Baumrind et al., 2010; Gershoff et al., 2010; Knutson et al., 2004; Landy & Tam, 1998; Miller et al., 2002; Wager, 2009), which could exacerbate the effect of corporal punishment so that it remains significant into the adolescent years.

Prosocial behaviours. Very few studies have assessed the association between early experiences of corporal punishment and prosocial behaviours (e.g., helping, sharing, giving, cooperating, responding to others' distress; Weir & Duveen, 1981). A study of 131 parents of 6-17 year old children (Gryckowski, 2010) found a significant and negative association between child corporal punishment and prosocial behaviours. Similarly, severe corporal punishment in the preschool years has been associated with lower prosocial, cooperative, and achievement-oriented behaviours in adolescence (Baumrind et al., 2010). The potential impact of corporal punishment on prosocial behaviours may be explained by the reduced moral internalization suggested to be associated with corporal punishment (Gershoff, 2002a). Corporal punishment may motivate children to comply with a caregiver's demands in order to avoid future punishment rather than because they believe in the importance of conducting themselves in a morally and socially responsible way (Hoffman, 1983). According to an attachment perspective, corporal punishment experiences may also contribute to the development of negative models of self and others; this may generate anxiety and resentment in interpersonal relationships and thus impede children's ability to engage in prosocial behaviours (Michiels, Gritens, Onghena, & Kuppens, 2010).

Consistent with study hypotheses and past findings, the current study confirmed a negative association between corporal punishment and later prosocial behaviours but this again depended on the broader disciplinary context. Specifically, children who experienced corporal punishment at 2-3 years had significantly lower prosocial behaviours at 8-9 and 14-15 years if

their caregivers used more non-physical punishment. Similarly, children who experienced corporal punishment at 2-3 years reported significantly lower prosocial behaviours at 14-15 years if their caregivers rarely described alternative ways of behaving. These findings suggest that the effect of corporal punishment appears to be exacerbated by the presence of additional corrective punishment and less frequent positive discipline. This makes sense given that supportive parenting, characterized by calm discussion and teaching, has been found to promote social skills (Pettit, Bates, & Dodge, 1997) and that reasoning with a child (or inductive parenting) contributes to increased internalization of moral norms (Passini et al., 2014). For non-physical punishment, this corrective strategy may promote compliance, but it does not necessarily teach children prosocial behaviours (Arnall, 2007; Gartrell, 2001).

Results from the current study suggested that co-occurring disciplinary strategies and parenting style in early childhood can independently influence future prosocial behaviours. Consistent with study expectations and past findings (Baumrind et al., 2010; Pettit et al., 1997), telling a child s/he is bad or not as good as others (psychological aggression) was associated with lower prosocial behaviours at 8-9 years. In contrast, parent-child positive interactions were significantly associated with greater prosocial behaviours at 8-9 years and 14-15 years. These results again reflect the fact that positive parenting, characterized by affection, responsiveness, encouragement, and engagement, promotes children's well-being whereas hostile and harsh parenting impede children's healthy development (Newland, 2015).

Finally, results surprisingly suggested that frequently describing alternative ways of behaving at 2-3 years was associated with lower prosocial behaviours at 8-9 years. This result is contrary to past research and to the previous finding, which suggested a moderating effect at 14-15 years (discussed above). It may be that the positive effect of explaining and teaching

becomes apparent only later in life. This should be further explored as well as the way in which explaining/teaching is implemented by caregivers who report its use.

The Debate: Anti-Corporal Punishment versus Conditional Corporal Punishment

Corporal punishment is a disciplinary strategy that has generated and continues to generate much controversy. As aforementioned, this controversy is mainly characterized by a debate between the anti-corporal punishment and the conditional corporal punishment perspectives (Benjet & Kazdin, 2003). The anti-corporal punishment perspective builds on principles related to children's rights and on research findings suggesting that corporal punishment compromises children's healthy development. As such, proponents believe that corporal punishment should not be used under any circumstances (Durrant & Ensom, 2012; Gershoff, 2013). In contrast, proponents of the conditional corporal punishment perspective argue that the literature on corporal punishment is methodologically limited, and they maintain that occasional use of physical force for disciplinary purposes may be beneficial under certain conditions (Baumrind, Larzere, & Cowan, 2002; Larzelere & Kuhn, 2005).

This study's fourth objective addressed some of the methodological limitations of the existing literature in order to inform the debate surrounding child corporal punishment. First, it used a longitudinal design to explore the longer-term behavioural outcomes of corporal punishment at 2-3 years. Corporal punishment is most prevalent during this age period, and it is supported by conditions set forth by the conditional corporal punishment perspective and by Section 43 of the Canadian Criminal Code. Second, the current study also added to the research literature not only by examining potential problem behaviours associated with corporal punishment but also by exploring positive outcomes. This appears important given that caregivers' primary responsibility is to foster children's healthy development and well-being.

Proponents of conditional corporal punishment have underscored the beneficial impact of corporal punishment, especially if this disciplinary strategy is used under certain conditions such as in combination with reasoning or other disciplinary strategies (Larzelere, 2000). As such, the third way in which this study contributed to current research is by examining any moderating effects of co-occurring disciplinary strategies on the corporal punishment outcomes; this has never been done in past studies. Fourth, current research on the detrimental outcomes of corporal punishment has been criticized because it: (1) focuses too heavily on severe forms of corporal punishment; (2) fails to use distinct sources of information for measures of corporal punishment and outcome variables which creates problems of shared-method variance; and (3) does not include the myriad of potential confounding variables (Ferguson, 2013; Larzelere & Kuhn, 2005; Larzelere et al., 2010). Therefore, the current study examined the effect of parent-reported corporal punishment on parent-reported (at 8-9 years) and youth-reported (at 14-15 years) behavioural outcomes, while taking into account a variety of contextual variables; such an exhaustive array of variables has, to date, never been accounted for within a single analytic model. While results from the current study cannot characterize the level of severity of corporal punishment, frequency data suggest that caregivers who endorsed this strategy reported rarely using it, which respects one of the conditions identified by the conditional corporal punishment proponents.

After addressing these different methodological limitations, results from the current study led to two main conclusions. First, early corporal punishment experience is, in and of itself, associated with increased risk of externalizing behaviours at 8-9 years. Second, besides this independent association, results do not suggest that corporal punishment is detrimental for all children who experience it in early childhood. Rather, early child corporal punishment is

associated with longer-term detrimental outcomes (i.e., increased externalizing and internalizing and decreased prosocial behaviours) in school-age children (8-9 years) and adolescents (14-15 years) when it occurs within a certain disciplinary context (i.e., more hostile, harsh, and punitive discipline and parenting style and/or lower inductive discipline and positive parenting). This moderating effect is important to consider, but not surprising, because corporal punishment tends to occur more frequently within this exact type of disciplinary context, namely a more hostile and punitive parenting context. Indeed, corporal punishment tends to be accompanied by more caregiver psychological aggression (i.e., yelling, making the child feel bad, acting cold), fewer acts of warmth toward the child, and limited physical affection (Gamez-Guadix et al., 2010; Wissow, 2001). Similarly, in a U.S. nationally representative sample, Thompson and collaborators (1999) identified three clusters of parents (N = 1,000) of 0-17 year old children. Two of these clusters were characterized by the presence of high physically punitive discipline accompanied either by negative attitudes toward children and higher verbally abusive discipline (22% of the sample) or by positive attitudes toward children but high anger/frustration in parenting and high non-physical punishment (63% of the sample).

Consistent with previous findings (Durrant & Ensom, 2002; Ferguson, 2013; Gershoff, 2013; Paolucci & Violato, 2004), results from the current study revealed that corporal punishment was not associated with beneficial outcomes under any conditions. Note that children who experienced corporal punishment at 2-3 years had lower internalizing behaviours at 8-9 years if they also experienced high explain/teach, but their level of internalizing behaviours was still higher than that of children who experienced no corporal punishment and low explain/teach at 2-3 years. As such, while the detrimental impact of corporal punishment generally appears to be a function of interactions within the broader disciplinary context, results

suggest that corporal punishment does represent a risk factor, and they offer support for the anti-corporal punishment perspective.

Effect sizes and identification of corporal punishment as a risk factor. Before arriving to the conclusion that corporal punishment is unwarranted under any circumstances, effect sizes merit specific attention. The small effect sizes observed in this study stress the importance of cautiously interpreting results because they put into question their relevance in an applied perspective. Larzelere and Baumrind (2010) argued that ending corporal punishment would not make an important contribution to the well-being of children because the effect size of this corrective disciplinary strategy is so low.

Compared to bivariate correlations, part correlations represent a more conservative index of effect size that control for the presence of all variables included in the statistical model (Ferguson, 2013). In the current study, part correlations revealed that corporal punishment (either as an independent or moderated effect) individually explained between 0.14-0.44% of the variance (part r = .04-.07) in externalizing behaviours, between 0.38-0.40% of the variance (part r = .06-.06) in internalizing behaviours, and between 0.29-0.37% of the variance (part r = .05-.06) in prosocial behaviours. The amount of variance explained by corporal punishment falls within the range obtained in other research (Ferguson, 2013; Poalucci & Violato, 2004), even after controlling for initial level of behavioural functioning, corporal punishment experience after the time of the initial assessment, variables from the stable individual and relational context, variables from the social-cultural context, and the broader disciplinary context (co-occurring disciplinary strategies and parenting style). The effect size of corporal punishment is small (Cohen, 1992) but not trivial. Indeed, although the methodology of the current study prevents

any causal conclusion, corporal punishment can still be identified as a risk factor and this risk remains important to consider for several reasons.

The concept of risk does not suggest a one-to-one relationship; most children who experience corporal punishment will not suffer from its harmful effects but these children are put at risk of harm (Ferguson, 2013; Straus et al., 2014). The concept of risk reflects the increased probability of behavioural, emotional, and/or social difficulties in children who have experienced corporal punishment. The low effect size of corporal punishment may be a reflection of the low problem behaviours reported in the community sample used in the current study. One could expect that the effect size of corporal punishment would have been greater in a clinical sample. Nevertheless, it is important to remember that domains of functioning are interconnected (Cicchetti & Toth, 1997; Cicchetti & Valentino, 2006); consequently, the small effect sizes for the different behavioural outcomes in the current study may cumulatively represent greater risk in the real-world context. Moreover, the small effect sizes of corporal punishment may simply illustrate the complexity of human behaviours and the fact that any single factor can only explain a small amount of variance in a specific behaviour (Straus et al., 2014). Such low effect sizes reflect the array of factors that influence child development and are typical of the impact of any of these factors taken individually (Straus et al., 2014). The small effect size of an event that occurred 6 to 12 years earlier could also suggest that this event or experience is part of the child's developmental "baggage" but that more proximal experiences (e.g., current parent-child relationship, peer relationships, school functioning) may exert bigger effects.

Another important reason for considering the risk associated with corporal punishment is its high prevalence in the population. Indeed, the small effect of corporal punishment may translate into larger cumulative negative outcomes at the population level (Straus & Paschall,

2009). Such a cumulative effect is central to public health research and intervention because minimal individual-level change may create major shifts if these changes occur for a large proportion of the population (Kasangra & Farley, 2011). Interestingly, while the small effect size of corporal punishment has led to individuals supporting its continued use, public health efforts have historically targeted the reduction of risk factors with effect sizes as low (if not lower) as that of corporal punishment (Ferguson, 2013; Straus et al., 2014). For example, the impact of smoking during pregnancy (Castles, Adams, Melvin, Kelsch, & Boulton, 1999), the impact of child exposure to secondary tobacco smoke (Gehrman & Howell, 2003), the Salk Vaccine for polio (Ferguson, 2013), the impact of exposure to lead on children's IQ scores, and the impact of calcium intake on bone mass (Bushman & Anderson, 2001) are all risk factors that have been targeted by public health efforts and that have effect sizes considered small.

In sum, results from the current study revealed small effect sizes of corporal punishment on externalizing, internalizing, and prosocial behaviours. The effect sizes are similar to those observed in previous studies even after accounting for a wide array of contextual variables and the broader disciplinary context. The small effect sizes are also representative of what would be expected for the effect of any specific parent behaviour on child development. In addition, the small effect sizes may represent the presence of an even greater risk if one considers the cumulative impact of corporal punishment on the different behavioural outcomes and its cumulative effect at a population level. Given all these considerations, it is reasonable to conclude that corporal punishment does represent a non-trivial risk factor for child development and that results from the current study support the anti-corporal punishment perspective.

Finally, it is critical to ask ourselves what is trivial when we consider the issue of hitting children. Straus poignantly highlighted that "the family is one of the last places where violence

by individual members of society to achieve desirable ends has persisted" (Straus et al., 2014, p. 319). While corporal punishment by teachers or for criminals has been abolished, this practice is still lawful in Canada and the U.S. if used by parents for purposes of discipline. There is no debate around the importance of eliminating child physical abuse but it is important to remember that corporal punishment often has the potential to result in physical abuse (Fréchette et al., 2015; Gonzalez et al., 2008; Heilmann et al., 2015; Zolotor et al., 2008). As such, the elimination of corporal punishment is a vital first step (Freeman & Saunders, 2014). Moreover, from a human rights perspective, all children have the right to protection from all forms of violence as per Article 19 of the UN Convention on the Rights of the Child (Committee on the Rights of the Child, 2006). Childen also have the right to life, survival, and development (Article 6), and there is no evidence that corporal punishment promotes healthy child development and well-being. On the contrary, the evidence identifies corporal punishment as a developmental risk factor. Canada, who has ratified the UN Convention on the Rights of the Child in 1991, needs to commit to the upholding of its articles.

Limitations

The current study made use of a Canadian nationally-representative data, which allowed for analyses that were both comprehensive and longitudinal in nature. With any broad survey come certain limitations, especially with regard to the amount of information that can be collected for any one specific area. This certainly was the case for the current study. First, the NLSCY question used to assess corporal punishment did not provide an operational definition, which means that caregivers were required to answer based on their own interpretation. Because there is definitional variability in behaviours that comprise corporal punishment, it is difficult to characterize the severity of corporal punishment reported by caregivers. This could potentially

influence the prevalence of corporal punishment as well as outcomes associated with its use. Establishing the validity of such a question and understanding how caregivers define corporal punishment will be essential in future studies. Similarly, the different disciplinary strategies examined in the current study also occur on a continuum of severity, and they may differ in the way they are implemented by caregivers. Unfortunately, questions such as the ones used in the NLSCY cannot qualify how caregivers engage in those behaviours, and this should be further characterized in future studies.

Second, although caregiver reports are the primary data collection method in corporal punishment research (Gershoff, 2002a) and the only feasible option in large-scale surveys, reliance on self-report measures may bias results. Due to the limits of retrospective recall and to the fact that corporal punishment is a controversial form of discipline that has repeatedly been challenged, caregivers tend to underreport their use of this disciplinary strategy (Straus et al., 2014). This could serve to underestimate the true prevalence of corporal punishment. As such, the current study included caregivers who *rarely* reported using corporal punishment as part of the operationalization of the corporal punishment variable. This decision can also be justified by the fact that even rare experiences of corporal punishment have been associated with increased risk of negative outcomes, such as physical abuse (Fréchette et al., 2015). Nevertheless, it would be important for future studies to further discriminate between levels of corporal punishment frequency as this can influence the prevalence, the characteristics of caregivers who use this disciplinary strategy, and the outcomes associated with corporal punishment.

Third, most of the information collected and examined in the present study stemmed from the same rater (i.e., caregiver). As such, shared method variance may have resulted in higher correlations between predictors and child outcomes. It should be noted, however, that shared

method variance did not represent a problem in the longitudinal analyses for 14-15 year olds because the outcomes at this age were measured through adolescent self-reports.

Finally, given its correlational design, this study was not able to determine causality in the examined relationships. The cross-sectional nature of the analyses on the predictors of corporal punishment (*study objective 3*) prevented the establishment of temporal associations between variables. For the analyses on outcomes of corporal punishment (*study objective 4*), the longitudinal design helped to strengthen causal and temporal inferences, especially because analyses controlled for the initial level of behavioural functioning. The numerous controls and covariates used in the current study also allowed for more solid inferences about the influence of corporal punishment on behavioural outcomes. Nevertheless, there were a number of variables that could not be included in study analyses because the NLSCY did not include them. Specifically, certain variables from the interactional context of Gershoff's (2002a, 2002b) process-context model (e.g., characteristics of a child's misbehaviour, emotional state of the parent and child in disciplinary moments, parent attributions) as well as dynamic variables such as caregivers' attitudes toward corporal punishment, perceived stress, and social support could not be examined. Future studies should endeavour to further explore these variables because they may also act as predictors of corporal punishment and as moderators of its impact on child development. Similarly, characterization of mediational processes could increase one's understanding of the association between corporal punishment and behavioural outcomes. Future research should attempt to (1) examine different forms and severity of corporal punishment, (2) better characterize the complexity of human characteristics (e.g., examination of more than two-level interactions; exploration of profile of characteristics; use of statistical modelling to assess bi-directional, mediational, and moderating relationships), and (3) examine

how early childhood experiences such as corporal punishment can moderate the impact of current stressors on mental health and behavioural functioning.

Conclusion

Child corporal punishment has consistently been identified as a developmental risk factor (Benjet & Kazdin, 2003; Durrant & Ensom, 2012; Gershoff, 2002a, 2013; Heilmann et al., 2015). The current study confirmed that early child corporal punishment is independently associated with increased externalizing behaviours at 8-9 years. The current study also demonstrated that, in certain disciplinary and parenting contexts, early corporal punishment is associated with an increased risk of externalizing and internalizing behaviours as well as with a reduced likelihood of prosocial behaviours later in childhood and into adolescence. Under no conditions was corporal punishment beneficial to children's healthy development and well-being. Although its effect size was small, corporal punishment remains a risk factor that could have greater cumulative effects across domains of development and at a population level.

Legal reforms and public education efforts to eliminate the use of corporal punishment and promote positive discipline seem to have resulted in decreases in its prevalence and frequency of use, at least within the Canadian context. These efforts also seem to have generalized to co-occurring disciplinary strategies by reducing the prevalence and frequency of other negative strategies while increasing that of alternative positive strategies. Nevertheless, a considerable number of caregivers continue to use corporal punishment. As such, efforts need to be pursued to further encourage a social change that would impact a greater number of parents. Also, it seems important to keep understanding the characteristics of parents who use corporal punishment and to target specific education and intervention efforts accordingly. Certain child, parent, and family characteristics seem to differentiate parents who use and do not use corporal

punishment. Therefore, future research, programming, and policy efforts could be specifically oriented toward at-risk parents. However, notwithstanding results from this study and efforts to target at risk parents based on socio-demographics, the low observed effect sizes and the inconsistencies in the literature suggest that continued investigation of more dynamic factors, such as parental stress and corporal punishment attitudes, is indicated.

There is also a need for a global effort toward de-legitimization of corporal punishment across societies in order to reduce corporal punishment approval and use (Durrant et al., 2006). As observed in other countries, this could be attained by removal of the legal defense to corrective force in child discipline (Durrant et al., 2006; Zolotor & Puzia, 2010). In addition, universal parenting programs could further promote constructive and positive discipline, thus encouraging children's well-being at a population level (Durrant & Ensom, 2012). It appears that caregivers continue to lack confidence in their disciplinary role and are hoping for more guidance in this role (Clément & Chamberland, 2014). With the desire to promote, acknowledge, and respect children's right to dignity and integrity, and within a public health perspective, professionals and society as a whole have an ethical responsibility to inform caregivers that corporal punishment may have negative side effects and that other disciplinary strategies are available and effective. Not only should we advocate that it is never acceptable to hit a child, but most importantly we have the duty to support caregivers in their parenting role. According to the UN Convention on the Rights of the Child, all children have the right to protection from all forms of violence and all caregivers have the right to be supported and assisted in their childrearing role (Committee on the Rights of the Child, 2006).

Study Two

How do Parents Label Their Physical Disciplinary Practices? A Focus on Corporal Punishment and Influencing Factors

Corporal punishment has been the focus of much empirical study yet a major limitation has been the lack of consensus about its definition (Benjet & Kazdin, 2003; Ripoll-Nunez & Rohner, 2006). Different terms have been used interchangeably, such as corporal punishment, physical punishment, spanking, harsh punishment, and punitive parenting (Benjet & Kazdin, 2003). Gershoff (2002a) demonstrated the variety of terms used to define corporal punishment. Out of the 88 studies included in her meta-analysis, corporal punishment was operationalized as follows: spank (26 studies); physical punishment (24 studies); spank, slap/spank, hit/spank, or pinch (20 studies); spank or hit with object (16 studies); corporal punishment (8 studies); and other (e.g., strike, smack, negative physical discipline; 6 studies). Similarly, in her systematic review on the effects of corporal punishment, Hicks-Pass (2009) specified that several (i.e., 8) of the 21 examined studies operationalized corporal punishment using the definition from the Parent-Child Conflict Tactics Scales, namely *spanked on the bottom with bare hand or hit on the bottom with an object or slapped on the hand, arm, or leg or pinched or shook.* However, corporal punishment was defined in a number of other ways in the remaining studies, including spanking/slapping, beat/beaten, negative caregiver strategies, physical punishment, hitting, severe discipline, harsh discipline, ordinary vs. non ordinary discipline, or a combination of these terms.

One of the problems with this definitional variability is that the terms are not synonymous. While some terms represent a more general category of behaviours (e.g., physical punishment, corporal punishment, harsh discipline), others are examples of specific behaviours

that could be included within the more general category (e.g., spanking, slapping, hitting with/without out an object). Moreover, the extent to which some terms actually represent forms of corporal punishment is also questionable (e.g., severe discipline, ordinary vs. non ordinary discipline, punitive parenting), and some behaviours considered to represent corporal punishment have rarely if ever been studied (e.g., requiring a child to remain motionless or in a sitting position without a chair; Durrant et al., 2004).

In many studies where parents report on their use of corporal punishment, such as the NLSCY, no specific definition is presented so parents must rely on their own conceptualization of corporal punishment. This undoubtedly impedes interpretation of results given that variability most likely exists among parents with regard to what they perceive as corporal punishment. As an illustration, Benjet and Kazdin (2003) referred to unpublished data from a study by Straus et al. (1997) to show that parents' definition of spanking was not restricted to *hitting the buttocks* but rather to numerous other forms of corporal punishment. To address this ambiguity, it seems imperative to gain a better understanding of how parents define corporal punishment (Gershoff, 2002a; Oas, 2010). While this type of work has been undertaken in the area of child maltreatment (Lau et al., 2006; Wekerle et al., 2001), it has never been examined with regard to corporal punishment. As such, the first objective of this study was to examine parental definitions of corporal punishment. Specifically, this study examined the concordance between parents' self-report of corporal punishment using the NLSCY question (*Tell me how often you use physical punishment when your child breaks the rules or does things that s/he is not supposed to)* and their responses to questions about specific physical disciplinary strategies ranging from mild to severe forms that approach physical abuse. Furthermore, parental

responses to an open-ended question on what disciplinary behaviours they consider to constitute corporal punishment helped increase understanding of parents' own conceptions.

Related to the issue of diverse conceptualizations of corporal punishment is the possibility that certain groups of parents define corporal punishment in a systematically different way from others (Benjet & Kazdin, 2003). For example, physically abusive parents might not label their behaviours as such whereas they would undoubtedly be labeled as abusive by researchers and other members in the community (Benjet & Kazdin, 2003). Similarly, it is possible that parents who hold favourable attitudes toward corporal punishment and/or who have experienced corporal punishment during childhood might not label their use of corporal punishment as such. Therefore, the current study's second objective was to (1) identify groups of parents based on their use of corporal punishment and their endorsement of specific physical disciplinary strategies (e.g., parents who report using both corporal punishment and physical disciplinary strategies; parents who do not report using corporal punishment but nonetheless report the use of specific physical disciplinary strategies), and (2) understand the characteristics of these different groups of parents. In terms of characteristics, this study will explore variables that have been found to influence parental reports of corporal punishment use.

Gershoff's (2002a, 2002b) process-context model suggests that distal and contextual factors can influence parents' use of corporal punishment and the way they perceive their disciplinary behaviours. Specifically, child, parent, and family characteristics from the *stable individual and relational context* can have an influence on parent-child interactions during disciplinary moments. Factors from the *social-cultural context* can also influence parents' disciplinary practices by shaping their beliefs, goals, and expectations (for a discussion on the factors presented in Gershoff's model, please refer to Table 1). The Theory of Planned Behavior

(TPB; Ajzen, 2012) is a social cognitive theory of human behaviour which concurs that perceived cultural norms is one of the factors linked with attitudes and use of corporal punishment (Durrant et al., 2014; Taylor et al., 2011).

Cultural Norms

The broader cultural context in which families are situated provides different opportunities for the development of childrearing beliefs (Deater-Deckard, Lansford, Dodge, Pettit, & Bates, 2003). The combination of cultural beliefs, norms, and values can determine the meaning associated with parent-child relationships and parental disciplinary strategies (Ripoll-Nunez & Rohner, 2006). In fact, race and ethnicity have frequently been used as proxy measures of culture (Lansford et al., 2005), with corporal punishment attitudes and use varying across different racial and ethnic groups (Day et al., 1998; Gershoff et al., 2012; Giles-Sims et al., 1995; Grogan-Kaylor & Otis, 2007; Lansford et al., 2010; Lansford et al., 2005; MacKenzie et al., 2011; Pinderhughes et al., 2000; Regalado et al., 2004; Straus & Stewart, 1999; Wissow, 2001).

Apart from race and ethnicity, one can conceptualize cultural norms more specifically as the perceptions that parents have about the disciplinary behaviours of other parents in their cultural group and as the actual use of disciplinary strategies by parents in a given culture (Lansford et al., 2005). According to the TPB (Ajzen, 2012), perceived norms, examined in terms of perceived approval (injunctive norms) and prevalence (descriptive norms) of corporal punishment within a given cultural context, can have a role in shaping parents' own perceptions and disciplinary behaviours (Taylor et al., 2011). Indeed, perceived descriptive norms of corporal punishment as well as perceived approval by professionals, family, and friends have been identified as a significant predictor of maternal reports on their own use of and positive

attitudes toward corporal punishment (Lansford et al., 2005; Lansford et al., 2015; Taylor et al., 2011).

An understanding of the role of cultural norms in determining parents' disciplinary practices can help explain the discrepancies sometimes observed between attitudes and behaviours. Parents' disciplinary behaviours can depend on the behaviours of others around them rather than on their own beliefs (Cappa & Khan, 2011). Perhaps out of perceived (or actual) social disapproval, parents may engage in certain forms of violence towards their child depending on the choice of other families rather than on their own attitudes. According to a social learning perspective, transmission of behaviours within a cultural group could be explained through modeling and imitation of practices observed from other parents in one's surrounding environment (Cappa & Khan, 2011). In sum, perceived approval of and actual use of corporal punishment by members of one's community can influence parents' own use of this disciplinary practice as well their perceptions about its use and the use of other disciplinary strategies.

Attitudes Toward Corporal Punishment

Favourable attitudes toward corporal punishment have consistently been found to be one of the strongest predictors of its use (Ateah & Durrant, 2005; Gagné et al., 2007; Socolar & Stein, 1995; Vittrup et al., 2006). This seems reasonable given that, according to the cognitive-instrumental view of spanking, parents engage in corporal punishment because they believe it to be a useful and appropriate disciplinary strategy (Gagné et al., 2007). Similarly, the TPB (Ajzen, 2012) adds that positive expectations for outcomes of a behaviour increase the likelihood of engaging in that behaviour. Indeed, positive expected outcomes were found to be a significant predictor of positive attitudes toward and use of corporal punishment (Taylor et al., 2011;

Lansford et al., 2015). Despite findings linking parental attitudes toward corporal punishment with use of this disciplinary strategy, some researchers have proposed a possible disconnect between attitudes and behaviours (Cappa & Khan, 2011; Lansford et al., 2010; Roberts, 2000). This suggests that attitudes could be moderated by other factors, such as the perceived cultural norms (as discussed above) and one's own childhood disciplinary experiences.

Childhood Experiences of Corporal Punishment

Research has found that parents who experienced corporal punishment during childhood tend to approve of it and to actually use this disciplinary strategy with their own children (Bell & Romano, 2012; Bower & Knutson, 1996; Deater-Deckard et al., 2003; Gagné et al., 2007; Holden & Zambarano, 1992; Rodriguez & Sutherland, 1999; Socolar & Stein, 1995). Gagné and collaborators (2007) found that individuals who believed that corporal punishment did not cause injury and who had also experienced frequent spanking in childhood (but did not report feeling threatened, humiliated, or ridiculed) were most in favour of spanking. Similar findings have been obtained in other studies; individuals reporting that they deserved the punishment they received as a child were more likely to indicate that they would use the same type of punishment with their own children (Bower-Russa, Knutson, & Winebarger, 2001; Rodriguez & Price, 2004). As well, more favourable attitudes toward spanking were found in individuals who were exposed to child corporal punishment and who perceived their disciplinary experiences as positive (i.e., having occurred with warm and supportive parents; Bell & Romano, 2012). However, the link between parents' own childhood experiences and their attitudes toward and use of corporal punishment has not been observed in other studies. Specifically, Ateah and Durrant (2005) found no association between childhood disciplinary experiences and physical punishment use in a sample of 110 mothers of 3 year old children. Moreover, experiences of

additional forms of violence (e.g., severe physical aggression, psychological aggression, exposure to violence in the home) have been found to be associated with less favourable attitudes towards spanking (Bell & Romano, 2012; Deater-Deckard et al., 2003; Gagné et al., 2007).

The findings linking childhood experiences of corporal punishment with attitudes and actual use of corporal punishment support a model of intergenerational transmission originating from a social learning perspective. According to social learning, the transmission of abusive discipline stems from the modeling and imitation of abusive disciplinary practices or violent behaviours observed in one's environment (Bower & Knutson, 1996; Muller, Hunter, & Stollak, 1995). Bower and Knutson (1996) have further proposed that a history of family violence may serve to legitimize the use of physical disciplinary practices later in life. However, results demonstrating negative attitudes toward corporal punishment in parents who were exposed to this disciplinary strategy in childhood suggest that these childhood experiences could also reduce parents' tolerance for violence (Gagné et al., 2007). Nevertheless, Gagné and collaborators (2007) specified that this does not necessarily prevent parents from using harsh discipline with their own children and that attitudes are not the only factor contributing to the intergenerational transmission of discipline. Despite negative attitudes, childhood experiences may continue to model disciplinary behaviours especially when parents are emotional and impulsive in disciplinary moments (Vittrup et al., 2006). Furthermore, the potential lack of skills to regulate their feelings of frustration and to respond non-aggressively in conflictual moments may impede parents' perceived behavioural control which, according to the TPB, will reduce the likelihood of using non-physical disciplinary strategies (Durrant et al., 2014).

In sum, parental use of corporal punishment may be influenced by their own exposure to this form of discipline while growing up. Research findings, however, indicate that childhood

experiences of corporal punishment may serve to either increase or decrease parents' attitudes toward and use of this disciplinary strategy with their own children. The lack of a clear link indicates that other factors may be at play, including perceived cultural norms and individual and relational factors as suggested by the TPB and/or Gershoff's (2002a, 2002b) process-context model.

Social Desirability

While research indicates that corporal punishment is on the decline (Clément & Chamberland, 2014; Heilmann et al., 2015; Straus & Donnelly, 2001; Zolotor et al., 2011), these data are difficult to interpret without assessing the effect of social desirability. It may be that parents are beginning to under-report their use of corporal punishment because it has more recently become a contested form of discipline, which has received public attention and has been repeatedly challenged in legal and social context (Straus, 2010). In fact, parents often report feeling guilt and regret after using corporal punishment, suggesting that some parents may perceive that it is not an optimal disciplinary strategy and may feel uncomfortable with its use (Durrant et al., 2003). It is possible that these parents might not report using corporal punishment due to the pressure of social norms; nonetheless, they may endorse specific disciplinary behaviours that researchers would define as corporal punishment.

Study Objectives

This study investigated one of the limits of parent-report measures by clarifying what behaviours parents label as corporal punishment and what factors influence the endorsement of corporal punishment use. In order to increase our understanding of how parents conceptualize corporal punishment, the first objective was to examine the concordance between parental responses to a general question on corporal punishment use and their responses to questions on

the use of specific strategies that have been identified in the literature as representing a continuum of physical disciplinary behaviours. Parents also responded to an open-ended question on the disciplinary strategies which they consider to constitute corporal punishment.

Given that parents may systematically differ in the way they conceptualize corporal punishment, the second objective was to identify different groups of parents (based on their responses to a general question on corporal punishment and to questions on various physical disciplinary strategies) and to explore the factors influencing endorsement of corporal punishment use. While controlling for social desirability and for socio-demographics (suggested in the *stable individual and relation context* and in the *social-cultural context* of Gershoff's process-context model), the study examined the extent to which cultural norms, attitudes toward corporal punishment, and childhood experiences of corporal punishment predicted the different groups of parents. Given that attitudes are linked with corporal punishment use and with perceptions of various disciplinary strategies but that these links may be moderated by childhood experiences and cultural norms, the current study also examined potential interaction effects between these variables.

Hypotheses

1) Given the exploratory nature of the current study and the very limited research on the subject, there are no specific hypotheses with regard to the concordance between parental responses to the general question on corporal punishment use and their responses to questions on specific physical disciplinary strategies. Nevertheless, it was expected that parents who indicated using corporal punishment would also more frequently endorse specific physical disciplinary strategies than parents who did not report using corporal punishment.

2) The exploratory nature of the current study precluded hypotheses about the specific groups of parents to be identified. Nonetheless, based on the literature, the following groups were expected:
    a. A group of parents who not only responded negatively to the question on corporal punishment use but who also did not report using any of the specified physical disciplinary strategies;
    b. A group of parents who responded negatively to the question on corporal punishment use but who reported some of the specified physical disciplinary strategies;
    c. A group of parents who responded positively to the question on corporal punishment and who reported using milder forms of physical disciplinary strategies;
    d. A group of parents who responded positively to the question on corporal punishment and who reported using severe forms of physical disciplinary strategies.
3) The absence of research on the predictors of group membership prevented specific hypotheses. Nevertheless, based on past results on predictors of corporal punishment use, it was expected that greater perceived normativeness, more positive attitudes toward corporal punishment, and greater childhood experiences with corporal punishment would be positively associated with self-reported use of corporal punishment. However, positive attitudes toward corporal punishment may not be associated with increased self-reported corporal punishment in the context of low perceived normativeness, whereas negative attitudes toward corporal punishment may not be associated with reduced self-reported corporal punishment in the context of frequent childhood experiences with this disciplinary strategy.

Method

Participants

The sample consisted of 338 Canadian caregivers of children aged 2-11 years. If caregivers had more than one child in the prescribed age range, they were instructed to complete the study for the youngest child. Sample socio-demographic characteristics are presented in Table 19. Children were on average aged 4.5 years (*SD* = 2.6), and child sex was equally represented in the sample (52.8% girls). Caregivers were on average 34.8 years old (*SD* = 6.0), and 90.4% were female. The vast majority of respondents were the child's biological parent (94.6%). Households comprised an average of four individuals; the majority included two biological parents (77.0%). The majority of caregivers and their partners (when applicable) had higher than high school education (87.5% and 83.2%, respectively) and were employed outside the home (72.5% and 94.0%, respectively). Various levels of current household income were equally represented in the sample. Specifically, 8.4% of the participants reported an income of less than $30,000, 25.2% reported an income of $30 000-$69 999, 36.0% reported an income of $70 000-$109 999, and 30.4% reported an income of $110,000 and over. The majority of respondents lived in the province of Ontario (65.7%), were non-immigrants (85.1%), and from European-Canadian descent (85.1%). The most frequent religion was Christian (55.2%).

Given that participants in the current study are from a convenience sample, it was important to determine its representativeness of Canada's population. Compared to the 2008-2009 NLSCY sample (Statistics Canada, 2009), child and caregiver age (*M* child age = 4.5 years; *M* caregiver age = 34.8 years) and sex (52.8% female child; 90.4% female caregiver), as well as caregiver relationship to the child (94.6% biological parent), were similar to population-level statistics (*M* child age = 4.5 years; *M* caregiver age = 35.0 years; 48.8% female child; 90.2%

female caregiver; 98.1% biological parent). Note that the NLSCY was used for these comparisons as such data are not available in Canadian Census data. However, for the remaining socio-demographic characteristics, Canadian Census data from 2011 were used. The study's sample was appropriately representative of Canada's ethnic and family composition, income, and employment rates. Visible minorities represent approximately 19.4% of Canada's population (Statistics Canada, 2015a), and they represented 15.0% of the current sample. The percentage of caregivers in a couple relationship (83.9%) and the average household size (4 individuals) in the current study were also comparable to Canadian data (83.7% in a couple relationship and average of 4 individuals per household; Statistics Canada, 2015b). The employment rate of caregivers in the sample (72.5%) was similar to that of Canadian women aged 30-34 years (74.9%; Statistics Canada, 2015). Women aged 30-34 years were selected because this group offered a better representation of the caregivers included in the study sample (in terms of their sex and age). According to the most recent National Household Survey (NHS) data available, the average family income in Canada is $95,000, and the median income is $77,300 (Statistics Canada, 2013). An income of $70 000-$109 999 represented both the median and mode in the current sample, and this range of income includes both Canada's average and median income. A greater number of caregivers from this sample were non-immigrants (85.1%) and completed postsecondary education (87.5%) than what would be expected from Census data (77.7% non-immigrants women and 74.7% women aged 30-34 years with postsecondary education; Statistics Canada, 2015). Compared with Census data, a greater number of caregivers had no religious affiliation (37.3% compared to 23.6% in Canada) and fewer were from a Christian background (55.2% compared to 67.3% in Canada; Statistics Canada, 2015a). Finally, caregivers from the

province of Ontario were overly represented in the sample (65.7% compared to 40.5% in Canada; Statistics Canada, 2015b).

Measures

Outcome variables.

Corporal punishment. Caregivers reported on their use of corporal punishment by answering one item (*How often do you use physical punishment when your child breaks the rules or does things that s/he is not supposed to?*) from the Parent Practices Scale (Strayhorn & Weidman, 1988). This item was used in the NLSCY. Caregivers answered the item along a 5-point scale from 0 to 4 (0 = "Never"; 1 = "Rarely"; 2 = "Sometimes"; 3 = "Frequently"; 4 = "Always"), with higher scores indicating greater corporal punishment use. Responses were dichotomized so that any response other than 0 ("Never") indicated corporal punishment use. This method is consistent with previous research on corporal punishment prevalence (e.g. Oldershaw, 2002; Vittrup et al., 2006; Wissow, 2001) and takes into account the tendency of parents to underreport their use of this disciplinary strategy (Straus et al., 2014).

Physical disciplinary strategies. The Parent-Child Conflict Tactics Scales (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) was used to examine caregiver use of a range of physical disciplinary strategies with varying degrees of severity. There were 5 items from the Minor Physical Assault (Corporal Punishment) Scale, 4 items from the Severe Physical Assault (Physical Maltreatment) Scale, and 4 items from the Very Severe Physical Assault (Extreme Physical Maltreatment) Scale. The internal consistency of the Overall Physical Assault Scale has been found to be low ($\alpha = .55$; Straus et al., 1998). This can be explained by the fact that items, especially from the Severe and Very Severe Physical Assault Scales, measure rare events which results in a skewed distribution that lowers correlations between items (Straus et

al., 1998). Nevertheless, the good test-retest reliability (r = .80), found with the parent-to-child assault scale of the original Conflict Tactics Scale, suggests temporal consistency (Straus et al., 1998; Straus & Hamby, 1997). Item responses are on an 8-point scale from 0 ("This has never happened") to 7 ("More than 20 times in the past year"), with higher scores indicating greater frequency of use. Responses were dichotomized so that any response other than 0 indicated use of the physical disciplinary strategy. Items from the CTSPC are presented in Appendix B.

Additional physical disciplinary strategies were assessed by one item from the Corporal Punishment Scale of the Dimensions of Discipline Inventory (DDI; Straus & Fauchier, 2007) and by seven items that have been proposed as corporal punishment in the Joint Statement on Physical Punishment of Children and Youth (Durrant et al., 2004). See Appendix B for the list of items. Responses are on an 11-point scale from 0 ("Never") to 10 ("Two or more times a day"), with higher scores indicating greater frequency of use. Responses were dichotomized so that any response other than 0 indicated use of the physical disciplinary strategy. Finally, caregivers were asked to answer the following open-ended question on what disciplinary strategies they would consider as corporal punishment: *Parents/caregivers may use physical/corporal punishment to discipline their child when they misbehave. Please give 3-5 examples of disciplinary behaviours that you would consider as physical/corporal punishment.*

Predictor variables.

Cultural norms. Perceived cultural norms were assessed following a procedure used by Taylor and collaborators (2011). Caregivers were asked to think about friends and family members whose opinions mean the most to them and then to determine the extent to which most of these friends and family members would approve of using the four corporal punishment strategies assessed in the DDI (Straus & Fauchier, 2007). Items assessing cultural norms are

presented in Appendix B. Responses are on a 4-point scale from 0 ("Never OK") to 3 ("Always or almost always OK"). Items were summed to obtain a total score ranging from 0-12, with higher scores indicating greater perceived cultural normativeness. While Cronbach α = .59, average inter-item correlation (*r* = .27) suggests adequate internal consistency for this sample.

Attitudes toward corporal punishment. Four items from the Cognitive Appraisal Scale of the DDI (Straus & Fauchier, 2007) were used to assess caregivers' attitudes toward corporal punishment. This scale has been found to have adequate internal consistency in a sample of university students (α = .74) but low internal consistency in a pilot sample of parents (α = .54; Straus & Fauchier, 2007). Items from this scale are presented in Appendix B. Responses are on a 4-point scale from 0 ("Never OK") to 3 ("Always or almost always OK"), and they were summed to create a total score ranging from 0-12, with higher scores indicating more favourable attitudes toward corporal punishment. Cronbach alpha (α = .38) and average inter-item correlation (*r* = .12) suggest low internal consistency for this sample. This low internal consistency may be due to the fact that caregivers might have positive attitudes towards more common and socially accepted forms of corporal punishment (e.g., spanking) but not towards other corporal punishment strategies such as hitting with an object. Nevertheless, items were kept in one scale because taken together, higher scores on the different items indicate more favourable attitudes.

Childhood experiences of corporal punishment. Caregivers responded to four items on their childhood experiences of corporal punishment. Items were from the Adult-Recall Corporal Punishment Scale of the DDI (Straus & Fauchier, 2007) which asks participants about disciplinary experiences that occurred at around age 10. This age was selected because it represented a good inflection point between the earliest age of recall accuracy and sufficient

frequency of disciplinary experiences (Fauchier & Straus, 2007; Straus & Fauchier, 2007). This scale has been found to have adequate internal consistency (α = .68-.75) and high test-retest reliability (*r* = .72-.75) in a sample of university students who responded to corporal punishment experiences that they may have experienced with their mother and father (Fauchier & Straus, 2010). Items from this scale are presented in Appendix B. Responses are on an 11-point scale from 0 ("Never") to 10 ("Two or more times a day"). Items were summed to create a total score ranging from 0-40, with higher scores indicating greater corporal punishment experiences in childhood. Cronbach alpha (α = .78) and average inter-item correlation (*r* = .48) suggest adequate internal consistency for this sample.

Control variables.

Social desirability. The tendency to minimize disclosure of socially undesirable behaviours was assessed with 13 items from the Limited Disclosure Scale (LDS) of the Personal and Relationship Profile (PRP; Straus, Hamby, Boney-McCoy, & Sugarman, 2007). Items represent behaviours and emotions that are true for most people but which are slightly undesirable. The LDS has shown adequate internal consistency in a community sample of 726 participants (α = .70) and in a sample of 17,404 university students from 32 nations (α = .71; Straus, Hamby, Boney-McCoy, & Sugarman, 2007). Item from the LDS are presented in Appendix B. Responses are on a 4-point scale from 0 ("Strongly disagree") to 3 ("Strongly agree"). Items were summed to establish a total score ranging from 0-39, with higher scores indicating higher social desirability. Cronbach alpha (α = .79) and average inter-item correlation (*r* = .22) suggest adequate internal consistency for this sample.

Socio-demographic characteristics. Caregivers provided information on the target child's age and sex as well as on their own age, sex, employment, race/ethnicity, immigration

status, religion, education level, household size, household income, geographic region of residence, and family structure. Caregivers also provided information on their partner's education and employment (where applicable). These questions can be found in Appendix B.

Procedure

Ethics approval was obtained from the University of Ottawa prior to the start of the study. Various strategies were used to recruit participants. Study notices were distributed through community organizations (e.g., Parents' Lifeline of Eastern Ontario; Maternal, Newborn and Child Health Promotion Network; Family Resources Program), and links to the study were placed on the website www.parentsmatter.ca as well as on social media platforms (e.g., Facebook, Twitter). Due to the diverse recruitment strategies, participants were asked to indicate how they became aware of the study when they completed the on-line questionnaire. Study notices explained the purpose of the study, outlined inclusion criteria and participation requirement, and provided the study web-link (see Appendix C). The notice referred to a study on disciplinary strategies and not corporal punishment in order to prevent any potential recruitment bias. As an incentive to participate, caregivers were invited to enter a draw for one of two $50 Visa gift cards. Individuals interested in completing the study were able to log onto fluidsurveys.com using the web-link provided to them on the study notice.

Prior to beginning the study, inclusion criteria were assessed (see Appendix B). If participants answered "no" to any inclusion criteria, they were forwarded to a webpage thanking them for their interest and explaining that they were not eligible for the study. As for eligible participants, consent was obtained. Specifically, participants were provided with an on-line consent form (see Appendix D and E for the English and French consent form, respectively), following which they were asked to click a button indicating that they had read and understood

the form and that they agreed to participate in the study. To ensure anonymity, no identifiable information was collected from participants (e.g., IP address), and cookies was not installed on their computers. Parents were informed that they had eight hours to complete the study before the web-link would time out. This Internet design was used to circumvent ethical issues surrounding researchers' duty to report children in need of protection. Furthermore, it was anticipated that this web-design would make it possible to gather more accurate data by discouraging caregivers from misrepresenting their disciplinary practices out of fear of reprisal (e.g., involvement of the Children's Aid Society). As well, the anonymity provided by the Internet design may have prevented selection bias and reduced socially desirable answers (Gosling, Vazire, Srivastava, & John, 2004).

The on-line questionnaire took approximately 20-30 minutes to complete. The order of the questions was counterbalanced to avoid order effects, with the exception of the open-ended question which was placed at the beginning of the questionnaire. Participants were able to terminate the study at any time. A window opened when participants either terminated participation or completed the study. Participants were provided with a list of mental health resources that they could contact should they feel any discomfort as a result of study participation (see Appendix F). In addition, participants were invited to provide their e-mail address in order to enter the draw for one of two $50 Visa gift cards (see Appendix F). Note that these e-mail addresses could not be linked to participants' study responses.

Data Analysis

Analyses were conducted using the Statistical Package for Social Sciences – Version 23.0 (SPSS 23.0). A probability level of .05 was used to establish statistical significance. Data cleaning was conducted, and statistical assumptions were tested prior to running analyses. If

assumptions were not met, corrections were made accordingly (see below for assumptions and necessary transformations for the different analyses).

Study Objective 1: Understanding How Caregivers Conceptualize Corporal Punishment

An understanding of how caregivers conceptualize corporal punishment was obtained through descriptive analyses of their answers to an open-ended question (i.e., *Parents/caregivers may use physical/corporal punishment to discipline their child when they misbehave. Please give 3-5 examples of disciplinary behaviours that you would consider as physical/corporal punishment.*). Descriptive analyses were also used to characterize (1) the percentage of caregivers who endorsed corporal punishment and specific physical disciplinary strategies, and (2) the frequency (*M* and *SD*) with which they reported using the different strategies.

The concordance between caregiver endorsement of corporal punishment and their reports of specific physical disciplinary strategies was assessed in two ways. First, chi-square tests of independence were used to examine the association between participants' answer (yes vs. no) to the corporal punishment question and their answers (yes vs. no) to each question on specific physical disciplinary strategies. Second, Wilcoxon *Z* tests (non-parametric test accounting for non-normally distributed data and adapted for large sample size) were conducted to assess the mean difference between caregivers who reported corporal punishment and caregivers who did not across all physical disciplinary strategies. The percentage of missing data was low (<1.5%) across the different physical disciplinary strategies and were deleted from analyses. Physical disciplinary strategies endorsed by fewer than 1% of caregivers were removed from analyses. These strategies had an expected cell frequency less than 1, which prevented their inclusion in chi-square analyses (McHugh, 2013). Finally, for the different analyses, Cramer's Φ was calculated to assess effect sizes for the results of the chi-square

analyses, and *r* ($Z/\sqrt{N}$) was calculated to assess effect sizes for the Wilcoxon *Z* test results. Effect sizes of .10 were considered small, .30 medium, and .50 large (Cohen, 1992).

Study Objective 2: Predicting Group Differences in Caregivers' Endorsement of Corporal Punishment and Reports of Specific Physical Disciplinary Strategies

Identification of group membership. Caregivers' endorsement (yes vs. no) of corporal punishment and various physical disciplinary strategies was first explored. Descriptive analyses identified the frequency of profiles of self-reported corporal punishment (yes vs. no) with different physical disciplinary strategies. Participants with missing data points on the physical disciplinary strategies (n=12) were removed from the analysis.

Predictors of group membership. To determine variables predicting group membership, a multinomial logistic regression was conducted. To encourage model parsimony, socio-demographic controls that were not significantly associated with group membership at a univariate level were not included in the analysis. After controlling for socio-demographic factors and social desirability, the following potential predictors were entered in the regression model: cultural norms; attitudes toward corporal punishment; and childhood experiences of corporal punishment. Interaction terms of attitudes toward corporal punishment with cultural norms and with childhood experiences of corporal punishment were also examined.

Missing data on predictor and control variables (examined individually) were between 2.8% and 10.5%; they were completely random and imputed using the fully conditional Markov Chain Monte Carlo (MCMC) method, described in study one. Multinomial logistic regression assumptions were tested and met (Tabachnick & Fidell, 2007). The ratios of case to variables were adequate, and no multicollinearity was found between predictor variables (as examined with Pearson's *r).* Five univariate outliers were found on the different predictors and brought

back to 3.29 *SD* from the mean. Five multivariate outliers (in the group of caregivers who did not report corporal punishment and who did not endorse any specific physical disciplinary strategies) were also identified and deleted from the analysis. Assumption of linearity in the logit was met and no transformation was needed. Examination of standardized residuals revealed no outliers in the solution.

Results

Study Objective 1: Understanding How Caregivers Conceptualize Corporal Punishment

Caregivers' responses to the open-ended question regarding the disciplinary strategies they would consider as corporal punishment are presented in Table 20. Caregivers perceived a variety of physical disciplinary strategies as corporal punishment. Specifically, descriptive analyses revealed 37 different strategies ranging in level of severity, some of which approached the definition of physical abuse (e.g., hitting with a belt, whipping). Answers also varied in terms of the specificity of the strategy (e.g., slapping hand vs. slapping face vs. slapping in general). The most frequent strategies considered by caregivers to define corporal punishment were the following: spanking (71.9%); slapping the hand, arm, or leg (26.0%); hitting (21.0%); grabbing, dragging, or pulling (19.5%); slapping (15.4%); pushing or shoving (13.3%); pinching (8.9%); hitting with an object (7.7%); slapping the face, mouth, head, or ears (7.7%); physically restraining (6.8%); hitting with a belt, whipping (5.9%); and shaking (5.6%).

Table 21 presents the percentage of caregivers who endorsed the use of corporal punishment and specific physical disciplinary strategies, as well as the frequency with which they reported using these strategies. Data indicated that 37.9% of caregivers endorsed corporal punishment. Similarly, 37.9% endorsed slapping their child on the hand, arm, or leg, and 35.0% reported spanking their child on the bottom with their bare hand. The most frequent forms of

other physical disciplinary strategies endorsed by caregivers were the following: pinching (11.6%); slapping on the face, head, or ears (8.1%); shaking (7.7%); and hitting on the bottom with an object (5.0%). In terms of frequency of use, caregivers reported almost never using the different physical disciplinary strategies. The most frequently-used strategies were slapping on the hand, arm, or leg as well as spanking on the bottom with a bare hand, but their frequencies were still low (mean score of 1.16 and 1.09 on a scale ranging from 0-10, respectively).

Chi-square analyses (Table 22) revealed a statistically significant relationship between the endorsement of corporal punishment and that of all physical disciplinary strategies, with the exception of throwing/knocking down a child and isolating a child in a confined space. In other words, caregivers who reported using corporal punishment were significantly more likely to endorse every specific physical disciplinary strategy. Most effect sizes for these relationships were small to medium. However, the effect size was large for the relationship between corporal punishment and spanking on the bottom with a bare hand (Φ = .62).

Wilcoxon *Z* tests (Table 22) also confirmed a statistically significant relationship between corporal punishment and the different physical disciplinary strategies, with the exception of throwing/knocking down a child and isolating a child in a confined space. Caregivers who endorsed using corporal punishment reported using every disciplinary strategy more frequently than caregivers who did not endorse corporal punishment. Most effect sizes were small to medium. However, the effect size was large for the relationship of corporal punishment with slapping on the hand, arm, or leg (r = -.47) and with spanking on the bottom with a bare hand (r = -.65).

Study Objective 2: Predicting Group Differences in Caregivers' Endorsement of Corporal Punishment and Reports of Specific Physical Disciplinary Strategies

Identification of group membership. Profiles of self-reported corporal punishment (yes vs. no) with different physical disciplinary strategies are presented in Table 23. Based on these profiles, it was possible to identify four main groups: (1) caregivers who did not endorse corporal punishment and who reported no specific physical disciplinary strategy (*n* = 137; 42.3%); (2) caregivers who did not endorse corporal punishment but did report at least one specific physical disciplinary strategy (*n* = 64; 19.8%); (3) caregivers who endorsed corporal punishment and who reported at least one specific physical disciplinary strategy (*n* = 110; 34.0%); and (4) caregivers who endorsed corporal punishment but reported no physical disciplinary strategies (*n* = 13; 4.0%). Examination of profiles revealed that the physical disciplinary strategies most frequently reported by caregivers who did not endorse corporal punishment (*group 2*) were spanking and slapping hand, arm, or leg, followed by pinching, shaking, throwing or knocking down and then slapping face, head, or ears. These were also the most frequently reported strategies of caregivers who endorsed corporal punishment use (*group 3*), but these caregivers also reported a variety of other physical disciplinary strategies (e.g., hitting the bottom with an object, washing mouth).

Predictors of group membership. Caregivers who endorsed corporal punishment but reported no physical disciplinary strategies (*group 4*) were considered outliers and dropped from the analyses on the predictors of group membership. Table 24 presents information on the predictor variables for three identified groups of caregivers. Mean scores across the three groups appeared at the lower end of the possible range of scores. Descriptive statistics revealed that cultural normativeness, positive attitudes toward corporal punishment, and childhood

experiences of corporal punishment were highest for caregivers who endorsed corporal punishment and physical disciplinary strategies (*group 3*), followed by caregivers who did not endorse corporal punishment but reported physical disciplinary strategies (*group 2*), and then by caregivers who reported neither corporal punishment nor any physical disciplinary strategies (*group 1*). ANOVAs confirmed that mean attitude scores were significantly different across the three groups ($F_{Attitudes}$ (2,203) = 81.26, $p < .001$). As for cultural norms and childhood experiences of corporal punishment, mean scores were significantly higher only for *group 3* (F_{Norms} (2,203) = 27.41, $p < .001$; $F_{Experiences}$ (2,203) = 7.53, $p < .001$). Pearson correlations between predictor variables are presented in Table 25. Results revealed that cultural norms, attitudes toward corporal punishment, and childhood experiences of corporal punishment were positively and significantly correlated with one another. The highest correlation revealed that greater cultural normativeness was associated with more favourable attitudes toward corporal punishment ($r = .60$).

A multinomial logistic regression identified predictors of group membership. As aforementioned, socio-demographic controls that were not significantly associated with group membership at a univariate level were not included in the analysis. To this effect, results from chi-square analyses and ANOVAs indicated that household size and geographic region of residence were the only two variables that significantly distinguished caregivers of the different groups ($p<.05$); these socio-demographics were included as control variables in the multinomial logistic regression. Note that geographic region of residence was dichotomized as follow: Prairies versus others.

After controlling for socio-demographics and social desirability, cultural norms, attitudes toward corporal punishment, and childhood experiences of corporal punishment were entered in

the regression model. Interaction terms of attitudes with cultural norms and with childhood experiences were examined, but were not found to be statistically significant at $\alpha = .05$ level. Results from the model without interactions are presented in Table 26. The multivariate model significantly contributed to predicting group membership ($\chi 2$ (12) = 144.3, $p<.001$). Nagelkerke's Pseudo R^2 indicated that predictors explained 42.8% of the variance in group membership. The Pearson and the Deviance Goodness of Fit Chi Square tests suggested that the model adequately fitted the data ($p>.05$). The classification accuracy rate was of 63.9%, which was greater than the proportional by chance accuracy criteria for this sample (i.e., 45.2%).

Turning to the specific results, it should be noted that caregivers who did not endorse corporal punishment and who reported no physical disciplinary strategies (*group 1*) were the reference group. With every 1-unit increase in attitudes toward corporal punishment, caregivers were 2.93 times more likely to be part of the group that did not endorse corporal punishment but reported physical disciplinary strategies (*group 2*), compared with *group 1*. With every 1-unit increase in attitudes toward corporal punishment, caregivers were 8.70 times more likely to be part of the group that endorsed corporal punishment and physical disciplinary strategies (*group 3*) than *group 1*. Finally, every 1-unit increase in childhood experiences of corporal punishment increased by 7% the likelihood of being in the group that endorsed corporal punishment and physical disciplinary strategies (*group 3*). However, this latter effect only approached statistical significance ($p = .05$).

Finally, it is interesting to note that based on the model of prediction, all caregivers from *group 2* were statistically classified either within the group of caregivers that did not report physical disciplinary strategies (*group 1*) or within the group that did endorse corporal punishment (*group 3*). Specifically, 57.8% of caregiver who did not endorse corporal

punishment but reported physical disciplinary strategies were statistically classified within *group 1*, and 42.2% of them were classified within *group 3*.

Discussion

The main objective of the current study was to address one of the limits of parent-report measures by clarifying how caregivers conceptualize corporal punishment. The disciplinary behaviours considered by caregivers to constitute corporal punishment were first explored. Then, the concordance between their answers to a general question on corporal punishment and to questions on specific physical disciplinary strategies was determined (*study objective 1*). Finally, profiles of endorsement of corporal punishment with self-reported physical disciplinary strategies helped identify distinct groups of caregivers. After controlling for social desirability and socio-demographic factors (i.e., geographic region of residence and household size), cultural norms, attitudes toward corporal punishment, and childhood experiences with corporal punishment were examined as potential predictors of group membership. This allowed for the identification of factors that influence parental endorsement of corporal punishment (*study objective 2*).

Understanding How Caregivers Conceptualize Corporal Punishment (Study Objective 1)

One major limitation of the research literature on corporal punishment is the lack of consensus about the definition of this disciplinary strategy and about the behaviours that constitute corporal punishment (Benjet & Kazdin, 2003; Ripoll-Nunez & Rohner, 2006). Terms are used interchangeably even though they are not synonymous. Moreover, many studies, such as the NLSCY, offer no specific definition of corporal punishment so parents must rely on their own conceptualization of this disciplinary strategy. The definitional variability is likely to influence data on the prevalence of corporal punishment and on the outcomes associated with its

use. To address this ambiguity, it was imperative to gain a better understanding of how caregivers define corporal punishment.

Based on answers to the study's open-ended question (i.e., *Parents/caregivers may use physical/corporal punishment to discipline their child when they misbehave. Please give 3-5 examples of disciplinary behaviours that you would consider as physical/corporal punishment.*), 37 physical disciplinary strategies were identified as corporal punishment across caregivers. Caregivers evoked distinct physical disciplinary strategies ranging in level of severity (e.g., spanking vs. hitting with an object) and in level of specificity (e.g., slapping the hand or the face vs. slapping in general). The obtained results are consistent with the definitional variability found in the research literature (Gershoff, 2002a). The most consistently identified form of corporal punishment by caregivers was spanking, which makes sense given that it represents the most commonly accepted form of corporal punishment. However, there does not appear to be a consensus among caregivers as to the definition of corporal punishment.

The variety of physically punitive behaviours identified by caregivers confirms that results from general questions on corporal punishment are difficult to generalize to any specific physical disciplinary strategy. As such, it is imperative for future studies to provide a clear definition of corporal punishment and/or to assess specific disciplinary strategies. In order to arrive at a consensus as to the behaviours that would warrant research attention and to determine to which physical disciplinary strategies results obtained from general questions on corporal punishment can generalize, the following two objectives were targeted. First, it was important to identify the behaviours caregivers typically engage in when they physically punish their child. Second, the concordance between endorsement of corporal punishment and self-reports of specific physical disciplinary strategies was examined.

Self-report of corporal punishment and physical disciplinary strategies. Results from this study revealed that 37.9% of caregivers endorsed using corporal punishment to discipline their 2-11 year old children; however, it was used on an infrequent basis (M = .46 on a 4-point scale). While the frequency of use is similar to what has been observed in Canadian population-based surveys that used the same question to assess corporal punishment, the percentage of caregivers who endorsed corporal punishment appears higher in the current study. Indeed, NLSCY data indicated that in 2008-2009 (cycle 8), 25.3% of caregivers reported physically punishing their 2-7 year old children (Study 1). As for data from the Survey of Young Canadians (SYC; Statistic Canada, 2012), they revealed that in 2010-2011, 20.7% of caregivers reported using corporal punishment with their 2-9 year olds. However, results from this study are consistent with the 35% prevalence found in a recent Quebec survey that defined corporal punishment as spanking, slapping, pinching, and shaking (Clément & Chamberland, 2014).

Interestingly, 35.0% of caregivers in the current study reported spanking their child on the bottom with a bare hand, and 37.9% reported slapping their child's hand, arm, or leg. In contrast, almost no caregivers endorsed physical disciplinary strategies that could more traditionally be considered as physical abuse (i.e., items included in the Physical Maltreatment and Extreme Physical Maltreatment scales of the CTSPC), with the exception of two strategies. Slapping a child on the face, head, or ears was reported by 8.1% of caregivers, and throwing or knocking down a child was reported by 4.7% of them. Overall, these results suggest that caregivers' general endorsement of corporal punishment may be a reflection of their use of spanking and/or slapping on the hand, arm, or leg, rather than a representation of any other forms of physical disciplinary strategies (especially the severe ones).

Congruent with the study's hypothesis, a statistically significant and positive relationship was found between endorsement of corporal punishment and self-report of all physical disciplinary strategies (except throwing/knocking down and isolating a child), but the effect was stronger for spanking. Similarly, a statistically significant and positive relationship was found between caregivers' endorsement of corporal punishment and the frequency with which they reported using all physical disciplinary strategies (except throwing/knocking down and isolating a child). Again, the effect sizes were particularly elevated for spanking but also for slapping a child on the hand, arm, or leg. This confirms the presence of a significant correspondence between answers to a specific question on corporal punishment and physical disciplinary strategies, and the concordance is especially elevated for spanking and slapping. These results are consistent with the finding that most parents who report corporal punishment occasionally use milder and what could be described as "ordinary" forms of punishment (Larzelere & Kuhn, 2005; Straus & Stewart, 1999).

However, it is important to note that, as hypothesized, some caregivers (16.2% of the sample) who reported spanking on the bottom and/or slapping their child's hand, arm, or leg did not endorse corporal punishment. Of these caregivers, 5.6% also reported using additional physical disciplinary strategies. Moreover, 3.6% of caregivers did not endorse corporal punishment or spanking or slapping the hand, arm, or leg; however, they indicated using strategies such as pinching, slapping the face, head, or ears, throwing or knocking down, and isolating in a confined space. As expected, this points to the fact that some caregivers use physical disciplinary strategies but do not necessarily perceive or label them as forms of corporal punishment. These caregivers are thus not identified by a general question on corporal punishment such as the one used in the NLSCY.

Predictors of Differences in Caregivers' Endorsement of Corporal Punishment and Reports of Specific Disciplinary Strategies (Study Objective 2)

Based on the research literature, four different groups of caregivers were expected to be found: (1) a group who would respond negatively to the question on corporal punishment and who would not report using any of the specified physical disciplinary strategies; (2) a group who would respond negatively to the question on corporal punishment but who would report some of the specified physical disciplinary strategies; (3) a group who would respond positively to the question on corporal punishment and who would report using milder forms of physical disciplinary strategies; and (4) a group who would respond positively to the question on corporal punishment and who would report using severe forms of physical disciplinary strategies. As hypothesized, these different groups were identified with the exception of the latter one. Severe forms of corporal punishment were very rarely reported in the present study. This may be a reflection of the fact that severe corporal punishment that approaches physical abuse is rare in a community sample. As such, for this study, caregivers were combined within groups without any distinction of the severity of their physically punitive behaviours.

According to different factors such as cultural norms, attitudes toward corporal punishment, and one's own history of corporal punishment, the different groups of caregivers may vary systematically in the way they label and thus endorse corporal punishment (Benjet & Kazdin, 2003). A better understanding of the factors that predict endorsement of corporal punishment was important. These predictive factors could also help identify those caregivers that remain under the radar and that are not detected with a general question on corporal punishment.

Simply based on descriptive analyses and ANOVAs, it is interesting to note that the three groups of caregivers formed a continuum in terms of their level of reported attitudes toward corporal punishment, and that caregivers who endorsed corporal punishment (*group 3*) reported the greatest cultural normativeness and the most frequent experiences with corporal punishment in childhood. This pattern of results is consistent with past findings showing that the three predictors are significantly and positively associated with corporal punishment report (Ateah & Durrant, 2005; Gagné et al., 2007; Lansford et al., 2005; Socolar & Stein, 1995; Taylor et al., 2011).

However, results from the multinomial logistic regression pointed to the fact that taken together, the only variable that statistically distinguished the three groups of caregivers was attitudes toward corporal punishment. As hypothesized, positive attitudes toward corporal punishment were positively associated with self-reports of physically punitive behaviours. Specifically, caregivers who had more positive attitudes toward corporal punishment were 2.93 times more likely to report physical disciplinary strategies but not endorse corporal punishment (*group 2*), and they were 8.70 times more likely to report physical disciplinary strategies and endorse corporal punishment (*group 3*). The positive effect of attitudes toward corporal punishment is consistent with results from past studies. Indeed, favourable attitudes have been found to be one of the strongest predictors of corporal punishment (Ateah & Durrant, 2005; Gagné et al., 2007; Socolar & Stein, 1995; Vittrup et al., 2006); caregivers use this strategy because they believe it to be useful and appropriate (Gagné et al., 2007). Contrary to the study's hypothesis, results did not suggest any interaction of attitudes with other predictor variables. Note that this absence of moderating effects was not due to a lack of statistical power because the effect sizes for the different interactions were almost zero. As such, results indicate that,

despite the level of cultural support and childhood experiences of corporal punishment, caregivers who hold more favourable attitudes toward corporal punishment are more likely to report using physical disciplinary strategies with their child.

Contrary to expectations, cultural norms and childhood experiences of corporal punishment were not independently associated with group membership. Past research has identified perceived prevalence of corporal punishment in the cultural community (descriptive norms) and perceived approval by community members as significant predictors of attitudes toward and use of corporal punishment (Lansford et al., 2005; Taylor et al., 2011). Experiences of corporal punishment during childhood also tend to increase its approval during parenthood and its use with one's child (Bell & Romano, 2012; Bower & Knutson, 1996; Deater-Deckard et al., 2003; Gagné et al., 2007). In the current study, childhood experiences of corporal punishment slightly increased the likelihood of caregivers being in the group that endorsed corporal punishment (*group 3*), but the relationship only approached statistical significance. The absence of statistically significant effects for cultural norms and childhood experiences may be due to their significant and positive correlation with attitudes. It may be that the shared variance between constructs contributed to the lack of statistical significance for cultural norms and childhood experiences. Because these two variables have been found to not only be associated with actual use of corporal punishment but also with attitudes, statistical analyses accounting for possible mediational relationships between the variables could offer a better representation of their contribution in predicting corporal punishment. Future studies should explore this possibility. Finally, distinguishing between different forms of injunctive and descriptive norms could help clarify the effect of the cultural context. Indeed, Taylor and colleagues (2011) found differential effects of perceived approval by professionals, perceived prevalence in the

community, and perceived approval by family and friends. These factors were all related to attitudes toward corporal punishment but, respectively, in decreasing order of importance.

Coming back to this study's predictive model, it is interesting to note that it explained 42.8% of the variance in group membership. Most importantly, 27 caregivers who reported physical disciplinary strategies but did not endorse corporal punishment (*group 2*) were statistically classified within the group of caregivers that did endorse corporal punishment (*group 3*). This indicates that the model of prediction was actually able to identify caregivers who use physical disciplinary strategies and place them in the group to which they belong, with those who endorsed corporal punishment. This classification was mainly due to the effect of attitudes toward corporal punishment because it was the only variable that remained significant after accounting for socio-demographic factors, social desirability, cultural norms, and childhood experiences of corporal punishment. This result suggests that examining attitudes toward corporal punishment may help identify caregivers who would normally fly under the radar based on their answer to a general question on corporal punishment use.

However, results from this study revealed that the effect of attitudes was lower for the group of caregivers who did not endorse corporal punishment but reported physical disciplinary strategies (*group 2*; *OR* = 2.93) than for the group who endorsed corporal punishment (*group 3*; *OR* = 8.70). In addition, 37 caregivers who did not endorse corporal punishment but reported physical disciplinary strategies were classified, by the predictive model, within the group who did not use any forms of corporal punishment (*group 1*). As such, these caregivers remained unidentified. This indicates that other factors, not accounted for in the current study, could explain why some caregivers report physically punitive behaviours when specific physical

disciplinary strategies are assessed but do not, prima facia, identify themselves as caregivers who use corporal punishment to discipline their child.

First, it may be that caregivers lack knowledge and simply do not know that the behaviours they are engaging in are forms of corporal punishment. This explanation could be especially true for slapping a child's hand, arm, or leg, which is a disciplinary strategy evoked (in the open-ended question) as a form of corporal punishment by only 26.0% of caregivers but endorsed by 37.9% of them. Second, it may be that caregivers engage in physical disciplinary strategies at such a low frequency that they do not spontaneously identify themselves as using corporal punishment. Indeed, post-hoc analyses revealed that caregivers who did not endorse corporal punishment (*group 2*) reported spanking, hitting the bottom with an object, and slapping a child's hand, arm, or leg significantly less frequently ($p<.05$) than caregivers who did endorse corporal punishment (*group 3*). Note that no significant differences emerged for the other physical disciplinary strategies. Becoming aware of one's problematic behaviours is the foundation of any behavioural change. Therefore, prevention strategies to eliminate child corporal punishment should increase parental awareness as to the array of behaviours that represent forms of corporal punishment, even the mildest and the less frequent ones.

The Theory of Planned Behaviour (TPB; Ajzen, 2012) can also guide hypotheses as to why some caregivers reported specific physical disciplinary strategies but did not endorse corporal punishment. The only factor from TPB that was not directly assessed in the current study is caregivers' perceived behavioural control. Durrant and collaborators (2014) explained that perceptions of factors that help or impede the performance of a behaviour, such as the ability to respond non-aggressively to parent-child conflict, determine caregivers' perceived behavioural control (or self-efficacy). This will, in turn, influence the likelihood of performing the behaviour

and the actual behavioural control in disciplinary moments (Ajzen, 2012). Caregivers who maintain less favourable attitudes toward corporal punishment but who still engage in physical disciplinary strategies (such as caregivers in *group 2*) may do so out of anger, impulsivity, and loss of behavioural control. Indeed, the relationship between psychological distress and corporal punishment was found to be stronger for mothers who did not support the use of this strategy as compared to mothers with positive attitudes (McLoyd, Kaplan, Hardaway, & Wood, 2007). For these caregivers, corporal punishment might be used impulsively when parental anger is high and when there is little perceived parental control during disciplinary moments (Straus & Mouradian, 1998). Similarly, emotional arousal may lead to a failure to monitor and adjust one's reaction in the disciplinary moment in order to act according to beliefs and values (Bower-Russa & Rodriguez, 2010).

In sum, caregivers' attitudes toward corporal punishment was a significant predictor of group membership. Caregivers who endorsed corporal punishment held significantly more favourable attitudes toward corporal punishment. Those who did not endorse corporal punishment but reported specific physical disciplinary strategies also had more favourable attitudes but to a lesser extent. It may be that their attitudes are not favourable enough so they do not initially or spontaneously label themselves as caregivers who use corporal punishment to discipline their child. Besides the possible lack of awareness of what behaviours constitute corporal punishment and/or of infrequent physical disciplinary strategies, other factors could explain why they still reported specific physically punitive strategies. Namely, the lack of behavioural control (perceived or actual) and the level of psychological distress in disciplinary moments may lead to impulsive instead of instrumental forms of corporal punishment. Future studies should explore these variables not only as predictors of corporal punishment but also as

potential screening factors that could help identify caregivers at risk of underreporting their use of corporal punishment. Preventive strategies to reduce corporal punishment and promote positive parenting strategies should also endeavour to target parent behavioural control by increasing their knowledge and skills in terms of non-aggressive conflict resolution, emotion regulation, and distress tolerance.

Limitations

It is important to note various limitations in the study's methodology. The cross-sectional and retrospective design prevents inferences about causality or temporality. Results from this study confirm that positive attitudes toward corporal punishment are associated with increased corporal punishment use. However, the conclusion that favourable attitudes lead to corporal punishment cannot be made. Dynamic factors such as caregivers' perceived behavioural control and psychological distress were not examined in the current study. These factors could increase the strength of inferences about the predictors of corporal punishment endorsement. Similarly, questions from this study could not qualify how caregivers engage in the different physically punitive behaviours. This should be further examined in future studies because this could help distinguish between impulsive and instrumental forms of corporal punishment. Characterization of mediational processes as well as longitudinal designs could also increase one's understanding of the association among predictors of corporal punishment and increase the strength of inferences.

The reliance on caregiver reports may have biased our results in that caregivers tend to underreport their use of corporal punishment (Straus et al., 2014). This could serve to underestimate the true frequency of corporal punishment and the specific physical disciplinary strategies. Nevertheless, the frequency of corporal punishment obtained in the current study was

higher than that observed in Canadian population-based surveys (NLCY and SYC). Note that the study's sample was appropriately representative of Canada's population for most of the socio-demographic characteristics. However, due to the sampling frame, the generalizability of findings may be still restricted to the population of Ontario because this province was overly represented in this study. Non-immigrants, mothers, caregivers with higher education, and caregivers with no religious affiliation were also slightly overrepresented in this sample. Similarly, it is possible that, regardless of the anonymity permitted by the Internet design, participants may have been significantly different from caregivers who chose not to participate in the study. This, in combination with the fact that the study used a community sample, could have increased the frequency of milder rather than severe forms of corporal punishment.

Finally, while the questions on specific physical disciplinary strategies were exhaustive, some physically punitive behaviours may have been omitted. Indeed, pulling or twisting ears, pulling hair, and biting a child are strategies that were identified by 2-4% of caregivers in the study's open-ended question but these strategies were not further assessed. Interestingly, to my knowledge, no past studies have examined these specific strategies but they should be further explored because they can be part of caregivers' disciplinary repertoire. Such strategies could further characterize the caregivers who do not identify themselves as using corporal punishment to discipline their child and who may currently remain undetected by research studies conducted in the field of corporal punishment.

Conclusion

An important limit of the current literature on corporal punishment is the lack of consensus about the definition of this disciplinary strategy, which may influence results on its prevalence and associated developmental outcomes. The current study confirmed that a

concordance exists between answers to a general question on corporal punishment and answers to questions on specific physical disciplinary strategies; this relationship is stronger for spanking and slapping a child's hand, arm, or leg. This suggests that a question such as the one used in the NLSCY is measuring what it is supposed to be measuring, and it mostly reflects parental use of milder forms of corporal punishment. Based on this result, it is possible to extrapolate that data on prevalence and outcomes of corporal punishment obtained from such general question are associated with the most commonly used forms physical disciplinary strategies. This result is particularly important because it can inform the debate surrounding corporal punishment, which continues to be fueled by the belief that the detrimental effects of corporal punishment are due to severe forms of physical discipline rather than to the occasional use of mild corporal punishment (Larzelere & Kuhn, 2005).

Given that what continues to be controversial around corporal punishment is whether mild to moderate spanking is harmful to the child (Baumrind et al., 2002) and given that there appears to be variability in what caregivers perceive as corporal punishment, it will be essential for future studies to specifically focus on physical disciplinary strategies that are the most commonly used (e.g., spanking or slapping) and/or that are on the milder end of the continuum of severity (e.g., pinching, biting, pulling ears, pulling hair, shaking). Providing a definition to participants, such as the one proposed by the UN (i.e., "any forms of punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light"; p.4; Committee on the Rights of the Child, 2006), also seems appropriate, especially because it introduces the idea that *light* physical disciplinary behaviours are forms of corporal punishment.

Finally, the current study confirmed that some caregivers may remain undetected by general questions on corporal punishment because they may not readily identify themselves as

caregivers who use corporal punishment to discipline their child. Positive attitudes toward corporal punishment appeared to be a good predictor of physical disciplinary strategies (whether or not corporal punishment was endorsed). As such, this variable could be used as a screening factor to flag caregivers who are using physically punitive strategies but who may not endorse corporal punishment. Targeting attitudes toward corporal punishment by altering beliefs about its normativeness and necessity of use may also be a first step to reduce the use of corporal punishment (Lansford et al., 2015). However, the current study demonstrated that attitudes are not the only factor influencing use of physically punitive behaviours, especially among caregivers who did not endorse corporal punishment. Indeed, caregivers may not support corporal punishment as a necessity in discipline but they may still report using physical disciplinary strategies (Lansford et al., 2015). Therefore, other factors that could lead to impulsive rather than instrumental corporal punishment, such as parent behavioural control and psychological distress, will need to be explored as potential screening factors and as a possible foundation of preventive and intervention strategies to reduce corporal punishment.

General Conclusion

The most common form of violence towards children is of a disciplinary and punitive nature (Durrant et al., 2009). According to the UN, corporal punishment represents a form of child violence that is unjustifiable and preventable (Pinheiro, 2006). While many organizations concerned with children's well-being consider corporal punishment to impede child development and to violate children's rights (e.g., Canadian Psychological Association, Canadian Paediatric Society), corporal punishment remains lawful in Canada and continues to be part of the disciplinary strategies of many parents. As such, corporal punishment is a topic that has generated and continues to generate much controversy. The debate surrounding its use is mainly

characterized by two perspectives that were remarkably well captured by statements provided by participants in the second study of the current dissertation. The anti-corporal punishment point of view was illustrated by one caregiver who noted that "it is *never acceptable* [emphasis added] to use physical punishment for any child regardless of their age". In contrast, the conditional corporal punishment point of view was reflected by another caregiver who indicated the following: "[I am a] strong believer in 'Spare the rod, spoil the child'. [Corporal punishment] is only used when in a 'last resort' kind of situation, [and] it works".

Corporal punishment has been present since the beginning of history in almost all societies (Saunders & Goddard, 2010; Straus & Donnelly, 2001). As such, attitudes surrounding its use are deeply entrenched within our cultural belief system. Personal experiences with corporal punishment (and the belief that one was not negatively affected by it), social myths reinforcing the idea that corporal punishment works when other disciplinary strategies do not, the belief that parents are owners of their child and have the right to physically punish them, and the fear of losing control over children are several of the obstacles to accepting the empirical evidence against its effectiveness (Porzig-Brummon, 2015; Straus et al., 2014). In the scientific literature, the debate over corporal punishment has also been fueled by the lack of firm conclusions about its developmental impact. The current dissertation represented an attempt to advance knowledge on corporal punishment, and to inform the debate and social policies surrounding its use. To do so, the use of corporal punishment in the Canadian context was examined and methodological limitations of the literature on its developmental outcomes were addressed. The dissertation's main objectives and contributions were as follows:

1) No nationally-representative Canadian study had captured a picture of parental use of corporal punishment and co-occurring disciplinary strategies in a way that could help

understand the change that is happening at a societal level. Results from the current study confirmed the presence of a significant decrease over time in the prevalence and frequency of corporal punishment. It also revealed a significant decrease in the prevalence and frequency other negative strategies (e.g., psychological aggression) alongside a significant increase in the frequency of positive strategies (e.g., reward/praise, explain/teach; the prevalence remained high across time). The small effect sizes brought into question the meaningfulness of the observed changes from an applied perspective. Nevertheless, it is important to remember that small changes in disciplinary practices may impact a significant number of caregivers and children at a population level.

2) Much research to date has focused solely on parents' use of corporal punishment. Results from this dissertation confirmed that it is best conceptualized as part of a broader disciplinary context because parents make use of a variety of disciplinary strategies (i.e., psychological aggression, non-physical punishment, explain/teach and reward/praise). The majority of caregivers who endorsed the use of corporal punishment also reported using all other disciplinary strategies that were assessed, including positive ones. Increased use of psychological aggression was the only disciplinary strategy that distinguished caregivers who used corporal punishment from those who did not.
3) Since many parents continue to use corporal punishment, it seemed important to examine socio-demographic factors that distinguished parents who use corporal punishment from those who do not. While several socio-demographic factors were statistically significant, the variance explained by the predictive model suggested that they may not be the best predictors of corporal punishment. It was also interesting to realize that socio-demographic factors had a greater association with corporal punishment from caregivers of younger

children, and that several variables statistically significant only in younger age cohorts could be considered proxies of stress. As such, it may be that parents of younger children are more likely to use impulsive forms of corporal punishment exacerbated by stress, and that parents of older children are more likely to continue to use instrumental forms of corporal punishment, associated with attitudes and ideology.

4) This dissertation addressed methodological limitations of the existing literature on outcomes of corporal punishment. It used a longitudinal design not only to explore the longer-term association of corporal punishment with detrimental outcomes but also to explore potential associations with positive behaviours. There was also consideration of an exhaustive array of contextual factors and of potential moderating effects of co-occurring disciplinary strategies and parenting style. Results revealed that corporal punishment experiences at 2-3 years were directly associated with an increased risk of externalizing behaviours at 8-9 years. Results also suggested that early corporal punishment, which occurred within a certain disciplinary context (i.e., more hostile, harsh, and punitive discipline and parenting style and/or lower inductive discipline and positive parenting), was associated with an increased risk of externalizing behaviours at 14-15 years, an increased risk of internalizing behaviours at 8-9 and 14-15 years, and a reduced likelihood of prosocial behaviours at 8-9 and 14-15 years. Finally, results indicated that corporal punishment was not associated with beneficial outcomes under any conditions. Overall, results confirmed that corporal punishment represents a small but non-trivial risk factor for child development; these results offer support for the anti-corporal punishment perspective.
5) The current dissertation addressed one crucial limit of parent-report measures by clarifying what parents self-label as corporal punishment. Results confirmed a concordance between

answers to a general question on corporal punishment and answers to questions on specific physical disciplinary strategies. This validated the question used in the NLSCY. Results also revealed that questions such as the one used in the NLSCY may reflect parental use of milder forms of corporal punishment. Therefore, it can be extrapolated that obtained results on the prevalence, predictors, and outcomes of corporal punishment are mostly associated with "mild" and commonly-used forms of corporal punishment, such as spanking and slapping a child's hand, arm, or leg. Based on the research literature, it is reasonable to assume that inclusion of more severe forms of corporal punishment would have increased the association between this strategy and behavioural outcomes. Finally, results confirmed that some caregivers remain undetected by general questions on corporal punishment because they do not readily identify themselves as caregivers who use child corporal punishment. Inclusion of these caregivers with those who do endorse corporal punishment could have further increased the prevalence rates obtained with the NLSCY data as well as the effect sizes associated with behavioural outcomes. Exploration of additional factors, such as attitudes toward corporal punishment, could help flag caregivers who use physically punitive strategies but who may not endorse corporal punishment.

Based on findings from the current dissertation, there are several theoretical and research recommendations that can guide future studies. Results also have a number of applied and practical implications.

Theoretical and Research Implications

The goal of discipline is to teach children self-control and acceptable behaviours (Papalia et al., 2006); it is inherent to parents' role of promoting children's socialization and intellectual, social and emotional development. Whether used instrumentally or impulsively, parents engage

in forms of corporal punishment during disciplinary interactions as a response to a child's misbehaviour. According to a continuum of violence position, corporal punishment and physical abuse vary only in terms of severity and/or frequency (Gershoff, 2010; Gonzalez et al., 2008). While no one would contest the importance of eliminating child physical abuse, what remains controversial is whether "mild" and occasional forms of corporal punishment might be appropriate and beneficial for children under certain contexts. However, corporal punishment must also be considered within a children's rights perspective. The UN's definition of corporal punishment specifies that all disciplinary behaviours that cause a child to experience pain or discomfort, even if it is light, represent a form of violence from which all children have the right to receive protection (Committee on the Rights of the Child, 2006). With this theoretical framework in mind and with the goal of further informing the debate surrounding corporal punishment, future research should:

1) always understand corporal punishment within a disciplinary context (including co-occurring disciplinary strategies and the broader parenting style);
2) focus on the most commonly-used forms of physically punitive strategies (e.g., spanking and slapping a child's hand, arm, or leg);
3) explore whether corporal punishment prevents caregivers from achieving their long-term parenting goals by further assessing its impact on children social functioning, emotion regulation skills, cognitive development, and school functioning;
4) emphasize dynamic (i.e., attitudes toward corporal punishment, co-occurring disciplinary strategies, parenting style, knowledge about child development, parent behavioural control) rather than static (e.g., socio-demographics, history of childhood experiences with corporal punishment) factors associated with corporal punishment in order to inform ongoing

prevention efforts and intervention strategies to support parents in their childrearing role. The interactional context of Gershoff's (2002a, 2002b) process-context model captures different factors that would be important to target (e.g., characteristics of a child's misbehaviour, emotional state of the parent and child in disciplinary moments, parent attributions).

Applied and Practical Implications

While there has been a reduction in the prevalence of corporal punishment and a change in attitudes toward this disciplinary strategy, there need to be continued efforts to further encourage a social change that would impact a greater number of parents. Specifically, de-legitimization of corporal punishment across society is needed, and caregivers need support and assistance in their childrearing role. Building on the current literature (Durrant et al., 2006; Durrant & Ensom, 2012; Gershoff, 2013; Heilmann et al., 2015; Porzig-Drummon, 2015), this calls for a change in Canadian and international legislation to prohibit all forms of corporal punishment for all children. Given that parents fear prosecution should the legal defense of corporal punishment be repealed (Bell & Romano, 2012), it is essential to assure them that the aim of a corporal punishment ban is to establish new standards and to promote change by helping parents and children (Porzig-Drummond, 2015).

Within a public health approach, changes in legislation should unequivocally be accompanied by awareness campaigns to inform the public about children's rights, the risk associated with corporal punishment, and the benefits of alternative and positive disciplinary strategies. Health professionals, counsellors, child and family workers, and welfare agencies need to work together in advocacy efforts and in sending the message that it is never acceptable to hit a child. Finally, evidence-based parenting programs that are easily accessible to everyone

before and during parenthood will also be essential to inform caregivers of child developmental processes, to normalize parenting challenges, to establish realistic disciplinary expectations, and to strengthen and teach emotion regulation and non-violent problem-solving skills. To shift attitudes toward and use of corporal punishment, not only should social norms, attitudes, beliefs, and knowledge be targeted, but parents also need support at a practical level (Porzig-Drummond, 2015). Such support is critical to help parent build their sense of self-efficacy and to promote children's well-being.

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Table 1

Contextual Factors Identified in Gershoff's Process-Context Model (2002a): Predictors of Corporal Punishment (CP) and Potential Moderators of its Consequences

Stable individual and relational context

Characteristics of the child

Child age

The age of the child has an impact on the prevalence and frequency of CP use (Straus & Stewart, 1999; Mackenzie et al., 2013). Research suggests that rates of CP are highest among 2-5 year olds (Straus & Stewart, 1999; Vittrup et al., 2006), perhaps because parents believe it to be a more appropriate disciplinary practice for this age group (Gershoff, 2002a). Oldershaw (2002) also suggested that parents of older children engage in less CP because they are more confident in their parenting role, having had the chance to put into place support systems as well as to develop a variety of parenting strategies. Nevertheless, parents of older children may continue to engage in CP because their parenting strategies and sense of confidence are undermined by the new set of challenges with which they are faced as children progress through different developmental periods (e.g., peer influence; Oldershaw, 2002).

Moderating effect: Some evidence suggests that CP is linked with more negative effects in older children (Grogan-Kaylor, 2005). Increased severity of CP, higher parental expectations and frustration, and cumulative effects of punishment are some explanations of the observed moderated effect (Gershoff, 2002a). The age of the child can also be associated with the ability to understand the lesson behind the punishment (Gershoff, 2002a), which could moderate its effects.

Child sex

It has been suggested that boys are more likely to experience CP than girls either because they engage in more behaviours that elicit that type of punishment (e.g., aggressive behaviours) or because parents have specific sex-based beliefs and expectations that mediate different reactions to the same behaviour (Gershoff, 2002a). Mixed results have been found regarding sex differences in parents' use of CP, where some studies have identified a difference (Day et al., 1998; Giles-Sims et al., 1995; Mahoney et al., 2000; Straus & Stewart, 1999; Taylor, Manganello et al., 2010; Wang & Kenny, 2014) and others have not (Holden et al., 1995; Lytton & Romney, 1991; Woodward & Fergusson, 2002).

Moderating effect: A moderating effect of child sex has been suggested in the literature (Gershoff, 2002a). For example, Grogan-Kaylor (2005) found greater negative effects of CP on antisocial behaviours in boys, and Gryczkowski (2010) found a stronger negative association between CP and prosocial behaviours in girls. It may also be a question of the match between parent and child sex where children tend to imitate a same-sex adult model to a greater extent (Gershoff, 2002a). To illustrate, a study found an impact of CP on externalizing behaviours only when the parent

and the child were of the same sex (Deater-Deckard & Dodge, 1997). These sex differences were however not observed by other researchers (Lahey et al., 2008; Lansford et al., 2011; MacKenzie et al., 2012, 2013, 2014; Wang & Kenny, 2014).

Child temperament and genetic contribution

Findings have indicated that children with high activity level, low self-regulation, or high aggressive tendencies tend to elicit more CP from their parents (e.g., Day et al., 1998). However, Gershoff (2002a) identified three longitudinal studies (Cohen & Brook, 1995; Crockenberg, 1987; Kandel & Wu, 1995) that did not find this relationship. She suggests that the relationship between child temperament and CP may not be unidirectional but better characterized by a bidirectional and reciprocal association.

Moderating effect: Child temperament can contribute to later internalizing and externalizing behaviours (MacKenzie et al., 2012; Mulvaney & Mebert, 2007; Stacks et al., 2009). Also, because the temperament can affect children's reactivity to parenting behaviours, it could moderate the effect of CP (Gershoff, 2002a). For example, Mulvaney and Merbert (2007) found that spanking was more strongly associated with externalizing behaviours for children with more difficult temperament. Data from a sample of 1,600 twins revealed that the effect of CP on antisocial behaviours increased with increasing level of genetic risk (Boutwell et al., 2011). A moderating effect for child temperament was confirmed by some studies (Lahey et al., 2008; Lengua, 2008) but not others (Clincy, 2013).

Characteristics of the parent

Parent age

Research has suggested that younger parents are at greater risk of using CP and of using it more frequently (Day et al., 1998; Giles-Sims et al., 1995; Morris & Gibson, 2011; Regalado et al., 2004; Straus & Stewart, 1999; Taylor, Manganello et al., 2010; Wissow, 2001; Woodward & Fergusson, 2002; Xu et al., 2000). Suggested reasons include a lack of experience in child rearing (Gershoff, 2002a), lower social integration, economic stresses, and higher rates of alcohol abuse (Straus & Stewart, 1999).

Moderating effect: To my knowledge, no studies has suggested a moderating effect of parent age.

Parent sex

Mothers have been found to report more frequent use of CP (Day et al., 1998; Gamez-Guadix et al., 2010; MacKenzie et al., 2012; Straus & Stewart, 1999; Xu et al., 2000). One explanation might be that mothers spend more time disciplining their child (Biernat & Wortman, 1991). Results in the literature on the effect of parent sex have been mixed (Fauchier & Straus, 2007; Morris & Gibson, 2011; Wissow, 2001).

Moderating effect: Gamez-Guadix and collaborators (2010) found no significant interaction between parent sex and CP in predicting child antisocial behaviours and depressive symptoms. However, recent results have revealed that frequent maternal spanking, but not paternal spanking, at age 3 and 5 was respectively associated with externalizing behaviours at age 5 and 9, after controlling for several risk factors and initial externalizing behaviours (MacKenzie et al., 2012, 2013). As mentioned above, Gershoff (2002a) proposed that the match between parent and child sex could also moderate the effect of CP.

Parent temperament and genetic contribution

In her review of the literature, Gershoff (2002a) found that parents with aggressive tendencies are more likely to report CP use, and she suggested that the association between CP and aggressive behaviours in children might be due to a heritable tendency toward aggression. This hypothesis is in line with research suggesting genetic predisposition to criminality and antisocial behaviours (Gershoff, 2002a).

Moderating effect: As mentioned above, the effect of CP on antisocial behaviours increased with increasing level of genetic risk in a sample of 1,600 twins (Boutwell et al., 2011). However, a longitudinal study of adopted children revealed that negative parenting still predicted children's externalizing behaviours after controlling for the heritable component (O'Connor et al., 1998).

Psychological functioning

Parents' impaired psychological functioning, such as the presence of depressive symptoms, has shown a consistent link with an increased risk of CP or harsh/aggressive discipline (Holden et al., 1995; Laskey & Cartwright-Hatton, 2009; Regalado et al., 2004; Smith & Brooks-Gunn, 1997; Wang & Kenny, 2014; Wissow, 2001; Woodward & Fergusson, 2002). Depressed parents' tendency to value parent-centered interaction rather than child-centered interaction, and to make negative attributions about their child's misbehaviour have been posited to explain this link (Gershoff, 2002a). Anxious mothers have also been found to be more critical, less warm, and less granting of autonomy than non-anxious mothers.

Moderating effect: Maternal depression and anxiety have been found to have a direct association with children's socio-emotional difficulties (Laskey & Cartwright-Hatton, 2009; Mulvaner & Mebert, 2007) due to genetic influence and social learning. Parent psychological difficulties could also indirectly influence child outcomes by increasing marital conflicts, negative/hostile parenting (Eamon, 2001) and inconsistent discipline, thus leading to unpredictable home environments (Laskey & Cartwright-Hatton, 2009).

Parenting style and beliefs

CP occurs in the context of other disciplinary strategies (i.e., reinforcement and punishment) as well as in the context of an overall parenting style (e.g., warm, supportive, consistent). In her review of the literature, Gershoff (2002a) noted that overall parenting style can influence parental use of CP. Indeed, CP has been associated with fewer parent-child positive interactions as well as greater negative practices such as yelling (Gamez-Guadix et al., 2010; Wissow, 2001).

Moderating effect: The literature has mainly examined the impact of parental warmth, support and emotional responsiveness, but results have been inconsistent. Warmth, support and emotional responsiveness have sometimes been found to buffer the negative consequences of CP (Aucoin et al., 2006; Clincy, 2013; Lansford et al., 2010; Ma et al., 2012; McLoyd & Smith, 2002) and sometimes not (Berlin et al., 2009; Christie-Mizell et al., 2008; De Zoysa et al., 2008; Gamez-Guadix et al., 2010; Lahey et al., 2008; Lee, Altschul, & Gershoff, 2013; MacKenzie et al., 2012; Stacks et al., 2009; Wang & Kenny, 2014). It has been hypothesized that CP may not be perceived by a child as unjust or indicative of rejection if administered in the context of a warm and accepting family (Wang & Kenny, 2014), thus moderating its impact on children's development. Similarly, children who believe that parents are acting in their best interest and in a legitimate way may be more inclined to accept CP. Hostile parent-child relationships may also increase acceptance of CP by children as it fosters acceptance of coercion as a means of dealing with problems (Gershoff, 2002a). On the other hand, maternal support and warmth have also been found to interact with spanking in predicting higher negative impact (Turner & Finkelhor, 1996; Verhoeven et al., 2010). Such results have been explained through the ambiguous message sent by a parent

who is supportive and aggressive at the same time, thus causing unpredictability and increasing distress in children (Verhoeven et al., 2010; Wang & Kenny, 2014). Finally, Harper et al. (2006) suggested that parental support can have a protective effect, but that it depends on the sex of the punishing and supportive parent.

Characteristics of the family

Household size and family structure

Household size and family structure have been associated with CP use, but this relationship may be mediated by the level of stress experienced by certain parents. Given their higher level of stress, it has been found that single, separated or divorced and stepfamily parents, as well as parents having a larger number of children, use CP more often (Day et al., 1998; Gosselin & Gagné, 2011; Loeber et al., 2000; McCabe et al., 1999; Pinderhughes et al., 2000; Regalado et al., 2004). For household size, having a large household is associated with an increased need for resources in the home as well as with an increased complexity in the distribution and sharing of these resources, which may act as a greater burden for parents (Day et al., 1998; Pinderhughes et al., 2000; Straus & Stewart, 1999). It has also been suggested that parents from larger household may have less time and energy to monitor, explain, and reason so they may rely more on quick and physical disciplinary behaviours. As well, having more children may impact the size and quality of the support system, thus increasing the impact of stress on parental abilities and behaviours (Straus et al., 2014). The relationship between CP and household size and family structure has however not been identified by other studies (Juby, 2009; MacKenzie et al., 2011; Morris & Gibson, 2011; Straus & Stewart, 1999; Woodward & Fergusson, 2002). For example, a reduced prevalence of CP was found in stepfamilies and this was explained by: (1) a reduced level of child supervision due to the stress related to family transitions and to the parents' investment in a new relationship, and (2) reduced time in the presence of their biological children as compared to parents in intact families (Thomson et al., 2001).

Moderating effect: While, to my knowledge, no studies have specifically examined the moderating effect of household size or structure, these factors have been identified as risk factors that, cumulatively, are associated with greater behavioural difficulties in childhood (Deater-Deckard et al., 1996). In addition, greater risk factors have been found to increase the association between parenting behaviours and negative child outcomes (Ackerman et al., 1999). However, an index of sociodemographic risk was not found to moderate the effect of maternal spanking on later internalizing and externalizing behaviours (Clincy, 2013).

Social-cultural context

Stress and social support

Social support can act as a buffer against the negative effects of stressful experiences or environments. In her review of the literature, Gershoff (2002a) proposed that by providing instrumental help (e.g., child care, money), emotional support, and childrearing advice, social networks can promote parents' psychological functioning and a more positive parent-child relationship. Using a representative sample of U.S. parents, one study found that social support was a significant predictor of CP frequency, but this association varied depending on family structure and parental

ethnicity (e.g., negative relationship in Black-married families vs. no significant relationship in White-married families; Day et al., 1998). Other studies have revealed that higher social support and higher satisfaction in the support system are associated with more positive and less controlling parent-child interactions (Gershoff, 2002a).

Moderating effect: It is suggested that social networks can moderate the association between stress and child outcomes (Cicchetti & Valentino, 2006; Zielinski & Bradshaw, 2006). However, to my knowledge, the interaction effect of CP with social support was not studied in the literature. .

Socioeconomic status (SES; e.g., income, education level, and job status)

Mixed results have been found regarding the impact of SES on CP attitudes and use. Many studies have identified a negative relationship where CP increases as SES declines (Giles-Sims et al., 1995; Gunnoe & Mariner, 1997; Jackson et al., 1999; Juby, 2009; Perron et al., 2014; Pinderhughes et al., 2000; Straus & Stewart, 1999; Wang & Kenny, 2014; Xu et al., 2000). This relationship is important given that low SES has also been associated with greater developmental difficulties in children (e.g., externalizing behaviours; Grogan-Kaylor, 2005). Different explanations for this link have been offered. Because of an increased exposure to negative life events (e.g., victimization, job loss) and to chronic tensions (e.g., inability to fulfill obligations and responsibilities; Eamon, 2001), low SES may be associated with greater stress, parental depression, and marital conflict, which in turn may lead to more frequent use of CP (Eamon, 2001; Gershoff, 2002a). Also, according to the socialization hypothesis, low SES parents may place a greater importance on child compliance and obedience necessary for the life experiences the child will likely face as an adult. As such, there may be greater use of CP (Gershoff, 2002a). Other researchers have found no effect of SES on the acceptance or use of CP (Day et al., 1998; Grogan-Kaylor & Otis, 2007; Mahoney et al., 2000; Morris & Gibson, 2011), or they have found a curvilinear relationship with CP rates highest for parents from middle SES backgrounds (Wissow, 2001).

Moderating effect: Several studies have found no moderating effect of SES while others suggest that SES moderates the impact of punitive and restrictive parenting (more generally) on prosocial behaviours and cognitive development (Gershoff, 2002a). Also, SES can be identified as a risk factor which, in combination with other risk factors, is associated with greater behavioural difficulties (Deater-Deckard et al., 1996) and can moderate the effect of parenting behaviours on child outcomes (Ackerman et al., 1999).

Race-ethnicity

Studies have been inconclusive in regards to the relationship between ethnicity and CP use (Gershoff, 2002a; Regalado et al., 2004). Some U.S. findings have indicated that normative beliefs about spanking are more positive among Black families, and that African American parents use CP more often than Hispanic American or European American parents (Day et al., 1998; Gershoff et al., 2012; Giles-Sims et al., 1995; Grogan-Kaylor & Otis, 2007; MacKenzie et al., 2011; Pinderhughes et al., 2000; Regalado et al., 2004; Slade & Wissow, 2004; Straus & Stewart, 1999; Wang & Kenny, 2014). Other studies have found opposite results (e.g., Hispanic and Asian American parents spank less; Hashima & Amato, 1994; Wissow 2001) or no ethnic differences (Hemenway et al., 1994; Lansford et al., 2012; MacKenzie et al., 2014; Morris & Gibson, 2011; Straus & Donnelly, 2001). It has been hypothesized that the level of stress experienced by families from minority cultures and/or values of parental control and child compliance may explain cultural differences. Similarly, immigration status might also impact CP use as families that have immigrated may experience more stress (Thomas, 1995). As well, we may speculate that living for a longer period of time in a country where there are some social and educational efforts to reduce CP may influence its use. Indeed, not being born in the U.S. was found as a significant predictor of spanking in Black and Hispanic mothers (MacKenzie et al., 2011).

Moderating effect: Several studies suggest that ethnic, racial, and cultural background can moderate the impact of CP on psychological adjustment in that the meaning that a child attributes to parents' disciplinary behaviours may act as moderator (Deater-Deckard & Dodge, 1997; Ripoll-Nunez & Rohner, 2006). If CP is considered normative and beneficial in a given culture, then child processes initiated and shaped by the experience of CP may be different (e.g., how s/he responds emotionally to CP). Mixed results have been found in the literature regarding the moderating impact of race/ethnicity; several studies have found that CP was associated with increased behavioural difficulties in all racial-ethnic groups examined (Berlin et al., 2009; Christie-Mizell et al., 2008; Coley et al., 2014; Gershoff et al., 2012; Grogan-Kaylor, 2005; Lansford et al., 2011; MacKenzie et al., 2011, 2012, 2013, 2014; McLoyd & Smith, 2002; Mulvaney & Mebert, 2007; Wang & Kenny, 2014). Others have found either no association or a negative association between CP and problem behaviours in African American or Hispanic children (Deater-Deckard et al., 1996; Gunnoe & Mariner, 1997; Lahey et al., 2008; Lansford et al., 2004; Lansford et al., 2012; Lau et al., 2006; Stacks et al., 2009). Conversely, a stronger and positive association between CP and externalizing difficulties was found in African American as compared to Caucasian children (Pardini et al., 2008).

Religion-religiosity

"Sparing the rod spoils the child" is a philosophy of child rearing anchored in conservative fundamentalist religious beliefs. Such philosophy can influence parents' decision to use CP as they will not only view it as a possible option, but also as the most appropriate response to children's misbehaviours (Ellison et al., 1996). Studies have found that parents with Conservative Protestant affiliation and with other conservative religious beliefs (e.g. Christian) are more likely to use CP than parents from less conservative religious backgrounds (e.g. Catholic; Day et al., 1998; Flynn, 1994; Giles-Sims et al., 1995; Grogan-Kaylor & Otis, 2007; Taylor, Manganello et al., 2010; Xu et al., 2000). Existing results suggest that Conservative Protestant parents attribute less negative consequences to CP (Gershoff et al., 1999). Gershoff (2002a) also suggested that, different from the effect of specific religious affiliations, religiosity (e.g. attendance at religious services or endorsement of religious belief) can exert positive effects on parent-child relationships and can be associated with child-oriented discipline (Kelley et al., 1992; Pearce & Axinn, 1998; Wilcox, 1998).

Moderating effect: In her review of the literature, Gershoff (2002a) underlined the fact that little attention has been given to the potential moderating effect of parents' religious affiliation. However, similar to ethnicity, religion offers a cultural context that can influence CP attitudes and normativeness, thus potentially moderating its impact. Adverse effect of spanking was not observed for children from conservative Protestant background as compared to children from other or no religion (Ellison et al., 2011).

Geographic region

The geographic region in which families live also represents a cultural context that could influence CP (Gershoff, 2002a). Studies have suggested that, even after controlling for demographic factors, CP is favoured and more prevalent in the southern U.S., compared to the northeast region (Flynn, 1994; Giles-Sims et al., 1995; Straus & Stewart, 1999). Flynn (1994) suggested that the south of the U.S. represents a distinct culture characterized by value of tradition, order, and authority. Such regional differences have also been observed in Canada where, for example, an examination of the 1994 NLSCY data revealed that parents of 2-3 year-old children in the Prairie region reported significantly higher levels of punitive practices whereas Quebec parents reported significantly lower punitive practices (Thomas, 2004).

Moderating effect: To my knowledge, no studies have examined the moderating effect of the geographic region. However, the geographic region of residence provides a cultural context that could moderating the impact of CP.

Legal statutes and public policies

Parent-child interactions and child rearing attitudes occur in and are influenced by social institutions and rules (Durrant et al., 2003). An examination of Sweden's CP ban demonstrates the influence of the legal structure on individuals' behaviours, knowledge, and beliefs (Durrant, 2003). In Canada, positive attitudes towards CP are supported by the public policies that sanction CP.

Table 2

Summary of Longitudinal Studies on the Relationship between Corporal Punishment (CP) and Developmental Outcomes

Reference	Sample	Outcomes	Controls/Covariates/ Moderators	Main results
Barnes et al. (2013)	- 1,000 twins from ages 2-6 - U.S.	- Externalizing behaviours: parent and teacher report	- Initial level of externalizing behaviours - Child sex and race; child self-regulation	- After accounting for the bidirectional relationship between spanking and the outcome, spanking at age 4 was not associated with parent-reported externalizing behaviours at age 5. - After accounting for the bidirectional relationship between spanking and the outcome, spanking at age 4 was positively associated with teacher-reported externalizing behaviours at age 5.
Baumrind et al. (2010)	- 87 European American families of children from ages 3-17 - U.S.	- Individuation, self-efficacy, cognitive competence, communal competence, externalizing behaviours, and internalizing behaviours: direct observation, self and parent report	- Initial level on outcome variable - Child IQ; externalizing behaviours - Confrontative discipline; household management; verbal hostility; psychological control; arbitrary discipline; unqualified power assertion	- Normative CP in the preschool years had no effect on behavioural functioning in adolescence. - Severe CP in the preschool years was associated with lower communal competence in adolescence. - Verbal hostility in the preschool years was associated with lower individuation, self-efficacy and communal competence as well as with greater internalizing difficulties in adolescence. - Psychological control in the preschool years was associated with lower self-efficacy and greater internalizing difficulties in adolescence. - Arbitrary discipline in the preschool years was associated with lower communal competence and greater internalizing in adolescence.
Berlin et al. (2009)	- 2,573 low-income children at age 1,2, and 3 - U.S.	- Aggressive behaviours: parent report - Cognitive development: child assessment	- Child sex and fussiness; maternal age, education, and depression; ethnicity and acculturation; household income; family structure - Verbal punishment and emotional responsiveness	- After accounting for the bidirectional relationship between spanking and outcomes, spanking at age 1 was associated with increased aggression at age 2 and lower cognitive development at age 3. - Spanking at age 1 was associated with increased cognitive development at age 1 in more acculturated Mexican American children, but not in White children. - Emotional responsiveness did not moderate the effect of spanking. - Verbal punishment at age 1 was not associated with aggression at age 2 and cognitive development at age 3.
Callender et al. (2012)	- 245 children at age 3 and 5 - U.S.	- Externalizing behaviours: parent and teacher report	- Initial level of externalizing behaviours - Parent depression - Reciprocal affection and responsiveness	- CP at age 3 was associated with increased externalizing behaviours at age 5.

Choe et al. (2013)	- 241 children at age 3, 5.5, and 10 - U.S.	- Externalizing behaviours: teacher report	- Child sex; SES - Inductive discipline	- A positive bidirectional effect was found between CP and externalizing behaviours across the different ages. - Inductive discipline at age 3 was associated with less CP and reduced externalizing difficulties at age 5.5.
Christie-Mizell et al. (2008)	- 713 African American and 1,139 European American children from ages 6-14 - U.S.	- Depressive symptoms: parent report	- Initial level of depressive symptoms - Child age and sex; maternal education, employment, and depressive symptoms; family structure; number of children in household; place/region of residence; ethnicity; household income - Child emotional support	- Spanking was not associated with depressive symptoms 2 years later. - Ethnicity and emotional support had no moderating effects. - Emotional support was associated with fewer depressive symptoms 2 years later only for European American children.
Clincy (2013)	- 468 African American children at age 36 and 58 months - U.S.	- Externalizing and internalizing behaviours: parent and teacher report	- Initial level of problem behaviours - Child sex and temperament; SES; marital status - Maternal sensitivity and harshness	- Spanking at 36 months was not associated with later internalizing behaviours. - Spanking at 36 months was associated with later externalizing behaviours in the context of low maternal sensitivity or high level of harshness (at 36 months). - Child temperament or socio-demographic risk did not moderate the effect of spanking.
Coley et al. (2014)	- 592 African American and Hispanic children at age 3, 4, and 9 - U.S.	- Externalizing and internalizing behaviours: parent report	- Child age and sex; mother education; marital status; ethnicity	- After accounting for the bidirectional relationship between spanking and behavioural domains, spanking was associated with a short-term decrease (from 3 to 4), but a long-term increase (from 4 to 9) in internalizing symptoms. - Spanking was associated with a long-term increase in externalizing symptoms. - Ethnicity did not moderate the effect of spanking.
Ellison et al. (2011)	- 456 children at age 2-4 and 7-9 - U.S.	- Antisocial behaviours and emotional problems: parent report	- Initial levels of problem behaviours - Child age and sex; mother age, education, and depression; marital status; ethnicity; religion - Positive maternal behaviours	- Spanking at 2-4 years was not associated with later problem behaviours, but spanking that persisted until middle childhood was associated with increased antisocial behaviours and emotional problems. - Adverse effect of spanking was not observed for children from a conservative Protestant background as compared to children from other or no religion.

Fatori et al. (2013)	- 86 children from ages 6-13 - Brazil	- Mental health problems: parent report	- Initial level of mental health problems - Child age and sex; maternal education and trajectory of maternal anxiety/depression; family SES; trajectory of severe physical marital violence; social support; pro-social activities	- Aggravation of child severe CP over time was associated with increased mental health problems 5 years later.
Gershoff et al. (2012)	- 11,044 children at age 5 and 8 - U.S.	- Externalizing behaviours: teacher report	- Initial levels of externalizing behaviours - SES; marital status; ethnicity	- A positive bidirectional effect was found between spanking and externalizing behaviours, from age 5 to 8. - Ethnicity did not moderate the effect of spanking.
Grogan-Kaylor (2005)	- 6,912 children from ages 4-14 - U.S.	- Antisocial behaviours: parent report	- Initial level of antisocial behaviours - Child age and sex; SES; ethnicity - Cognitive stimulation; emotional support	- Spanking was associated with increased antisocial behaviours across time. - The effect of spanking was less for girls than boys. - Spanking had a greater effect when used with older children. - Ethnicity did not moderate the effect of spanking. - Mother-reported cognitive stimulation and emotional support were associated with reduced antisocial behaviours across time.
Gromoske & Maguire-Jack (2012)	- 3,870 families of children at age 1, 3, and 5 - U.S.	- Externalizing and internalizing behaviours: parent report	- Child sex and emotionality; mother age at birth of child; mother cognitive abilities and maternal depression; ethnicity; marital status; income; household size	- Spanking at age 1 was positively associated with externalizing behaviours across age groups. - Spanking was not directly associated with internalizing behaviours, but spanking at age 1 was associated with greater externalizing at age 3, which was related to greater internalizing at age 5.
Huang et al. (2010)	- 905 mother of children at age 1, 3, and 5 - U.S.	- Externalizing and internalizing behaviours: parent report	- Child sex, temperament, and health status; maternal age, race, education, employment, depression, substance abuse problems, social support, and relationship with father; domestic violence - Positive parenting	- Spanking at 3 years was associated with greater externalizing and internalizing behaviours at 5 years. - Positive parenting at 3 years was associated with fewer externalizing and internalizing behaviours at 5 years.

Lahey et al. (2008)	- 1,863 mothers of children from ages 0-14 - U.S.	- Conduct problems: parent report	- Child age, sex, race and temperament; mother age; family income - Maternal responsiveness; cognitive stimulation	- Spanking at age 0-11 months was associated with more conduct problems across 4-13 years in non-Hispanic European families, but not in Hispanic families. - The effect of spanking was lower among fussier infants and infants with more positive affect. - Child sex, maternal responsiveness and cognitive stimulation did not moderate the effect of spanking.
Lansford et al. (2009)	- 499 children from ages 5-16 - 258 children from ages 5-15 - U.S.	- Antisocial behaviours: parent and child report	- Initial level of externalizing behaviours - Ecological disadvantage	- High but decreasing, and moderate CP use from ages 6-9 was associated with higher levels of antisocial behaviours at 16 years.
Lansford et al. (2011)	- 562 children from ages 6-9 - 293 lower income families of boys from ages 10-15 - U.S.	- Externalizing behaviours: teacher report - Antisocial behaviours: youth report	- Child sex; ethnicity; SES	- At 6-9 years, a positive bidirectional relationship was found between CP and externalizing behaviours, from a given year to the next year. - At 10-15 years, CP, at a given year, was associated with increased antisocial behaviours the next year. - Child sex, ethnicity, and SES had no moderating effect.
Lansford, Wager, Bates, Pettit, & Dodge, (2012)	- 585 children at age 6, 7, and 8 - U.S.	- Externalizing behaviours: parent and teacher report	- Initial level of externalizing behaviours	- Harsh spanking was associated with increased externalizing behaviours over time. - Mild spanking was only associated with concurrent and prior externalizing behaviours.
Lansford, Wager, Bates, Dodge, & Pettit, (2012)	- 585 children from ages 5-9 - U.S.	- Externalizing behaviours: teacher report	- Initial level of externalizing behaviours - Ethnicity - Yelling; denying privileges; reasoning	- Spanking in grades 1-3 was associated with greater externalizing behaviours in grade 4, for European American children but not African American children. - Denying privileges in grades 1-3 was associated with higher externalizing behaviours in grade 4, for African American children but not European Americans. - Yelling and reasoning were not associated with externalizing behaviours.

Larzelere et al. (2010)	- 1,464 children from ages 6-9 - Canada (NLSCY)	- Antisocial behaviours and hyperactivity: parent report	- Initial level of problem behaviours - Non-physical punishment; scolding/yelling; hostility/ineffectiveness	- After controlling for initial level of problem behaviours, CP, scolding/yelling, and hostility/ineffectiveness at 6-7 years were associated with greater antisocial behaviours at 8-9 years. - After controlling for initial level of problem behaviours, non-physical punishment, scolding/yelling, and hostility/ineffectiveness at 6-7 years were associated with greater hyperactivity at 8-9 years. - CP at 6-7 years was not significantly associated with gains in antisocial behaviour scores between 6-7 and 8-9 years. - Non-physical punishment, scolding/yelling, and hostility/ineffectiveness at 6-7 years were negatively associated with gains in antisocial behaviour scores between 6-7 and 8-9 years. - Hostility/Ineffectiveness was negatively associated with gains in hyperactivity scores between 6-7 and 8-9 years.
Lau et al. (2006)	- 442 children at age 4, 6, and 8 - U.S.	- Externalizing behaviours: parent report	- Initial level of externalizing behaviours - Child sex and physical abuse experience; parent education; income; ethnicity - Parental warmth	- CP at age 6 was associated with increased externalizing behaviours at age 8 but only in children with behavioural problems at age 4. - For White children, but not Black children, CP had a lower effect on externalizing behaviours in the context of high parental warmth.
Lee, Altschul, & Gershoff (2013)	- 3,279 children at age 1, 3, and 5 - U.S.	- Aggression: parent report	- Child sex and temperament; mother age and depression; parenting stress; intimate partner violence; ethnicity; marital status; SES - Maternal warmth	- A positive bidirectional effect was found between spanking and child aggression, from age 1, 3, and 5. - Maternal warmth had no moderating effect.
Lee, Taylor, Altschul, & Rice (2013)	- 923 children at age 3 and 5 - U.S.	- Aggression: parent report	- Initial level of aggression - Child sex and exposure to television; child maltreatment experiences; parent age and sex; parent depression, alcohol or drug use; parental stress; intimate partner violence; ethnicity; immigration; SES	- Mother-reported and father-reported frequent (2 times in the previous month) spanking at age 3 was associated with increased aggression at age 5.

Lengua (2008)	- 188 children from ages 8-12 - U.S.	- Externalizing and internalizing behaviours: self and parent report	- Initial level of problem behaviours - Child age, sex and temperament; SES - Maternal rejection/acceptance; inconsistent parenting	- For boys with high anxiousness and low frustration, CP was associated with higher externalizing difficulties one year later. - For boys with low anxiousness and high frustration, CP was associated with lower externalizing difficulties one year later. - For children with high effortful control, CP was associated with lower externalizing difficulties one year later. - For children with low frustration, inconsistent parenting was associated with lower internalizing behaviours one year later. - Inconsistent parenting was negatively associated with internalizing and externalizing behaviours for boys with high anxiousness, but positively associated with the outcomes for boys with low anxiousness. - For children with high frustration, rejection was associated with increased externalizing behaviours one year later. - For children with low effortful control, inconsistent discipline predicted higher externalizing difficulties.
Mackenzie et al. (2012)	- 1,110 children at age 3 and 5 - U.S.	- Externalizing behaviours: parent report - Cognitive skills: receptive vocabulary test	- Initial level of externalizing behaviours and cognitive skills - Child sex, low birth weight and temperament; prenatal risk; indicator of first-born child; mother age at birth of child; parent sex; parenting stress; parent depression or anxiety, impulsivity, and cognitive level; family structure; SES; household size; ethnicity - Cognitively stimulating activities; parental warmth; spanking normativeness	- Frequent mother-reported spanking, but not father-reported spanking, at age 3 was associated with increased externalizing behaviours and lower vocabulary skills at age 5. - Ethnicity, parental warmth, normativeness, and child sex had no moderating effects.

Mackenzie et al. (2013)	- 1,933 children at age 3, 5, and 9 - U.S.	- Externalizing behaviours: parent report - Cognitive skills: receptive vocabulary test	- Child age and sex, low birth weight and temperament; prenatal risk; indicator for first-born child; mother age at time of birth; parent sex; parenting stress; parent depression or anxiety, impulsivity, and cognitive level; marital status; SES; household size; ethnicity - Cognitively stimulating activities	- Mother-reported spanking, but not father-reported spanking, at age 5 was associated with increased externalizing behaviours at age 9. - Paternal spanking, but not maternal spanking at age 5, was associated with lower receptive vocabulary at age 9. - Child sex and ethnicity had no moderating effects.
MacKenzie et al. (2014)	- 1,874 mothers and children at age 1, 3, 5, and 9 - U.S.	- Externalizing behaviours: parent report	- Child sex; Cumulative Risk Index; geographic region of residence; ethnicity	- A positive bidirectional effect was found between spanking and externalizing behaviours across the different ages. - Ethnicity and child sex had no moderating effects.
Maguire-Jack et al. (2012)	- 3,870 children at age 1, 3, and 5 - U.S.	- Externalizing and internalizing behaviours: parent report - Cognitive skills: receptive vocabulary test	- Child sex and emotionality; maternal age, ethnicity, receptive vocabulary, and depression; SES; marital status; household size	- After accounting for the bidirectional relationship between spanking and behavioural domains, spanking at age 1 was associated with increased externalizing behaviours at age 3, and spanking at age 3 was associated with increased externalizing and internalizing behaviours at age 5. - No effect was found on children's vocabulary.
Morris & Gibson (2011)	- 1,346 children at age 6, 9, 12, and 15 - U.S.	- Externalizing behaviours: parent report	- Child age, sex, internalizing behaviours, impulsivity, and help for problems; parental age and sex; ethnicity; SES; household size; marital status; intimate partner violence; family criminal and mental health history - Parental supervision or monitoring; warmth	- When children were matched on variables influencing their risk of CP, the relation between CP and subsequent (3 years later) externalizing behaviours was not significant.

Mulvaney & Mebert (2007)	- 1,364 children at 15, 36, and 54 months as well as in 1st grade - U.S.	- Externalizing and internalizing behaviours: parent report	- Initial level of problem behaviours - Child sex and temperament; mother depression; income; ethnicity - Maternal sensitivity	- Spanking (mother-reported or home observation) at 15 months was associated with increased externalizing and internalizing behaviours at 36 months. - Spanking at 36-54 months was associated with increased externalizing, but not internalizing behaviours in 1st grade. - Child temperament moderated the association found at 15-36 months; spanking was more strongly associated with externalizing behaviours for children with more difficult temperament. - Ethnicity had no moderating effects.
Olson et al. (2011)	- 199 children at age 3 and 5-6 - U.S.	- Peer aggression: observation and teacher report	- Initial level of peer aggression - Child sex, effortful control; negative emotional reactivity; anger/frustration; understanding of the Theory of mind (ToM)	- CP at age 3 was associated with increased level of peer aggression at age 5-6. - No moderating effects of effortful control, negative emotions, anger/frustration, and ToM were found.
Pardini et al. (2008)	- 1,517 children from ages 6.5-16.5 - U.S.	- Conduct problems: parent and teacher report	- Initial level of conduct problems - Child age; parent age and mental health; SES; family structure; household size; ethnicity	- CP was associated with increased conduct problems one year later. - For teacher-reported conduct problems, the positive association with CP was stronger for African American as compared to Caucasian children, but the association was reduced with increasing child age.
Scott et al. (2014)	- 1,600 parents of children at age 22 and 46 months - Scotland	- Emotional and behavioural problems: parent report	- Child age and sex; parent sex, age, education, and mental health; ethnicity; household size; family transition	- Spanking in the first 2 years of life was associated with increased emotional and behavioural problems at 46 months.
Sheehan & Watson (2008)	- 440 children at age 7-14, and 12-19 - U.S.	- Aggressive behaviour: parent report	- Child age and sex; mother education; ethnicity - Emotional/verbal aggression; reasoning	- A positive bidirectional effect was found between aggressive discipline and child aggressive behaviours across time. - A moderating effect was found for ethnicity, suggesting that aggressive discipline is used more frequently and is less harmful in minority families. - Reasoning did not predict aggressive behaviours across time.

Simons et al. (2013)	- 683 African American youth at age 10, 12, and 15 - U.S.	- Conduct problems, depressive symptoms and school engagement: self-report	- Child sex; parent education; family structure; community violence - Parental responsiveness and demandingness	- Adding CP to responsiveness and demandingness had little effect on school engagement and depressive symptoms, but it increased the likelihood of conduct problems.
Stacks et al. (2009)	- 2,792 children at age 14, 24, and 36 months - U.S.	- Aggressive behaviours: parent report	- Initial level of aggressive behaviours - Child sex and temperament; ethnicity - Maternal warmth	- Spanking at 36 months, but not previous spanking, was associated with increased aggressive behaviours at 36 months. - This effect was observed only for children of Caucasian mothers. - Maternal warmth had no moderating effects.
Taylor, Manganello et al. (2010)	- 2,461 children at age 3 and 5 - U.S.	- Aggressive behaviours: parent report	- Initial level of aggression - Child sex; child maltreatment; mother age, education, ethnicity, and religion; maternal parenting risks; unwantedness of child; parenting stress; maternal depression; use of alcohol/drugs; marital status; intimate partner violence; income	- Spanking at age 3 was associated with increased levels of aggression at age 5.
Townsend Kessenich (2006)	- 13,698 children from Kindergarten to grade 3 - U.S.	- Academic achievement, interpersonal skills and behaviour problems: teacher report	- Child sex, age, and academic achievement in Kindergarten; diagnosis of learning problem; family type; maternal depression; maternal education; household income; ethnicity - Cognitive stimulation; warmth; inductive discipline; child-initiated curriculum	- Spanking in Kindergarten was associated with reduced academic achievement and with lower learning-related skills in grade 3. - Spanking in Kindergarten was associated with reduced interpersonal skills in grade 3. - Warmth in Kindergarten was associated with increased interpersonal skills in grade 3. - Warmth and cognitive stimulation, but not spanking in Kindergarten, were associated with reduced behaviour problems in grade 3.
Wang & Kenny (2014)	- 862 youth at age 12, 14, and 16 - U.S.	- Misconduct and depressive symptoms: self-report	- Youth sex; parenting stress; parental depression; SES; ethnicity - Parental warmth	- A positive bidirectional relationship was found between parent-reported CP and youth misconduct across ages. - CP at ages 12 and 14 predicted greater depressive symptoms at ages 14 and 16, respectively. - Ethnicity, parental warmth, and youth sex had no moderating effects.

Wimsatt et al. (2013)	- 89 children from ages 9-12 - U.S.	- Depressive symptoms: self-report	- Child sex and age; ethnicity - Parent-child communication	- Parent-reported CP was associated, one year later, with increased depressive symptoms. - The effect of CP was the highest in the presence of high positive parent-child communication.
Xing et al. (2011)	- 486 children from grades 3-5 - China	- Externalizing behaviours: self-report	- Child sex and age; parent education and employment; household size; family structure	- Mild and severe self-reported CP were associated with increased externalizing behaviours 6 months later in girls, but not in boys. - A bidirectional relationship was found only between severe CP and externalizing behaviours for boys, but not for girls.
Xing & Wang (2013)	- 454 children from grades 3-5 - China	- Internalizing behaviours: self-report	- Child sex and age; family structure; SES	- Mild and severe self-reported CP were associated with increased internalizing behaviours 6 months later in girls. - Severe self-reported CP was associated with increased internalizing behaviours 6 months later in boys. - Internalizing behaviours predicted mild and severe CP only in boys.

Table 3

Age of Children at Each Cycle of the NLSCY for the Original Longitudinal Cohort and the Early Childhood Development (ECD) Cohorts

NLSCY cycle	Year	Age of children (years) ECD cohorts					Age of children (years) Original longitudinal cohort
1	1994-1995	-	-	-	-	-	0-11
2	1996-1997	0-1	-	-	-	-	2-13
3	1998-1999	0-1	2-3	-	-	-	4-15
4	2000-2001	0-1	2-3	4-5	-	-	6-17
5	2002-2003	0-1	2-3	4-5	-	-	8-19
6	2004-2005	0-1	2-3	4-5	-	-	10-21
7	2006-2007	0-1	2-3	4-5	6-7	8-9	12-23
8	2008-2009	0-1	2-3	4-5	6-7	-	14-25

Note. Children in the original longitudinal cohort were followed on a biennial basis from cycles 1 to 8. Starting at cycle 2, an ECD cohort of 0-1 year old children was added at every data collection. ECD cohorts were followed for a minimum of three cycles. NLSCY = National Longitudinal Survey of Children and Youth.

Table 4

Characteristics of Cross-Sectional Samples for Each Cycle of the NLSCY

Variable	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5[a]	Cycle 6[b]	Cycle 7[c]	Cycle 8[d]
Age (years) – Child								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
Min.	2	2	2	2	2	2	2	2
Max.	11	11	11	11	11	11	9	7
M (*SD*)	5.6 (2.9)	5.9 (2.9)	5.9 (2.8)	6.1 (2.8)	6.4 (3.1)	6.0 (3.5)	5.6 (2.3)	4.5 (1.7)
Age (years) – Caregiver								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
Min.	16	16	17	16	18	17	15	16
Max.	69	79	87	76	75	72	76	73
M (*SD*)	35.0 (6.0)	35.5 (6.1)	35.7 (6.1)	36.0 (6.5)	36.2 (6.4)	36.1 (6.4)	35.8 (6.1)	35.0 (6.1)
Sex – Child								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
N Female (%)	5,548 (48.7)	4,658 (49.0)	7,451 (49.2)	8,777 (48.9)	4,350 (49.0)	3,719 (48.6)	7,945 (48.8)	5,838 (48.8)
N Male (%)	5,849 (51.3)	4,847 (51.0)	7,690 (50.8)	9,162 (51.1)	4,522 (51.0)	3,929 (51.4)	8,324 (51.2)	6,114 (51.2)
Sex – Caregiver								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
N Female (%)	10,214 (89.6)	8,621 (90.7)	13,995 (92.4)	16,461 (91.8)	7,891 (89.0)	6,705 (87.7)	14,595 (89.7)	10,784 (90.2)
N Male (%)	1,183 (10.4)	884 (9.3)	1,146 (7.6)	1,478 (8.2)	980 (11.0)	943 (12.3)	1,674 (10.3)	1,168 (9.8)
Caregiver relationship to the child								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
N Biological mother (%)	10,017 (87.9)	8,423 (88.6)	13,751 (90.8)	16,107 (89.7)	7,755 (87.4)	6,561 (85.8)	14,387 (88.4)	10,591 (88.6)
N Biological father (%)	1,137 (10.0)	832 (8.8)	1,116 (7.5)	1,428 (8.0)	950 (10.7)	926 (12.1)	1,648 (10.1)	1,131 (9.5)
N Other mother figure (%)	197 (1.7)	195 (2.1)	237 (1.6)	354 (2.0)	136 (1.5)	144 (1.9)	208 (1.3)	193 (1.6)
N Other father figure (%)	41 (0.4)	49 (0.5)	22 (0.1)	50 (0.3)	2 (0.4)	9 (0.2)	26 (0.2)	37 (0.3)
Education level – Caregiver								
Total *N*	11,371	9,491	15,064	17,670	8,620	7,583	15,989	11,515
N Up to and including high school (%)	3,934 (34.6)	2,918 (30.7)	4,478 (29.7)	6,029 (34.1)	3,241 (37.6)	2,699 (35.6)	4,188 (26.2)	2,692 (23.4)
N Higher than high school (%)	7,438 (65.4)	6,572 (69.3)	10,586 (70.3)	11,642 (65.9)	5,379 (62.4)	4,884 (64.4)	11,801 (73.8)	8,823 (76.6)

Variable	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5[a]	Cycle 6[b]	Cycle 7[c]	Cycle 8[d]
Education level – Partner (if applicable)								
Total *N*	9,087	7,581	12.285	14,273	6,939	6,401	13,494	9,903
N Up to and including high school (%)	3,094 (34.1)	2,393 (31.6)	3,958 (32.2)	4,952 (34.7)	2,730 (39.3)	2,433 (38.0)	4,053 (30.0)	2,606 (26.3)
N Higher than high school (%)	5,993 (65.9)	5,188 (68.4)	8,328 (67.8)	9,321 (65.3)	4,210 (60.7)	3,968 (62.0)	9,441 (70.0)	7,297 (73.7)
Employment status – Caregiver								
Total *N*	11,344	9,423	14,806	17,517	8,681	7,554	15,976	11,637
N Employed outside the home (%)	8,242 (72.7)	7,038 (74.7)	11,609 (78.4)	13,809 (78.8)	6,867 (79.1)	5,924 (78.4)	12,443 (77.9)	8,863 (76.2)
N Not employed outside the home (%)	3,102 (27.3)	2,385 (25.3)	3,196 (21.6)	3,708 (21.2)	1,814 (20.9)	1,630 (21.6)	3,533 (22.1)	2,775 (23.8)
Employment status – Partner (if applicable) Total *N*	11,119	7,592	12,004	13,757	7,042	6,323	13,403	9,902
N Employed outside the home (%)	10,574 (95.1)	7,254 (95.5)	11,499 (95.8)	13,184 (95.8)	6,652 (94.5)	6,000 (94.9)	12,705 (94.8)	9,370 (94.6)
N Not employed outside the home (%)	545 (4.9)	338 (4.5)	505 (4.2)	572 (4.2)	390 (5.5)	323 (5.1)	699 (5.2)	531 (5.4)
Household income[e]								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
N Low (%)	3,792 (33.3)	3,275 (34.5)	4,347 (28.7)	4,771 (26.6)	2.195 (24.7)	2,016 (26.4)	4,042 (24.8)	2,792 (23.4)
N Average to high (%)	7,605 (66.7)	6,230 (65.5)	10,794 (71.3)	13,168 (73.4)	6.676 (75.3)	5,632 (73.6)	12,227 (75.2)	9,160 (76.6)
Household size								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
Min.	2	2	2	2	2	2	2	2
Max.	11	15	18	14	16	14	15	16
M (*SD*)	4.1 (1.2)	4.2 (1.2)	4.2 (1.2)	4.2 (1.2)	4.2 (1.2)	4.2 (1.2)	4.3 (1.2)	4.3 (1.2)
Family structure								
Total *N*	11,397	9,505	15,141	17,939	8,871	7,648	16,269	11,952
N Biological parents (%)	8,621 (75.6)	7,150 (75.2)	11,466 (75.7)	13,532 (75.4)	6,842 (77.1)	6,111 (79.9)	13,097 (80.5)	9,817 (82.1)
N Single parent (%)	2,039 (17.9)	1,741 (18.3)	2,711 (17.9)	3,212 (17.9)	1,494 (16.8)	1,108 (14.5)	2,419 (14.9)	1,652 (13.8)
N Step parents (%)	579 (5.1)	465 (4.9)	803 (5.3)	991 (5.5)	441 (5.0)	341 (4.4)	600 (3.7)	319 (2.7)
N Other (%)	158 (1.4)	150 (1.6)	162 (1.1)	204 (1.1)	94 (1.1)	89 (1.2)	153 (0.9)	164 (1.4)
Immigration status								
Total *N*	11,365	9,385	13,413	17,455	8,299	7,295	15,393	11,255
N Not immigrated (%)	9,266 (81.5)	7,722 (82.3)	12,136 (90.5)	14,514 (83.2)	6,870 (82.8)	5,930 (81.3)	12,343 (80.2)	8,871 (78.8)
N Immigrated (%)	2,099 (18.5)	1,663 (17.7)	1,276 (9.5)	2,940 (16.8)	1,430 (17.2)	1,365 (18.7)	3,050 (19.8)	2,384 (21.2)

Variable	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5[a]	Cycle 6[b]	Cycle 7[c]	Cycle 8[d]
Ethnicity								
Total *N*	7,300	9,412	14,383	16,953	8,129	7,247	15,388	11,105
N European-Canadian (%)	6,553 (89.8)	8,297 (88.1)	12,693 (88.3)	14,991 (88.4)	7,105 (87.4)	6,135 (84.6)	12,647 (82.2)	8,949 (80.6)
N Black (%)	105 (1.4)	162 (1.7)	235 (1.6)	273 (1.6)	168 (2.1)	187 (2.6)	414 (2.7)	311 (2.8)
N South and West Asian (%)	167 (2.3)	269 (2.9)	415 (2.9)	566 (3.3)	311 (3.8)	367 (5.1)	924 (6.0)	700 (6.3)
N East Asian (%)	226 (3.1)	317 (3.4)	537 (3.7)	657 (3.9)	288 (3.5)	305 (4.2)	786 (5.1)	633 (5.7)
N Other (%)	249 (3.4)	367 (3.9)	504 (3.5)	466 (2.7)	257 (3.2)	253 (3.5)	617 (4.0)	512 (4.6)
Religion								
Total *N*	11,359	9,385	14,547	17,444	8,294	7,504	15,918	11,549
N No religion (%)	1,441 (12.7)	1,242 (13.2)	1,924 (13.2)	2,296 (13.2)	1,146 (13.8)	1,227 (16.3)	2,873 (18.0)	2,336 (20.2)
N Roman Catholic (%)	5,297 (46.6)	4,362 (46.5)	6,839 (47.0)	8,208 (47.1)	3,859 (46.5)	3,274 (43.6)	6,689 (42.0)	4,717 (40.8)
N Mainline Protestant (%)	2,648 (23.3)	2,182 (23.3)	3,223 (22.2)	3825 (21.9)	1,673 (20.2)	1,332 (17.7)	2,513 (15.8)	1,603 (13.9)
N Conservative Protestant (%)	360 (3.2)	301 (3.2)	480 (3.3)	574 (3.3)	286 (3.5)	253 (3.4)	504 (3.2)	703 (6.1)
N Other (%)	1,613 (14.2)	1,298 (13.8)	2,081 (14.3)	2,540 (14.5)	1,330 (16.0)	1,419 (18.9)	3,338 (21.0)	2,191 (19.0)
Religiosity								
Total *N*	9,910	8,135	14,816	17,450	8,491	7,516	16,107	11,779
Min.	0	0	0	0	0	0	0	0
Max.	4	4	4	4	4	4	4	4
M (*SD*)	2.0 (1.5)	2.0 (1.5)	1.8 (1.6)	1.8 (1.6)	1.7 (1.6)	1.7 (1.6)	1.8 (1.6)	1.6 (1.6)
Geographic region								
Total *N*	11,397	9,505	15,141	17,939	8,868	7,648	16,269	11,952
N Maritimes (%)	919 (8.1)	719 (7.6)	1,111 (7.3)	1,306 (7.3)	644 (7.3)	529 (6.9)	1,062 (6.5)	751 (6.3)
N Quebec (%)	2,825 (24.8)	2,241 (23.6)	3,543 (23.4)	4,093 (22.8)	2,047 (23.1)	1,727 (22.6)	3,548 (21.8)	2,669 (22.3)
N Ontario (%)	4,205 (36.9)	3,636 (38.2)	5,804 (38.3)	7,182 (40.0)	3,515 (39.6)	3,072 (40.2)	6,658 (40.9)	4,750 (39.8)
N Prairies (%)	2,051 (18.0)	1,729 (18.2)	2,733 (18.1)	3,129 (17.5)	1,613 (18.2)	1,407 (18.4)	3,020 (18.6)	2,323 (19.4)
N British Columbia (%)	1,396 (12.2)	1,180 (12.4)	1,950 (12.9)	2,229 (12.4)	1,050 (11.8)	914 (11.9)	1,981 (12.2)	1,459 (12.2)

Note. Values are weighted. NLSCY = National Longitudinal Survey of Children and Youth

[a] Data missing for 6-7 year olds. [b] Data missing for 6-9 year olds . [c] Data missing for 10-11 year olds. [d] Data missing for 8-11 year olds. [e] A low-income cutoff (LICO) below 1.25 was used to represent low household income.

Table 5

Disciplinary Strategies Frequency of Use Over a 14-Year Period for 2-11 Year Olds

	2-5 years			6-9 years			10-11 years		
Year	*N*	Mean	*SD*	*N*	Mean	*SD*	*N*	Mean	*SD*
Corporal Punishment									
1994-1995	6,146	.64	.75	3,502	.47	.67	1,507	.28	.53
1996-1997	5,531	.55	.72	2,602	.39	.61	1,204	.23	.49
1998-1999	11,087	.51	.69	2,342	.37	.58	1,081	.25	.50
2000-2001	12,431	.48	.68	3,704	.34	.58	1,074	.21	.48
2002-2003[a]	9,224	.46	.67	2,864	.37	.62	1,377	.22	.47
2004-2005[b]	6,756	.45	.67	-	-	-	2,654	.20	.49
2006-2007[c]	7,313	.36	.62	8,650	.27	.54	-	-	-
2008-2009[d]	8,268	.33	.62	3,389	.28	.58	-	-	-
Psychological Aggression 1: Tell your child s/he is bad or not as good as others									
1994-1995	6,162	.34	.76	3,511	.24	.60	1,511	.19	.51
1996-1997	5,535	.29	.70	2,615	.16	.50	1,210	.16	.47
1998-1999	11,122	.27	.69	2,342	.17	.50	1,082	.19	.54
2000-2001	12,518	.29	.69	3,725	.18	.50	1,075	.12	.39
2002-2003[a]	9,314	.33	.74	2,879	.19	.50	1,380	.15	.45
2004-2005[b]	6,776	.30	.72	-	-	-	2,652	.13	.42
2006-2007[c]	7,344	.26	.67	8,668	.17	.50	-	-	-
2008-2009[d]	8,300	.28	.68	3,403	.18	.49	-	-	-
Psychological Aggression 2: Raise your voice, scold, or yell at your child									
1994-1995	6,146	1.90	.82	3,502	1.99	.89	1,503	2.00	.51
1996-1997	5,526	1.80	.85	2,606	1.86	.84	1,204	1.93	.85
1998-1999	11,097	1.77	.83	2,342	1.87	.80	1,081	1.80	.85
2000-2001	12,442	1.76	.83	3,705	1.82	.80	1,073	1.80	.80
2002-2003[a]	9,223	1.69	.85	2,866	1.83	.82	1,377	1.78	.80
2004-2005[b]	6,755	1.67	.84	-	-	-	2,654	1.73	.83
2006-2007[c]	7,316	1.59	.83	8,649	1.73	.84	-	-	-
2008-2009[d]	8,266	1.62	.86	3,390	1.68	.84	-	-	-
Non-Physical Punishment: Take away privileges or put child in his/her room									
1994-1995	6,143	2.19	1.09	3,502	2.36	1.05	1,507	2.00	.87
1996-1997	5,530	2.19	1.06	2,606	2.23	1.01	1,204	2.20	1.04
1998-1999	11,074	2.20	1.07	2,342	2.27	.96	1,081	2.14	1.03
2000-2001	12,429	2.30	1.07	3,703	2.38	.98	1,074	2.18	1.05
2002-2003[a]	9,215	2.28	1.09	2,864	2.40	.98	1,377	2.27	1.00
2004-2005[b]	6,756	2.26	1.12	-	-	-	2,651	2.31	1.10
2006-2007[c]	7,301	2.25	1.13	8,648	2.40	1.07	-	-	-
2008-2009[d]	8,257	2.17	1.16	3,387	2.35	1.07	-	-	-

Year	2-5 years			6-9 years			10-11 years		
	N	Mean	*SD*	*N*	Mean	*SD*	*N*	Mean	*SD*
Reward and Praise									
1994-1995	6,166	3.58	.69	3,513	3.07	.86	1,512	2.86	.89
1996-1997	5,540	3.62	.63	2,615	3.21	.82	1,212	2.91	.89
1998-1999	11,128	3.59	.64	2,346	3.06	.82	1,082	2.82	.86
2000-2001	12,531	3.66	.60	3,727	3.18	.79	1,073	2.91	.85
2002-2003[a]	9,326	3.71	.55	2,880	3.10	.78	1,380	2.96	.85
2004-2005[b]	6,781	3.71	.56	-	-	-	2,663	2.92	.81
2006-2007[c]	7,351	3.72	.55	8,671	3.25	.76	-	-	-
2008-2009[d]	8,303	3.72	.55	3,411	3.38	.73	-	-	-
Explain/Teach 1: Calmly discuss the problem									
1994-1995	6,143	2.68	.87	3,502	2.80	.75	1,508	2.77	.78
1996-1997	5,524	2.67	.81	2,606	2.74	.72	1,204	2.71	.80
1998-1999	11,049	2.75	.79	2,342	2.77	.72	1,081	2.76	.75
2000-2001	12,438	2.82	.79	3,704	2.78	.74	1,074	2.84	.73
2002-2003[a]	9,210	2.85	.81	2,867	2.83	.72	1,377	2.89	.74
2004-2005[b]	6,754	2.81	.81	-	-	-	2,652	2.88	.72
2006-2007[c]	7,311	2.93	.78	8,650	2.92	.75	-	-	-
2008-2009[d]	8,267	2.94	.77	3,389	2.97	.73	-	-	-
Explain/Teach 2: Describe alternative ways of behaving that are acceptable									
1994-1995	6,125	2.78	.93	3,499	2.94	.80	1,506	2.96	.84
1996-1997	5,511	2.76	.86	2,599	2.88	.79	1,201	2.90	.81
1998-1999	11,053	2.81	.88	2,342	2.91	.77	1,075	2.84	.81
2000-2001	12,417	2.94	.87	3,702	2.96	.83	1,074	2.98	.81
2002-2003[a]	9,184	3.01	.86	2,864	3.04	.79	1,375	3.08	.81
2004-2005[b]	6,745	2.95	.88	-	-	-	2,652	3.09	.76
2006-2007[c]	7,292	3.04	.86	8,637	3.09	.80	-	-	-
2008-2009[d]	8,246	3.05	.87	3,390	3.13	.83	-	-	-

Note. Values are weighted. Possible range of scores = 0-4.
[a] Data missing for 6-7 year olds. [b] Data missing for 6-9 year olds . [c] Data missing for 10-11 year olds. [d] Data missing for 8-11 year olds.

Table 6

Age Differences in the Prevalence and Frequency of Use of Disciplinary Strategies

	Difference in prevalence		Difference in frequency of use	
Age comparison	X^2	Cramer's Φ	Z	r
Corporal Punishment				
2-5 vs. 6-9 years[a]	60.3***	.06	-8.5***	-.07
2-5 vs. 10-11 years[b]	290.5***	.20	-16.6***	-.20
6-9 vs. 10-11 years[c]	127.7***	.12	-11.3***	-.12
Psychological Aggression 1: Tell your child s/he is bad or not as good as others				
2-5 vs. 6-9 years[a]	38.69***	.05	-6.37***	-.05
2-5 vs. 10-11 years[b]	80.02***	.10	-9.31***	-.11
6-9 vs. 10-11 years[c]	14.07***	.04	-4.20***	-.05
Psychological Aggression 2: Raise your voice, scold, or yell at your child				
2-5 vs. 6-9 years[a]	22.51***	.04	-9.69***	-.08
2-5 vs. 10-11 years[b]	1.58	.01	-3.17**	-.04
6-9 vs. 10-11 years[c]	.57	.01	-1.30	-.01
Non-Physical Punishment: Take away privileges or put child in his/her room				
2-5 vs. 6-9 years[a]	90.53***	.08	-7.55***	-.06
2-5 vs. 10-11 years[b]	7.07**	.03	-1.39	-.02
6-9 vs. 10-11 years[c]	49.10***	.07	-8.72***	-.09
Reward/Praise				
2-5 vs. 6-9 years[a]	-	-	-42.96***	-.35
2-5 vs. 10-11 years[b]	-	-	-41.63***	-.50
6-9 vs. 10-11 years[c]	-	-	-14.11***	-.15
Explain/Teach 1: Calmly discuss the problem				
2-5 vs. 6-9 years[a]	-	-	-2.43*	-.02
2-5 vs. 10-11 years[b]	-	-	-2.89**	-.03
6-9 vs. 10-11 years[c]	-	-	-3.66***	-.04
Explain/Teach 2: Describe alternative ways of behaving that are acceptable				
2-5 vs. 6-9 years[a]	-	-	-2.75**	-.02
2-5 vs. 10-11 years[b]	-	-	-5.88***	-.07
6-9 vs. 10-11 years[c]	-	-	-.82	-.01

Note. Values are weighted. Age differences in the prevalence of reward/praise and explain/teach are not presented because almost all caregivers (> 99% for reward/praise and > 97% for explain/teach) reported using these strategies for all age groups.

[a] NLSCY cycle 7 data (2006-2007). [b] NLSCY cycle 6 data (2004-2005). [c] NLSCY cycle 4 data (2000-2001).

*p<.05. ** p<.01. ***p<.001.

Table 7

Change Across Time in the Prevalence of Disciplinary Strategies for 2-11 Year Olds

Age group	NLSCY cycle	N^a	%[b]	X^2	Cramer's Φ
		Corporal Punishment			
2-5 years	C.1 – C.4	6,146 – 12,431	49.9 – 38.1	235.91***	.11
	C.1 – C.8	6,146 – 8,268	49.9 – 26.3	848.98***	.24
	C.4 – C.8	12,431– 8,268	38.1 – 26.3	310.17***	.12
6-9 years	C.1 – C.4	3,502 – 3,704	38.2 – 29.1	66.93***	.10
	C.1 – C.7	3,502 – 8,650	38.2 – 23.2	281.80***	.15
	C.4 – C.7	3,704 – 8,650	29.1 – 23.2	48.41***	.06
10-11 years	C.1 – C.4	1,507 – 1,074	25.3 – 17.5	20.24***	.10
	C.1 – C.6	1,507 – 2,654	25.3 – 17.1	40.47***	.10
	C.4 – C.6	1,074 – 2,654	17.5 – 17.1	.32	.01
		Psychological Aggression 1: Tell your child s/he is bad or not as good as others			
2-5 years	C.1 – C.4	6,162 – 12,518	20.5 – 18.4	12.78***	.03
	C.1 – C.8	6,162 – 8,300	20.5 – 18.2	11.58***	.03
	C.4 – C.8	12,518 – 8,300	18.4 – 18.2	.02	.00
6-9 years	C.1 – C.4	3,511 – 3,725	16.9 – 13.3	18.17***	.05
	C.1 – C.7	3,511 – 8,668	16.9 – 13.2	26.98***	.05
	C.4 – C.7	3,725 – 8,668	13.3 – 13.2	.01	.00
10-11 years	C.1 – C.4	1,511 – 1,075	14.4 – 10.5	8.84**	.06
	C.1 – C.6	1,511 – 2,652	14.4 – 11.3	8.54**	.05
	C.4 – C.6	1,075 – 2,652	10.5 – 11.3	.33	.01
		Psychological Aggression 2: Raise your voice, scold, or yell at your child			
2-5 years	C.1 – C.4	6,146 – 12,442	95.4 – 93.2	33.51***	.04
	C.1 – C.8	6,146 – 8,266	95.4 – 89.3	176.14***	.11
	C.4 – C.8	12,442 – 8,266	93.2 – 89.3	101.37***	.07
6-9 years	C.1 – C.4	3,502 – 3,705	95.0 – 95.1	.10	.00
	C.1 – C.7	3,502 – 8,649	95.0 – 92.4	25.81***	.05
	C.4 – C.7	3,705 – 8,649	95.1 – 92.4	30.73***	.05
10-11 years	C.1 – C.4	1,503 – 1,073	95.6 – 95.5	.00	.00
	C.1 – C.6	1,503 – 2,654	95.6 – 92.3	16.49***	.06
	C.4 – C.6	1,073 – 2,654	95.5 – 92.3	12.99***	.06

Age group	NLSCY cycle	N^a	%[b]	X^2	Cramer's Φ
Non-Physical Punishment: Take away privileges or put child in his/her room					
2-5 years	C.1 – C.4	6,143 – 12,429	90.8 – 92.3	12.11**	.03
	C.1 – C.8	6,143 – 8,257	90.8 – 87.7	34.97***	.05
	C.4 – C.8	12,429 – 8,257	92.3 – 87.7	121.81***	.08
6-9 years	C.1 – C.4	3,502 – 3,703	93.4 – 95.8	20.09***	.05
	C.1 – C.7	3,502 – 8,648	93.4 – 93.3	.03	.00
	C.4 – C.7	3,703 – 8,648	95.8 – 93.3	28.29***	.05
10-11 years	C.1 – C.4	1,507 – 1,074	90.3 – 92.2	2.69	.03
	C.1 – C.6	1,507 – 2,651	90.3 – 91.9	2.94	.03
	C.4 – C.6	1,074 – 2,651	92.2 – 91.9	.06	.00

Note. Values are weighted. The prevalence of reward/praise and explain/teach is not presented because almost all caregivers (> 99% for reward/praise and > 97% for explain/teach) reported using these strategies for all age groups and across all eight data collection cycles. NLSCY = National Longitudinal Survey of Children and Youth.

[a] Sample size for each compared cycle; [b] Percentage of caregivers reporting the use of the disciplinary strategy.

*p<.05. ** p<.01. ***p<.001.

Table 8

Change Across Time in the Frequency of Use of Disciplinary Strategies for 2-11 Year Olds

Age-group	NLSCY cycle	*N*[a]	*M* (*SD*)	*Z*	*r*
		Corporal Punishment			
2-5 years	C.1 – C.4	6,146 – 12,431	.64 (.75) – .48 (.68)	-14.99***	-.11
	C.1 – C.8	6,146 – 8,268	.64 (.75) – .33 (.62)	-27.71***	-.23
	C.4 – C.8	12,431– 8,268	.48 (.68) – .33 (.62)	-16.37***	-.12
6-9 years	C.1 – C.4	3,502 – 3,704	.47 (.67) – .34 (.58)	-9.01***	-.11
	C.1 – C.7	3,502 – 8,650	.47 (.67) – .27 (.54)	-17.32***	-.16
	C.4 – C.7	3,704 – 8,650	.34 (.58) – .27 (.54)	-6.43***	-.06
10-11 years	C.1 – C.4	1,507 – 1,074	.28 (.53) – .21 (.48)	-4.69***	-.09
	C.1 – C.6	1,507 – 2,654	.28 (.53) – .20 (.49)	-5.85***	-.09
	C.4 – C.6	1,074 – 2,654	.21 (.48) – .20 (.49)	-.17	-.00
		Psychological Aggression 1: Tell your child she is bad or not as good as others			
2-5 years	C.1 – C.4	6,162 – 12,518	.34 (.76) – .29 (.69)	-3.38**	-.03
	C.1 – C.8	6,162 – 8,300	.34 (.76) – .28 (.68)	-3.79***	-.03
	C.4 – C.8	12,518 – 8,300	.29 (.69) – .28 (.68)	-.77	-.01
6-9 years	C.1 – C.4	3,511 – 3,725	.24 (.60) – .18 (.50)	-4.10***	-.05
	C.1 – C.7	3,511 – 8,668	.24 (.60) – .17 (.50)	-4.98***	-.05
	C.4 – C.7	3,725 – 8,668	.18 (.50) – .17 (.50)	-.01	-.00
10-11 years	C.1 – C.4	1,511 – 1,075	.19 (.51) – .12 (.39)	-2.42*	-.05
	C.1 – C.6	1,511 – 2,652	.19 (.51) – .13 (.42)	-2.78**	-.04
	C.4 – C.6	1,075 – 2,652	.12 (.39) – .13 (.42)	-.09	-.00
		Psychological Aggression 2: Raise your voice, scold, or yell at your child			
2-5 years	C.1 – C.4	6,146 – 12,442	1.90 (.82) – 1.76 (.83)	-9.78***	-.07
	C.1 – C.8	6,146 – 8,266	1.90 (.82) – 1.62 (.86)	-17.54***	-.15
	C.4 – C.8	12,442 – 8,266	1.76 (.83) – 1.62 (.86)	-10.24***	-.07
6-9 years	C.1 – C.4	3,502 – 3,705	1.99 (.89) – 1.82 (.80)	-8.66***	-.10
	C.1 – C.7	3,502 – 8,649	1.99 (.89) – 1.73 (.84)	-14.47***	-.13
	C.4 – C.7	3,705 – 8,649	1.82 (.80) – 1.73 (.84)	-4.67***	-.04
10-11 years	C.1 – C.4	1,503 – 1,073	2.00 (.51) – 1.80 (.80)	-6.11***	-.12
	C.1 – C.6	1,503 – 2,654	2.00 (.51) – 1.73 (.83)	-9.43***	-.15
	C.4 – C.6	1,073 – 2,654	1.80 (.80) – 1.73 (.83)	-1.86	-.03
		Non-Physical Punishment: Take away privileges or put child in his/her room			
2-5 years	C.1 – C.4	6,143 – 12,429	2.19 (1.09) – 2.30 (1.07)	-5.89***	-.04
	C.1 – C.8	6,143 – 8,257	2.19 (1.09) – 2.17 (1.16)	-0.56	-.00
	C.4 – C.8	12,429 – 8,257	2.30 (1.07) – 2.17 (1.16)	-6.73***	-.05
6-9 years	C.1 – C.4	3,502 – 3,703	2.36 (1.05) – 2.38 (.98)	-.26	-.00
	C.1 – C.7	3,502 – 8,648	2.36 (1.05) – 2.40 (1.07)	-2.06*	-.02
	C.4 – C.7	3,703 – 8,648	2.38 (.98) – 2.40 (1.07)	-2.46*	-.02
10-11 years	C.1 – C.4	1,507 – 1,074	2.00 (.87) – 2.18 (1.05)	-1.64	-.03
	C.1 – C.6	1,507 – 2,651	2.00 (.87) – 2.31 (1.10)	-5.83***	-.09
	C.4 – C.6	1,074 – 2,651	2.18 (1.05) – 2.31 (1.10)	-3.77***	-.06

Age-group	NLSCY cycle	N^a	*M* (*SD*)	*Z*	*r*
			Reward/Praise		
2-5 years	C.1 – C.4	6,166 – 12,531	3.58 (.69) – 3.66 (.60)	-6.63***	-.05
	C.1 – C.8	6,166 – 8,303	3.58 (.69) – 3.72 (.55)	-10.73***	-.09
	C.4 – C.8	12,531 – 8,303	3.66 (.60) – 3.72 (.55)	-5.41***	-.04
6-9 years	C.1 – C.4	3,513 – 3,727	3.07 (.86) – 3.18 (.79)	-5.04***	-.06
	C.1 – C.7	3,513 – 8,671	3.07 (.86) – 3.25 (.76)	-10.09***	-.09
	C.4 – C.7	3,727 – 8,671	3.18 (.79) – 3.25 (.76)	-4.30***	-.04
10-11 years	C.1 – C.4	1,512 – 1,073	2.86 (.89) – 2.91 (.85)	-1.79	-.04
	C.1 – C.6	1,512 – 2,663	2.86 (.89) – 2.92 (.81)	-2.02*	-.03
	C.4 – C.6	1,073 – 2,663	2.91 (.85) – 2.92 (.81)	-.30	-.01
			Explain/Teach 1: Calmly discuss the problem		
2-5 years	C.1 – C.4	6,143 – 12,438	2.68 (.87) – 2.82 (.79)	-8.51***	-.06
	C.1 – C.8	6,143 – 8,267	2.68 (.87) – 2.94 (.77)	-16.63***	-.14
	C.4 – C.8	12,438 – 8,267	2.82 (.79) – 2.94 (.77)	-10.75***	-.08
6-9 years	C.1 – C.4	3,502 – 3,704	2.80 (.75) – 2.78 (.74)	-1.67	-.01
	C.1 – C.7	3,502 – 8,650	2.80 (.75) – 2.92 (.75)	-7.05***	-.06
	C.4 – C.7	3,704 – 8,650	2.78 (.74) – 2.92 (.75)	-9.28***	-.08
10-11 years	C.1 – C.4	1,508 – 1,074	2.77 (.78) – 2.84 (.73)	-2.23*	-.04
	C.1 – C.6	1,508 – 2,652	2.77 (.78) – 2.88 (.72)	-3.83***	-.06
	C.4 – C.6	1,074 – 2,652	2.84 (.73) – 2.88 (.72)	-.92	-.02
			Explain/Teach 2: Describe alternative ways of behaving that are acceptable		
2-5 years	C.1 – C.4	6,125 – 12,417	2.78 (.93) – 2.94 (.87)	-10.21***	-.08
	C.1 – C.8	6,125 – 8,246	2.78 (.93) – 3.05 (.87)	-16.84***	-.15
	C.4 – C.8	12,417 – 8,246	2.94 (.87) – 3.05 (.87)	-9.30***	-.07
6-9 years	C.1 – C.4	3,499 – 3,702	2.94 (.80) – 2.96 (.83)	-1.81	-.02
	C.1 – C.7	3,499 – 8,637	2.94 (.80) – 3.09 (.80)	-10.00***	-.09
	C.4 – C.7	3,702 – 8,637	2.96 (.83) – 3.09 (.80)	-7.10***	-.07
10-11 years	C.1 – C.4	1,506 – 1,074	2.96 (.84) – 2.98 (.81)	-.30	-.01
	C.1 – C.6	1,506 – 2,652	2.96 (.84) – 3.09 (.76)	-3.80***	-.06
	C.4 – C.6	1,074 – 2,652	2.98 (.81) – 3.09 (.76)	-3.25**	-.05

Note. Values are weighted. NLSCY = National Longitudinal Survey of Children and Youth.

[a] Sample size for each compared cycle.

*p<.05. ** p<.01. ***p<.001.

Table 9

Socio-Demographic Characteristics Associated with Corporal Punishment (CP) Prevalence for 2-11 Year Olds

	2-5 years (2008-2009)		6-9 years (2006-2007)		10-11 years (2004-2005)	
Socio-demographic	CP Yes	CP No	CP Yes	CP No	CP Yes	CP No
Sex – Child						
Total *N*	2,173	6,095	2,005	6,645	455	2,200
% Boy	55.8	49.3	52.3	50.7	60.4	49.6
% Girl	44.2	50.7	47.7	49.3	39.6	50.4
	$X^2(1) = 27.13$***, $\Phi = .06$		$X^2(1) = 1.71$, $\Phi = .01$		$X^2(1) = 17.76$***, $\Phi = .08$	
Sex – Caregiver						
Total *N*	2,174	6,095	2,005	6,645	454	2,201
% Male	9.0	8.7	10.8	12.1	6.6	8.6
% Female	91.0	91.3	89.2	87.9	93.4	91.4
	$X^2(1) = 0.12$, $\Phi = .00$		$X^2(1) = 2.72$, $\Phi = .02$		$X^2(1) = 2.03$, $\Phi = .03$	
Age (years) – Caregiver						
Total *N*	2,173	6,095	2,006	6,644	454	2,200
Mean (*SD*)	33.7 (5.4)	33.9 (5.7)	37.0 (5.7)	37.4 (5.7)	39.6 (5.2)	39.9 (5.1)
	$Z = -1.09$, $r = -.01$		$Z = -3.26$**, $r = -.04$		$Z = -1.75$, $r = -.03$	
Education level – Caregiver						
Total *N*	2,109	5,922	1,983	6,582	453	2,196
% Up to including high school	24.3	24.4	29.4	29.1	15.2	12.9
% Higher than high school	75.7	75.6	70.6	70.9	84.8	87.1
	$X^2(1) = 0.00$, $\Phi = .00$		$X^2(1) = 0.06$, $\Phi = .00$		$X^2(1) = 1.72$, $\Phi = .03$	
Education level – Partner (if applicable) Total *N*	1,842	5,110	1,729	5,404	380	1,770
% Up to including high school	28.3	26.3	33.3	30.8	15.5	16.4
% Higher than high school	71.7	73.7	66.7	69.2	84.5	83.6
	$X^2(1) = 2.82$, $\Phi = .02$		$X^2(1) = 3.69$, $\Phi = .02$		$X^2(1) = 0.19$, $\Phi = .01$	
Employment status – Caregiver						
Total *N*	2,129	5,952	1,989	6,574	453	2,184
% Yes (outside the home)	70.4	76.1	80.6	82.6	83.9	85.0
% No (outside the home)	29.6	23.9	19.4	17.4	16.1	15.0
	$X^2(1) = 27.00$***, $\Phi = .06$		$X^2(1) = 4.05$*, $\Phi = .02$		$X^2(1) = 0.35$, $\Phi = .01$	

	2-5 years (2008-2009)		6-9 years (2006-2007)		10-11 years (2004-2005)	
Socio-demographic	CP Yes	CP No	CP Yes	CP No	CP Yes	CP No
Employment status – Partner						
(if applicable) Total *N*	1,842	5,081	1,721	5,393	380	1,743
% Yes (outside the home)	94.7	94.7	96.5	95.2	95.5	96.5
% No (outside the home)	5.3	5.3	3.5	4.8	4.5	3.5
	$X^2(1) = 0.01$, $\Phi = .00$		$X^2(1) = 4.56^*$, $\Phi = .03$		$X^2(1) = 0.84$, $\Phi = .02$	
Household income						
Total *N*	2,174	6,095	2,006	6,644	454	2,200
% Low	27.1	23.4	23.3	22.3	23.8	21.5
% Average to high	72.9	76.6	76.7	77.7	76.2	78.5
	$X^2(1) = 11.99^{**}$, $\Phi = .04$		$X^2(1) = 0.92$, $\Phi = .01$		$X^2(1) = 1.20$, $\Phi = .02$	
Household size						
Total *N*	2,173	6,095	2,006	6,644	454	2,200
Mean (*SD*)	4.4 (1.2)	4.2 (1.2)	4.6 (1.3)	4.3 (1.2)	4.5 (1.4)	4.3 (1.1)
	$Z = -8.42^{***}$, $r = -.10$		$Z = -11.20^{***}$, $r = -.12$		$Z = -2.22^*$, $r = -.04$	
Family structure						
Total *N*	2,160	6,043	1,996	6,618	447	2,185
% Biological parents	85.8	84.8	82.7	76.5	76.5	72.1
% Single parent	12.7	13.5	12.9	17.0	15.9	18.7
% Step family	1.5	1.7	4.4	6.5	7.6	9.2
	$X^2(1) = 1.26$, $\Phi = .01$		$X^2(1) = 34.10^{***}$, $\Phi = .06$		$X^2(1) = 3.54$, $\Phi = .04$	
Immigration status						
Total *N*	2,048	5,764	1,926	6,343	433	2,171
% Not immigrated	76.3	79.7	77.3	82.5	81.8	85.5
% Immigrated	23.7	20.3	22.7	17.5	18.2	14.5
	$X^2(1) = 10.77^{**}$, $\Phi = .04$		$X^2(1) = 26.33^{***}$, $\Phi = .06$		$X^2(1) = 4.03^*$, $\Phi = .04$	
Ethnicity						
Total *N*	1,961	5,402	1,859	6,127	405	2,051
% European-Canadian	80.6	85.6	83.5	87.4	88.9	92.1
% Black	4.6	2.1	4.2	2.1	2.0	1.9
% South and West Asian	6.4	6.6	5.3	6.1	3.2	3.2
% East Asian	8.4	5.7	7.0	4.4	5.9	2.8
	$X^2(1) = 53.59^{***}$, $\Phi = .09$		$X^2(1) = 47.49^{***}$, $\Phi = .08$		$X^2(1) = 10.13^*$, $\Phi = .06$	

	2-5 years (2008-2009)		6-9 years (2006-2007)		10-11 years (2004-2005)	
Socio-demographic	CP Yes	CP No	CP Yes	CP No	CP Yes	CP No
Religion						
Total *N*	1,634	4,882	1,600	5,566	364	1,866
% No religion	22.6	27.5	20.2	19.8	21.4	21.8
% Roman Catholic	45.3	51.2	48.0	51.7	50.0	55.0
% Mainline Protestant	16.7	16.1	17.4	21.5	22.3	19.3
% Conservative Protestant	15.4	5.2	14.4	7.0	6.3	3.9
	$X^2(1) = 182.03$***, $\Phi = .17$		$X^2(1) = 92.97$***, $\Phi = .11$		$X^2(1) = 6.81$, $\Phi = .06$	
Religiosity						
Total *N*	2,162	6,045	2,002	6,627	454	2,192
Mean (*SD*)	3.2 (1.6)	3.7 (1.5)	2.7 (1.6)	3.2 (1.6)	2.8 (1.5)	3.2 (1.6)
	$Z = -12.99$***, $r = -.15$		$Z = -10.47$***, $r = -.11$		$Z = -5.66$***, $r = -.11$	
Geographic Region						
Total *N*	2,173	6,095	2,006	6,644	454	2,200
% Maritimes	4.1	7.0	4.4	8.1	5.7	7.6
% Quebec	18.7	24.3	18.2	23.6	20.9	23.3
% Ontario	35.0	40.9	37.9	40.7	31.7	42.0
% Prairies	29.2	16.2	25.2	16.4	24.0	16.7
%British Columbia	13.0	11.6	14.3	11.2	17.7	10.4
	$X^2(1) = 198.80$***, $\Phi = .16$		$X^2(1) = 130.57$***, $\Phi = .12$		$X^2(1) = 40.27$***, $\Phi = .12$	

Note. Values are weighted.
*$p < .05$. ** $p < .01$. *** $p < .001$.

Table 10

Socio-Demographic Predictors of Corporal Punishment for 2-11 Year Olds

	2-5 years (2008-2009) *N*=6,394		6-9 years (2006-2007) *N*=6,560		10-11 years (2004-2005) *N*=2,452	
Variable	*OR*	95% CI	*OR*	95% CI	*OR*	95% CI
Sex – Child[a]	1.38***	[1.22,1.56]	-	-	1.67***	[1.33, 2.09]
Sex – Caregiver	-	-	-	-	-	-
Age (year) – Caregiver	-	-	.98***	[.97, .99]	-	-
Education level – Caregiver[b]	-	-	-	-	-	-
Employment status – Caregiver[c]	.87	[.75, 1.01]	1.27**	[1.07, 1.50]	-	-
Household income[d]	.90	[.77, 1.06]	-	-	-	-
Household size	1.20***	[1.14, 1.28]	1.16***	[1.10, 1.24]	1.14**	[1.04, 1.25]
Family structure[e]						
Single parent	-	-	.83	[.69, 1.01]	-	-
Step family	-	-	.74*	[.57, .96]	-	-
Immigration status[f]	.89	[.71, 1.12]	1.26*	[1.01, 1.57]	1.01	[.67, 1.50]
Ethnicity[g]						
Black	2.09***	[1.40, 3.11]	1.50	[.99, 2.28]	1.09	[.49, 2.43]
South and West Asian	1.38	[.79, 2.40]	.75	[.40, 1.39]	.46	[.19, 1.12]
East Asian	1.45*	[1.08, 1.95]	1.14	[.84, 1.55]	1.71	[.94, 3.12]
Religion[h]						
No religion	.42***	[.33, .55]	.72*	[.56, .94]	-	-
Roman Catholic	.44***	[.35, .55]	.60***	[.49, .74]	-	-
Mainline Protestant	.51***	[.40, .66]	.55***	[.43, .70]	-	-
Religiosity	.89***	[.85, .94]	.85***	[.82, .90]	.83***	[.77, .89]
Geographic Region[i]						
Quebec	.51***	[.42, .62]	.57***	[.47, .70]	.86	[.61, 1.21]
Maritimes	.31***	[.24, .42]	.33***	[.25, .44]	.56*	[.34, .91]
Ontario	.45***	[.38, .53]	.65***	[.56, .77]	.53***	[.39, .71]
British Columbia	.64***	[.51, .80]	.83	[.68, .77]	1.09	[.74, 1.60]
R^2	.10		.08		.07	

Note. Values are weighted. *OR* = Odds ratio; CI = Confidence interval; R^2 = Nagelkerke R Square.

Reference groups are: [a] girls; [b] Up to and including high school; [c] Unemployed; [d] Low household income; [e] Two biological parents; [f] Not immigrated; [g] European-Canadian, [h] Conservative Protestant, [i] Prairies.

* p< .05. ** p< .01. *** p< .001.

Table 11
Descriptive Statistics of Outcomes, Predictor and Covariates Included in Longitudinal Analyses

		Outcomes at 8-9 years (cycles 4-5)				Outcomes at 14-15 years (cycles 7-8)			
Variable		*N*	%	*M* (*SD*)	Possible range	*N*	%	*M* (*SD*)	Possible range
Externalizing behaviours		3,193	-	.66 (1.16)	0-12	2,586	-	.38 (.88)	0-12
Internalizing behaviours		3,193	-	1.78 (1.85)	0-14	2,575	-	2.63 (2.55)	0-14
Prosocial behaviours		3,041	-	14.26 (3.71)	0-20	2,565	-	12.10 (4.37)	0-20
Corporal punishment									
	Yes	3,203	44.7	-	-	2,602	46.5	-	-
	No		55.3				53.5		
Psychological aggression 1									
	Yes	3,203	17.4	-	-	2,602	18.7	-	-
	No		82.6				81.3		
Psychological aggression 2		3,203	-	1.78 (0.86)	0-4	2,602	-	1.82 (.81)	0-4
Non-physical punishment		3,203	-	2.04 (1.13)	0-4	2,602	-	2.06 (1.10)	0-4
Explain/Teach 1		3,203	-	2.64 (.89)	0-4	2,602	-	2.62 (.89)	0-4
Explain/Teach 2		3,203	-	2.72 (.91)	0-4	2,602	-	2.74 (.92)	0-4
Positive interaction		3,203	-	12.73 (2.27)	0-16	2,602	-	12.68 (2.20)	0-16
Hostility/Ineffectiveness		3,203	-	8.85 (3.84)	0-28	2,602	-	9.13 (3.78)	0-28
Consistency		3,203	-	14.37 (3.46)	0-20	2,602	-	14.41 (3.47)	0-20

Note. Values are weighted. Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*. Reward/Praise was removed from the analyses because of the absence of variance on this variable (all caregiver, except one, reported rewarding/praising at a high frequency).

Table 12
Correlations Among Outcomes, Predictor and Covariates at 8-9 Years and 14-15 Years

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Externalizing behaviours	1											
2. Internalizing behaviours	-.16** (-.13**)	1										
3. Prosocial behaviours	-.14** (-.25**)	.01 (.18**)	1									
4. Corporal punishment[a]	.11** (.09**)	.01 (-.02)	-.02 (-.05**)	1								
5. Psychological aggression 1[a]	.01 (.05**)	.01 (-.04)	-.10** (-.05**)	.17** (.24**)	1							
6. Psychological aggression 2	.13** (.09**)	.02 (-.06**)	-.08** (-.06**)	.30** (.29**)	.16** (.17**)	1						
7. Non-physical punishment	.11** (.12**)	-.02 (-.06**)	.01 (-.06**)	.09** (.09**)	-.00 (.02)	.13** (.08**)	1					
8. Explain/Teach 1	-.14** (-.03)	.02 (.07**)	.11** (.06**)	-.14** (-.11**)	-.10** (-.12**)	-.29** (-.23**)	.07** (.13**)	1				
9. Explain/Teach 2	-.09** (-.01)	.09** (.02)	.06** (.04)	-.07** (-.07**)	-.11** (-.10**)	-.13** (-.14**)	.11** (.14**)	.53** (.56**)	1			
10. Positive interaction	-.06** (-.01)	-.02 (.01)	.13** (.06**)	-.16** (-.18**)	-.15** (-.18**)	-.15** (-.12**)	-.02 (-.02)	.22** (.22**)	.18** (.16**)	1		
11. Hostility/ Ineffectiveness	.20** (.05**)	.02 (-.06**)	-.12** (-.06**)	.30** (.31**)	.22** (.20**)	.52** (.51**)	.17** (.14**)	-.31** (-.32**)	-.18** (-.18**)	-.18** (-.18**)	1	
12. Consistency	-.07** (.01)	.00 (.02)	.09** (.07**)	.04* (.01)	-.15** (-.16**)	-.10** (-.13**)	.16** (.18**)	.21** (.23**)	.16** (.19**)	.09** (.10**)	-.26** (-.24**)	1

Note. Correlations not in parentheses are for 8-9 year olds. Correlations in parentheses are for 14-15 year olds. Values are weighted. Pearson correlation was used for relationship between two continuous and/or between one continuous and one dichotomous variable. Kendall's tau-b correlation was used for relationship between two dichotomous variables. Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*.
[a] Dichotomous variable.
* $p < .05$. ** $p < .01$.

Table 13
Hierarchical Regression for Externalizing Behaviours at 8-9 Years (N =3,114)

	Step 1				Step 2				Step 3			
Variable	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*
Corporal punishment (CP)[a]	.020*	.008	[.004, .036]	.043	.016	.009	[-.001, .033]	.032	.021*	.009	[.002, .039]	.037
Psychological aggresion 1[b]					-.035**	.011	[-.057, -.014]	-.056	-.020	.017	[-.053, .013]	-.020
Psychological aggression 2					-.001	.005	[-.012, 0.10]	-.003	.001	.007	[-.014, .015]	.001
Non-physical punishment					.015***	.004	[.008, .022]	.070	.017***	.005	[.008, .026]	.062
Explain/Teach 1					-.012*	.005	[-.023, -.001]	-.038	-.006	.007	[-.020, .008]	-.015
Explain/Teach 2					-.007	.005	[-.017, .003]	-.024	-.006	.007	[-.019, .008]	-.014
Positive interaction					.001	.002	[-.003, .005]	.009	.001	.003	[-.004, .006]	.005
Hostility/Ineffectiveness					.005***	.001	[.002, .008]	.060	.005*	.002	[.001, .009]	.044
Consistency					-.003*	.001	[-.005, .000]	-.039	-.004*	.002	[-.007, -.001]	-.042
CP x Psych. aggression 1									-.025	.022	[-.068, .018]	-.019
CP x Psych. aggression 2									-.003	.011	[-.025, .019]	-.005
CP x Non-physical punishment									-.005	.007	[-.020, .009]	-.012
CP x Explain/Teach 1									-.015	.011	[-.037, .007]	-.022
CP x Explain/Teach 2									-.003	.010	[-.023, .017]	-.005
CP x Positive interaction									.001	.004	[-.007, .008]	.002
CP x Hostility/Ineffectiveness									.000	.003	[-.005, .005]	.002
CP x Consistency									.002	.003	[-.003, .007]	.016
R^2			.084				.102				.104	

Note. Values are weighted. The outcome variable is log-transformed. All steps controlled for externalizing behaviours at time 1, corporal punishment experiences after time 1, variables from the stable individual and relational context, and variables from the social-cultural context. β = Unstandardized estimate; *SE* = Standard error; CI = Confidence interval; Part *r* = Part correlation; Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*; R^2 = R Square.
Reference groups are: [a] Corporal punishment no; [b] Psychological aggression 1 no.
* p< .05. ** p< .01. *** p< .001.

Table 14
Hierarchical Regression for Internalizing Behaviours at 8-9 Years (N =3,112)

	Step 1				Step 2				Step 3			
Variable	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*
Corporal punishment (CP)[a]	-.006	.010	[-.026, .014]	-.010	-.005	.011	[-.026, .016]	-.008	-.005	.012	[-.028, .018]	-.008
Psychological aggresion 1[b]					.010	.014	[-.017, .036]	.012	.004	.021	[-.037, .046]	.004
Psychological aggression 2					-.007	.007	[-.020, .007]	-.017	.002	.009	[-.016, .020]	.004
Non-physical punishment					-.008	.005	[-.017, .001]	-.030	-.006	.006	[-.018, .005]	-.019
Explain/Teach 1					-.012	.007	[-.025, .002]	-.030	-.017	.009	[-.034, .001]	-.032
Explain/Teach 2					.032***	.006	[.020, .045]	.088	.053***	.009	[.036, .070]	.108
Positive interaction					-.005*	.002	[-.010, -.001]	-.038	-.003	.003	[-.009, .003]	-.017
Hostility/Ineffectiveness					-.001	.002	[-.005, .002]	-.014	-.004	.002	[-.009, .001]	-.029
Consistency					.004*	.002	[.000, .007]	.039	.003	.002	[-.001, .007]	.028
CP x Psych. aggression 1									.008	.027	[-.046, .062]	.005
CP x Psych. aggression 2									-.016	.014	[-.044, .011]	-.020
CP x Non-physical punishment									-.004	.009	[-.022, .014]	-.008
CP x Explain/Teach 1									.011	.014	[-.016, .038]	.014
CP x Explain/Teach 2									-.047***	.013	[-.072, -.022]	-.064
CP x Positive interaction									-.005	.005	[-.014, .004]	-.018
CP x Hostility/Ineffectiveness									.005	.003	[-.001, .011]	.027
CP x Consistency									.001	.003	[-.005, .007]	.007
R^2			.056				.068				.075	

Note. Values are weighted. The outcome variable is log-transformed. All steps controlled for internalizing behaviours at time 1, corporal punishment experiences after time 1, variables from the stable individual and relational context, and variables from the social-cultural context. β = Unstandardized estimate; *SE* = Standard error; CI = Confidence interval; Part *r* = Part correlation; Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*; R^2 = R Square.
Reference groups are: [a] Corporal punishment no; [b] Psychological aggression 1no.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 15
Hierarchical Regression for Prosocial Behaviours at 8-9 Years (N =2,964)

	Step 1				Step 2				Step 3			
Variable	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*
Corporal punishment (CP)[a]	-.200	.133	[-.461, .060]	-.026	.040	.141	[-.237, .317]	.005	-.054	.155	[-.359, .251]	-.006
Psychological aggresion 1[b]					-.366*	.178	[-.715, -.016]	-.035	-.567*	.275	[-1.106, -.028]	-.035
Psychological aggression 2					-.024	.090	[-.201, .154]	-.004	-.200	.119	[-.433, .033]	-.029
Non-physical punishment					-.052	.060	[-.170, .066]	-.015	.093	.076	[-.055, .241]	.021
Explain/Teach 1					.119	.091	[-.059, .297]	.022	.010	.118	[-.222, .242]	.001
Explain/Teach 2					-.183*	.085	[-.350, -.016]	-.037	-.278*	.114	[-.502, -.055]	-.042
Positive interaction					.097**	.030	[.037, .156]	.054	.205***	.041	[.125, .285]	.086
Hostility/Ineffectiveness					-.071**	.023	[-.117, -.025]	-.052	-.051	.031	[-.111, .009]	-.028
Consistency					.015	.020	[-.025, .055]	.012	.042	.026	[-.009, .094]	.028
CP x Psych. aggression 1									.279	.359	[-.425, .983]	.013
CP x Psych. aggression 2									.394*	.183	[.036, .752]	.037
CP x Non-physical punishment									-.390**	.124	[-.633, -.147]	-.054
CP x Explain/Teach 1									.212	.184	[-.149, .573]	.020
CP x Explain/Teach 2									.220	.170	[-.114, .553]	.022
CP x Positive interaction									-.236***	.060	[-.353, -.119]	-.067
CP x Hostility/Ineffectiveness									-.036	.043	[-.120, .048]	-.014
CP x Consistency									-.074	.041	[-.155, .006]	-.031
R^2			.119				.131				.143	

Note. Values are weighted. All steps controlled for prosocial behaviours at time 1, corporal punishment experiences after time 1, variables from the stable individual and relational context, and variables from the social-cultural context. β = Unstandardized estimate; *SE* = Standard error; CI = Confidence interval; Part *r* = Part correlation; Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*; R^2 = R Square.
Reference groups are: [a] Corporal punishment no; [b] Psychological aggression 1 no.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 16
Hierarchical Regression for Externalizing Behaviours at 14-15 Years (N =2,528)

	Step 1				Step 2				Step 3			
Variable	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*
Corporal punishment (CP)[a]	.010	.008	[-.006, .025]	.024	.007	.008	[-.009, .023]	.017	.003	.009	[-.014, .021]	.007
Psychological aggresion 1[b]					.009	.010	[-.010, .028]	.018	.001	.016	[-.031, .034]	.002
Psychological aggression 2					.011*	.005	[.000, .021]	.040	-.005	.007	[-.019, .009]	-.014
Non-physical punishment					.019***	.003	[.012, .026]	.108	.018***	.004	[.009, .026]	.077
Explain/Teach 1					-.006	.005	[-.016, .004]	-.023	-.008	.007	[-.022, .006]	-.021
Explain/Teach 2					.003	.005	[-.007, .012]	.011	.002	.006	[-.011, .015]	.006
Positive interaction					.002	.002	[-.001, .006]	.027	.005	.002	[.000, .009]	.037
Hostility/Ineffectiveness					-.002	.001	[-.005, .001]	-.029	.000	.002	[-.003, .004]	.000
Consistency					-.001	.001	[-.004, .001]	-.022	.000	.001	[-.003, .003]	-.002
CP x Psych. aggression 1									.011	.020	[-.029, .051]	.011
CP x Psych. aggression 2									.036**	.011	[.015, .057]	.066
CP x Non-physical punishment									.004	.007	[-.010, .018]	.011
CP x Explain/Teach 1									.001	.010	[-.019, .022]	.002
CP x Explain/Teach 2									.002	.009	[-.016, .020]	.004
CP x Positive interaction									-.005	.003	[-.012, .002]	-.027
CP x Hostility/Ineffectiveness									-.005*	.002	[-.009, .000]	-.039
CP x Consistency									-.003	.002	[-.007, .002]	-.021
R^2			.043				.058				.065	

Note. Values are weighted. The outcome variable is log-transformed. All steps controlled for externalizing behaviours at time 1, corporal punishment experiences after time 1, variables from the stable individual and relational context, and variables from the social-cultural context. β = Unstandardized estimate; *SE* = Standard error; CI = Confidence interval; Part *r* = Part correlation; Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*; R^2 = R Square.
Reference groups are: [a] Corporal punishment no; [b] Psychological aggression 1 no.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 17
Hierarchical Regression for Internalizing Behaviours at 14-15 Years (N =2,518)

	Step 1				Step 2				Step 3			
Variable	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*
Corporal punishment (CP)[a]	.019	.013	[-.007, .045]	.027	.029*	.014	[.001, .056]	.039	.043**	.015	[.013, .072]	.053
Psychological aggresion 1[b]					.010	.016	[-.023, .042]	.011	.052	.028	[-.003, .106]	.035
Psychological aggression 2					-.012	.009	[-.030, .005]	-.026	-.004	.012	[-.027, .019]	-.006
Non-physical punishment					-.010	.006	[-.021, .001]	-.033	-.004	.007	[-.018, .011]	-.009
Explain/Teach 1					.025**	.009	[.008, .042]	.055	.022	.012	[-.001, .046]	.035
Explain/Teach 2					-.009	.008	[-.025, .006]	-.022	-.006	.011	[-.028, .015]	-.011
Positive interaction					.001	.003	[-.004, .007]	.009	-.004	.004	[-.011, .004]	-.017
Hostility/Ineffectiveness					-.003	.002	[-.007, .001]	-.024	-.009**	.003	[-.015, -.003]	-.057
Consistency					.003	.002	[-.001, .006]	.025	.002	.003	[-.003, .007]	.018
CP x Psych. aggression 1									-.073*	.034	[-.141, -.006]	-.040
CP x Psych. aggression 2									-.020	.018	[-.054, .015]	-.021
CP x Non-physical punishment									-.016	.012	[-.039, .007]	-.026
CP x Explain/Teach 1									.010	.017	[-.024, .044]	.011
CP x Explain/Teach 2									-.004	.016	[-.035, .028]	-.004
CP x Positive interaction									.012	.006	[.000, .023]	.039
CP x Hostility/Ineffectiveness									.013**	.004	[.005, .021]	.062
CP x Consistency									-.001	.004	[-.008, .007]	-.005
R^2			.096				.105				.112	

Note. Values are weighted. The outcome variable is log-transformed. All steps controlled for internalizing behaviours at time 1, corporal punishment experiences after time 1, variables from the stable individual and relational context, and variables from the social-cultural context. β = Unstandardized estimate; *SE* = Standard error; CI = Confidence interval; Part *r* = Part correlation; Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*; R^2 = R Square.
Reference groups are: [a] Corporal punishment no; [b] Psychological aggression 1 no.
* p< .05. ** p< .01. *** p< .001.

Table 18
Hierarchical Regression for Prosocial Behaviours at 14-15 Years (N =2,508)

	Step 1				Step 2				Step 3			
Variable	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*	β	*SE*	95% CI	Part *r*
Corporal punishment (CP)[a]	-.301	.179	[-.651, .049]	-.032	-.158	.187	[-.525, .209]	-.016	-.193	.203	[-.590, .205]	-.018
Psychological aggresion 1[b]					-.250	.221	[-.683, .183]	-.021	-.427	.374	[-1.160, .307]	-.021
Psychological aggression 2					.014	.119	[-.220, .247]	.002	.029	.159	[-.283, .341]	.003
Non-physical punishment					-.304***	.078	[-.458, -.151]	-.073	-.103	.101	[-.301, .095]	-.019
Explain/Teach 1					.140	.117	[-.083, .370]	.022	.229	.162	[-.089, .547]	.026
Explain/Teach 2					-.100	.107	[-.310, .109]	-.017	-.440**	.149	[-.732, -.148]	-.055
Positive interaction					.079*	.039	[.002, .156]	.037	.117*	.053	[.012, .221]	.041
Hostility/Ineffectiveness					-.012	.029	[-.069, .045]	-.008	-.021	.040	[-.098, .057]	-.010
Consistency					.077**	.026	[.026, .127]	.055	.055	.034	[-.011, .122]	.030
CP x Psych. aggression 1									.170	.463	[-.738, 1.078]	.007
CP x Psych. aggression 2									-.045	.238	[-.512, .422]	-.004
CP x Non-physical punishment									-.489**	.158	[-.799, -.179]	-.058
CP x Explain/Teach 1									-.181	.234	[-.640, .278]	-.014
CP x Explain/Teach 2									.698**	.214	[.278, 1.118]	.061
CP x Positive interaction									-.081	.077	[-.232, .070]	-.020
CP x Hostility/Ineffectiveness									.008	.054	[-.098, .115]	.003
CP x Consistency									.037	.051	[-.063, .138]	.014
R^2			.123				.135				.142	

Note. Values are weighted. All steps controlled for prosocial behaviours at time 1, corporal punishment experiences after time 1, variables from the stable individual and relational context, and variables from the social-cultural context. β = Unstandardized estimate; *SE* = Standard error; CI = Confidence interval; Part *r* = Part correlation; Psychological aggression 1 = *tell your child s/he is bad or not as good as others*; Psychological aggression 2 = *raise your voice, scold, or yell at your child*; Non-physical punishment = *Take away privileges or put child in his/her room*; Explain/ Teach 1= *calmly discuss the problem*; Explain/Teach 2 = *describe alternative ways of behaving that are acceptable*; R^2 = R Square.
Reference groups are: [a] Corporal punishment no; [b] Psychological aggression 1 no.
* p< .05. ** p< .01. *** p< .001.

Table 19
Study Two Sample Characteristics

Variable	*N*	%	*M* (*SD*)	Range
Age (years) – Child	338	-	4.5 (2.6)	2-11
Age (years) – Caregiver	325	-	34.8 (6.0)	19-53
Sex – Child				
Female	177	52.8	-	-
Male	158	47.2		
Sex – Caregiver				
Female	303	90.4	-	-
Male	32	9.6		
Caregiver relationship to the child				
Biological parent	317	94.6		
Adoptive parent	2	.6	-	-
Step parent	7	2.1		
Other	9	2.7		
Education level – Caregiver				
Up to and including high school	42	12.5	-	-
Higher than high school	295	87.5		
Education level – Partner (if applicable)				
Up to and including high school	50	16.8	-	-
Higher than high school	248	83.2		
Employment status – Caregiver				
Employed outside the home	245	72.5	-	-
Not employed outside the home	93	27.5		
Employment status – Partner (if applicable)				
Employed outside the home	283	94.0	-	-
Not employed outside the home	18	6.0		
Household income				
Less than $30,000	28	8.4		
$30,000-$69,999	84	25.2	-	-
$70,000-$109,999	120	36.0		
$110,000 and more	102	30.4		
Household size	337	-	4.0 (1.1)	2-10
Number of siblings	338	-	1.0 (1.0)	0-7
Family structure				
Biological parents	258	77.0		
Single parent	43	12.8	-	-
Step parents	23	6.9		
Other	11	3.3		

Characteristic	*N*	%	*M* (*SD*)	Range
Immigration status				
Not immigrated	285	85.1	-	-
Immigrated	50	14.9		
Ethnicity				
European-Canadian	285	85.1		
Black	15	4.5		
South and West Asian	4	1.2	-	-
East Asian	15	4.5		
Other	16	4.8		
Religion				
No religion	125	37.3		
Christian	185	55.2		
Mainline Protestant	2	.6	-	-
Conservative Protestant	1	.3		
N Other	22	6.6		
Geographic region				
Maritimes	16	4.8		
Quebec	39	11.6		
Ontario	220	65.7	-	-
Prairies	28	8.4		
British Columbia	31	9.3		
Territories	1	.3		

Table 20

Disciplinary Strategies Considered as Corporal Punishment by Caregivers

Disciplinary strategy	*N*	%[a]
Spanking	243	71.9
Slapping the hand, arm, or leg	88	26.0
Hitting (in general)	71	21.0
Grabbing, dragging, or pulling	66	19.5
Slapping (in general)	52	15.4
Pushing or shoving	45	13.3
Pinching	30	8.9
Hitting with an object (in general)	26	7.7
Slapping the face, mouth, head, or ears	26	7.7
Physically restraining	23	6.8
Hitting with a belt, whipping	20	5.9
Shaking	19	5.6
Washing the mouth with soap, putting hot sauce on the tongue	15	4.4
Squeezing arms or other parts of the body	13	3.8
Pulling or twisting ears	13	3.8
Denying access to food	9	2.7
Punching	9	2.7
Smacking (in general)	8	2.4
Pulling hair	8	2.4
Biting	7	2.1
Beating (in general)	6	1.8
Isolating in a confined space	6	1.8
Kicking	5	1.5
Forcing physical exertion	5	1.5
Using excessive force or causing pain/harm on purpose	4	1.2
Requiring child to stay in an uncomfortable position	4	1.2
Hitting the bottom with an object	3	0.9
Burning, cutting	3	0.9
Squeezing the face	3	0.9
Flicking	2	0.6
Throwing something to hit child	2	0.6
Hitting other parts of the body with an object	1	0.3
Knocking down	1	0.3
Denying use of toilet	1	0.3
Pocking	1	0.3
Forcing to kneel on sand or rice	1	0.3
Drenching with cold water	1	0.3

Note. [a] Percentage of caregivers who considered the disciplinary strategy as corporal punishment.

Table 21

Descriptive Statistics for Corporal Punishment and Different Physical Disciplinary Strategies

Physical disciplinary strategy	*N*	%[a]	*M* (*SD*)	Possible range
Corporal punishment	338	37.9	.46 (.65)	0-4
Slapping on the hand, arm, or leg	338	37.9	1.16 (1.78)	0-10
Spanking on the bottom with bare hand	337	35.0	1.09 (1.79)	0-10
Pinching	336	11.6	.31 (1.00)	0-10
Slapping on the face, head, or ears	333	8.1	.18 (.68)	0-10
Shaking	337	7.7	.17 (.69)	0-10
Hitting on the bottom with belt, hairbrush, stick, or other hard object	338	5.0	.10 (.51)	0-10
Throwing or knocking down	337	4.7	.09 (.44)	0-10
Washing mouth with soap, putting hot sauce on tongue, or something similar	337	2.4	.05 (.41)	0-10
Isolating in a confined space (not a bedroom; e.g., closed closet, bathroom)	337	2.1	.06 (.41)	0-10
Forcing to stand or sit in a painful position for some time	338	1.2	.05 (.54)	0-10
Hitting on other parts of the body with belt, hairbrush, stick, or other hard object	337	.6	.01 (.12)	0-10
Forcing physical exertion	337	.6	.03 (.39)	0-10
Denying access to needed water, food, or sleep	337	.3	.01 (.11)	0-10
Burning or scalding on purpose	336	.3	.01 (.22)	0-10
Threatening with a knife or gun	337	.3	.02 (.33)	0-10
Denying use of toilet	338	0	-	0-10
Forcing to kneel on sharp or painful objects	338	0	-	0-10
Grabbing around the neck and chocking	337	0	-	0-10
Beating up	337	0	-	0-10
Hitting with a fist or kicking hard	334	0	-	0-10

Note. [a] Percentage of caregivers reporting the use of the disciplinary strategy.

Table 22

Physical Disciplinary Strategies Associated with Endorsement of Corporal Punishment

Physical disciplinary strategy		CP Yes (N = 128)	CP No (N = 210)
Slapping on the hand, arm, or leg			
	% (n) Yes	64.1 (82)	21.9 (46)
	% (n) No	35.9 (46)	78.1 (164)
		$X^2(1) = 60.07$***, $\Phi = .42$	
	M (SD)	2.26 (2.14)	.49 (.22)
		$Z = -8.60$***, $r = -.47$	
Spanking on the bottom with bare hand			
	% (n) Yes	72.7 (93)	12.0 (25)
	% (n) No	27.3 (35)	88.0 (184)
		$X^2(1) = 128.51$***, $\Phi = .62$	
	M (SD)	2.53 (2.09)	.22 (.69)
		$Z = -11.94$***, $r = -.65$	
Pinching			
	% (n) Yes	19.7 (25)	6.7 (14)
	% (n) No	80.3 (102)	93.9 (195)
		$X^2(1) = 12.99$***, $\Phi = .20$	
	M (SD)	.54 (1.32)	.49 (1.06)
		$Z = -3.61$***, $r = -.20$	
Slapping on the face, head, or ears			
	% (n) Yes	16.8 (21)	2.9 (6)
	% (n) No	83.2 (104)	97.1 (202)
		$X^2(1) = 20.29$***, $\Phi = .25$	
	M (SD)	.41 (1.02)	.04 (.27)
		$Z = -4.57$***, $r = -.25$	
Shaking			
	% (n) Yes	14.8 (19)	3.3 (7)
	% (n) No	85.2 (109)	96.7 (202)
		$X^2(1) = 14.73$***, $\Phi = .21$	
	M (SD)	.32 (.85)	.08 (.55)
		$Z = -3.86$***, $r = -.21$	
Hitting on the bottom with belt, hairbrush, stick, or other hard object			
	% (n) Yes	11.7 (15)	1.0 (2)
	% (n) No	88.3 (113)	99.0 (208)
		$X^2(1) = 19.30$***, $\Phi = .24$	
	M (SD)	.24 (.76)	.02 (.22)
		$Z = -4.39$***, $r = -.24$	

Physical disciplinary strategy		CP Yes (N = 128)	CP No (N = 210)
Throwing or knocking down			
	% (n) Yes	7.0 (9)	3.3 (7)
	% (n) No	93.0 (119)	96.7 (202)
		$X^2(1) = 2.38$, $\Phi = .08$	
	M (SD)	.13 (.51)	.07 (.40)
		$Z = -1.53$, $r = -.08$	
Washing mouth with soap, putting hot sauce on tongue, or something similar			
	% (n) Yes	4.7 (6)	1.0 (2)
	% (n) No	95.3 (121)	99.0 (208)
		$X^2(1) = 4.86$*, $\Phi = .12$	
	M (SD)	.08 (.39)	.03 (.42)
		$Z = -2.19$*, $r = -.12$	
Isolating in a confined space (not a bedroom; e.g., closed closet, bathroom)			
	% (n) Yes	3.9 (5)	1.0 (2)
	% (n) No	96.1 (123)	99.0 (208)
		$X^2(1) = 3.40$, $\Phi = .10$	
	M (SD)	.11 (.58)	.02 (.25)
		$Z = -1.84$, $r = -.10$	
Forcing to stand or sit in a painful position for some time			
	% (n) Yes	3.1 (4)	0.0 (0)
	% (n) No	96.9 (124)	100.0 (210)
		$X^2(1) = 6.64$*, $\Phi = .14$	
	M (SD)	.14 (.88)	.00 (.00)
		$Z = -2.57$*, $r = -.14$	

Note. Analyses were not conducted for physical disciplinary strategies with a frequency below 1. *p< .05. ** p< .01. *** p< .001.

Table 23

Profiles of Self-Reported Corporal Punishment (CP) with Physical Disciplinary Strategies

CP	Spank	Hit bottom with object	Slap hand, arm, leg	Pinch	Shake	Slap face, head, ears	Throw, knock down	Burn	Threaten with knife or gun	Wash mouth	Force painful position	Isolate	Force physical exertion	Deny water, food, sleep	Hit body with object	*N*	%[a]
0																**137**	**42.3**
0			√													**19**	**5.9**
0	√		√													**9**	**2.8**
0	√															**6**	**1.9**
0			√	√												**5**	**1.5**
0	√		√	√												3	0.9
0				√												3	0.9
0			√			√										2	0.6
0							√									2	0.6
0					√											2	0.6
0	√	√	√	√		√				√		√		√	√	1	0.3
0	√		√			√	√						√			1	0.3
0	√		√			√	√									1	0.3
0	√		√			√										1	0.3
0	√		√		√											1	0.3
0	√	√					√									1	0.3
0					√		√									1	0.3
0				√			√									1	0.3
0				√	√											1	0.3
0			√		√											1	0.3
0	√				√											1	0.3
0												√				1	0.3
0										√						1	0.3
1																**13**	**4.0**
1	√		√													**27**	**8.3**
1	√															**16**	**4.9**
1			√													**11**	**3.4**
1	√		√	√												**4**	**1.2**
1	√		√			√										**4**	**1.2**
1	√		√	√		√										3	0.9

CP	Spank	Hit bottom with object	Slap hand, arm, leg	Pinch	Shake	Slap face, head, ears	Throw, knock down	Burn	Threaten with knife or gun	Wash mouth	Force painful position	Isolate	Force physical exertion	Deny water, food, sleep	Hit body with object	*N*	%[a]
1	√		√		√		√									3	0.9
1	√	√	√	√												3	0.9
1	√		√		√	√										2	0.6
1	√		√	√	√											2	0.6
1	√		√							√						2	0.6
1			√	√												2	0.6
1	√	√	√	√		√		√		√						1	0.3
1	√	√	√		√	√	√									1	0.3
1	√		√	√		√				√		√				1	0.3
1	√	√	√		√							√				1	0.3
1	√	√	√		√		√									1	0.3
1	√		√	√		√	√									1	0.3
1	√		√		√	√					√					1	0.3
1			√	√		√									√	1	0.3
1	√		√			√	√									1	0.3
1	√	√	√			√										1	0.3
1	√	√	√		√											1	0.3
1	√		√	√			√									1	0.3
1	√		√		√											1	0.3
1	√			√	√											1	0.3
1	√		√									√				1	0.3
1			√	√							√					1	0.3
1		√	√	√												1	0.3
1	√	√									√					1	0.3
1	√	√			√											1	0.3
1	√	√		√												1	0.3
1	√	√														1	0.3
1	√													√		1	0.3
1	√											√				1	0.3
1	√						√									1	0.3
1	√					√										1	0.3
1					√							√				1	0.3
1				√		√										1	0.3

CP	Spank	Hit bottom with object	Slap hand, arm, leg	Pinch	Shake	Slap face, head, ears	Throw, knock down	Burn	Threaten with knife or gun	Wash mouth	Force painful position	Isolate	Force physical exertion	Deny water, food, sleep	Hit body with object	*N*	%[a]
1			√	√												1	0.3
1			√													1	0.3
1					√											1	0.3
1				√												1	0.3

Note. CP = 0 indicates not endorsed by caregivers; CP = 1 indicates endorsed by caregivers. Checkmarks indicate endorsed physical disciplinary strategies. Participants with missing data have been removed from analysis.

[a] Percentage of caregiver who endorsed the specific profile of corporal punishment with physical disciplinary strategies.

Table 24

Descriptive Statistics of Predictors Included in the Multinomial Logistic Regression

	Group 1		Group 2		Group 3	
	No CP and no physical disciplinary strategies (n = 132)		No CP and at least one physical disciplinary strategy (n = 64)		CP and at least one physical disciplinary strategy (n = 110)	
Variable	*M* (*SD*)	Possible range	*M* (*SD*)	Possible range	*M* (*SD*)	Possible range
Cultural norms	.68 (1.01)	0-12	1.02 (1.02)	0-12	1.80 (1.44)	0-12
Attitudes toward CP	.20 (.46)	0-12	.58 (.71)	0-12	1.45 (1.05)	0-12
Childhood experiences of CP	4.14 (5.00)	0-40	4.63 (5.54)	0-40	6.75 (5.69)	0-40

Note. CP = Corporal punishment.

Table 25

Pearson Correlations Among Predictors Included in the Multinomial Logistic Regression

Variable	Cultural Norms	Attitudes toward CP	Childhood experiences of CP
Cultural norms	1		
Attitudes toward CP	.60**	1	
Childhood experiences of CP	.36**	.19**	1

Note. CP = Corporal punishment.
*p< .05. ** p< .01. *** p< .001.

Table 26

Predictors of Group Differences in Caregivers' Endorsement of Corporal Punishment and Reports of Specific Physical Disciplinary Strategies

	Group 2		Group 3	
	No CP and at least one physical disciplinary strategy (n = 64)		CP and at least one physical disciplinary strategy (n = 110)	
Variable	*OR*	95% CI	*OR*	95% CI
Cultural norms	1.04	[.74, 1.45]	1.04	[.74, 1.47]
Attitudes toward CP	2.93***	[1.64, 5.24]	8.70***	[4.86, 15.57]
Childhood experiences of CP	1.01	[.95, 1.08]	1.07†	[1.00, 1.14]

Note. Reference group = No CP and no physical disciplinary strategies (Group 1; n = 132). Model controlled for household size, geographic region of residence, and social desirability. CP = Corporal punishment; *OR* = Odds ratio; CI = Confidence interval.
† p=.05. *p< .05. ** p< .01. *** p< .001.

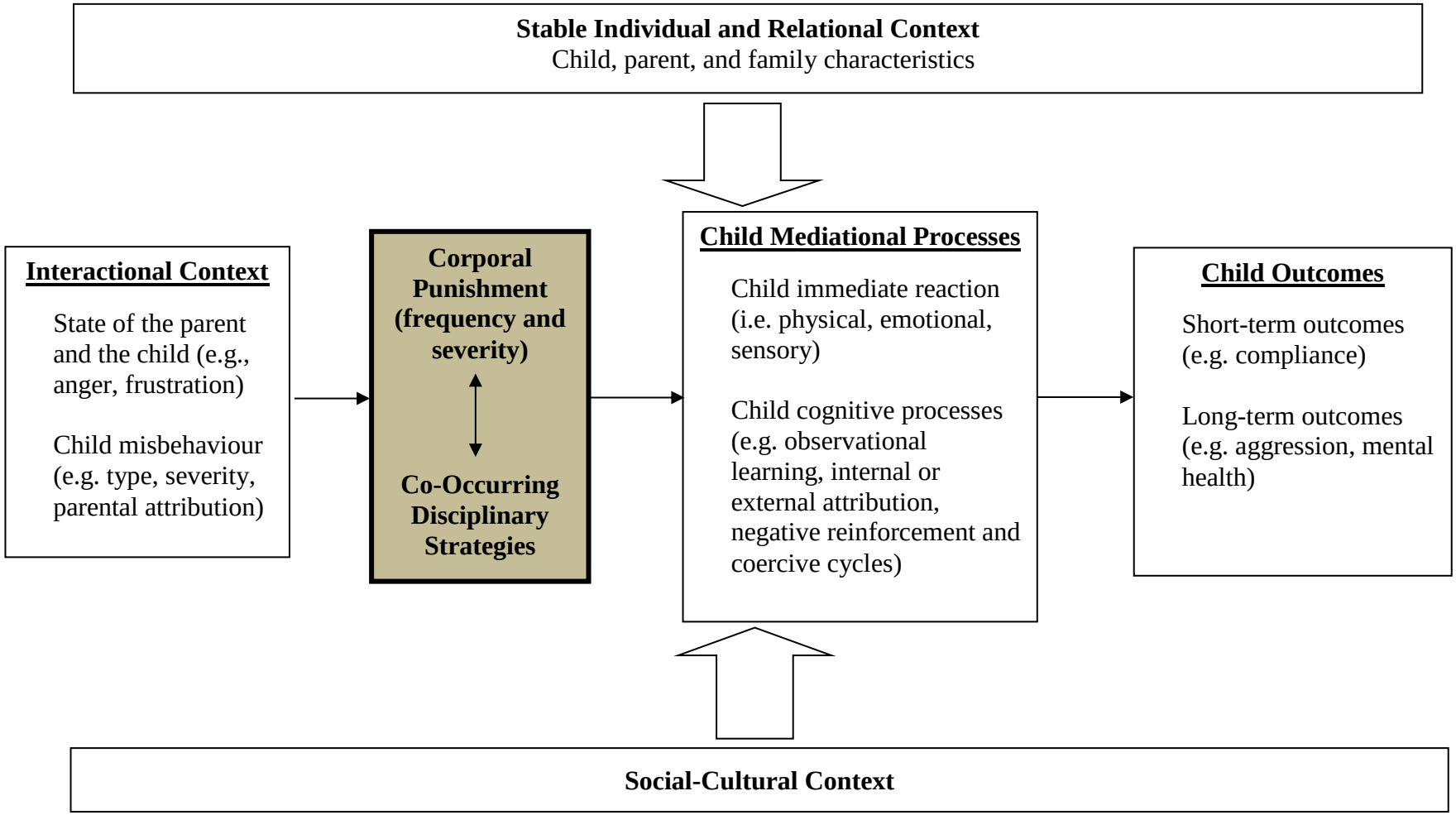

*Figure 1.*Gershoff's process-context model. From "Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review" by E. T. Gershoff, 2002, *Psychological Bulletin, 128*, p.552. Copyright 2002 by the American Psychological Association, and from "Corporal punishment, physical Abuse, and the burden of proof: Reply to Baumrind, Larzelere, and Cowan (2002), Holden (2002), and Parke (2002)" by E. T. Gershoff, 2002, *Psychological Bulletin, 128*, p.607. Copyright 2002 by the American Pyschological Association. Adapted in accordance with the American Psychological Association copyright and permissions regulation.

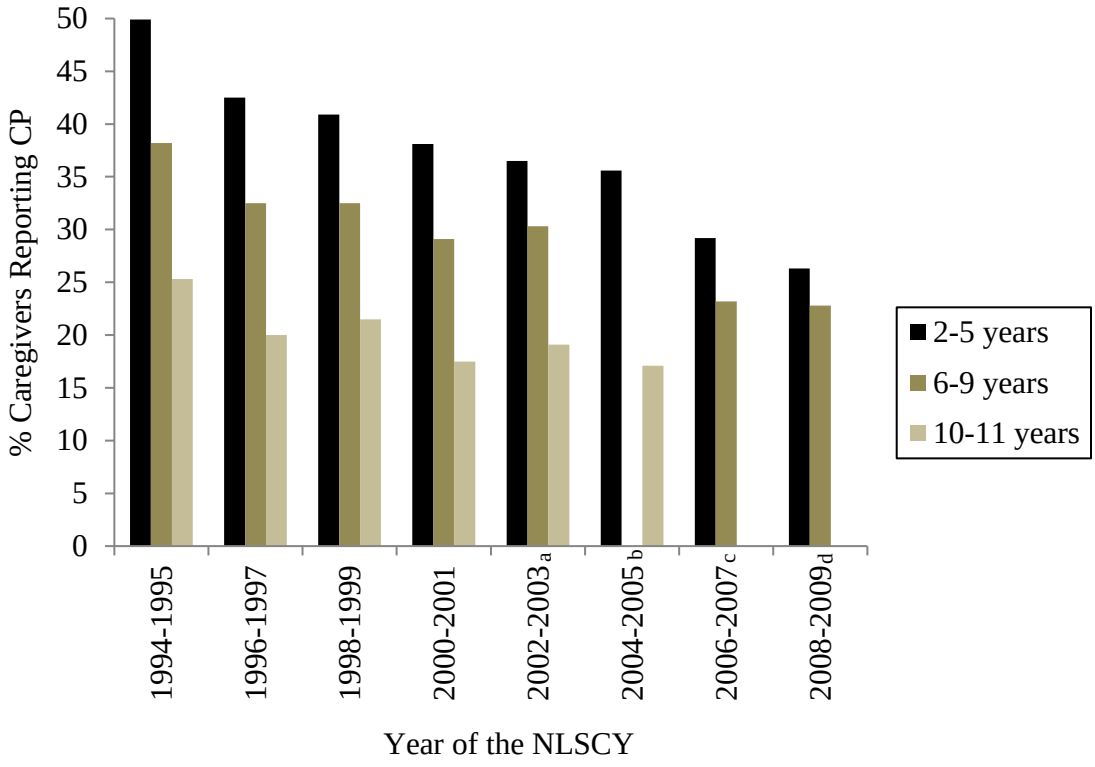

Figure 2. Prevalence of corporal punishment over a 14-year period for 2-5, 6-9, and 10-11 year olds. Values are weighted. CP = Corporal punishment.
[a] Data missing for 6-7 years. [b] Data missing for 6-9 years. [c] Data missing for 10-11 years. [d] Data missing for 8-11 years.

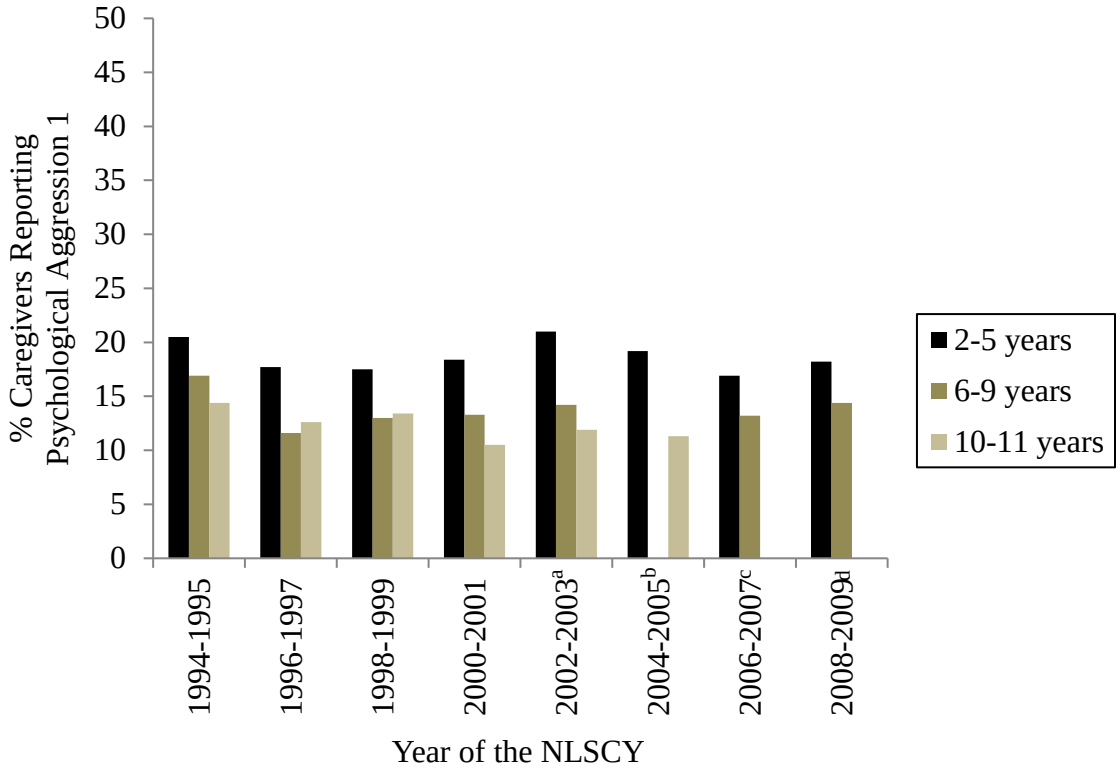

Figure 3. Prevalence of psychological aggression 1 over a 14-year period for 2-5, 6-9, and 10-11 year olds. Values are weighted. Psychological Aggression 1 = *Tell your child s/he is bad or not as good as others*.

[a] Data missing for 6-7 years. [b] Data missing for 6-9 years. [c] Data missing for 10-11 years. [d] Data missing for 8-11 years.

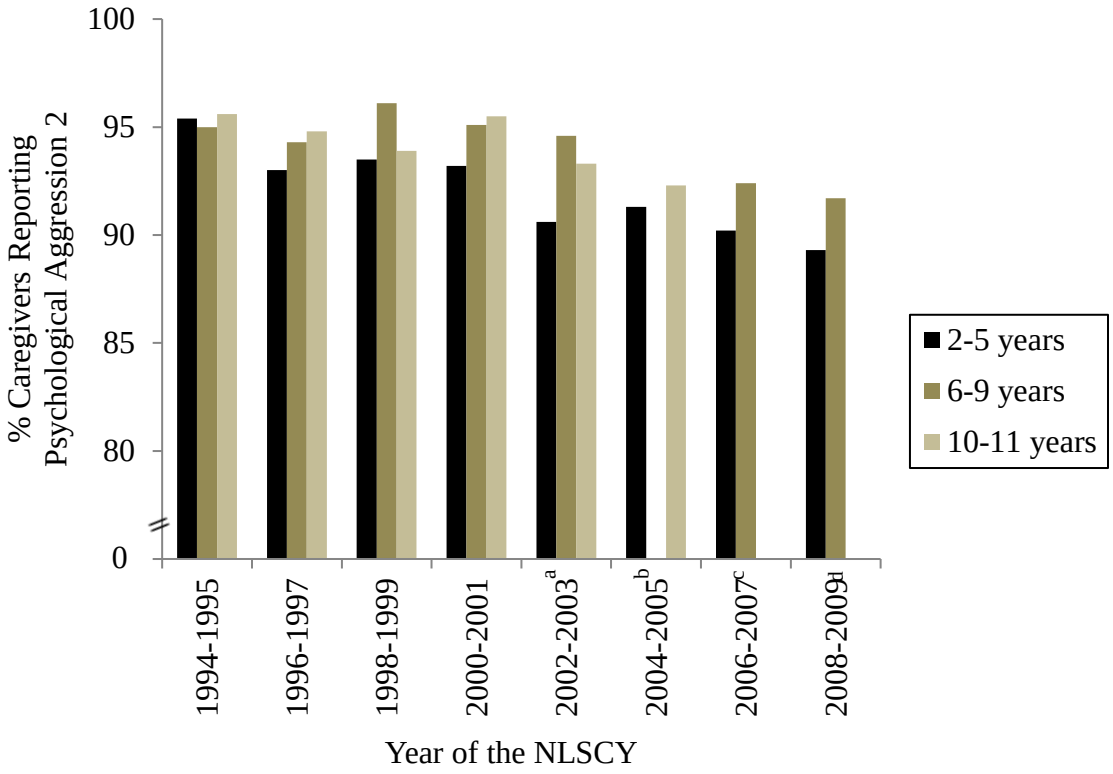

Figure 4. Prevalence of psychological aggression 2 over a 14-year period for 2-5, 6-9, and 10-11 year olds. Values are weighted. Psychological Aggression 2 = *Raise your voice, scold, or yell at your child.*

[a] Data missing for 6-7 years. [b] Data missing for 6-9 years. [c] Data missing for 10-11 years. [d] Data missing for 8-11 years.

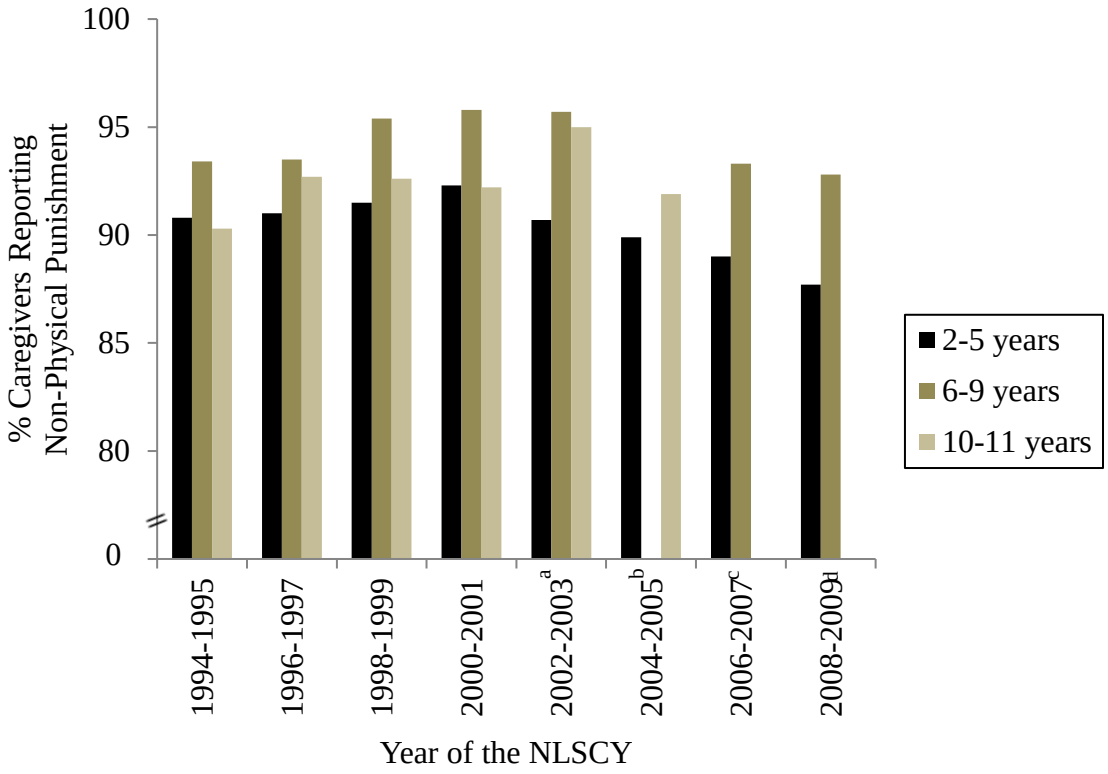

Figure 5. Prevalence of non-physical punishment over a 14-year period for 2-5, 6-9, and 10-11 year olds. Values are weighted. Non-Physical Punishment = *Take away privileges or put child in his/her room*.

[a] Data missing for 6-7 years. [b] Data missing for 6-9 years. [c] Data missing for 10-11 years. [d] Data missing for 8-11 years.

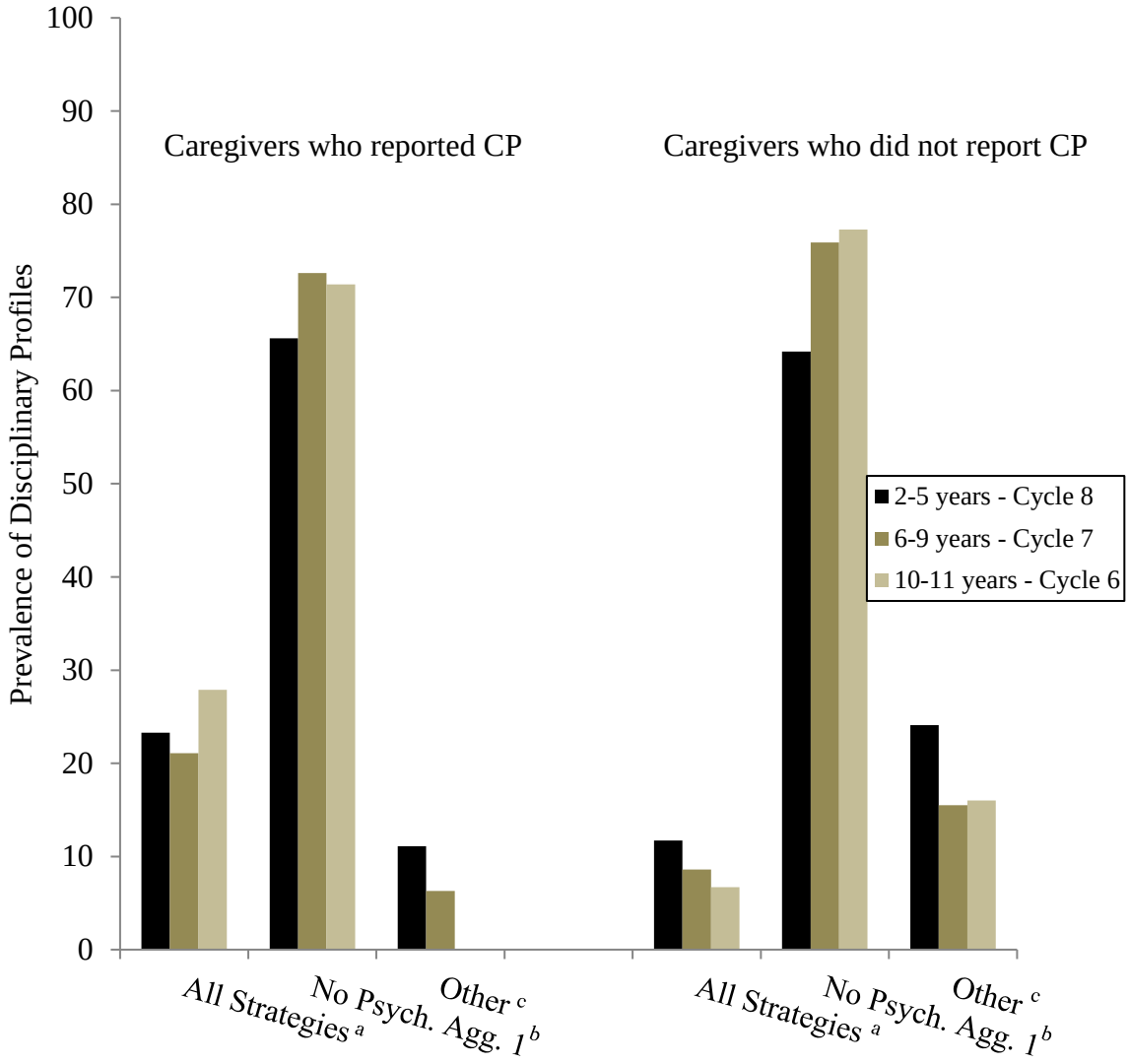

Figure 6. Prevalence of disciplinary profiles for caregivers who reported and did not report corporal punishment (CP) Use. Values are weighted. For 2-5 year olds, $N_{CP\ Yes}$ = 2,166 and $N_{CP\ No}$ = 6,062. For 6-9 year olds, $N_{CP\ Yes}$ = 1,997 and $N_{CP\ No}$ = 6,634. For 10-11 year old, $N_{CP\ Yes}$ = 457 and $N_{CP\ No}$ = 2,184. Psych. Agg. 1 = *Tell your child s/he is bad or not as good as others*. [a] Caregivers reported all 6 co-occurring disciplinary strategies. [b] Caregivers reported all co-occurring disciplinary strategies except psychological aggression 1. [c] Caregivers reported 4-5 out of the 6 possible co-occurring disciplinary strategies, with no pattern discernable.

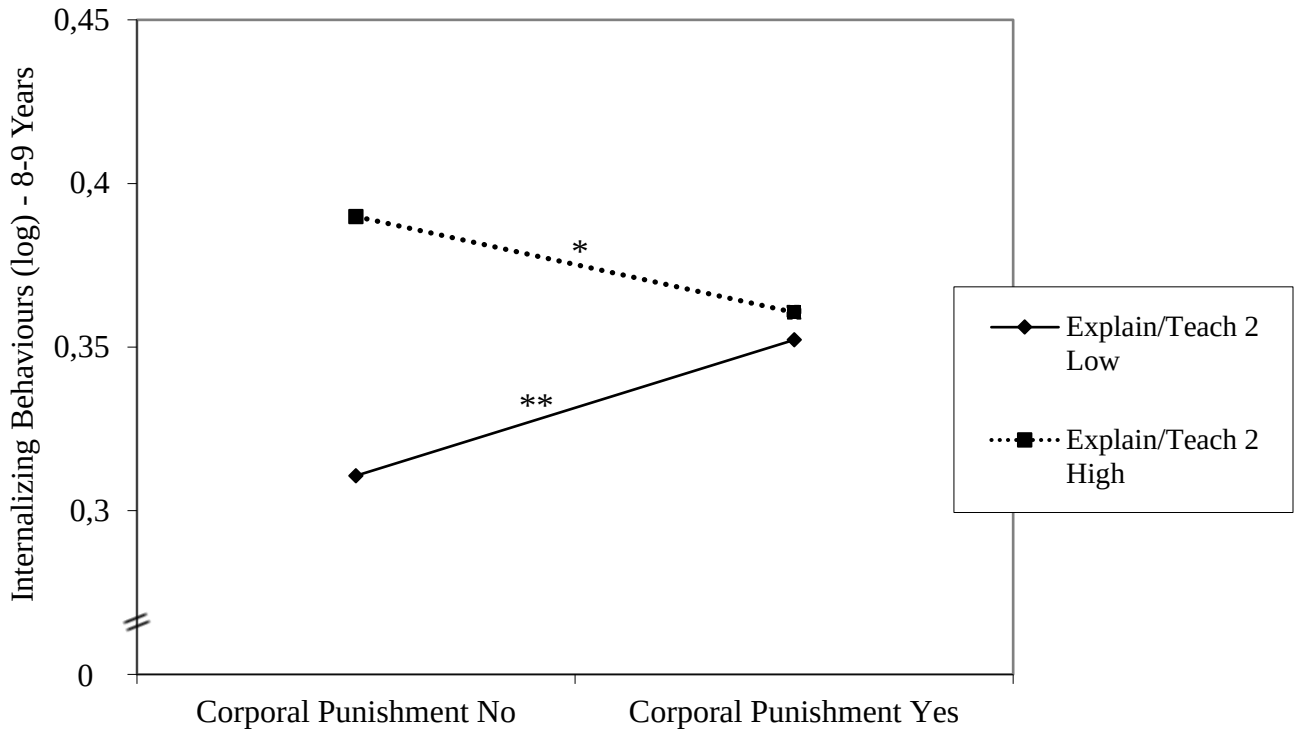

Figure 7. Interaction between corporal punishment and explain/teach 2 on internalizing behaviours at 8-9 years. Values are weighted. Internalizing behaviour scores are log transformed. Explain/Teach 2 = *Describe alternative ways of behaving that are acceptable.*
*p<.05. ** p<.01. ***p<.001.

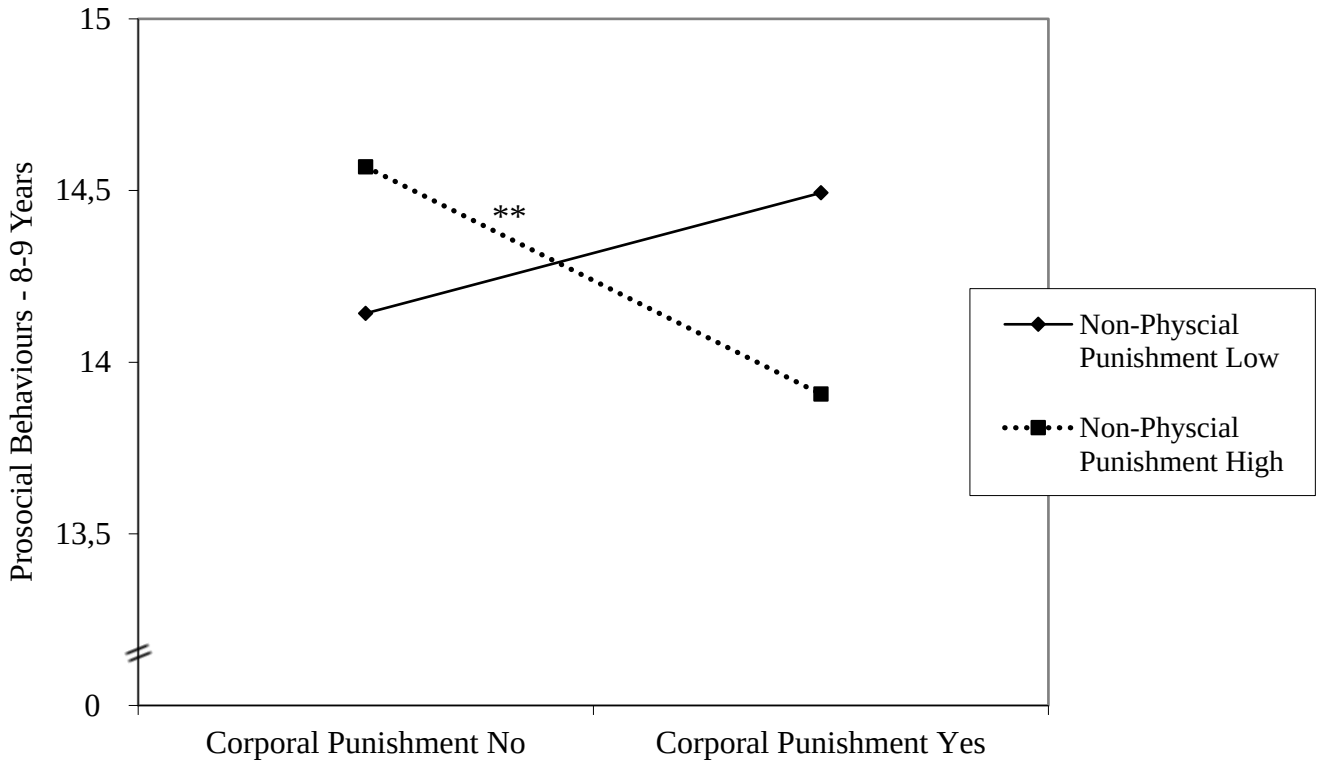

Figure 8. Interaction between corporal punishment and non-physical punishment on prosocial behaviours at 8-9 years. Values are weighted. Non-Physical Punishment = *Take away privileges or put child in his/her room*.
*p<.05. ** p<.01. ***p<.001.

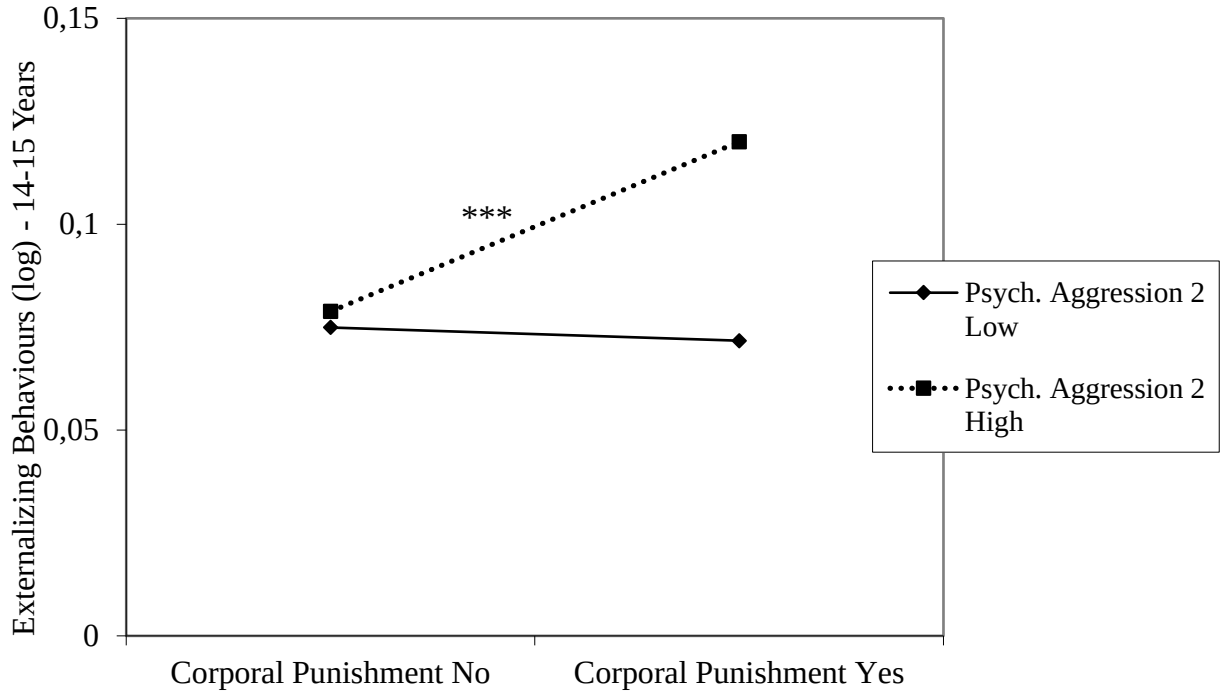

Figure 9. Interaction between corporal punishment and psychological aggression 2 on externalizing behaviours at 14-15 years. Values are weighted. Externalizing behaviour scores are log transformed. Psych. Aggression 2 = *Raise your voice, scold, or yell at your child*.
*p<.05. ** p<.01. ***p<.001.

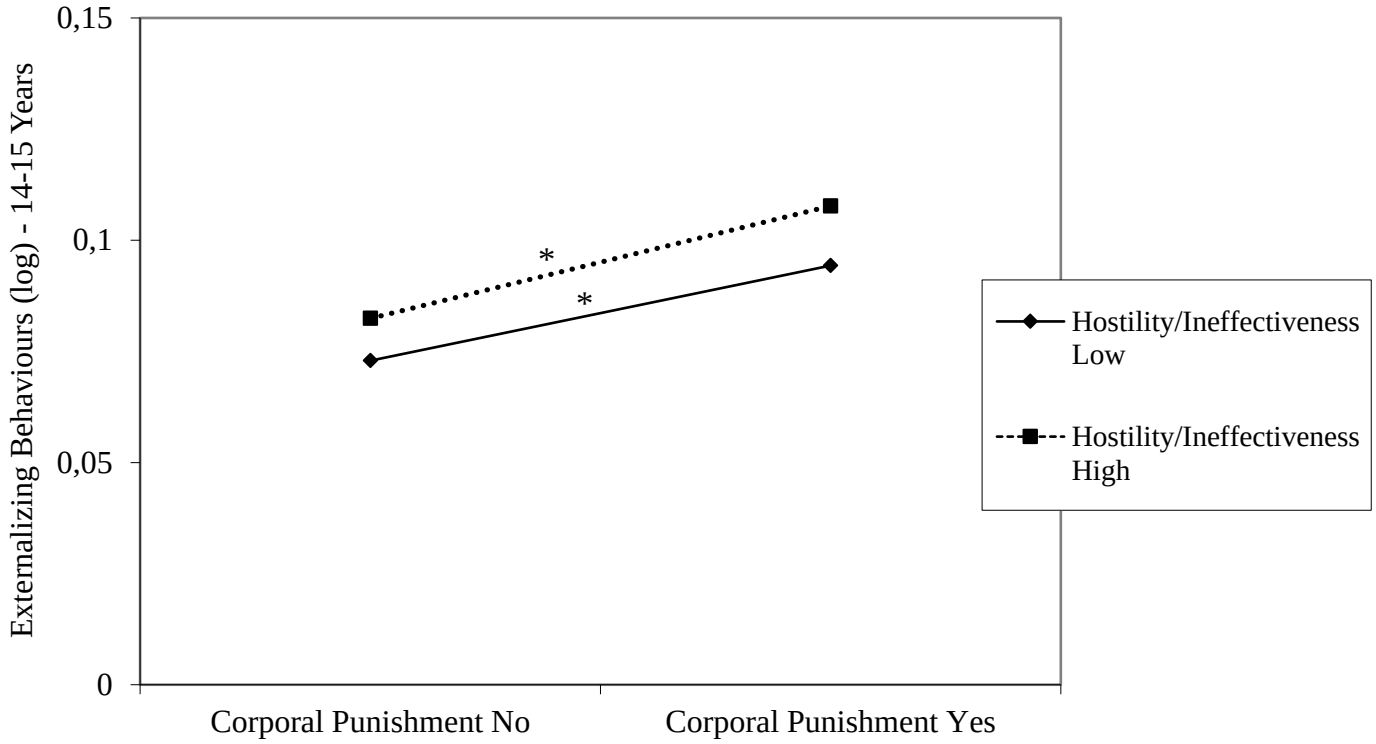

Figure 10. Interaction between corporal punishment and hostility/ineffectiveness on externalizing behaviours at 14-15 years. Values are weighted. Externalizing behaviour scores are log transformed.
*p<.05. ** p<.01. ***p<.001.

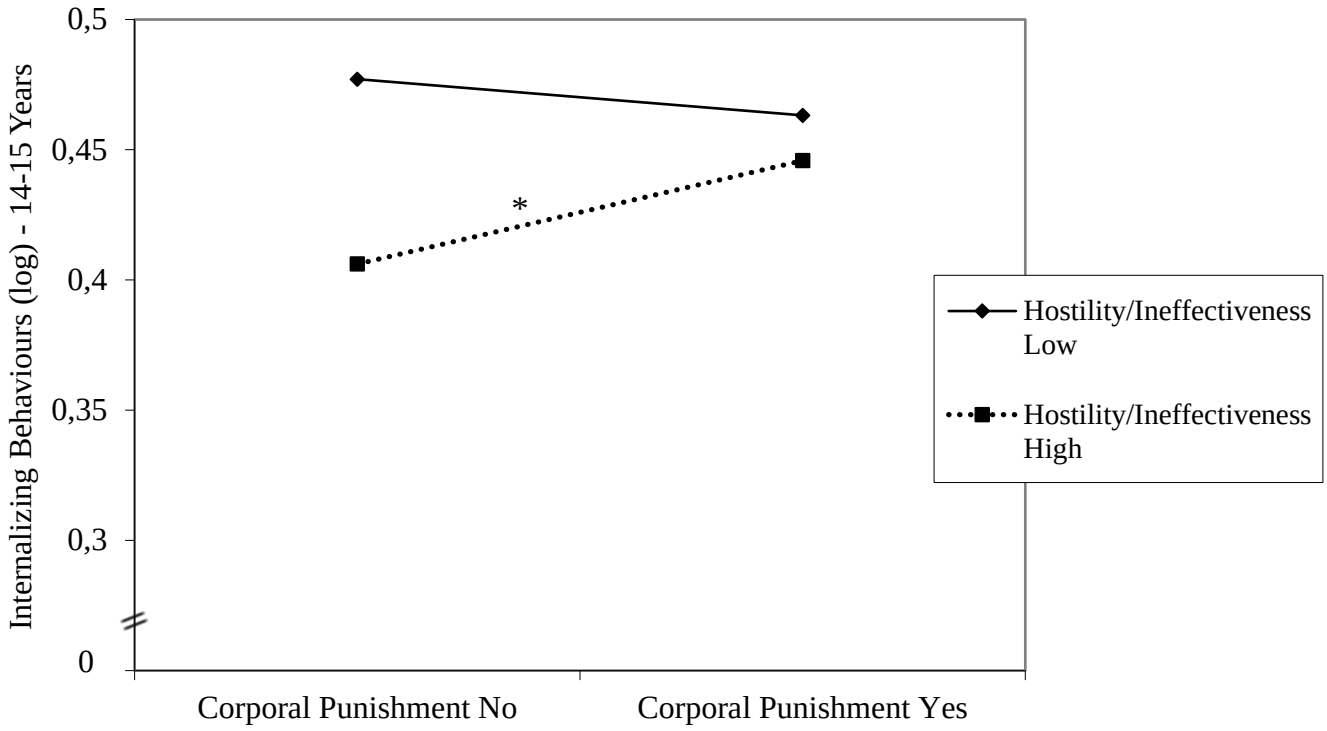

Figure 11. Interaction between corporal punishment and hostility/ineffectiveness on internalizing behaviours at 14-15 years. Values are weighted. Internalizing behaviour scores are log transformed.

*p<.05. ** p<.01. ***p<.001.

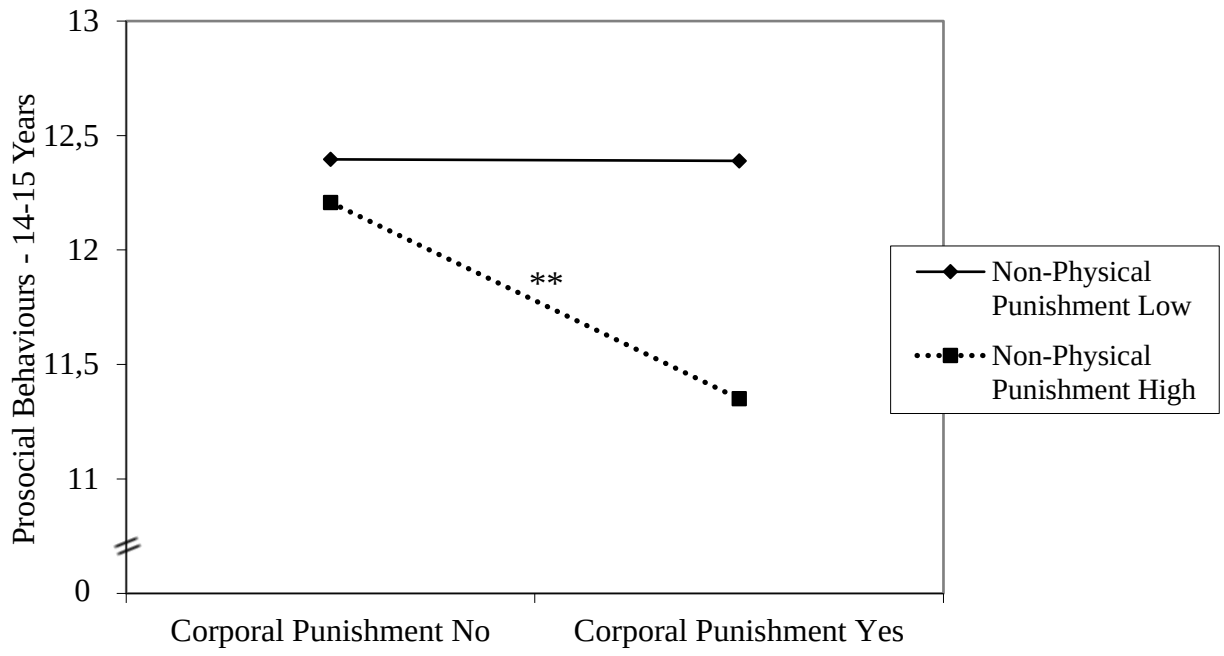

Figure 12. Interaction between corporal punishment and non-physical punishment on prosocial behaviours at 14-15 years. Values are weighted. Non-Physical Punishment = *Take away privileges or put child in his/her room*.
*p<.05. ** p<.01. ***p<.001.

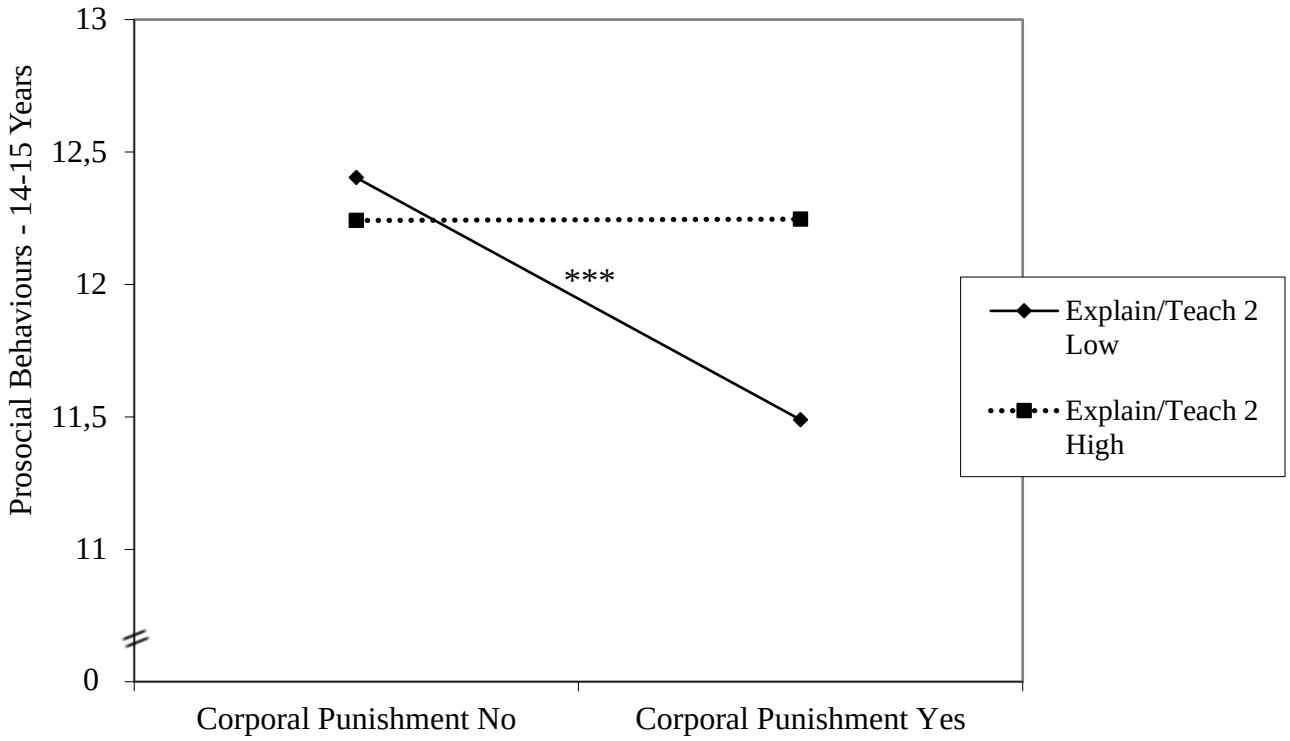

Figure 13. Interaction between corporal punishment and explain/teach 2 on prosocial behaviours at 14-15 years. Values are weighted. Explain/Teach 2 = *Describe alternative ways of behaving that are acceptable.*

*p<.05. ** p<.01. ***p<.001.

Appendix A

Description of the Scales Used in Study One

Child Temperament

Scale at 2-3 years of age (Cronbach α=.78-79; average inter-item correlation=.27-.30):

- How easy of difficult is it for you to calm or soothe this child when he/she is upset?
- How many times per day, on average, does this child get fussy and irritable for either short or long periods of time?
- In general how much this child cries, fusses or whine?
- How easily does this child get upset?
- How much does this child smile, make happy sounds, laughs? *Reversed score.
- What kind of mood is this child generally in?
- How changeable is this child's mood?
- How much attention does this child require, other than for caregiving (feeding, bathing, diaper changes, etc.)?
- Please rate the overall degree of difficulty this child would represent for the average parent?

Parent Psychological Functioning (Depression)

Scale at 2-3 years of age (Cronbach α=.80; average inter-item correlation=.25-.29):

How often have you felt or behave this way in the past week:

- I felt that I could not shake off the blues even with help from my family or friends.
- I had trouble keeping my mind on what I was doing.
- I felt depressed.
- I felt that everything I did was an effort.
- I felt hopeful about the future. *Reversed score.
- My sleep was restless.
- I was happy. *Reversed score.
- I felt lonely.
- I enjoyed life. *Reversed score.
- I had crying spells.
- I felt that people disliked me.
- I did not feel like eating; my appetite was poor.

Parenting Style

Positive Interaction

Scale at 2-3 years of age (Cronbach α=.68-.69; average inter-item correlation=.37-.40)

- How often do you and this child talk or play with each other, focusing attention on each other for five minutes or more, just for fun?
- How often do you and this child laugh together?
- How often do you do something special with this child that he enjoys?
- How often do you play sports, hobbies, or games with this child?

Hostility and ineffectiveness

Scale at 2-3 years of age (Cronbach α=.70-.72; average inter-item correlation=.26-.27):

- How often do you get annoyed with this child for saying or doing something he is not supposed to?
- Of all the times that you talk to this child about his behaviour, what proportion is praise? *Reversed score.
- Of all the times that you talk to this child about his behaviour, what proportion is disapproval?
- How often do you get angry when you punish this child?
- How often do you think that the kind of punishment you give this child depends on your mood?
- How often do you feel you are having problems managing this child in general?
- How often do you have to discipline this child repeatedly for the same thing?

Consistency

Scale at 2-3 years of age (Cronbach α=.67-.68; average inter-item correlation=.30-.31)

- When you give this child a command or order to do something, what proportion of the time do you make sure that he does it?
- If you tell this child he will get punished if he doesn't stop doing something, and he keeps doing it, how often will you punish him?
- How often does this child get away with things for which you feel he should have been punished? *Reversed score.
- How often is this child able to get out of a punishment when he really sets his mind to it? *Reversed score.
- How often when you discipline this child, does he ignore the punishment? *Reversed score.

Behavioural Functioning

Externalizing behaviour difficulties

Scale at 2-3 years of age (Cronbach α=.75-.76; average inter-item correlation=.28-.29):

- How often would you say this child gets into many fights?
- How often would you say this child reacts with anger and fighting?
- How often would you say this child is defiant?
- How often would you say this child has difficulty awaiting turn in games or groups?
- How often would you say that punishment does not change behaviour for this child?
- How often would you say this child has temper tantrums or hot temper?
- How often would you say this child has angry moods?
- How often would you say this child kicks, bites, hits other children?

Scale at 8-9 years of age (Cronbach α=.71; average inter-item correlation=.31):

- How often would you say this child gets into many fights?
- How often would you say this child reacts with anger and fighting?
- How often would you say this child physically attacks people?
- How often would you say this child kicks or hits other children?
- How often would you say this child threatens people?
- How often would you say this child bullies or is mean to others?

Scale at 14-15 years of age (Cronbach α=.71; average inter-item correlation=.32):

- I get into many fights.
- I react with anger and fighting.
- I physically attack people.
- I kick or hit other people my age.
- I threaten people.
- I bully or am mean to others.

Internalizing behaviour difficulties

Scale at 2-3 years (Cronbach α=.57-.59; average inter-item correlation=.19-.20):

- How often would you say this child is too fearful or anxious?
- How often would you say this child is worried?
- How often would you say this child is nervous, highstrung or tense?
- How often would you say this child seems unhappy, sad or depressed?
- How often would you say this child is not as happy as other children?
- How often would you say this child has trouble enjoying him/herself?

Scale at 8-9 years of age (Cronbach α=.69; average inter-item correlation=.25):

- How often would you say this child is too fearful or anxious?
- How often would you say this child is worried?
- How often would you say this child is nervous, highstrung or tense?
- How often would you say this child seems unhappy, sad or depressed?
- How often would you say this child is not as happy as other children?
- How often would you say this child cries a lot?
- How often would you say this child has trouble enjoying him/herself?

Scale at 14-15 years of age (Cronbach α=.77; average inter-item correlation=.33):

- I am too fearful or nervous.
- I worry a lot.
- I am nervous, highstrung or tense.
- I am unhappy or sad.
- I am not as happy as other people my age.
- I cry a lot.
- I have trouble enjoying myself.

Prosocial behaviours

Scale at 2-3 years of age (Cronbach α=.83; average inter-item correlation=.55):

- How often would you say this child will help someone who has been hurt?
- How often would you say this child offers to help other children with task?
- How often would you say this child comforts a child who is crying or upset?
- How often would you say this child helps other children who are sick?

Scale at 8-9 years of age (Cronbach α=.83; average inter-item correlation=.34):

- How often would this child show sympathy to someone who has made a mistake?
- How often would you say this child will help someone who has been hurt?
- How often would you say this child helps clear up a mess someone else has made
- If there is an argument, how often would you say this child tries to stop it?
- How often would you say this child offers to help other children with task?
- How often would you say this child comforts a child who is crying or upset?
- How often would you say this child helps to pick up things another child has dropped?
- When playing with others, how often would you say this child invites bystanders to join in a game?
- How often would you say this child helps other children who are sick?
- How often would you say this child praises the work of less able children?

Scale at 14-15 years of age (Cronbach α=.88; average inter-item correlation=.43):

- I show sympathy to (I feel sorry for) someone who has made a mistake.
- I try to help someone who has been hurt.
- I offer to help clear up a mess someone else has made.
- If there is an argument, I try to stop it.
- I offer to help other young people (friend, brother or sister) who are having difficulty with a task.
- I comfort another young person (friend, brother or sister) who is crying or upset.
- I help to pick up things which another young person has dropped.
- When I am playing with others, I invite bystanders to join in a game.
- I help other people my age (friend, brother or sister) who are feeling sick.
- I encourage other people my age who cannot do things as well as I can.

Appendix B

Description of the Scales Used in Study Two

Measure of Physical Disciplinary Behaviours – Parent-Child Conflict Tactics Scales (CTSPC)

Minor Physical Assault Scale (Corporal Punishment)

Children often do things that are wrong, disobey, or make their parents/caregivers angry. We would like to know what you have done when your child did something wrong or made you upset or angry. In the past year, how often did you do the following?

- Spanked him/her on the bottom with your bare hand?
- Hit him/her on the bottom with something like a belt, hairbrush, a stick, or some other hard object?
- Slapped him/her on the hand, arm, or leg?
- Pinched him/her?
- Shook him/her?

Response categories:

0=This has never happened
1=Not in the past year, but it happened before
2=Once in the past year
3= Twice in the past year
4=3-5 times in the past year
5=6-10 times in the past year
6=11-20 times in the past year
7=More than 20 times in the past year

Severe Physical Assault Scale (Physical Maltreatment)

Children often do things that are wrong, disobey, or make their parents/caregivers angry. We would like to know what you have done when your child did something wrong or made you upset or angry. In the past year, how often did you do the following?

- Slapped him/her on the face or head or ears?
- Hit him/her on some other part of the body besides the bottom with something like a belt, hairbrush, a stick or some other hard object?
- Threw or knocked him/her down?
- Hit him/her with a fist or kicked him/her hard?

Response categories:

0=This has never happened
1=Not in the past year, but it happened before
2=Once in the past year
3= Twice in the past year
4=3-5 times in the past year
5=6-10 times in the past year
6=11-20 times in the past year
7=More than 20 times in the past year

Very Severe Physical Assault Scale (Extreme Physical Maltreatment)

Children often do things that are wrong, disobey, or make their parents/caregivers angry. We would like to know what you have done when your child did something wrong or made you upset or angry. In the past year, how often did you do the following?

- Beat him/her up, that is you hit him/her over and over as hard as you could?
- Grabbed him/her around the neck and choked him/her?
- Burned or scalded him/her on purpose?
- Threatened him/her with a knife or gun?

Response categories:

0=This has never happened
1=Not in the past year, but it happened before
2=Once in the past year
3= Twice in the past year
4=3-5 times in the past year
5=6-10 times in the past year
6=11-20 times in the past year
7=More than 20 times in the past year

Measure of Physical Disciplinary Behaviours – Additional Physical Disciplinary Practices

When your child misbehaved in the past year, how often did you:

- Wash his/her mouth out with soap, put hot sauce on his tongue, or something similar?
- Force him/her to stand or sit in a painful position for some time (for example, remain motionless or in a sitting position without a chair)?
- Force him/her to kneel on sharp or painful objects (for example, rice, a floor grate)
- Isolate him/her in a confined space (not a bedroom; for example, in a closed closet or a bathroom)?
- Deny him/her use of toilet?
- Force physical exertion (for example, making him/her run for a certain amount of time)?
- Deny access to needed water, food or sleep?

Response categories:

0=Never
1=Not in the past year, but in a previous year
2= 1-2 times in the past year
3=3-5 times in the past year
4=6-9 times in the past year
5=Monthly (10 to 14 times in the past year)
6=A few times a month (2-3 times a month)
7=Weekly (1-2 times a month)
8=Several times a week (3-4 times)
9=Daily (5 or more times a week)
10=Two or more times a day

Measure of Cultural Norms

Now, we would like you to think about your friends and family members whose opinions mean the most to you. Do you think that most of these friends and family members would be never OK, rarely OK, usually OK, always or almost always OK with doing each of the following with children who are about the same age as the child you described in this questionnaire?

- Grab or shake children that age to get their attention
- Spank, slap, smack, or swat children that age
- Use an object such as a paddle, hairbrush, belt, etc. on children that age
- Wash the mouths of children that age out with soap, put hot sauce of their tongue, or something similar

Response categories:

1= Never OK
2=Rarely OK
3=Usually OK
4=Always or almost always OK

Measure of Attitudes toward Corporal Punishment – Cognitive Appraisal Scale, Dimensions of Discipline Inventory (DDI)

Regardless of what you yourself do, we would like to have your opinion about doing each of the following with children who are about the same age as the child you described in this questionnaire.

- Grab or shake children that age to get their attention
- Spank, slap, smack, or swat children that age
- Use an object such as a paddle, hairbrush, belt, etc. on children that age
- Wash the mouths of children that age out with soap, put hot sauce of their tongue, or something similar

Response categories:

1=Never OK
2=Rarely OK
3=Usually OK
4=Always or almost always OK

Measure of Childhood Experiences of Corporal Punishment – Adult-Recall Corporal Punishment Scale, Dimensions of Discipline Inventory (DDI)

When you misbehaved at around age 10:

- How often did your parents shake or grab you to get your attention?
- How often did your parents spank, slap, smack, or swat you?
- How often did your parents use a paddle, hairbrush, belt, or other object on you?
- How often did your parents wash your mouth out with soap, put hot sauce on your tongue, or something similar?

Response categories:

0=Never
1=Not in that year, but in another year
2= 1-2 times in the past year
3=3-5 times in the past year
4=6-9 times in the past year
5=Monthly (10 to 14 times in the past year)
6=A few times a month (2-3 times a month)
7=Weekly (1-2 times a month)
8=Several times a week (3-4 times)
9=Daily (5 or more times a week)
10=Two or more times a day

Measure of Social Desirability – Limited Disclosure Scale, Personal and Relationship Profile (PRP)

The following statements are about you. Please read each statement and indicate how much you agree or disagree with it.

- I sometimes try to get even rather than forgive and forget
- There have been occasions when I took advantage of someone
- There have been times when I was quite jealous of the good fortune of others
- I sometimes feel resentful when I don't get my way
- I am sometimes irritated by people who ask favors of me
- There have been times when I have felt like rebelling against people in authority even though I knew they were right
- I have never deliberately said something that hurt someone's feelings

- No matter who I am talking to I am always a good listener
- On a few occasions, I have given up doing something because I have thought too little of my ability
- I have never been irked when people expressed ideas very different from my own
- It is sometimes hard for me to go on with my work if I am not encouraged
- I am always courteous, even to people who are disagreeable
- I'm always willing to admit it when I make a mistake

Response categories:

1 = Strongly Disagree
2 = Disagree
3 = Agree
4 = Strongly Agree

Socio-Demographic Questionnaire

1. What is the age of this child (must be between 2-11 years)? _____

2. What is the sex of this child?
   Male _____ Female _____

3. What is your age (in years)? _____

4. What is your sex?
   Male _____ Female _____

5. What is your relationship to this child?
   _____ Birth parent
   _____ Adoptive parent
   _____ Step parent
   _____ Foster care parent
   _____ Other, please specify… _____

6. What is your current marital status?
   _____ Single, never married
   _____ Married
   _____ Living common-law
   _____ Separated
   _____ Divorced
   _____ Widowed
   _____ Other, please specify… _____

7. If you are in a relationship, what is your partner's relationship to this child?
   _____ Birth parent
   _____ Adoptive parent
   _____ Step parent

_____ Foster care parent
_____ Other, please specify… _____
_____ Not applicable

8. What is the number of people who usually live in your household (children and adults)? _____
9. How many siblings (full, half, step, adopted, or foster brother/sister) does this child have who usually live in the household? _____

10. In what Canadian province or territory are you currently living?

_____ Alberta
_____ British Columbia
_____ Manitoba
_____ New Brunswick
_____ Newfoundland and Labrador
_____ Northwest Territories
_____ Nova Scotia
_____ Nunavut
_____ Ontario
_____ Prince Edward Island
_____ Quebec
_____ Saskatchewan
_____ Yukon

11. Were you born in Canada?
_____ Yes
_____ No
If no, in what country were you born? _____
If no, in what year did you first immigrate to Canada? _____

12. How would you best describe your race or color?
_____ White (for example, European descent)
_____ Black (for example, African, Haitian, Jamaican, Somalian)
_____ Latin-American
_____ Native/Aboriginal (for example, North American Indian, Metis, or Inuit/Eskimo)
_____ Asian (for example, Chinese, Japanese, Korean)
_____ South Asian (for example, Cambodian, Laotian, Indonesian, Vietnamese, Sri Lankan)
_____ Middle Eastern (for example, Armenian, Egyptian, Iranian, Lebanese, Moroccan)
_____ Other (please specify) _____

13. What, if any, is your religion?
_____ No religion
_____ Christian
_____ Judaism
_____ Islam
_____ Hinduism

_____ Buddhism
_____ Other, please specify… _____

14. In which of the following groups does your income (during the past 12 months) fall before deductions?
    _____ Less than $9,999
    _____ $10,000-$29,999
    _____ $30,000-$49,999
    _____ $50,000-$69,999
    _____ $70,000-$89,999
    _____ $90,000-$109,999
    _____ Over $110,000

15. What do you consider to be your current main activity?
    _____ Caring for family (not working for pay outside the home)
    _____ Working for pay (part- or full-time basis)
    _____ Caring for family and working for pay (part- or full-time basis)
    _____ Going to school
    _____ Going to school and working for pay (part- or full-time basis)
    _____ Recovering from illness/on disability
    _____ Retired
    _____ Other, please specify… _____

16. What is the highest level of education that you have completed?
    _____ No schooling
    _____ Elementary (1 to 8 years)
    _____ High school
    _____ Vocational or College/CEGEP
    _____ Bachelor's or undergraduate degree
    _____ Graduate degree
    _____ Other, please specify…_____

17. If you are in a relationship, what do you consider to be your partner's current main activity?
    _____ Caring for family (not working for pay outside the home)
    _____ Working for pay (part- or full-time basis)
    _____ Caring for family and working for pay (part- or full-time basis)
    _____ Going to school
    _____ Going to school and working for pay (part- or full-time basis)
    _____ Recovering from illness/on disability
    _____ Retired
    _____ Other, please specify… _____
    _____ Not applicable

18. If you are in a relationship, what is the highest level of education your partner has completed?
    _____ No schooling

_____ Elementary (1 to 8 years)
_____ High school
_____ Vocational or College/CEGEP
_____ Bachelor's or undergraduate degree
_____ Graduate degree
_____ Other, please specify… _____
_____ Not applicable

Questions assessing inclusion criteria

Please answer the following questions to determine if you can participate in our study.

Are you 18 years of age or older?
_____ Yes
_____ No

Are you a parent/caregiver of a child between the ages of 2 and 11?
_____ Yes
_____ No

Do you currently live in Canada?
_____Yes
_____ No

Is this the first time you are participating in this study?
_____Yes
_____No

If you have a partner, did your partner also participate in this study?
_____Yes
_____No

How did you hear about this study?

_____ Community institution (for example, recreational centres, museums, libraries)
_____ Medical clinic (for example, family physician office)
_____ Mental health clinic (for example, psychologist office)
_____ Hospital
_____ Internet forum
_____ Newspaper
_____ Word of mouth (for example, a friend or collegue)
_____Other, please describe… _____

Appendix C

Study Notice

uOttawa

An Examination of Parental Disciplinary Strategies

Do you have a child aged 2-11 (biological or non-biological)?
Are you 18 years or older?
Are you willing to participate in an online study?

If you answer "yes" to the three questions, then the researchers at the University of Ottawa need your help!

What is the study about?

- To better understand the disciplinary strategies used by parents to correct children's misbehaviours
- To better understand the factors that might be related to the disciplinary strategies parents use

Why participate?

- To help us gather information that will inform public programs on how to support parents in their disciplinary practices

What do I have to do?

- Anonymously answer a series of questions that will take approximately 20-30 minutes to complete
- The study is available on-line and can be completed from any computer, in the convenience of your home or office
- Please note that the study questionnaire is only available in English
- You will have the chance to enter a draw to win one of two $50 Visa gift cards

Interested?

- Log on to: http://fluidsurveys.com/s/parental-discipline-survey/

Questions?

- Contact Sabrina Fréchette from the Children's Well-Being Lab at the University of Ottawa

Appendix D

Consent Form – English

Principal Investigators:

Sabrina Fréchette, B.A., Ph.D. Candidate
Elisa Romano, Ph.D.
School of Psychology
University of Ottawa

uOttawa
L'Université canadienne
Canada's university

Task to be completed:

This study is being conducted under the supervision of Dr. Elisa Romano from the School of Psychology at the University of Ottawa. The goal of this study is to understand the disciplinary strategies used by parents (or caregivers) with children aged 2-11 years. We are also interested in better understanding some of the factors that might be related to the discipline parents (or caregivers) use. If you decide to participate, you will be invited to complete a questionnaire which will take approximately 20-30 minutes. The questionnaire is available on-line and can be completed from any computer at a place of your choice. Once you begin the questionnaire, please note that it will not be possible to close the study's webpage and return to it at a later point. However, there will be an 8-hour time-frame in which to complete the questionnaire.

Anonymity and confidentiality:

Be assured that no identifiable information will be gathered. Your answers are strictly confidential and no one will be informed of your answers. Only Dr. Romano and Sabrina Fréchette will have access to the data. Data will be kept for 10 years on a password-protected computer in Dr. Romano's laboratory. Data from the study will be analyzed and presented at a group level so that there will not be presentation of individual results.

Rights and responsibilities:

The study can be completed in a quiet place at a time that is convenient for you. We would really appreciate your honesty in responding to the questions. You are free to refuse to participate or to withdraw from the study at any time without penalty. Once you complete the questionnaire or, if you do not complete the entire study, when you select the "exit study" option, you will be invited to enter a draw for one of two $50 Visa gift cards. If you choose to enter the draw, you will be forwarded to a different window and will be required to enter your e-mail address. Please note that your e-mail address cannot be linked to the answers you provided during the study.
Potential inconveniences and resources:

Some of the questions are sensitive in nature in that they ask about difficult experiences that may have happened to you or your child, such as experiencing harsh punishment, maltreatment, or bullying. As such, it is possible that you may experience some emotional distress. These experiences may or may not apply to you or your child. In the on-line study, you will find a list of resources, such as telephone distress lines, which are available to you. Please do not hesitate to contact these resources if needed.

Compensation:

If you decide to participate in the study, you will be invited to enter a draw for one of two $50 Visa gift cards. The draw is open to all participants who enter their e-mail address in the draw, regardless of whether they decide to withdraw from the study. Once the study is completed, a person will be randomly selected among those who have entered the draw. The winner will be informed by e-mail. If the person cannot be reached within 14 days from the date of the draw, the prize will be awarded to the second person who is randomly selected and so on until the prize has been awarded. The odds of winning a prize will depend on the number of eligible entries received. The prize must be accepted as awarded or forfeited and cannot be redeemed for cash. The e-mail address that you provide when you enter the draw is collected for the purposes of contacting you if you are selected in the draw. The contact information you have provided will be kept confidential and then destroyed once the prizes have been awarded. We reserve the right to cancel the draw or cancel the awarding of the prize if the integrity of the draw or the research or the confidentiality of participants is compromised. The draw is governed by the applicable laws of Canada.

Data storage and use:

Data from this study will be used for research purposes only. They will be presented at conferences and published in scientific journals. Your data will be stored electronically on a password-protected computer in Dr. Romano's laboratory. Results from this study will be analyzed and disseminated in group form meaning that no individual results will be presented. Data from this study will be kept for 10 years, after which point they will be deleted. Only Dr. Romano and Sabrina Fréchette will have access to the data.

Additional information:

If you have any questions or require additional information, please contact the Protocol Officer for Ethics in Research, Office of Research Ethics and Integrity, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON, K1N 6N5; Tel.: (613) 562-5387; E-mail: ethics@uottawa.ca. Any questions about the current study may be addressed to Sabrina Fréchette.

Informed consent:

If you understand all the statements above and freely consent to participate in the study, click "Yes" to the question below which will direct you to the study. If you understand all the statements above and do not want to participate in the study, click "No" to the question below and close this web page. If you have any questions before deciding whether or not you would like to participate, please contact Ms. Sabrina Fréchette at The Children's Well-Being Lab.

Do you wish to participate in this study? _____Yes _____No

Appendix E

Consent Form – French

Chercheurs principaux:

Sabrina Fréchette, B.A., Candidate au Ph.D.
Elisa Romano, Ph.D.
École de psychologie
Université d'Ottawa

Tâche à compléter:

Cette étude est menée sous la supervision du Dr Elisa Romano de l'École de psychologie de l'Université d'Ottawa. L'objectif de cette étude est de comprendre les stratégies disciplinaires employées par les parents (ou tuteurs) d'enfants âgés entre 2-11 ans. Nous cherchons aussi à mieux comprendre certains des facteurs pouvant être associés à la discipline employée par les parents (ou tuteurs). Si vous décidez de participer à cette étude, vous serez invité(e) à compléter un questionnaire d'une durée approximative de 20-30 minutes. Il est à noter que le questionnaire n'est offert qu'en anglais. Le questionnaire est disponible en ligne et peut être complété d'un ordinateur auquel vous avez accès. Lorsque vous débuterez le questionnaire, il vous sera impossible de fermer la page web de l'étude et d'y retourner par la suite. Par contre, vous aurez une période de 8 heures pour compléter le questionnaire.

Anonymat et confidentialité:

Afin d'assurer que vos réponses demeurent anonymes et confidentielles, nous vous demandons de ne pas écrire votre nom ou toutes autres informations pouvant vous identifier (p.ex., adresse à la maison) sur le questionnaire. Vos réponses sont strictement confidentielles et aucune personne ne sera informée de vos réponses. Seulement le Dr Romano et Sabrina Fréchette auront accès aux données. Les données seront conservées pour une durée de 10 ans sur un ordinateur protégé par un mot de passe dans le laboratoire du Dr Romano. Les données de cette étude seront analysées et présentées que sous forme de moyennes de groupe. Ainsi, aucun résultat individuel ne sera présenté.

Droits et responsabilités:

Cette étude peut être complétée dans un environnement calme au cours de la période qui vous convient le plus. Nous apprécierions beaucoup si vous pouviez répondre honnêtement aux questions. Vous êtes libre de refuser de participer ou de vous retirer de l'étude à tout moment sans pénalité. Lorsque vous aurez complété l'étude ou, si vous décidez de vous retirer de l'étude, lorsque vous sélectionnerez l'option «exit study», vous serez invité à participer à un tirage pour un de deux certificats cadeaux Visa de 50$. Si vous choisissez de participer au tirage, vous serez transféré à une

nouvelle fenêtre internet où vous devrez entrer votre adresse courriel. SVP noter que votre adresse courriel ne pourra être associée aux réponses fournies lors de l'étude.

Inconvénients potentiels et ressources:

Certaines questions peuvent être délicates. Elles portent sur des expériences difficiles que vous ou votre enfant auriez pu vivre telles que l'expérience de discipline sévère, de maltraitance ou d'intimidation. Ainsi, il est possible que vous viviez une certaine détresse émotionnelle en complétant le questionnaire. Ces expériences peuvent ou non s'appliquer à vous ou votre enfant. Dans le questionnaire en ligne, vous trouverez une liste de ressources qui sont à votre disposition, telles que des lignes d'aide en cas de crise. N'hésitez surtout pas à contacter ces ressources en cas de besoin.

Compensation et bénéfices:

Si vous décidez de participer à l'étude, nous vous offrons la possibilité de faire partie d'un tirage pour avoir la chance de gagner un de deux certificats cadeaux Visa d'une valeur de 50$. Tous les participants sont invités à tenter leur chance dans ce tirage même s'ils décident de se retirer de l'étude. Un fois l'étude terminée, une personne parmi celles qui ont fourni l'information nécessaire pour participer au tirage sera choisi au hasard et le gagnant sera informé par courriel. Si nous ne sommes pas en mesure d'entrer en contact avec le premier participant pigé dans les 14 jours suivants le tirage, une seconde personne sera sélectionnée et le détenteur de la seconde place aura à son tour la chance de remporter le prix, ainsi de suite jusqu'à ce que le prix trouvera preneur. La probabilité de remporter le prix dépendra du nombre d'applications reçues. Ce prix ne peut pas être échangé contre un équivalent monétaire. Le prix doit être accepté tel, sinon, vous y renoncerez. L'adresse courriel que vous inscrivez au tirage nous sert de référent pour vous contacter dans la mesure où vous êtes le gagnant du tirage. Les coordonnées dont vous nous faites part seront maintenus confidentielles et détruites une fois que le prix sera attribué. Nous nous réservons le droit en tout temps d'annuler ce tirage ou l'attribution du prix si nous jugeons qu'il y a eu manque en matière de confidentialité et d'intégrité. Ce tirage est effectué dans le respect des lois applicables du Canada.

Conservations et utilisations des données:

Les données de cette étude seront utilisées à des fins de recherches seulement. Elles seront présentées à des conférences et publiées dans des revues scientifiques. Les données seront conservées électroniquement sur un ordinateur protégé par un mot de passe dans le laboratoire du Dr Elisa Romano. Les résultats de cette étude seront analysés et publiés sous forme de moyennes de groupe de façon à ce qu'aucun résultat individuel ne soit présenté. Les données de cette étude seront conservées pour une période de 10 ans, période après laquelle elles seront supprimées. Seulement Dr Romano et Sabrina Fréchette auront accès aux données.

Information supplémentaire:

Si vous avez des questions ou désirez obtenir davantage d'information, veuillez contacter le Responsable de la déontologie en recherche, Bureau d'éthique et d'intégrité à la recherche,

Université d'Ottawa, Pavillon Tabaret, 550 rue Cumberland, pièce 154, Ottawa, ON, K1N 6N5; Tél.: (613) 562-5387; Courriel : ethics@uottawa.ca. Pour toutes questions concernant la présente étude, veuillez contacter Sabrina Fréchette.

Consentement éclairé:

Si vous comprenez tous les énoncés ci-haut mentionnés et consentez librement à participer à l'étude, répondez «oui» à la question ci-dessous et vous serez dirigé vers l'étude. Si vous comprenez tous les énoncés ci-haut mentionnés et ne désirez pas participer à l'étude, répondez «non» à la question ci-dessous et fermez cette page internet. Si vous avez des questions avant de décider si vous désirez participer ou non à l'étude, svp contacter Sabrina Fréchette du Children's Well-Being Lab.

Désirez-vous participer à cette étude? _____Oui _____Non

Appendix F

Exit Page

Thank you for taking part in our study! We really appreciate your help!

We are still looking for more participants. If you know of anyone who you think might be interested in completing this study, we would greatly appreciate it if you could forward them the link to this study. Thank you!

To enter into the draw for one of two $50 Visa gift cards, please enter your e-mail address in both boxes below. Please be assured that this information will not be linked in any way to your responses.

The draw will take place at the end of the study's recruitment phase, which is expected to last several months.

Chance 1 _____
Chance 2 _____

LIST OF RESOURCES

If you are experiencing emotional distress as a result of having participated in the study or think you or your child would benefit from any resources, please feel free to contact any of the following resources.

(Please consult www.ementalhealth.ca or http://www.cmha.ca/ for additional resources)

Telephone Crisis Lines

Alberta

Mental Health Help Line:	1-877-303-2642
St. Paul District Crisis Centre:	(780) 645-5195 or 1-800-263-3045
Distress Line of Soutwestern Alberta:	(403) 327-7905 or 1-888-787-2880
Distress Centre Calgary:	(403) 266-4357
Kids Help Phone:	1-800-668-6868

British Columbia

Canadian Mental Health Association Crisis Line:	1-888-353-2273
Crisis Centre for Northern BC:	1-888-565-1214
Vancouver Island Crisis Society:	1-888-494-3888
Wide British Columbia Crisis Line:	1-800-SUICIDE (1-800-784-2433)
Kids Help Phone:	1-800-668-6868

Manitoba

Klinic Community Health Centre:	(204) 786-8686 or 1-888-322-3019
Manitoba Suicide Line:	1-877-435-7170

Mobile Crisis Unit:	1-888-379-7699
Mental Health Crisis Service:	1-888-310-4593
Kids Help Phone:	1-800-668-6868

New Brunswick

New Brunswick Help Crisis Line:	506) 859-HELP (859-4357)
Chimo Helpline:	1-800-667-5005
Kids Help Phone:	1-800-668-6868

Newfoundland and Labrador

Mental Health Crisis Centre:	(709) 737-4668 or 1-888-737-4668
Kids Help Phone:	1-800-668-6868

Northwest Territories

Northwest Territories Help Line:	1-800-661-0844
Kids Help Phone:	1-800-668-6868

Nova Scotia

Mental Health Mobile Crisis Team:	1-888-429-8167
Eastern Regional Help Line:	1-800-957-9995
Kids Help Phone:	1-800-668-6868

Nunavut

Nenavuat Kamatsiaqtut Help Line:	(867) 979-3333 or 1-800-265-3333
Kids Help Phone:	1-800-668-6868

Ontario

Mental Health Crisis Line:	(613) 722-6914 or 1-866-996-0991
Mental Health Service Information Ontario:	1-866-531-2600
Ontario Crisis Intervention Centre:	1-888-757-7766
Ottawa Distress Centre:	(613) 238-3311 or (613) 722-6914
Tel-Aide Outaouais:	(613) 741-6433
Kids Help Phone:	1-800-668-6868

Prince Edward Island

Island Helpline:	1-800-218-2885
Kids Help Phone:	1-800-668-6868

Québec

Centre de prévention du suicide de Québec:	1-866-APPELLE (1-866-277-3553)
Tel-Aide Outaouais:	(613) 741-6433
Centre d'aide 24-7:	(819) 595-9999
Suicide Action Montréal:	(514) 723-4000 or 1-866-277-3553
Kids Help Phone:	1-800-668-6868

Saskatchewan

Mobile Crisis Service (Saskatoon):	(306) 933-6200
North East Crisis Intervention Centre:	(306) 752-9455 or 1-800-611-6349
Hudson Bay & District Crisis Centre:	(306) 865-3064 or 1-866-865-7274
Prince Albert Mobile Crisis Unit:	(306) 764-1011
Regina Mobile Crisis Services:	(306) 525-5333
Kids Help Phone:	1-800-668-6868

Yukon

Kaushee's Place Crisis Line:	(867) 668-5733
Kids Help Phone:	1-800-668-6868