The Impact of Aggressive Parental Disciplinary Strategies Implemented in Childhood on Externalizing and Internalizing Problem Behaviour in Early Adulthood

by

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A thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

in partial fulfillment of the requirements of the degree of

MASTER OF SCIENCE

Department of Family Social Sciences

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Abstract

Parental use of aggressive discipline, specifically corporal punishment (CP) and psychological aggression (PA), has been shown to increase the risk for a number of problem behaviours in children and adolescents. However, a major gap in the research concerns our lack of understanding regarding how CP and PA implemented in childhood contribute to adverse developmental outcomes in adulthood. Survey data collected from University of Manitoba students (n = 1133) was used to assess the effects of childhood experiences of CP and PA on externalizing and internalizing problems in early adulthood. Parental use of inductive discipline as well as protective factors in parenting (i.e., warmth/support, responsiveness, and consistent discipline) have been shown to impact development in positive ways, both within and outside the context of aggressive discipline. In order to determine the specific effects of CP and PA, these protective factors were also considered in analyses. Both CP and PA were associated with lower levels of parental warmth/support and responsiveness, and more inconsistency in discipline. Findings regarding the relationship between aggressive discipline and parental induction were somewhat unexpected; highly inductive parents used CP and PA more frequently than less inductive parents. Hierarchical regression analyses indicated that childhood CP predicted later intimate partner violence, and childhood PA predicted anxiety and lower self-esteem in adulthood, even after the effects of positive parenting were taken into account. These findings suggest that not only do CP and PA tend to occur within environments that are less conducive to positive development, but also predict problematic developmental outcomes in adulthood even after the effects of protective factors are taken into account. Implications of these findings are discussed.

Acknowledgments

First and foremost, I would like to thank my advisor, Dr. Douglas Brownridge, for all of his support, encouragement, and advice over the past number of years. I am extremely grateful for the doors you have opened and the opportunities you have provided. There is no doubt in my mind that had you not taken the time or interest in me as a student on an individual and personal level, that I would not be here today.

I would also like to thank my committee members, Dr. Rosemary Mills, Dr. Diane Hiebert-Murphy, and Dr. Edward Chan, for their valuable suggestions, comments, and insights. Your involvement has allowed me to learn much about the research process and has shown me the value of considering different perspectives. Also, a special thanks needs to go to Dr. Caroline Piotrowski who often acted as an "unofficial" advisor during the course of my master's program.

Making it through the graduate program would not have been possible without the help and assistance of the administrative staff in the Faculty of Human Ecology, especially Pam, Margaret, Jodi, and Sheri. Thank you! As well, thanks to all the past and present FSS students who I have had the privilege of getting to know: You not only made the program more enjoyable, but also were an invaluable source of information, advice, and support.

I am deeply grateful to my parents and my sisters for their love and support, not only during my more recent academic endeavours, but throughout my entire lifetime. Thank you for always believing and never giving up. Although I deeply regret that my mother did not live long enough to see this end result, her words of encouragement still motivate me each and every day. Finally, to my partner Brent, without your patience and

support, my academic aspirations could never have been realized.

This research would not have been possible without the financial support provided by the Manitoba Graduate Scholarship and the Social Sciences and Humanities Research Scholarship programs. Lastly, to the students who committed their time and energy to complete the survey, without your participation, this research would not have been possible. Thank you.

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CHAPTER I

Introduction

In Canada, section 43 of the Criminal Code (1985) states:

> Every school teacher, 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 (R.S., c. C-34, s. 42).

This gives both parents and persons acting in the place of parents the right to use physical aggression in the discipline of children. Although the Supreme Court of Canada has clarified what is meant by "reasonable force" to a certain degree (see *Canadian Foundation for Children, Youth and the Law v. Canada* [Attorney General], 2004)[1], there remains much ambiguity among parents, service providers, and academics as to what is and what is not considered reasonable force with regard to child rearing. Corporal punishment (CP) is often considered an integral, and even necessary, aspect of the disciplinary process (Straus, 2001) and a significant proportion of parents believe that CP is an effective means of discipline (Clément & Chamberland, 2007; Graziano, Hamblen, & Plante, 1996). Advocates of CP argue that if it is implemented in a controlled manner within the context of a warm and supportive parent-child relationship, CP can be an effective means of disciplining children (e.g., Baumrind, 1996; Baumrind, 1997a; Baumrind, 1997b; Larzelere, 1996; Larzelere, 2000; Larzelere, Sather, Schneider, Larson, & Pike, 1998). However, CP has also been linked to a number of internalizing and

[1] In Canada, the physical punishment of children under 2 years or over 12 years of age, blows to the head, and the use of implements for the purposes of discipline are all considered unreasonable applications of force under Canadian law (*Canadian Foundation for Children, Youth and the Law v. Canada* [Attorney General], 2004).

externalizing problem behaviours in children and adolescents (Aucoin, Frick, & Bodin, 2006; Bender et al., 2007; Capaldi, Chamberlain, & Patterson, 1997; Deater-Deckard, Dodge, Bates, & Pettit, 1996; Gershoff, 2002; Grogan-Kaylor, 2004; Grogan-Kaylor, 2005; Lau, Kim, Tsui, Cheung, Lau, & Yu, 2005; Straus, 2001; Straus & Mouradian, 1988; Turner & Finkelhor, 1996; Ulman & Straus, 2003).

Psychological aggression (PA), as it relates to the discipline encounter, is much less studied, and hence, much less well understood; although there is some indication that it is more prevalent and more pervasive than physical aggression towards children (e.g., Clément & Chamberland, 2007; McKee et al., 2007; Miller-Perrin, Perrin, & Kocur, 2009; Straus & Field, 2003). In fact, PA by parents towards their children has been reported to be so prevalent that it can be considered a nearly universal phenomenon (Straus & Field, 2003). Many people expect parents to engage in minor physical aggression (i.e., CP) for disciplinary purposes (Straus, 2001), and it is probable that the same expectation exists for minor PA (Davis, 1996). It has been suggested that PA may underlie all forms of abuse and have even greater developmental consequences than CP (Brassard, Germain, & Hart, 1987; Garbarino, Guttman, & Wilson Seeley, 1986; Hart & Brassard, 1987; Miller-Perrin et al., 2009; O'Hagan, 1993). Therefore, the experience of psychologically aggressive discipline in childhood may be an important determinant of long-term developmental outcomes.

Both CP and PA are incorporated into the disciplinary repertoire of many Canadian parents. In a population-based survey conducted in the province of Quebec, 80% of mothers had used PA, 43% had used at least one episode of minor CP, and 6% had used at least one episode of severe CP against their children ages 0 to 17 years in

2004 (Clément & Chamberland, 2007). Although the rate of minor CP against children had declined by 5% between 1999 and 2004, a significant decrease, this finding was counterbalanced by a similar significant increase in reports of repeated PA. Results also revealed a significant decrease in attitudes favouring the use of violence for discipline purposes between 1999 and 2004. Nevertheless, 25.7% of respondents still believed that certain children needed to be slapped to be corrected and 55.1% believed that parents who hit their children are right in doing so. Because CP and PA are incorporated into the disciplinary repertoire of a substantial proportion of Canadian parents, and these specific parenting practices have been linked to adverse developmental outcomes, research aimed at identifying the conditions under which aggressive parental discipline practices lead to adverse development is clearly warranted.

Statement of the Problem

It is well documented that parenting style and the disciplinary techniques adopted by parents contribute to the developmental outcomes of children in both positive and negative ways (e.g., Aunola & Nurmi, 2005; Baumrind, 1996; Baumrind, 1997a; Darling & Steinberg, 1993; Gershoff, 2002). However, a major gap in the research concerns our lack of understanding regarding how parental discipline implemented in childhood contributes to externalizing and internalizing problem behaviours in early adulthood. Most research concerns itself with childhood outcomes; adolescent outcomes have received far less attention, and few studies are extended into the adult period. As well, most research that has been conducted to date has looked at the relationship between CP and externalizing behaviour problems; few studies investigate the relationship between CP and internalizing problems, and even fewer look at the impact of psychologically

aggressive disciplinary strategies. Finally, not all children who experience aggressive parental discipline in childhood will develop adjustment problems (Harper , Brown, Arias, & Brody, 2006; Straus, 2001) and a number of factors have been shown to moderate the relationship between aggressive discipline and negative outcomes in past research (e.g., Aucoin et al., 2006; Harper et al., 2006; McKee et al., 2007; McLoyd & Smith, 2002; Simons, Johnson, & Conger, 1994; Straus & Mouradian, 1998; Turner & Finkelhor, 1996). How discipline is implemented as well as the context within which it occurs likely have an impact on the extent to which aggressive parental disciplinary strategies negatively affects adjustment. The current study has been designed to overcome these gaps in the existing literature by (a) identifying long-term developmental outcomes associated with the experience of CP and PA in childhood, (b) extending the discipline literature through the inclusion of PA as a specific disciplinary technique, (c) broadening the scope of outcomes assessed to include specific types of both externalizing and internalizing problem behaviours, and (d) investigating a number of factors that may protect against adverse adjustment otherwise associated with aggressive discipline.

Methodological and Definitional Limitations of Existing Research on CP

Most research on CP looks at its impact in isolation from other disciplinary techniques (e.g., Bender et al., 2007; Lau, Litrownik, Newton, Black, & Everson, 2006; McLoyd & Smith, 2002; Rohner, Bourque, & Elordi, 1996; Straus & Mouradian, 1998; Ulman & Straus, 2003), or compares the use of CP to a single alternative technique (e.g., Hart, DeWolf, Wozniak, & Burts, 1992; Kerr, Lopez, Olson, & Sameroff, 2004; Krevans & Gibbs, 1996). It is important to recognize that CP rarely occurs in isolation, and is often used in combination with other disciplinary practices (Tang, 2006). To fully

understand the impact of CP on adjustment, one needs to consider the range of co-occurring alternative disciplinary strategies parents use (e.g., diversion, explanation, reward, etc.; see Straus & Fauchier, 2007) in order to parcel out the specific effects of CP. Advocates of CP argue that it is not harmful provided that it is delivered in a controlled manner within the context of a warm and supportive parent-child relationship for disciplinary purposes (Baumrind, 1997b; Larzelere, 2000). How likely it is to occur in this context is unclear, however, given evidence that parents often use CP impulsively (Straus & Mouradian, 1998) and are more likely to hit their children when stressed and/or angry (Dobbs, Smith, & Taylor, 2006; Graziano et al., 1996; Graziano & Namaste, 1990; Phillips & Alderson, 2003; Tang, 2006). Further, parents using CP have been found to be less warm and responsive than parents who do not use physical aggression for disciplinary purposes (Afifi, Brownridge, Cox, & Sareen, 2006), suggesting that CP may not always occur within the context of a warm and supportive environment. The failure to consider both how discipline is implemented and the parenting context within which it occurs may compromise findings regarding the effects of any specific disciplinary practice, including the impact of CP on long-term adjustment.

A variety of measures and definitions of physically aggressive disciplinary practices are used throughout the literature, making comparisons between studies difficult (Douglas & Straus, 2006). Studies have looked at physical discipline (Deater-Deckard et al., 1996; Lau et al., 2006; McKee et al., 2007), harsh discipline (Nix, Pinderhughes, Dodge, Bates, Pettit, & McFadyen-Ketchum, 1999), harsh physical discipline (Bender et al., 2007; Swinford, DeMaris, Cernkovich, & Giordano, 2000; Weiss, Dodge, Bayes, & Pettit, 1992), physical punishment (Fergusson & Lynskey, 1997; Kerr et al., 2004;

Lansford et al., 2005; Rohner et al., 1996), punitive discipline (Bower & Knutson, 1996), spanking (Grogan-Kaylor, 2004), ineffective discipline (Capaldi et al., 1997), negative discipline (Prinzie, Onghena, Hellinckx, Grietens, Ghesquière, & Colpin, 2004), and corporal punishment (Aucoin et al., 2006, Douglas & Straus, 2006; Straus & Kaufman Kantor, 1994; Straus & Mouradian, 1988; Tang, 2006; Turner & Muller, 2004; Turner & Finkelhor, 1996). Physically abusive acts are not necessarily ruled out in many studies (Baumrind, Larzelere, & Cowan, 2002), and there is some debate in the literature as to where to draw the line between abusive and non-abusive disciplinary practices (Whipple & Richey, 1997)[2]. Generally, physically aggressive disciplinary practices that pose a

[2] Although there is universal consensus that severe physical aggression by parents against children is associated with adverse development, no consensus currently exists as to how to demarcate physically abusive from physically non-abusive discipline practices (Whipple & Richey, 1997). Some researchers argue that physical discipline and physical abuse exist along a continuum, ranging from minor (e.g., normative, culturally and legally sanctioned) to severe (e.g., non-normative, often illegal) violence. According to this perspective, physical aggression with the intention of causing pain is considered a violent act, and a violent act, by definition, can be considered abusive. As such, these researchers assert that all forms of physical aggression against children are unacceptable and should be prohibited (e.g., Graziano, 1994; Hyman, 1997; McCord, 1996; Straus, 1996; Straus, 2001). Other researchers assert that physical abuse represents a qualitatively different experience for children compared to physical discipline, and these two concepts represent unique phenomena that can be measured categorically, rather than continuously. According to Baumrind (1997b) the abusive profile differs qualitatively from other child-rearing patterns, and spanking should not be considered a violent act. Researchers from this perspective assert that the physical discipline of children is not abusive or harmful provided that it is used sparingly within the context of a warm, supportive parent-child relationship (e.g., Baumrind, 1996; Baumrind, 1997a; Baumrind, 1997b; Deater-Deckard & Dodge, 1997; Larzelere, 2000). A third perspective comes from the human rights movement. These advocates argue that the use of physical discipline for child rearing purposes represents a violation of children's rights (e.g., Dobbs et al., 2006; Newell, 2005; Phillips & Alderson, 2003; Turner, 2002). International law requires that children be protected from all forms of physical and mental harm, including both physically and psychologically aggressive parental disciplinary practices (The United Nations Convention on the Rights of the Child, 1989). Although it is beyond the scope of this paper to provide an exhaustive review of each

high risk of injury to the child (or cause actual injury/harm to the child) are the practices where social and legal interventions are applied (Straus, 2001; Straus & Gelles, 1990). Terminology decisions in research are not value-free processes, and the decision to use CP in the current investigation (rather than physical aggression) was based on the need to delineate between legal (CP in the current study) and illegal (physical abuse in the current study) forms of parental physical aggression. The literal components of the terms *corporal* (i.e., to the body) and *punishment* (i.e., response to a perceived transgression) both capture the essence of the parental action under investigation (a physical response to a perceived transgression) and accurately represent items in the CP measure (all represent punishment to the body). Further, the items used to operationalize CP are not likely to cause physical injury to the extent that social and/or legal interventions would be applied (as are the items in the physical abuse measure). That being said, the use of the term CP is by no means meant to justify or legitimate the use of physical aggression in child-rearing, nor is it meant to devalue the negative consequences associated with its use. For the purposes of the current investigation, CP will be defined as "the use of physical force with the intention of causing a child to experience pain, but not injury, for the purpose of correction or control of the child's behaviour" (Straus, 2001, p. 4). This definition is also consistent with section 43 of the Canadian Criminal Code. Identifying the long-term effects of these culturally and legally sanctioned forms of physically aggressive disciplinary strategies has not been adequately addressed in extant research.

Methodological and Definitional Limitations of Existing Research on PA

It is important to recognize that parental aggression is not always physical in

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stance, the reader should be made aware of the current debate surrounding the use of physical aggression for disciplinary purposes.

nature (Miller-Perrin et al., 2009). Children are rarely the victims of physical aggression alone and a substantial proportion also experience some form of PA (Clément & Chamberland, 2007). A limitation of existing research is that PA is generally investigated as a side effect of other forms of parental aggression rather than as a unique form in and of itself (Miller-Perrin et al., 2009). A standardized definition of PA has yet to be developed (Miller-Perrin et al., 2009; Straus & Field, 2003), and psychologically aggressive disciplinary practices have not received as much attention in extant research. Psychologically aggressive acts can take many different forms and can be broadly categorized as rejecting, isolating, terrorizing, ignoring, and/or corrupting the child (Garbarino et al., 1986). Many different acts have the potential to be considered psychologically aggressive (Baker, 2009; Brassard et al., 1987; Garbarino et al., 1986; Hart & Brassard, 1987), yet most studies investigate only a single aspect of psychological aggression (e.g., verbal threats in Davis, 1996) or use the Conflict Tactics Scale (CTS; Straus, 1979), which is limited in that the psychological aggression subscale only assesses verbal aggression (e.g., Miller-Perrin et al., 2009; Straus & Field, 2003). The lack of consistency between conceptual and operational definitions both within and across studies makes comparisons difficult and hinders the integration of the research literature on PA (see Baker, 2009, for a review of definitional issues). Although a body of research exists linking parental psychological control to internalizing and externalizing adolescent behaviour problems (e.g., Barber, 1996; Barber & Harmon, 2002; Barber, Olsen, & Shagle, 1994; Gray & Steinberg, 1999; Pettit, Laird, Dodge, Bates, & Criss, 2001), little is known about how psychologically controlling parental behaviour in childhood impacts functioning and adjustment in early adulthood. Finally, psychological

control as it relates specifically to the discipline encounter (i.e., as a means to achieve behavioural compliance in children) has not been investigated to date (Soenens & Vansteenkiste, 2010). For the purposes of the current study, PA will be defined as "a communication intended to cause the child to experience psychological [or emotional] pain. The communicative act may be active or passive or verbal or nonverbal" (Straus & Field, 2003, p. 797). The current study aims to generate new knowledge regarding the impact of psychologically aggressive disciplinary strategies on developmental outcomes in early adulthood, an area that has remained largely ignored in research to date.

The Proposed Research

The proposed research aims to link childhood disciplinary experiences, specifically CP and PA, with externalizing and internalizing problem behaviours in early adulthood to further our understanding of the factors that contribute to, or moderate the impact of, the relationship between aggressive parental discipline practices on developmental outcomes. The proposed research will not only advance the current state of knowledge regarding the long-term effects of childhood disciplinary experiences, but also overcome a number of limitations in extant research. Rather than examining parental behaviour that would be considered within the abusive range, analyses will focus on legally sanctioned and widely prevalent forms of physically and psychologically aggressive parental disciplinary practices. It is important to note that these discipline techniques do not occur in isolation and only represent a portion of an individual's entire disciplinary history. Positive adjustment has been associated with an authoritative parenting style characterized by acceptance (i.e., warmth, support, nurturance, love) and firm, consistent control (i.e., discipline, supervision, monitoring; Baumrind, 1997a). The

use of CP and PA for disciplinary purposes is not inconsistent with this parenting style and many advocates of the authoritative parenting style assert that CP and PA are not harmful provided they occur within the context of a positive parent-child relationship characterized by the use of induction for disciplinary purposes (Baumrind, 1996; Baumrind, 1997a; Baumrind, 1997b; Larzelere, 1998; Larzelere, 2000).

An important distinction needs to be made between parenting style and specific parenting practices. Parenting style is best conceptualized as "a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviors are expressed" (Darling & Steinberg, 1993, p. 488). It is a characteristic of the parent that alters the social environment of the child. While specific parenting practices have direct effects on specific developmental outcomes, parenting style exerts its influence indirectly by altering the effectiveness of parental socialization processes and by affecting the child's openness to socialization efforts (Darling & Steinberg, 1993) A problem with this type of typological approach to the study of parenting is that it remains unclear how each specific dimension encompassed within a particular parenting style work to facilitate, or hinder, development (Barber, 1996; Darling & Steinberg, 1993; Pettit et al., 2001). Therefore, the proposed research aims to uncover the unique effects of specific parenting practices on long-term developmental outcomes. In order to develop effective family violence prevention and intervention strategies, we need to identify factors that contribute to both positive and negative developmental outcomes and understand how childhood experiences impact later adult functioning and behaviour.

CHAPTER II

Literature Review

Developmental Outcomes Associated with Aggressive Disciplinary Practices

Parents play an integral role in the socialization of their children. The socialization process "involves the acceptance of values, standards, and customs of society as well as the ability to function in an adaptive way in the larger social context" (Grusec & Davidov, 2007, p. 284). An important goal of socialization is the internalization of these values and standards, whereby an individual behaves in accordance with prescribed values and standards willingly rather than out of fear of external consequences or in the hopes of externally imposed rewards (Grusec & Davidov, 2007). The discipline process is a means to achieve parental socialization goals.

The Goals of Parental Discipline

The goal of parental discipline is to achieve competence, self-control, and self-direction in children. According to Howard (1996),

> Discipline refers to systems of teaching, learning, and nurturing that are used in child rearing. These systems include procedures that encourage appropriate behaviour and deter misbehaviour according to the child's developmental abilities (p. 809).

Important components of an effective discipline system include parenting behaviours that (a) promote the parent-child relationship, (b) reinforce positive behaviours, and (c) decrease undesired behaviours (Committee on Psychosocial Aspects of Child and Family Health, 1998; Howard, 1996; Stoolmiller, Patterson, & Snyder, 1997). All three components, an entire system of discipline, are needed for discipline to result in

improved child behaviour (Howard, 1996). In and of themselves, CP and PA do not reinforce positive child behaviours and the quality of the parent-child relationship is also likely to suffer as a result of the parental decision to use aggressive tactics during the discipline encounter. Grusec and Goodnow (1994) have suggested that the effects of parental discipline may also depend on a child's accurate perception of the parental message, and the child's acceptance or rejection of that message. A parent uses aggressive discipline with the intention of causing the child physical, psychological, and/or emotional pain in order to motivate behaviour change. It seems likely that this intentional infliction of pain will both direct a child's attention away from the parental disciplinary message and undermine the child's willingness to comply with parental directives. Although reliance on CP and PA to achieve disciplinary goals may contribute to a decrease in misbehaviour in the short-term, this may come at the expense of other long-term socialization goals (Gershoff, 2002).

The limited effectiveness of CP in achieving parental disciplinary goals. CP is a form of power assertion and most research concludes that power assertive techniques are effective in achieving immediate compliance (Gershoff, 2002). However, power assertion has also been linked to a number of less than optimal outcomes (Gershoff, 2002; Hart et al., 1992; Kerr et al., 2004; Krevans & Gibbs, 1996), suggesting that CP may not be the most effective means of disciplining children. Ironically, in children's focus groups, the "most common transgression for which children reported being smacked, was hurting others, usually their siblings" (Dobbs et al., 2006, p. 146). Punishing aggression with aggression may result in a contradictory message being received (Dobbs et al., 2006) and reinforce the perception that aggression is both an

acceptable and efficient means of resolving conflict (McCord, 1996; Straus, 2001). It is also conceivable that being hit by a parent, someone a child loves and depends on, can be a traumatic experience that leads to feelings of powerlessness and helplessness (Straus & Kaufman Kantor, 1994). Negative emotions (e.g., anger, resentment, remorse, and sadness) are reported by both parents and children concerning parental use of CP (Graziano et al., 1996), and it seems likely that these negative emotions have a detrimental impact on parent-child relationship quality. Physical punishment contains no message regarding the appropriateness of the child's behaviour, focuses attention away from the consequences of the child's actions, and may teach the child to avoid being caught rather than learning to curtail unacceptable behaviour (Kerr et al., 2004). Internalization of the parental disciplinary message is compromised because CP encourages the child to view appropriate behaviour as being externally, versus internally, imposed (Grusec & Goodnow, 1994). Therefore, CP, as a disciplinary strategy, may not be the most effective means of achieving long term socialization goals.

The limited effectiveness of PA in achieving parental disciplinary goals. An important distinction needs to be made between parental psychological and behavioural control attempts as both are associated with different parenting goals and different developmental outcomes (Barber, 1992; Barber, 1996; Barber et al., 1994). Behavioural control "refers to parental behaviours that attempt to control or manage children's behaviour" (Barber, 1996, p. 3296) whereas psychological control "refers to control attempts that intrude into the psychological and emotional development of the child" (Barber, 1996, p. 3296). According to Straus and Field (2003), "parents can and should criticize misbehaviour, but should do so by criticizing the behaviour and not the child as a

person" (p. 806). Parental disciplinary techniques designed to induce guilt or shame, isolate the child, or use love withdrawal (i.e., psychologically aggressive practices) as a means of regulating child behaviour may represent parental attempts to establish psychological (vs. behavioural) control of their child (Barber, 1996; Barber et al., 1994). These parental psychological control attempts, in turn, may lead to feelings of insecurity and inadequacy and have long term implications on an individual's psychological health and well-being. It could also be that parental PA is perceived by children as a form of parental rejection, and parental rejection has been linked to adverse psychological outcomes in past research (Rohner, 1986; Rohner et al., 1996; Rohner, Kean, & Cournoyer, 1991). Psychologically aggressive acts can take many different forms, each of which can be considered a threat to human development (Garbarino et al., 1986). For example, verbal threats are a common tactic used by parents to gain compliance and maintain control of their children (Davis, 1996). Verbal threats "instil fears of physical pain and symbolically reduce children to physical objects....They are an aggressive shorthand that trivializes the intentional infliction of suffering" (Davis, 1996, p. 301). It seems that using verbal threats, or a number of other psychologically aggressive disciplinary practices such as name-calling, guilt induction, or withdrawal of love and affection, may not be the most effective means of achieving parental disciplinary goals. Children may become too distressed to attune to the parental disciplinary message and their willingness to comply may become compromised. Further, it seems that these parental acts may be especially harmful to the quality of the parent-child relationship. PA can also be considered a power assertive technique, and it is likely that this type of power assertion is also associated with less than optimal development; for example,

psychological control has been linked to both internalizing and externalizing behaviour problems in past research (Barber, 1996; Barber & Harmon, 2002; Barber et al., 1994; Gray & Steinberg, 1999; Pettit et al., 2001). As Barber (1996) notes, there is no compelling evidence to suggest any type of positive function resulting from such intrusive parental behaviour, suggesting that PA is both ineffective as a means to achieve disciplinary goals and may be especially detrimental for healthy development.

Externalizing Problem Behaviour Associated with Aggressive Discipline Practices

Physical discipline has been reported to have a significant direct effect on externalizing behaviour (Kerr et al., 2004). The use of CP has been linked to a number of externalizing problem behaviours including aggression, antisocial and impulsive behaviour, conduct problems, alcohol and substance use/dependence, juvenile delinquency, and criminal behaviour (Aucoin et al., 2006; Bender et al., 2007; Capaldi et al., 1997; Capaldi & Clark, 1998; Fergusson & Lynskey, 1997; Gershoff, 2002; Holmes & Robins, 1988; Kerr et al., 2004; Lau et al., 2005; McKee et al., 2007; Straus & Kaufman Kantor, 1994; Straus & Mouradian, 1988; Weiss et al., 1992). As well, the experience of CP during childhood has been linked to increased child-to-parent violence (Ulman & Straus, 2003), increased aggression towards peers (Hart et al., 1992), and to the use of violence against intimate partners in adulthood (Capaldi & Clark, 1998; Douglas & Straus, 2006; Fang & Corso, 2008; Gershoff, 2002; Straus & Kaufman Kantor, 1994; Straus & Yodanis, 1996; Swinford at al., 2000). Although less studied, psychologically aggressive discipline strategies have also been found to have an impact on child externalizing behaviour problems (Barber, 1996; Barber & Harmon, 2002; Barber et al., 1994; Capaldi et al., 1997; McKee et al., 2007; Pettit et al., 2001; Stone,

Buehler, & Barber, 2002). Although most studies investigating the relationship between aggressive discipline and externalizing behaviour consider additional factors that place an individual at risk in their analyses, a major shortcoming of this body of research is that potential protective factors are largely ignored. Concurrent alternative strategies (e.g., inductive discipline) and positive parenting characteristics (e.g., parental warmth/support) are rarely included in analyses. In order to isolate the specific effects of CP and PA, it is necessary to consider the context within which they occur.

The experience of physical abuse in childhood. Another major criticism of existing research is that reported relationships between physical discipline and adverse adjustment may be due to physically abusive parenting practices rather than due to the experience of physical discipline per se. As Baumrind et al. (2002) note, parenting practices that would normally be considered physically abusive are often either included in the physical discipline measure or are not necessarily ruled out in most analyses. A plethora of research exists documenting the negative impact that the experience of physical abuse in childhood has on development (e.g., Afifi et al., 2006; Afifi, Enns, Cox, de Graff, ten Have, & Sareen, 2007; Briere & Elliot, 2003; Higgins & McCabe, 2003; Sebre et al., 2004; Springer, Sheridan, Kuo, & Carnes, 2007; Trocmé, MacMillan, Fallon, & DeMarco, 2003), and the confounding culturally and legally sanctioned physical discipline with physically abusive parenting practices may contribute to inconsistent findings in the literature and can lead to misleading results.

The frequency of CP and externalizing problems. Deater-Deckard and Dodge (1997) have suggested that the relationship between CP and negative outcomes may be non-linear; that is, the degree of the association may vary depending on the frequency

and/or intensity of CP. In an examination of the relationship between CP and children's behavioural functioning, more conduct problems were found among the high CP group (3 or more times in past 2 weeks) than either the low CP (1 to 2 times in the past 2 weeks) or no CP groups, which did not differ significantly from one another (Aucoin et al., 2006). This finding suggests that it is frequent use of CP by parents that is especially harmful for children. Further, when the frequency and/or severity of CP have been assessed, a dose/response relationship is often reported with increasing frequency and/or severity associated with increasingly problematic outcomes (e.g., Fergusson & Lynskey, 1997; Straus & Kaufman Kantor, 1994). In contrast, Grogan-Kaylor (2004) compared the effects of higher and lower levels of CP (never, past week, more than one time in past week) and reported that even low levels of CP have an effect on antisocial behaviour, and this effect is nearly equivalent to the effect of high levels of CP. Grogan-Kaylor (2004) concluded that even low and relatively common applications of CP are associated with increases in antisocial behaviour. Based on this study, the effect of CP on antisocial behaviour is non-linear and does not appear to depend on the frequency of CP use.

The possibility of a conditional linear effect of CP on externalizing behaviour could indicate that reported relationships between harsh physical discipline and externalizing behaviour problems are due to a combination of factors (e.g., child characteristics, parenting style) rather than on the influence of the frequency of harsh physical discipline alone (Stoolmiller et al., 1997). A conditional linear effect could also indicate that CP acts as a mild suppressant of externalizing problems for children exhibiting low initial levels of antisocial behaviour, but exacerbates problems in children who are more antisocial to begin with (Stoolmiller et al., 1997), suggesting that both

child characteristics and parental disciplinary decisions have an effect on the relationship between CP and externalizing problems. Inconsistent findings regarding the nature of the relationship between CP and externalizing problems (e.g., linear vs. non-linear), and the marked absence of research on PA in this area, highlights the importance of investigating for whom, and under what conditions, the relationship between aggressive discipline and externalizing problems exists.

The impact of aggressive discipline on externalizing behaviours in adulthood. Less is known about the long-term impact of CP or PA on functioning and behaviour, as the impact of parenting on early adulthood outcomes has been somewhat neglected in the parenting literature (Jones, Forehand, & Beach, 2000). Parental psychological control has been linked to externalizing behaviours in adolescence (Stone et al., 2002), yet this area of research has not been extended into the adult period to date. Research linking childhood experiences of parental PA to adult externalizing behaviours is sparse, but there is some evidence to suggest a relationship exists. For example, Allen (2008) found that caregiver terrorizing and degradation predicted borderline personality disorder in adulthood, and Miller-Perrin et al. (2009) found that PA in childhood was related to higher hostility scores in adulthood. More is known about the long term effects of CP. The experience of CP in childhood, and especially during adolescence, has been found to increase the risk of alcohol abuse/dependence, criminal behaviour (particularly violent offending), violent victimization, perpetrating child abuse as a parent, and using violence towards an intimate partner later in life (Afifi et al., 2006; Douglas & Straus, 2006; Fang & Corso, 2008; Fergusson & Lynskey, 1997; Gershoff, 2002; Holmes & Robins, 1988; Straus, 2001; Straus & Kaufman Kantor, 1994; Straus & Yodanis, 1996; Swinford et al.,

2000). A major limitation of this research is that the vast majority of studies are cross-sectional and, as such, CP as a causal factor cannot be established. However, the consistent association of CP with major problems in adulthood suggests that CP needs to be considered a significant risk factor that increases the probability of adverse outcomes (Straus & Kaufman Kantor, 1994).

The effects of CP seem to be specific in that they are particularly related to violent outcomes in adulthood (e.g., intimate partner violence [IPV], child abuse, violent victimization), and these effects are not fully accounted for by the social disadvantages or the dysfunctional and compromised environments that are related to both the use of aggressive discipline and long-term negative developmental outcomes (Fergusson & Lynskey, 1997). These findings are consistent with social learning theory: CP as a discipline strategy teaches children that (a) violence is acceptable within intimate relationships, (b) violence is justified when someone is guilty of a wrongdoing, and (c) violence is effective in modifying another person's behaviour (Straus, 2001; Swinford et al., 2000). PA is a form of psychological violence, and it seems plausible that these same social learning principles could be applied to the experience of PA. These behaviours likely become entrenched over time and may help to explain the relationship between aggressive discipline in childhood and externalizing problems, particularly violent behaviours, in early adulthood.

Internalizing Problem Behaviour Associated with Aggressive Discipline Practices

Most research concerning the effects of aggressive disciplinary practices focuses on the relationship between CP and externalizing problems. However, CP can be considered a childhood stressor that has a negative impact on both self-concept and an

individual's sense of mastery and control. These consequences may, in turn, lead to psychological distress and increase the risk of internalizing problems (Turner & Finklehor, 1996). Because there may be a delayed effect on internalizing symptoms, these effects may not appear until early adulthood (Weiss et al., 1996). With regards to PA, the consistent association between psychological control and internalizing difficulties in adolescence (Barber, 1996; Barber & Harmon, 2002; Barber et al., 1994; Gray & Steinberg, 1999: Pettit & Laird, 2002) suggests that parental use of PA in childhood could be an important predictor of psychological and emotional functioning in adulthood.

The frequency of CP and internalizing problems. Turner and Finklehor (1996) investigated the impact of CP on psychological well-being in a nationally representative sample of 2,000 American youth (Turner & Finklehor, 1996). A positive association existed between the frequency of CP and both psychological distress and depression; although the association was strongest at higher frequencies of CP, it was present at low and moderate levels as well. The relationship remained statistically significant and effects were not appreciably reduced when the effects of abuse were controlled. In fact, those who had experienced CP only 1 to 2 times per year had significantly higher distress scores than those never experiencing CP. Conversely, Aucoin et al. (2006) reported that CP was associated with emotional adjustment problems, and the association was greatest for children who experienced high levels of CP. Specifically, the no CP (past 2 week measure) and the low CP (1 to 2 times in the past 2 weeks) groups had significantly lower depression and sense of adequacy scores than the high CP (3 or more times in past 2 weeks) group, and the no CP and low CP groups did not significantly differ from one another. However, self-esteem scores were significantly higher in the no CP group

compared to both the low and high CP groups. These findings suggest that negative adjustment problems are associated with frequent and severe parental use of CP.

The relationship between psychological control and internalizing problem behaviours. Research has indicated that deficiencies in parental behavioural control (e.g., monitoring, supervision, regulation of a child's behaviour) are more predictive of externalizing problem behaviour, whereas high levels of parental psychological control (e.g., guilt induction, love withdrawal, excessive criticism) are more predictive of internalizing problem behaviour (e.g., Barber, 1996; Barber & Harmon, 2002; Barber et al., 1994; Gray & Steinberg, 1999: Pettit & Laird, 2002). High levels of psychological control represent an overcontrolled discipline context that leads to overcontrolled adjustment problems such as guilt, self-responsibility, dependency, alienation, social withdrawal, low self-esteem, depression, and anxiety (Barber, 1992; Barber, 1996: Barber & Harmon, 2002). Parental psychological control represents a negative love-oriented discipline that inhibits and intrudes on the psychological and emotional development of the child through the manipulation of the parent-child bond (Barber, 1996). This type of control limits a child's opportunity for self-discovery, disrupts the individuation process, and transmits anxiety to child, leading to a lack of confidence that may cause a child to withdraw from the external world in order to protect him or herself psychologically (Barber, 1992). Therefore, it seems likely that the effects of psychological control extend far beyond the childhood years. However, because the vast majority of research has looked at the impact of psychological control on adolescent adjustment, little is known as to how psychological control experienced in childhood impacts subsequent adult functioning and behaviour.

The impact of aggressive discipline on internalizing behaviours in adulthood. There is some indication that the experience of aggressive parental discipline in childhood contributes to the development of internalizing problem behaviours in adulthood. Experiencing CP in adolescence has been associated with an increased risk of depression in adulthood (Afifi et al., 2006; Holmes & Robins, 1988; Straus, 2001; Straus & Kaufman Kantor, 1994; Straus & Yodanis, 1996; Turner & Muller, 2004). However, Turner and Muller (2004) found that the level of parental anger during CP, rather than the actual level of CP, was the strongest predictor of depression in adulthood, suggesting the context within which aggressive discipline occurs may be an important factor in determining outcomes. There is also some indication that the relationship between CP and depression may vary as a function of parent and/or child gender. A stronger association between CP and depression has been found for women compared to men (Holmes & Robins, 1988); and although maternal CP has been associated with adult depression for both men and women, paternal CP, even though it was almost as frequent as CP by mothers, was only significantly related to depression for women (Straus & Yodanis, 1996). The cross-sectional nature of these studies makes inferences about causality impossible. Longitudinally, the relationship between CP and depression became non-significant once a number of social and contextual factors were considered (Fergusson & Lynskey, 1997). However, this study found that harsh CP in childhood was associated with suicide attempts in late adolescence and early adulthood, even after social and contextual controls were introduced. The link with between CP and suicidal ideation has also been reported cross-sectionally (Straus, 2001; Straus & Kaufman Kantor, 1994). Finally, Afifi et al. (2006) found that CP in childhood significantly

increased the odds of having multiple psychiatric disorders in adulthood, even after protective factors in parenting (e.g., warmth, protectiveness, and authoritarianism) were considered. Taken together, these findings suggest that the experience of CP in childhood can have a profound impact on mental health that extends far beyond the childhood years.

Less is known about the effects of psychologically aggressive discipline strategies implemented in childhood on internalizing problem behaviours in early adulthood. Miller-Perrin et al. (2009) examined the relationship between various levels of childhood CP and PA and internalizing symptoms in a sample of college students. PA experienced in childhood emerged as a significant predictor of overall psychological distress and a significant predictor of eight of nine psychological adjustment subscales. In fact, PA emerged as the only variable uniquely predictive of internalizing symptoms, and uniquely predictive of specific psychological outcomes, after controlling for demographic variables, the frequency of CP, and child physical abuse. The authors noted that the minimal effects of physical violence were very surprising and, thus, a complex relationship likely exists between physical violence and PA in predicting internalizing outcomes (Miller-Perrin et al., 2009). However, only verbal aggression was assessed in this study, and other forms of PA need to be investigated as they relate to internalizing problems. Many different parental acts can be considered psychologically aggressive, and there may be qualitatively different outcomes depending upon the specific aspect of PA under investigation (Allen, 2008). That is, different forms of PA may predict different outcomes. Allen (2008) found that caregiver terrorizing in childhood predicted anxiety and somatic complaints in adulthood, ignoring predicted adult depression and

features of borderline personality disorder, and degradation predicted adult borderline personality disorder features only. Therefore, research aimed at identifying the long term-impact of different subtypes of PA is needed in order to provide a more comprehensive understanding of the long term implications of PA on psychological adjustment.

Contextual Variables Associated with both Parental use of Aggressive Discipline and Negative Developmental Outcomes

A number of factors (i.e., child characteristics, child gender, race/ethnicity, sociodemographic variables, and exposure to interparental violence) have been shown to be related to both parental use of aggressive disciplinary strategies and negative developmental outcomes. Therefore, in order to capture the unique contributions of both physically and psychologically aggressive discipline experiences to subsequent behaviour and adjustment, these factors need to be considered.

Child characteristics. The relationship between aggressive discipline practices and externalizing behaviour problems may be due to the fact that aggressive and antisocial children tend to elicit harsh discipline from their parents: The direction of effects may flow from child-to-parent rather than from parent-to-child. Individual differences in manageability are important to consider as they may have an impact on both future behavioural outcomes as well as on parental disciplinary decisions (Stoolmiller, 2001). For example, Lau et al. (2006) examined contextual factors that may affect the impact of discipline on later child behaviour problems, and considered race, parental warmth, and early behaviour problems as potential moderators of the relationship. They reported that physical discipline operated similarly across groups,

leading to increased externalizing problems only when children demonstrated behaviour problems early on. In a longitudinal study, maternal perceptions of early manageability problems (within the first 5 years of life) predicted unskilled maternal discipline practices in Grade 4, which, in turn, served as a risk factor for growth in antisocial behaviour, but only for boys with high early manageability problems (Stoolmiller, 2001). The results of these studies suggest that individual child characteristics have an impact on both future behavioural outcomes and parental disciplinary decisions.

In contrast, some research finds that the effect of parental CP on antisocial behaviour does not vary according to initial levels of antisocial behaviour exhibited by the child (Grogan-Kaylor, 2004; Grogan-Kaylor, 2005). Similar findings have been reported with regards to parental use of PA. For example, ineffective discipline (e.g., nattering, yelling, humiliating, threatening, hitting, inconsistency, overly restrictive/permissive) in Grade 4 predicted more serious juvenile arrest records and academic underachievement in late adolescence, even after controlling for initial levels of antisocial behaviour (Capaldi et al., 1997). These results seem to suggest that the relationship between aggressive discipline and externalizing problem behaviour is not fully explained by individual child characteristics and other factors play a role in the relationship between aggressive discipline and externalizing outcomes. It is also important to note that even if some physical punishment is a response to individual characteristics of the child, evidence suggests that the use of aggressive techniques fails to curtail this behaviour in the long run (McCord, 1996).

However, childhood manifestations of internalizing difficulties, such as depression or anxious behaviour, seem less likely to elicit CP from parents than

children's antisocial and aggressive behaviour (Turner & Finkelhor, 1996). Therefore, the possibility that the causal direction of a cross-sectional association between CP and adjustment difficulties flows from child to parent seems less likely in the case of depressed and/or withdrawn children, and more likely due to the causal impact of CP on children's well-being (Turner & Finklehor, 1996, p. 156). However, it remains unknown as to whether these child characteristics are more or less likely to elicit CP or PA from parents. It is likely that a reciprocal relationship between parents and their children exists, with each exerting an influence on the behaviour of the other. In order to more fully capture the unique contributions of aggressive discipline on the development of externalizing and internalizing problem behaviours in adulthood, it is important to consider individual child characteristics in analyses.

Child gender. Girls have been shown to be more prone to internalizing problems and boys to externalizing problems (Bender et al., 2007; Lau et al., 2006; Straus & Mouradian, 1998; Turner & Finkelhor, 1996), and these differences seem to become more pronounced in adolescence and early adulthood (Bosquet & Egeland, 2006; Degnan & Fox, 2007). In addition, a number of studies have reported that boys are more likely to receive harsh physical discipline than girls (e.g., Bender et al., 2007; Dietz, 2000; Douglas & Straus, 2006; Simons et al., 1994; Simons, Whitbeck, Conger, & Chyi-In, 1991; Tang, 2006; Turner & Muller, 2004). Finally, although some studies report gender differences in the relationship between harsh discipline and adjustment (e.g., Fang & Corso, 2008; Kerr et al., 2004), other studies find that the relationship is not moderated by child gender (e.g., Bender et al., 2007). Therefore, child gender may have an impact on both the parental decision to use aggressive discipline and associated developmental

outcomes.

Race/ethnicity. Most research has been conducted using White, middle-class samples of American children, and findings may not be generalizable across different cultures (Deater-Deckard & Dodge, 1997; Deater-Deckard et al., 1996). There is some indication that African American parents tend to use more harsh physical punishment than European American parents (Dietz, 2000; Lau et al., 2006; McLoyd & Smith, 2002; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Turner & Muller, 2004), and also that the impact of CP on internalizing and externalizing behaviour problems varies by race/ethnicity (Deater-Deckard et al., 1996; Lau et al., 2006; Polaha, Larzelere, Shapiro, & Pettit, 2004). One problem in extant research is the confounding of ethnic status with socioeconomic status and family structure, both of which are associated with more frequent use of physical punishment and greater externalizing problems among children (Deater-Deckard et al., 1996). As well, group differences in the use of discipline may reflect the impact of culture on how parents perceive the need to best socialize their children for future success as socialization goals may be grounded in different sets of values (Pinderhughes et al., 2000).

Other studies find that the relationship between CP and aggression persists across different racial/ethnic and cultural groups (e.g., Aucoin et al., 2006; Douglas & Straus, 2006; Grogan-Kaylor, 2004; Grogan-Kaylor, 2005; McLoyd & Smith, 2002; Nix et al., 1999). Bender et al. (2007) found no moderating effect of race/ethnicity on the relationship between harsh discipline in adolescence and either externalizing or internalizing adjustment problems. Although Lau et al. (2006) reported a significant main effect of race on the relationship between physical discipline and child adjustment

in bivariate analyses, this relationship became non-significant in multivariate analyses. Cross-culturally, physical discipline has been associated with more adverse outcomes regardless of the level of its perceived normativeness within a specific nation, although the relationship was stronger in conditions of low perceived normativeness (Lansford et al., 2005). Therefore, although cultural acceptance of CP plays a role in the way physical discipline is related to adjustment, findings also suggest that potential problems exist in using physical discipline even in contexts in which it is considered normative.

Sociodemographic variables. A parent's preferred mode of discipline may vary according to various sociodemographic characteristics. In a national sample of 1,000 parents, those with fewer resources (i.e., lower income and lower education) were more likely to use severe CP than those with greater resources (Dietz, 2000). As well, Pinderhughes et al. (2000) reported significant direct and mediated effects between socioeconomic status and parental discipline responses; lower income parents endorsed more harsh discipline in part because they held stronger beliefs regarding the value of spanking. Lower income parents also experienced higher levels of stress which, in turn, had an impact on discipline choices. There is also some indication that socioeconomic status may have an impact on rates of PA; rates have been reported to increase as socioeconomic status declines (Straus & Field, 2003). Simons et al. (1991) reported that the level of parental education was negatively associated with harsh discipline (verbal and physical) for adolescent sons, but not daughters. This finding suggests that parents of all education levels perceive the physical punishment of adolescent girls to be an unacceptable method for disciplining girls of this age. Finally, a number of sociodemographic variables (e.g., low socioeconomic status, low parental education, and

living in a single parent family) have been shown to increase a child's risk for adjustment problems (Moore, Vandivere, & Redd, 2006). These findings highlight the importance of investigating how various factors interact to predict both parental use of aggressive discipline and negative developmental outcomes.

Exposure to interparental violence in childhood. The relationship between exposure to interparental violence and child adjustment problems has been well established, and exposure to interparental violence has been shown to increase a child's risk for adjustment problems across multiple domains of functioning (Holt, Buckley, & Whelan, 2008; Kitzmann, Gaylord, Holt, & Kenny, 2003; Onyskiw, 2003; Saltzman, Holden, & Holahan, 2005; Zinzow et al., 2009). These effects may be long lasting; exposure to violence in childhood has been linked to a number of internalizing and externalizing problem behaviours in adulthood including anxiety, PTSD, conduct disorder, property crime, and alcohol abuse (Fergusson & Horwood, 1998; Marmion & Lundberg-Love, 2008) as well as to an increased risk that individuals will use violence against their partners or children later in life (Straus, Gelles, & Steinmetz, 2006). Because IPV and child abuse tend to co-occur, children who are exposed to interparental violence are also at an increased risk of being abused themselves (Holt et al., 2008; Kitzmann et al., 2003; Straus & Gelles, 1990). Finally, parents experiencing IPV are more likely to use aggressive physical and psychological discipline than parents from non-abusive homes (Fergusson & Horwood, 1998; Holt et al., 2008; Kelleher et al., 2008; Straus & Gelles, 1990). As such, the quality of parenting received and the ability of parents to meet children's needs may be compromised in a domestically violent home (Holt et al., 2008), which can have a profound impact on both the quality of the parent-

child relationship and developmental outcomes.

Protective Factors in Parenting

The fact that not all children who experience CP and/or PA suffer negative consequences suggests that some buffering effects or protective factors may limit the influence of aggressive discipline on adjustment (Harper et al., 2006). It is important to recognize that aggressive discipline likely occurs within the context of varying degrees of positive parenting (e.g., inductive discipline, parental warmth/support) and positive parenting has been associated with lower levels of adjustment problems (McKee et al., 2007). According to Baumrind (1997b), the consequences of any normative (i.e., non-abusive, culturally sanctioned) disciplinary practice are determined by the overall quality of the parent-child relationship and the context within which discipline occurs. As Larzelere (1996) states

> *How* parents use disciplinary tactics may be more important than which ones they consider off limits. Effects of physical punishment, as well as nonphysical punishment, probably depend on when and how parents implement it, its role in their overall approach to parental discipline, and the overall parent-child relationship. Other aspects of parental discipline may be more important indicators of dysfunctional parenting than whether parents spank or not (p. 827).

Therefore, other dimensions of parenting need to be assessed in order to determine the precise impact of aggressive disciplinary practices on developmental outcomes.

Developmental Psychopathology and a Risk and Resiliency Perspective

A developmental psychopathological perspective is unique in its focus on both adaptive and maladaptive trajectories of development. Key assumptions underlying this

perspective include: (1) development is a dynamic process of interaction between multiple individual, relational, and environmental factors; (2) individuals play an active role in their own development; (3) it is important to examine multiple domains of functioning and multiple potential responses; and (4) contextual factors underlie these processes (Cummings, Davies, & Campbell, 2000). Multiple diverse pathways in development exist that can lead to both adaptive and maladaptive functioning. Maladaptive development occurs generally over time as a result of the multiple intra-, inter-, and extra-organismic influences that build on past experiences, and psychopathology represents repeated failures to adapt optimally over time (Cummings et al., 2000). The developmental psychopathological perspective also recognizes that a multitude of factors can increase or decrease the risk of adjustment problems. It is important to recognize that exposure to risk does not predetermine the occurrence of negative developmental outcomes. Although the experience of CP or PA in childhood may increase the risk for adjustment difficulties later in life, a number of factors also exist that serve to protect an individual from adverse adjustment related to the experience of aggressive discipline. The marked individual variability in outcomes related to the experience of aggressive discipline highlights the importance of investigating factors that both promote and hinder development.

Within the developmental psychopathological framework, risk is conceived of as a process where the active ingredient of risk does not lie in the variable itself, but in the processes that flow from the variable, linking specific risk conditions with specific dysfunctional outcomes (Cummings et al., 2000). Risk operates and interacts with a variety of protective factors within a specific context (Cummings et al., 2000; Resnick,

2000), and all of these factors need to be considered when studying developmental outcomes. Protective factors moderate the effects of individual and environmental vulnerabilities so that when these factors are present, adaptation is more positive that would be if these factors were not operational (Masten, Best, & Garmezy, 1990). Risk and protective factors can exist, and interact, at many different levels including the individual level (e.g., gender, temperament), the family level (e.g., parent characteristics, quality of parenting), as well as at the broader environmental (e.g., neighbourhood, peer relationships) and cultural levels (e.g., the extent to which CP and PA are culturally and legally sanctioned within a given society; Resnick, 2000). Resiliency refers to "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances" (Masten et al., 1990, p. 425). The experience of CP and PA in childhood can, and should be, considered a threat to development, and an individual can, and should be, considered resilient if they exhibit adaptive functioning in adulthood despite exposure to this type of childhood adversity. Consistent with a risk and resiliency perspective, determining for whom and under what conditions the experience of aggressive discipline in childhood leads to maladaptive functioning in adulthood is a major objective of the current study.

Parental use of Inductive Discipline

Parental use of *inductive discipline* includes strategies such as explanation, reasoning, teaching, monitoring, as well as both proactive discipline and the recognition of positive child behaviour. The focus on reasoning and explanation within an inductive discipline style differentiates induction from both *power assertion*, where a child's inappropriate behaviour is followed by negative consequences without justification or

explanation, and *love-oriented discipline*, where parental approval and affection is contingent upon good behaviour or withdrawn as a result of misbehaviour. Inductive discipline is more positive (focus on good behaviour) than negative (focus on bad behaviour); and more proactive (encourage good behaviour) than reactive (prevent bad behaviour) compared to either a power assertive or love-oriented parental discipline style (Henricson & Grey, 2001). Inductive discipline has been linked to a number of positive developmental outcomes such as increased self-control, empathy, and moral regulation; enhanced communication skills; positive social interaction; prosocial behaviour; and social competence (Baumrind, 1997b; Hart et al., 1992; Hoffman, 1994; Kerr et al., 2004; Krevans & Gibbs, 1996). CP and PA likely occur within the context of varying degrees of inductive discipline, and it is likely that a combination of these disciplinary strategies contribute to long-term developmental outcomes.

The effectiveness of parental induction in achieving disciplinary goals.

Parental induction during the discipline encounter teaches children by introducing claims and consequences and by supplying rationales that support them (Hart et al., 1992). Through induction, children not only learn why their behaviour is inappropriate, but also the consequences that their behaviour has on both themselves and others. Because they are being offered explanations and justifications for parental requests, children may be more likely to understand the disciplinary message and to accept parental directives (Baumrind, 1997b; Goodnow & Grusec, 1994). Internalization can be defined as "taking over the values and attitudes of society as one's own so that socially acceptable behaviour is not motivated by anticipation of external consequences but by intrinsic or internal factors" (Grusec & Goodnow, 1994, p. 4), and inductive discipline has been reported to

foster internalization of the parental disciplinary message (Hoffman, 1994). Kochanska and Aksan (2006) suggested that there are three main components of early conscience development: moral emotions (discomfort following a transgression), moral conduct (to act in ways that are compatible with rules and standards), and moral cognitions (the ability to understand the rules of conduct and the consequences associated with rule transgressions). Inductive discipline promotes conscience development through its impact in these three domains. Inductive parents promote moral conduct by setting clear limits on behaviour and providing logical consequences for misbehaviour. As a matter of fact, deficiencies in parental behavioural control (e.g., monitoring, supervision, behaviour regulation) have been found to be consistently predictive of externalizing behaviour problems among adolescents (Barber, 1996; Barber et al., 1994; Gray & Steinberg, 1999; Pettit & Laird, 2002; Pettit et al., 2001). The use of reasoning and explanation to both justify parental actions and to make children aware of the consequences of their actions promote moral cognitive and emotional development. Guilt, or discomfort following a transgression, is an important affective response underlying conscience development (Kochanska & Aksan, 2006). Induction has been shown to facilitate the development of empathy and empathy-based guilt, which increase the likelihood that children will view appropriate behaviour as internally, rather than externally, imposed (Krevans & Gibbs, 1996). While power assertive and love-oriented discipline strategies use external consequences to motivate child behaviour, inductive discipline relies on strategies designed to induce internal attributions for appropriate behaviour; therefore, promoting the development of moral regulation and internalization of the parental disciplinary message (Hoffman, 1994).

Different pathways of influence to internalization. Two major influences exist that predict individual differences in conscience development: (1) biologically-based temperament and (2) socialization in the family (Kochanska & Aksan, 2006). In order for parental discipline to be effective, an optimal amount of anxious arousal needs to be generated during the discipline encounter in order to motivate the child to both pay attention to the parental message and to change his or her behaviour (Kochanska, 1995). CP and PA may generate too much arousal, which interferes with a child's ability to process the parental message effectively and redirects a child's attention towards self-oriented concerns. Discipline completely devoid of any pressure may not elicit sufficient arousal to signal the importance of the parental message, to orient child to the message, or to provide sufficient motivation to change behaviour (Kochanska, 1995). Children's temperament (i.e., level of fearfulness or anxiety-proneness) plays an important role in determining how the parental disciplinary message is internalized most effectively.

Both concurrently and longitudinally, gentle discipline (e.g., de-emphasis on power assertion, use of induction) predicts moral internalization for more fearful children whereas the quality of the parent-child relationship (e.g., security of attachment, caregiver's responsiveness, and mutually responsive orientation) predicts internalization for more fearless children (Kochanska, 1995; Kochanska, 1997; Kochanska & Askan, 2006). This relationship persists across multiple methods, reporters, and contexts. Therefore, parental discipline and parent-child relationship quality are factors that build on different motivations for compliance that may be more or less effective for children with different temperaments (Kochanska, 1995). It is likely that positive parenting (i.e., parental warmth and support, parental responsiveness, and consistency in discipline)

enhances parent-child relationship quality and, therefore, also has an impact on the extent to which the parental disciplinary message is internalized, especially for more temperamentally fearless individuals. In turn, the degree to which the disciplinary message is internalized likely has an impact on developmental outcomes.

Parental Warmth and Responsiveness versus Parental Rejection

Both parental warmth and responsiveness are multidimensional constructs that have been operationalized in many different ways. Rohner (1986) conceptualizes parental warmth as the expressions of love and acceptance that parents can give to their children. These expressions can be both physical and verbal, and exist on a continuum (i.e., the warmth dimension) from a great deal of love and affection to a complete absence of both (i.e., parental rejection). Parental warmth is encompassed within the construct of parental responsiveness. According to Baumrind (1997a), responsiveness "refers to the extent to which parents intentionally foster individuality and self-assertion by being attuned, supportive, and acquiescent to children's needs and demands" (p. 328). Important facets of responsiveness include warmth, reciprocity, clear communication and person-centered discourse, and security of attachment (Baumrind, 1996; Baumrind, 1997a). Parental warmth and responsiveness have been linked to positive functioning, including increased moral regulation and internalization, as well as to decreases in externalizing problem behaviour (Aucoin et al., 2006; Kerr et al., 2004). As well, high maternal acceptance of, and closeness to, their adolescent child has been linked to decreases in internalizing problems (Jones et al., 2000), and a sense of connectedness with parents has been shown to be related to more optimal adjustment within the context of CP (DeVet, 1997). In fact, emotional neglect and the absence of responsiveness (i.e.,

parental rejection) have been found to be more important than harsh coercive parenting strategies in the etiology of both externalizing and internalizing behaviour problems (Baumrind, 1997b; Rohner et al., 1996). Therefore, the effects of CP and PA could be buffered by parental warmth and responsiveness or exacerbated by the absence of these parenting characteristics.

Aucoin et al. (2006) found evidence of a moderating effect of warm and responsive parenting on the relationship between CP and conduct disorder: The association between CP and problem behaviour was largely confined to families low on measures of warm and responsive parenting. Similarly, higher levels of maternal nurturance have been associated with lower levels of antisocial and impulsive behaviour on the part of the child (Straus & Mouradian, 1998). However, when CP was administered impulsively, higher levels of child antisocial behaviour were reported regardless of the level of maternal nurturance experienced, suggesting that maternal nurturance does not protect children in the context of impulsively implemented CP. Due to the cross-sectional nature of both of these studies, it cannot be determined that CP is the causal variable in the relationship between CP and adverse outcomes. Longitudinally, McKee et al. (2007) reported that for both externalizing and internalizing problems, high maternal warmth was associated with reduced adjustment problems when paternal physical discipline was high, indicating the importance of warmth in moderating the negative effect of physical discipline between and across parents. Nonetheless, both harsh physical and verbal discipline were associated with internalizing and externalizing problem behaviours above and beyond the effects of positive parenting (warmth and appropriate discipline), suggesting that the buffering effect of parental warmth may be

limited in scope.

The moderating role of parental warmth has also been shown to vary by race/ethnicity. Lau et al. (2006) reported that parental warmth was unrelated to child adjustment for Black and White children exhibiting low levels of early problem behaviour. For children with high early problematic behaviour, warm parental attitudes protected against later problems among White children but exacerbated early problem behaviour in Black children over time. Although parental warmth and responsiveness seem to serve a protective function, their presence in the parent-child relationship does not seem to entirely eliminate adjustment problems associated with aggressive disciplinary strategies and may even be detrimental in some cases. Considering that individuals who experience CP may be more likely to report low parental warmth relative to individuals without a history of CP (Afifi et al., 2006), and PA represents the antithesis of parental warmth and responsiveness; it is important to determine for whom, and under what conditions, parental warmth and responsiveness serve a protective function within the context of aggressive discipline.

Parental Support

Parental support has been shown to have a positive association with a child's adjustment, as it fosters positive attitudes towards self and circumstances (Harper et al., 2006). The relationship between parental support and prosocial outcomes has been reported at all ages and across different ethnic, social, and cultural boundaries (Barber, 1992). Thus, it seems likely that parental support will serve a protective function in the relationship between the experience of aggressive discipline and externalizing and internalizing behaviour problems.

Parental support as a moderator. Maternal emotional support has been shown to moderate the impact of CP on child behaviour problems (McLoyd & Smith, 2002). For example, CP predicted an increase in behaviour problems over time in the context of low level maternal support, but not in the context of high maternal support (McLoyd & Smith, 2002). This study was limited in that it only asked if the child had been "spanked" in the past week, which could indicate that the frequency of CP (e.g., if weekly spanking was a regular occurrence, the child would have been spanked more than 50 times per year), rather than the presence of maternal support, might be responsible for the reported relationship between CP and behaviour problems. Further, Harper et al. (2006) reported that high maternal support was associated with lower child depression, but only at low levels of paternal CP. Frequent CP by fathers was associated with child depression at both high and low levels of mother support. Children with high paternal support showed lower aggression across all levels of maternal CP. However, at low levels of father support, child aggression increased as maternal CP increased. These findings suggest that parental support serves a protective function, but it may vary as a function of both parent gender and the frequency with which CP is used (Harper et al., 2006).

Turner and Finkelhor (1996) found that parental support had a strong, negative effect on the level of psychological distress experienced by youth. However, all levels of parental CP still had positive effects on psychological distress, independent of parental support. Interestingly, the authors also reported that the effect of frequent CP relative to no CP is greater in the context of high parental support, suggesting that parental support is less influential among youth experiencing frequent CP. High CP and low support

reduced, rather than accentuated, the negative impact of CP on distress whereas high CP in the context of high support led to higher levels of distress, which could be representative of a more arbitrary and inconsistent parenting style. Turner and Finklehor (1996) conclude that,

> In fact, this 'loving' context may affect the meaning that children attach to punishment, such that they are more likely to attribute it to their own failures and deficiencies, or experience the discipline as arbitrary and unexpected. Indeed, believing that 'they spank me often because they love me' may be more distressing than believing that 'they spank me often because we don't get along' (Turner & Finkelhor, 1996, p. 164).

However, parental support appears to be very important as it was found to be the most powerful factor in reducing the level of psychological distress and reducing the odds of depression among youth in this study (Turner & Finkelhor, 1996). Thus, it is likely that the association between CP and psychological distress is partially conditional on how supportive parents are perceived to be by youth.

Parental support as a mediator. A more extensive assessment of parental support and involvement has shown these variables to mediate the relationship between the experience of CP and adolescent outcomes. Simons et al. (1994) assessed parental involvement and support with a composite measure designed to capture parental warmth, affection, consistency in discipline, monitoring, and the use of inductive discipline. Findings indicated that the experience of CP was unrelated to adolescent outcomes (aggression, delinquency, and psychological well-being) once the effects of parental support and involvement were considered (Simons et al., 1994). These findings suggest

that it may be a combination of factors that serves to protect against adverse adjustment, rather than the presence of parental support alone. The measure of support and involvement used in this study incorporates a number of different dimensions of parenting and seems representative of a specific parenting style (i.e., authoritative) rather than as a measure of parental support per se. This type of composite measure makes it difficult to identify the role of each specific dimension of parenting encompassed under the umbrella of parental support and involvement, each of which may serve a different function in the relationship between aggressive discipline and developmental outcomes.

Consistency in Discipline

Consistency in discipline promotes positive developmental outcomes whereas inconsistent discipline increases the risk for internalizing and externalizing problem behaviours (Barry, Dunlop, Lochman, & Wells, 2009; Baumrind, 1997a; Committee on Psychosocial Aspects of Child and Family Health, 1998; Holmes & Robins, 1988, Howard, 1996). The relationship between aggressive discipline and developmental outcomes could be partially conditional on the consistency of parental disciplinary practices. In focus groups, many children reported that their parents were inconsistent when applying discipline, and most reported that they felt confusion, powerlessness, and a sense of inevitability as a result (Dobbs et al., 2006), and it could be that these feelings increase the risk for adjustment problems. Barry et al. (2009) reported that of the five parenting practices measured in their study (parental involvement, positive parenting, poor monitoring/supervision, inconsistent discipline, CP), inconsistent discipline was most strongly related to both child aggression and attention problems. There is also some indication that inconsistent discipline experienced in childhood can have effects that

extend into the adult period. In a retrospective study of the long-term effects of parental disciplinary practices, inconsistent discipline was associated with both adulthood diagnoses of major depression and alcohol abuse/dependence (Holmes & Robins, 1988).

Further, CP can be done impulsively or when a parent is under control, and impulsivity implies inconsistency in punishment (Straus & Mouradian, 1998). Straus and Mouradian (1998) reported a significant interaction effect of CP with impulsiveness by mother; when CP was used impulsively, it was most strongly associated with child antisocial and impulsive behaviour. As well, as the frequency of CP use increased, the probability that it would be done impulsively also increased. These findings suggest that inconsistency in discipline, as inferred by the impulsive use of CP, can have a negative effect on child development. It is also important to note that when CP was used in a controlled fashion, child behaviour problems were lower, yet still present.

The Current Study

Data was collected from University of Manitoba students in order to assess the effects of aggressive parental discipline strategies (i.e., CP and PA) implemented in childhood on externalizing (i.e., IPV, criminal behaviour, and alcohol use) and internalizing (i.e., depression, anxiety, and low self-esteem) problem behaviours in early adulthood, while controlling for a number of contextual and demographic variables (gender, race/ethnicity, sociodemographic risk, levels of misbehaviour in childhood, physical abuse, and exposure to interparental violence) that are known to be associated with the use of aggressive discipline and/or adverse developmental outcomes. Although CP and PA may place an individual at risk for developing adjustment problems, a number of factors have been shown to moderate the relationship between aggressive discipline

and negative outcomes in past research (e.g., Aucoin et al., 2006; Harper et al., 2006; McKee et al., 2007; McLoyd & Smith, 2002; Simons et al., 1994; Straus & Mouradian, 1998; Turner & Finkelhor, 1996). Consistent with a risk and resiliency perspective, both factors that place an individual at risk as well as factors that protect against negative outcomes need to be considered in order to more fully understand the processes giving rise to developmental outcomes. Therefore, parental use of alternate disciplinary strategies (i.e., inductive discipline) and protective parenting characteristics (i.e., parental warmth/support, responsiveness, and consistency in discipline) were also considered. See Figure 1 for a model of the proposed relationships between variables associated with the development of externalizing problem behaviours in adulthood and Figure 2 for a model of the proposed relationships between variables associated with the development of internalizing problem behaviours in adulthood.

Both CP and PA were hypothesized to be related to both the levels of inductive discipline and the extent to which positive parenting characteristics (warmth/support, responsiveness, and consistency in discipline) were experienced during childhood. It was anticipated that participants who experienced aggressive discipline (either CP or PA) in their childhood would report significantly lower levels of both inductive discipline and protective parenting characteristics than participants not reporting an aggressive disciplinary history. As well, it was anticipated that both types of aggressive discipline would be significantly positively related to both externalizing and internalizing behaviours in adulthood. In turn, both inductive discipline and positive parenting were expected to reduce, but not eliminate, the risk of externalizing and internalizing outcomes in adulthood related to childhood experiences of CP and PA. Specifically, the following

Figure 1. Conceptual model of the relationship between aggressive discipline, protective factors, and externalizing problem behaviours

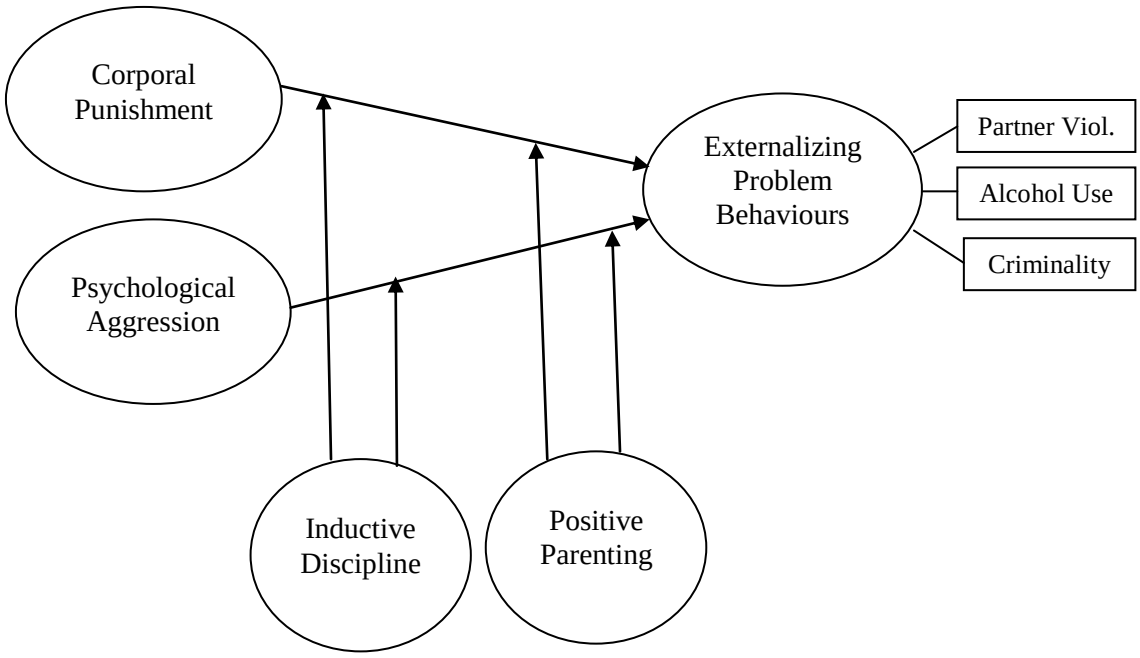

Figure 1. Conceptual model of the relationship between aggressive discipline and protective parenting factors experienced in childhood on externalizing problem behaviours in early adulthood. Partner Viol.=intimate partner violence. Positive parenting includes parental warmth/support, parental responsiveness, and consistency of parental discipline.

hypotheses were tested:

- ***Hypothesis 1:*** Both CP and PA experienced in childhood would predict externalizing problem behaviour (i.e., IPV, criminality, and alcohol use) in early adulthood, even after controlling for variables (i.e., gender, race/ethnicity, sociodemographic risk, misbehaviour in childhood, physical abuse, and witnessing interparental violence) known to be associated with both parental use

Figure 2. Conceptual model of the relationship between aggressive discipline, protective factors, and internalizing problem behaviours

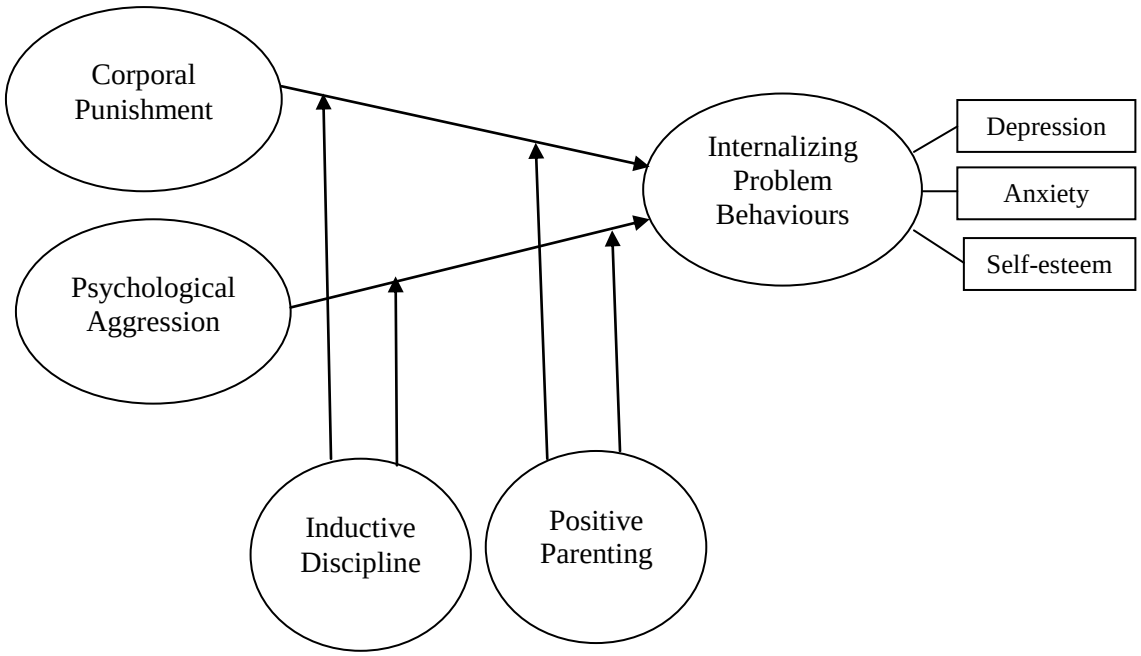

Figure 2. Conceptual model of the relationship between aggressive discipline and protective parenting factors experienced in childhood on internalizing problem behaviours in early adulthood. Positive parenting includes parental warmth/support, parental responsiveness, and consistency of parental discipline.

of aggressive discipline and adverse developmental outcomes. Further, consistent with social learning principles, parental modelling of aggressive and hostile behaviours provides children with maladaptive models of problem solving and/or conflict resolution. Therefore, the experience of CP in childhood was expected to be a stronger predictor of externalizing problem behaviours in adulthood than the experience of childhood PA as it serves as a more direct model for violent and antisocial behaviour.

- ***Hypothesis 2:*** Both CP and PA experienced in childhood would predict

internalizing problem behaviour (i.e., depression, anxiety, and low self-esteem) in early adulthood, even after controlling for variables (i.e., gender, race/ethnicity, sociodemographic risk, misbehaviour in childhood, physical abuse, and witnessing interparental violence) known to be associated with both parental use of aggressive discipline and adverse developmental outcomes. Because PA more directly attacks an individual's sense of self than does CP, it was expected that the experience of PA in childhood would be a stronger predictor of internalizing problem behaviours in adulthood than the experience of childhood CP.

- ***Hypothesis 3:*** Inductive discipline has been linked to positive developmental outcomes in past research (e.g., Baumrind, 1997b; Hart et al., 1992; Kerr et al., 2004; Krevans & Gibbs, 1996). The extent to which an individual experiences inductive discipline (within the context of aggressive discipline) will likely have an impact on the extent to which aggressive disciplinary practices are associated with negative developmental outcomes. However, it was hypothesized that although the experience of inductive discipline in childhood would predict a decrease in both externalizing and internalizing problem behaviours in early adulthood, childhood CP and PA would continue to significantly predict adverse developmental outcomes even after levels of parental induction were considered.
- ***Hypothesis 4:*** Positive aspects of parenting (i.e., parental warmth/support, responsiveness, and consistency in discipline) have been shown to moderate the impact of aggressive parenting practices on developmental outcomes in past research (e.g., Aucoin et al., 2006; Harper et al., 2006; McKee et al., 2007; McLoyd & Smith, 2002; Simons et al., 1994; Straus & Mouradian, 1998; Turner

& Finkelhor, 1996). The extent to which an individual experiences positive parenting (within the context of aggressive discipline) will likely have an impact on the extent to which aggressive disciplinary practices are associated with negative developmental outcomes. However, it was hypothesized that although the experience of positive parenting in childhood would predict a decrease in both externalizing and internalizing problem behaviours in early adulthood, childhood CP and PA would continue to significantly predict adverse developmental outcomes even after levels of positive parenting were considered.

CHAPTER III

Materials and Methods

Method

Sample Selection and Data Collection Procedures

Sample selection. Students from the University of Manitoba students were recruited and asked to respond to a web-based questionnaire developed by Straus and Fauchier (2007) at the University of New Hampshire. In addition to the current research, data collected will be used in the International Parenting Study (IPS) currently being conducted by Straus and Fauchier (see Straus & Fauchier, n.d., for study details). A sample size of approximately 625 undergraduate students was required to ensure adequate protection against both Type I and Type II errors (see Appendix A for sample size and power analyses calculations). To facilitate recruitment, a mass email was sent to all University of Manitoba students informing them of the survey. To encourage participation, a draw for $500 was conducted for all individuals who returned a completed survey by May 31, 2010. In order to determine the winner of the draw, participant information was entered into a computer program which randomly selected one winner from the list of individuals. Participation was entirely voluntary and only students who were 18 years of age or older were eligible to participate (students less than 18 years of age were informed that the survey was only open to students 18 years of age and older).

Data collection procedures. As stated previously, participants were initially contacted via an email sent to all University of Manitoba students. The email provided a link to the survey website. When participants entered the website, they saw a consent

form and indicated their consent or refusal to participate by clicking a box on the page. If participants refused, they were directed to the debriefing page. If participants consented, they were directed through the protocol and were provided the debriefing information at the end of the survey. Participants were free to withdraw their consent at any time (by clicking on an "exit this survey" button at the top of every survey page), and could refuse to answer any question to which they did not feel comfortable responding. At the end of the protocol, participants were directed to a separate page asking for their name and email address for the purpose of recording participation for the incentive draw. This information was not linked to their data in any way. Several steps were taken to ensure the anonymity of the electronic data, including encryption of the data, disabling of "cookies," and the separation of identifying information from the data. Only the principal investigator of the IPS, Dr. Angele Fauchier, at the University of New Hampshire had access to both the list of names and the data (although the two were not linked in any way). Neither myself, nor anyone else at the University of Manitoba, were able to connect data to participants' names in any way.

Ethics. Ethics approval was obtained from the Joint-Faculty Research Ethics Board at the University of Manitoba. As well, both the data collection instrument and the data collection procedures (i.e., web survey method) for the IPS have been approved by the internal review board at the University of New Hampshire, as well as at a number of other sites that are participating in the IPS.

The Dimensions of Discipline Inventory (DDI)

The Dimensions of Discipline Inventory (DDI) is a multidimensional instrument developed by Straus and Fauchier (2007) to assess the multiple disciplinary strategies

used by parents as well as the context and mode of implementation within which discipline occurs. A major strength of this instrument is that it assesses the multiple strategies that may comprise the parental disciplinary repertoire, based on the view that specific techniques are not used in isolation and it is the combination of disciplinary strategies that contributes to developmental outcomes. As well, many aspects of the broader parent-child relationship are assessed (e.g., warmth, support, consistency, etc.). For the purposes of the current study, the adult recall version of the DDI was administered and participants were asked to retrospectively report on their disciplinary experiences at age 10. Age 10 was chosen as the default reporting age because, at this age: (a) most children still engage in misbehaviour that warrants disciplinary action, (b) parents are likely to still engage in a number of disciplinary practices (e.g., CP) that may be considered inappropriate for older children, and (c) recall bias is minimized as adults' recall of parenting behaviour is better for older compared to younger referent periods (Straus & Fauchier, 2007). As well, within the Canadian context, the use of physical punishment for corrective purposes is legally permissible for children 10 years of age.

The questionnaire consists of three main sections: the first section collects demographic information including variables associated with risk factors related to negative developmental outcomes. The second section measures the frequency and severity of misbehaviour on the part of the child as well as the range of disciplinary techniques used by parents in order to correct perceived misbehaviour. In addition, the DDI considers both the context in which discipline occurs and the mode of implementation by parents. In the third section, current opinions regarding discipline are obtained. The administration of the DDI constitutes the primary data collection

instrument, although a number of additional measures have been appended to the DDI in order to assess current psychological adjustment and behaviour (see Measures section).

Measures

Predictor Variables: Aggressive Parental Discipline Strategies

Participants' experience of CP and PA was assessed using the adult recall version of the DDI (Straus & Fauchier, 2007). The frequency with which each type of discipline was experienced at age 10 was assessed with the following 10 different frequency categories:

- Never / Not in that year, but in another year (coded as 0);
- 1 to 2 times in that year (coded as 2);
- 3 to 5 times in that year (coded as 4);
- 6 to 9 times in that year (coded as 8);
- Monthly (10 to 14 times in that year; coded as 12);
- A few times a month (2 to 3 times a month; coded as 36);
- Weekly (1 to 2 times a week; coded as 50);
- Several times a week (3 to 4 times a week; coded as 200);
- Daily (5 or more times a week; coded as 350); and
- Two or more times a day (coded as 700).

The coded values were intended to approximate the frequency with which the participant experienced a specific episode of CP or PA during their tenth year. Because the current study was concerned with the effects of an individual's entire disciplinary experience at the reporting age, responses with respect to both mother- and father-implemented discipline were combined for analyses (see below).

Corporal punishment[3]. Participants' experience of CP in childhood was measured with the following six items (each item was reported for mother and father behaviour separately) from the corporal punishment discipline method scale of the DDI:

- 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 wash your mouth out with soap, put hot sauce on your tongue, or something similar?

A total CP score was calculated by summing scores across the aforementioned six items. CP scores could range from 0 to 4200. For bivariate analyses, participants were placed into one of four categories based on the frequency with which CP was experienced at age 10: No CP (no CP at age 10; total CP score equal to 0), Low CP (less than once per month; total CP score greater than 0 but less than 12); Moderate CP (once per month to once per week; total CP score between 12 and 52), and High CP (more than one time per week; total CP score greater than 52). For multivariate analyses, the total CP score was used. The alpha coefficient for the CP scale in the current study is .829.

Psychological aggression. Participants' experience of PA in childhood was measured with the following eight items (each item was reported for mother and father

[3]The CP measure of the DDI includes an item related to the use of implements for disciplinary purposes (i.e., item C10:"How often did your parents use a paddle, hairbrush, belt, or other object?"). Because the current study is concerned with legally permissible forms of physical aggression in child-rearing, the decision was made to remove this item from the CP measure as the use of implements for child rearing purposes is no longer considered reasonable use of physical force under Canadian law (see *Canadian Foundation for Children, Youth and the Law v. Canada* [Attorney General], 2004). As well, there is evidence suggesting that the use of implements within the Canadian context is not a prevalent disciplinary practice. For example, in a population-based study conducted in the province of Quebec, Clément and Chamberland (2007) reported that less than 2% of all parents surveyed reported using this technique in 2004.

behaviour separately) from the psychological aggression discipline method scale of the DDI:

- How often did your parents shout or yell at you?
- How often did your parents try to make you feel ashamed or guilty?
- How often did your parents hold back affection by acting cold or not giving hugs or kisses?
- When you behaved badly, how often did your parents tell you that you were lazy, sloppy, thoughtless, or some other name like that?

A total PA score was calculated by summing scores across the aforementioned eight items. PA scores could range from 0 to 5600. For bivariate analyses, participants were placed into one of four categories based on the frequency with which PA was experienced at age 10: No PA (no PA at age 10; total PA score equal to 0), Low PA (less than once per month; total PA score greater than 0 but less than 12); Moderate PA (once per month to once per week; total PA score between 12 and 52), and High PA (more than one time per week; total PA score greater than 52). For multivariate analyses, the total PA score was used. The alpha coefficient for the PA scale in the current study is .864.

Protective Factors: Inductive Discipline and Positive Parenting

Both inductive discipline and protective factors in the broader parent-child relationship are considered potential protective factors in the relationship between aggressive discipline practices experienced in childhood and adverse functioning and behaviour in adulthood. Because the current study was concerned with the effects of an individual's entire disciplinary experience, mother and father protective factors were combined into a single protective factor score for inductive discipline and the positive

parenting variables, respectively.

Inductive discipline. Inductive discipline was assessed using the adult recall version of the DDI (Straus & Fauchier, 2007). An inductive discipline scale was created by combining the following 14 items (each item was reported for mother and father behaviour separately) from the explanation and teaching, diversion, restorative behaviour, monitoring, and reward subscales of the DDI:

- How often did your parents explain to you what the rules were to try and prevent you from repeating misbehaviour? (explanation/teaching subscale)
- How often did your parents give you something else you might like to do instead of what you were doing wrong? (diversion subscale)
- How often did your parents praise you for finally stopping bad behaviour or for behaving well? (reward subscale)
- How often did your parents tell you that they were watching or checking to see if you did something? (monitoring subscale)
- How often did your parents show or demonstrate to you the right thing to do? (explanation/teaching subscale)
- How often did your parents check on you so that they could tell you that you were doing a good job? (reward subscale)
- How often did your parents make you apologize or say you were sorry for misbehaviour? (restorative behaviour subscale)

The frequency with which inductive discipline was experienced at age 10 was assessed with 11 different frequency categories ranging from “never” (coded as 0) to “two or more times a day” (coded as 10). The mean score of the 14 inductive discipline items was

calculated in order to create an inductive discipline score; therefore, scores on the inductive discipline scale could range from 0 to 10. In the current investigation, inductive discipline was conceptualized as a specific protective disciplinary style and, thus, the focus was on the relative amount of inductive discipline experienced rather than on the discrete number of acts that occurred. Because it did not seem likely that all participants would be reporting on two parents, the mean score was calculated based only on the items to which the participant responded. Compared to the mean score, a total summed inductive discipline score could bias results in the event that a participant only reported on one parent. For bivariate analyses, participants were placed into one of three categories (low, moderate, or high) based on the extent to which they experienced inductive discipline at age 10. Low inductive discipline was defined as scores more than one standard deviation below the mean; moderate inductive discipline included all scores falling between one standard deviation below and one standard deviation above the mean; and high inductive discipline was defined as scores more than one standard deviation above the mean. For multivariate analyses, participants' mean inductive discipline score was used. The alpha coefficient for the inductive discipline scale in the current study is .897.

Positive parenting characteristics. Positive parenting characteristics were assessed using the warmth/support, responsiveness, and consistency scales from the adult recall version of the DDI (Straus & Fauchier, 2007). Parental warmth/support, responsiveness, and consistent discipline were examined separately in order to determine each variable's unique association with both the predictor and outcome variables of interest. Using the same methods and guidelines described above regarding inductive

discipline, participants were classified for bivariate comparative purposes based on the extent to which they experienced each protective factor at age 10 (i.e., placed in low, moderate, or high categories based on scores relative to the sample mean). For multivariate analyses, scores on each scale were computed as the mean of the items reported by the participant.

Parental warmth/support. Parental warmth and support experienced in childhood was measured with the following six items (each item was reported for mother and father behaviour separately) from the warmth/support mode of discipline implementation scale of the DDI:

- When correcting misbehaviour, your parents did or said things to show that they loved and supported you.
- When your parents corrected misbehaviour, you knew they still loved you.
- When your parents corrected misbehaviour, you still felt encouraged and supported.

The frequency with which parental warmth/support was experienced in childhood was assessed with five different frequency categories ranging from “never” (coded as 0) to “always or almost always" (coded as 4). A parental warmth/support score was computed by calculating the mean score on the aforementioned items. The alpha coefficient for the warmth/support scale in the current study is .888.

Parental responsiveness. Parental responsiveness was measured with the following four items (each item was reported for mother and father behaviour separately) from the responsiveness mode of discipline implementation scale of the DDI:

- Your parents changed how they disciplined you as you got older.

- Your parents made changes to their discipline when something did not work for you.

The frequency with which parental responsiveness was experienced in childhood was assessed with five different frequency categories ranging from “never” (coded as 0) to “always or almost always" (coded as 4). A parental responsiveness score was computed by calculating the mean score on the aforementioned items. The alpha coefficient for the responsiveness scale in the current study is .718.

Consistency of discipline. Consistency of discipline experienced in childhood was measured with the following six items (each item was reported for mother and father behaviour separately) from the consistency mode of discipline implementation scale of the DDI:

- Your parents checked to make sure you were behaving after they corrected misbehaviour.
- Your parents corrected you again if you repeated misbehaviour.
- Your parents followed through on what they said they would do.

The frequency with which consistency in discipline was experienced in childhood was assessed with five different frequency categories ranging from “never” (coded as 0) to “always or almost always" (coded as 4). A consistency of discipline score was computed by calculating the mean score of the aforementioned items. The alpha coefficient for the consistency scale in the current study is .802.

Outcome Variables: Externalizing and Internalizing Problem Behaviours in Adulthood

The outcomes of interest in the current study include both externalizing (i.e., IPV,

criminal behaviour, and alcohol use) and internalizing (i.e., depression, anxiety, and self-esteem) problem behaviours in early adulthood.

The use of violence in intimate partner relationships. Participants' use of physical aggression in intimate partner relationships was assessed with the dating version short form of the Revised Conflict Tactics Scale (CTS2S; Straus & Douglas, 2004; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) [4]. For the purposes of the current investigation, having an intimate partner was defined as involvement in a romantic relationship that had lasted a month or more. Respondents were asked to report on past year experiences in their most recent relationship. The following two items from the CTS2S were used to determine whether or not the respondent was ever physically violent in the reported relationship:

- I pushed, slapped, or shoved my partner.
- I punched or kicked or beat-up my partner.

The frequency with which these specific acts of IPV occurred was assessed with the following seven different frequency categories:

- Never / Not in the past year (coded as 0);
- Once in the past year (coded as 1);

[4] The short form of the CTS2 was the only indicator available in the data set to assess the use of IPV in adulthood. A limitation of the CTS2S (Straus & Douglas, 2004) is that only two items (vs. eight in the full version of the CTS2; Straus et al., 1996) are included in the physical violence subscale. The short form has been found to be less sensitive than the full version of the CTS2 in detecting the presence of IPV, thus, resulting in a higher false negative rate (12.9 percentage point difference in prevalence rates for perpetration; Straus & Douglas, 2004). However, concurrent validity, as measured by the correlation between the short form and the full physical aggression subscales (r = .72) seems to indicate that the short form does, in fact, adequately represent the full scale (Straus & Douglas, 2004).

- Twice in the past year (coded as 2);
- 3 to 5 times in the past year (coded as 4);
- 6 to 10 times in the past year (coded as 8);
- 11 to 20 times in the past year (coded as 15); and
- More than 20 times in the past year (coded as 25).

The coded values were intended to approximate the frequency with which the participant used physical violence against an intimate partner in the past year. Total IPV scores were calculated by summing the scores across these two items. Therefore, scores on the IPV scale could range from 0 to 50. For bivariate analyses, dichotomous coding was used based on whether or not the participant ever used physical violence against an intimate partner: Participants reporting they never used IPV were placed into the no IPV group (coded as 0) whereas participants reporting positively to either item, regardless of frequency and severity, were placed into the IPV group (coded as 1). For multivariate analyses, the total IPV score was used. The alpha coefficient for the IPV scale in the current study is .544.

Alcohol use. Participants' alcohol use was assessed with the following three items from the substance abuse scale of the Personal and Relationships Profile (Straus, Hamby, Boney-McCoy, & Sugarman, 1999):

- I worry that I have an alcohol problem.
- When I am drinking I usually have five or more drinks at a time.
- Sometimes I can't remember what happened the night before because of drinking.

Responses were assessed on a four point Likert scale ranging from "strongly disagree" (coded as 1) to "strongly agree" (coded as 4). An alcohol use score was calculated by

computing the mean score of the three items. Scores on the alcohol use scale could range from 0 to 4, with higher scores indicative of potential alcohol abuse problems. For bivariate analyses, dichotomous coding was used: Participants who "disagreed" or "strongly disagreed" with all of the substance use items were classified as having no alcohol abuse issues (coded as 0) whereas participants who "agreed" or "strongly agreed" with any of the substance use items were classified as potential alcohol abusers (coded as 1). For multivariate analyses, the total alcohol use score (mean) was used. The alpha coefficient of the alcohol use scale in the current study is .749.

Criminal history. Participants' criminal history was assessed with the following three items from the criminal history scale of the Personal and Relationships Profile (Straus et al., 1999):

- Since age 15, I have physically attacked someone with the idea of seriously hurting them (violent crime subscale).
- Since age 15, I have stolen money from anyone, including family (property crime subscale).
- Since age 15, I hit or threatened to hit someone who is not a member of my family (violent crime subscale).

Responses were assessed on a four point Likert scale ranging from "strongly disagree" (coded as 1) to "strongly agree" (coded as 4). A criminal history score was calculated by computing the mean score of the three items. Scores on the criminal history scale could range from 0 to 4, with higher scores indicative of greater involvement in criminal activity. For bivariate analyses, dichotomous coding was used based on whether or not the participant had engaged in any criminal activity since the age of 15. Participants who

"disagreed" or "strongly disagreed" with all of the criminal history items were classified as having no criminal history (coded as 0) whereas participants who "agreed" or "strongly agreed" with any of the criminal history items were classified as having a criminal history (coded as 1). For multivariate analyses, the total criminal history score (mean) was used. The alpha coefficient of the criminal history scale in the current study is .661.

Depression. Depression was assessed using the World Health Organization's Major Depression Inventory (MDI; Olsen, Jensen, Noerholm, Martiny, & Bech, 2003). The MDI is a 10 item measure of self-reported feelings related to depression in the past two weeks. Depression was measured on a six point Likert scale ranging from "at no time" (coded as 0) to "all of the time" (coded as 5). The following items were used to assess participants' depressive symptomatology:

1. Have you felt low in spirits or sad?
2. Have you lost interest in your daily activities?
3. Have you felt lacking in energy and strength?
4. Have you felt less self-confident?
5. Have you had a bad conscience or feelings of guilt?
6. Have you felt that life wasn't worth living?"
7. Have you had difficulty concentrating?
8. (a) Have you felt very restless?
8. (b) Have you felt subdued or slowed down?
9. Have you had trouble sleeping at night?
10. (a) Have you suffered from reduced appetite?

10. (b) Have you suffered from increased appetite?

A total depression score was calculated by summing the scores from the 10 items. For items 8 and 10, the higher score reported on either part (a) or part (b) was used to calculate the depression score. Therefore, scores on the MDI could range from 0 to 50, with higher scores indicative of higher levels of depression. The total score on the MDI can also be used to measure the severity of depressive states (Olsen et al., 2003). Scores between 20 and 24 are indicative of probable or mild depression; scores between 25 and 29 are indicative of moderate depression; and scores of 30 or more are indicative of severe depression. For bivariate analyses, dichotomous coding was used based on severity of depression: Participants with scores in the moderate to severe range (i.e., MDI total score 25 or more) were classified as depressed (coded as 1) and participants with total MDI scores less than 25 were classified as not depressed (coded as 0). For multivariate analyses, the total MDI score was used. The alpha coefficient for the depression scale in the current study is .930.

Anxiety. Anxiety was assessed with three items taken from the anxiety symptom dimension subscale of the Brief Symptom Inventory (BSI; Derogatis, 1993). Participants were asked to report on specific symptoms of anxiety (i.e., worrying too much, nervousness or shakiness inside, and spells of terror or panic) they had experienced in the past 7 days. Responses were measured on a five point Likert scale ranging from "not at all" bothered and/or distressed (coded as 1) to "extremely" (coded as 5) bothered and/or distressed by symptoms. Scores on the anxiety scale could range from 5 to 15, with higher scores indicative of higher anxiety problems. Because the full anxiety symptom dimension subscale was not included in the IPS survey instrument (the full subscale

consists of six items), predetermined, empirically derived cut-off points could not be used. Therefore, for the purposes of bivariate analyses, scores falling more than one standard deviation above the mean were considered indicative of potential anxiety problems (coded as 1) whereas participants with scores below this cut-off (i.e., equal to or less than one standard deviation above the mean) were classified as having no anxiety problems (coded as 0). For multivariate analyses, the total anxiety score was used. The alpha coefficient for the anxiety scale in the current study is .742.

Self-esteem. Self-esteem was assessed using Rosenberg's Self-Esteem Scale (RSE; Rosenberg, 1965). The RSE is a 10 item self-report measure of global self-esteem designed to assess feelings of self-worth and self-acceptance. The RSE was scored using a four point Likert scale ranging from "strongly agree" (coded as 4) to "strongly disagree" (coded as 1). The following items were used to assess participants' self-esteem:

1. On the whole, I am satisfied with myself.
2. At times, I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

The RSE is equally divided into positively and negatively worded items and the negatively worded items (items 2, 5, 6, 8, & 9) are reverse scored. Scores on the self-esteem scale could range from 10 to 40, with higher scores representing better self-esteem. University and college samples tend to report higher self-esteem scores than those reported in the general population (Blascovich & Tomaka, 1991); therefore, a relative measure of self-esteem that is entirely dependent on levels reported in the sample was used in the current study. For bivariate analyses, scores falling more than one standard deviation below the mean were considered indicative of potential self-esteem problems (coded as 1) whereas participants with scores above this cut-off (i.e., equal to or greater than one standard deviation below the mean) were classified as having no self-esteem problems (coded as 0). For multivariate analyses, the total RSE score was used. The alpha coefficient for the anxiety scale in the current study is .900.

Control Variables: Demographic and Contextual Factors

A number of variables that are known to affect the discipline-adjustment relationship, including participant gender, race/ethnicity, sociodemographic risk factors, levels of misbehaviour in childhood, the experience of physical abuse, and exposure to interparental violence in childhood were considered. Descriptive bivariate comparisons were conducted in order to determine the relationship between each of these variables and parental use of aggressive discipline in childhood. These variables also served as demographic and contextual controls in multivariate analyses.

Gender. Participant gender was coded as 0 for males and 1 for females.

Race/ethnicity. For descriptive purposes, participant racial and ethnic identification was reported in order to give insight into the demographic composition of

the sample. For multivariate analyses, participant race/ethnicity was coded as 0 for White and 1 for visible minority status.

Sociodemographic risk factors. According to the guidelines set forth by Straus and Fauchier (2007), the following five items (parental marital status, number of children in family of origin household, parental education, family of origin income, and family of origin home ownership) were dichotomized and used to create a sociodemographic risk factor index. Scores on the sociodemographic risk factor index could range from 0 to 5, with higher scores indicating higher exposure to socioeconomic risk factors in childhood.

Parental marital status. Current parental marital status was assessed with the adult recall version of the DDI item A6 and coded as follows: Risk 1 = separated, divorced, never lived together, or one parent has died; No Risk 0 = married or currently living together.

***Number of children in the family of origin*.** The number of children in the family of origin was assessed with the adult recall version of the DDI item A4 and coded as follows: Risk 1 = 4 or more children; No Risk 0 = 3 or fewer children.

Parental education. Parental education was assessed with the adult recall version of the DDI item A11 and coded as follows: Risk 1 = one or both parents did not complete high school; No Risk 0 = both parents completed high school or more.

Family of origin income. The family of origin's total household income in the year before the participant started university was assessed with the adult recall version of the DDI item A12 and coded as follows: Risk 1 = income under $30,000; No Risk 0 = income of $30,000 or above.

Family of origin home ownership. The family of origin's home ownership in the

year before the participant started university was assessed with the adult recall version of the DDI item A14 and coded as follows: Risk 1 = did not live in a home owned by the parent(s); No Risk 0 = lived in a home owned by parents.

Levels of misbehaviour in childhood. Participants were asked to report how often they repeated both minor and serious misbehaviour at age 10 after being corrected for it by their parents on an 11 point frequency scale ranging from "never" (coded as 0) to "two or more times a day" (coded as 700; see aggressive parenting scales for entire frequency scale and respective codes). Repeated minor and severe responses were summed in order to create a childhood level of misbehaviour scale. Scores on this scale could range from 0 to 1400 (higher scores indicate more misbehaviour), and were used as a proxy measure of the initial level of misbehaviour in the participants' childhood. For bivariate analyses, participants were placed in low (participant score below the 25th percentile), moderate (score between the 25th percentile and the 75th percentile), or high (score above the 75th percentile) misbehaviour categories. For multivariate analyses, the total level of misbehaviour score was used.

Physical abuse experienced in childhood. The experience of physical abuse in childhood (i.e., at age 10) was assessed with five items (hit with fist or kicked hard; choked; beat up; hit with an object on a part of the body other than their bottom; and thrown or knocked down) from the severe physical violence scale (modified) of the parent-to-child version of the CTS (Straus, 1979). Responses were measured on an eight point Likert scale ranging from "never" to "more than 20 times in that year." Dichotomous coding was used to classify participants on the basis of whether or not they had ever experienced physical child abuse at the hands of a parent during childhood.

Participants responding negatively to all of the aforementioned items were considered non-abused (coded as 0) and participants responding positively to any of the aforementioned items (regardless of frequency) were considered to have experienced physical abuse in childhood (coded as 1).

Exposure to interparental violence in childhood. Participants' exposure to interparental violence in childhood (i.e., at age 10) was assessed with the following four items from the physical violence scale (modified) of the CTS (Straus, 1979):

- Your mother pushed, shoved, or slapped your father.
- Your father pushed, shoved, or slapped your mother.
- Your mother punched or kicked or beat-up your father.
- Your father punched or kicked or beat up your father.

Responses were measured on an eight point Likert scale ranging from "never" to "more than 20 times in that year." Dichotomous coding was used to classify participants on the basis of whether or not they had ever witnessed interparental violence during childhood. Participants responding negatively to all of the aforementioned items were considered non-exposed (coded as 0) and participants responding positively to any of the aforementioned items (regardless of frequency) were considered to have been exposed to interparental violence in childhood (coded as 1).

Data Analysis

Descriptive analyses involved bivariate comparisons using cross-tabulations with Chi-square tests of significance. Two sets of bivariate analyses were conducted. The first set investigated the relationship between different levels of aggressive discipline (i.e., none, low, moderate, and high levels of CP and PA) and the demographic/contextual

control and the protective variables of interest in the study. The purpose of these comparisons was to examine the extent to which the control variables and protective factors differ across different levels of CP and/or PA. These analyses provided evidence either for or against the hypothesis that participants experiencing CP and/or PA in childhood would also report lower levels of both inductive discipline and positive parenting than those not experiencing CP or PA in childhood. These analyses were used to investigate whether the degree to which protective factors are experienced in childhood vary as a function of the frequency with which aggressive discipline was experienced. The second set of bivariate analyses investigated the relationship between aggressive discipline and the risk for adverse adjustment. The purpose of these comparisons was to examine the extent to which different levels of aggressive discipline were associated with the externalizing and internalizing problem behaviours in adulthood. These analyses showed that CP and PA in childhood were, in fact, associated with problem behaviours beyond the childhood years.

For multivariate analyses, hierarchical multiple regression was used. In hierarchical multiple regression analyses, terms are added to the model in a series of steps and the change in the multiple correlation coefficient (R) is calculated and tested to determine if the change is significantly different from zero. In other words, at each step, a determination can be made as to whether or not the inclusion of the specific set of independent variables significantly improves prediction of the dependent variable. Further, in each step, standardized beta values (β) are calculated and tested in order to determine the relative contribution of each variable to the prediction of the dependent variable. The absolute size, direction, and significance level of the standardized beta

values can be examined to determine the relative importance of each independent variable in predicting the outcome in each model. The purposes of these analyses were not only to determine the extent to which aggressive discipline was associated with adverse adjustment, but also to examine the protective role of both inductive discipline and positive parenting.

Six series of models were tested, one for each outcome under investigation (i.e., use of IPV, criminality, alcohol use, depression, anxiety, and self-esteem). In the first step in each series, only the aggressive discipline variables were entered (CP and PA). This analysis provided information regarding the extent to which aggressive discipline predicted the specific outcome of interest. In the second step, the contextual variables were entered. Because these variables have been shown to impact both the use of aggressive discipline and the risk of adverse adjustment, their primary function was to serve as contextual controls in the analysis. Any contextual variables that did not significantly improve prediction in the model were removed from the analysis. In the third step, inductive discipline was entered in order to determine whether inductive discipline served a protective function in the relationship between aggressive discipline and adverse adjustment. In the fourth step (the full model), the positive parenting variables were entered (i.e., warmth/support, responsiveness, consistency) in order to determine how each positive parenting variable impacts the relationship between aggressive discipline and adverse adjustment. The full model provided information regarding the relative importance of each independent variable in predicting adverse adjustment, holding the effects of all variables entered constant.

CHAPTER IV

Results

Sample Recruitment

The most recent figures suggest that 27,476 students (23,654 undergraduate and 3,822 graduate students) were enrolled at the University of Manitoba during the sample selection period (University of Manitoba, 2010). Of these students, approximately 24,500 were on the "all students" email list maintained by the Information Services and Technology Department at the university when the recruitment email was sent out (N. Marnoch, personal communication, August 3, 2010). This list consists of all students with active student records who have claimed a University of Manitoba email account. However, it is not possible to determine how many students actually use these email accounts. Further, the email was sent out after the end of the spring term (May 3, 2010) and because the university email system is largely used for class purposes, it seems likely that a substantial number of students would not have checked their email during this time frame. Nonetheless, a total of 1,803 responses were generated via the mass email recruitment procedure. Of the total number of cases, 661 (37%) were excluded as there was too much missing data or the participant did not complete the questionnaire, and 9 (0.5%) were excluded due to invalid data patterns (A. Fauchier, personal communication, August 1, 2010)[5], resulting in a final sample of 1,133 total cases.

[5] A questionnaire was deemed incomplete if more than 75% of the section on specific parental disciplinary techniques was left blank (section C of the DDI), or if more than 75% of the information appended to the DDI was left blank (A. Fauchier, personal communication, November 27, 2010). The high rate of incomplete questionnaires is likely partially attributable to the data collection method. In almost all cases where a questionnaire was excluded, the participant would have complete data up to a certain point, but left the remainder of the survey blank (A. Fauchier, personal communication,

Descriptive Information on the Sample

Individual and parent characteristics of the sample. Demographic information on the final sample is given in Table 1. The final sample was 74% female and 26% male with a mean age of 24.2 years (*SD* = 6.03, range 18 to 40 years). Almost three-quarters of the sample reported being either single or dating (39.0% and 33.6%, respectively), and 24.5% reported being involved in a cohabitating union (married or common-law). The sample was predominately White (71.3%). Although a substantial proportion of the sample identified with a visible minority group (28.7%), no other single specific ethnic or racial group constituted more than 10% of the entire sample. International students make up 7.9% of the enrolment at the University of Manitoba (University of Manitoba, 2010). Cross-cultural differences in parental socialization and disciplinary practices may have an influence on results if these students are over-represented as survey respondents. Although the IPS survey did not directly ask about citizenship status, it did include a question regarding whether or not the participant was born in Canada. Eighty-five percent of the sample reported being Canadian-born. The remaining 15% reported being born elsewhere; however, the average age at which a participant had moved to Canada was 2.2 years (*SD* = 6.3 years), suggesting that the majority of foreign-born students had been living in Canada for a substantial proportion of their lifetimes. Less than 10% of the foreign-born students had moved to Canada after age 10, and, of these, approximately 6% moved to Canada in adulthood (i.e., at age 18 or older). However, due to potential bias

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November 27, 2010). The web-based survey required that the entire questionnaire be filled out in one sitting (i.e., you could not return to an incomplete survey and complete it at a later time), and required a significant time commitment to complete (approximately one hour). Other than the incentive draw, participants were not compensated for completing the questionnaire, which may have contributed to a lower completion rate.

created by cross-cultural differences in child-rearing, a control variable based on nativity status (Canadian-born = 0; Foreign-born = 1) was included in all analyses.

For the most part, participants reported a more affluent background than the general population of Winnipeg, Manitoba. This is reflected in the total household income in the year prior to starting university, as well as parental employment and educational status. According to 2006 census data for the city of Winnipeg, the median household income was approximately $63,000 for all census families (Statistics Canada, 2006), which is similar to the total household income reported by the sample. More than 60% of the sample reported total household incomes above $60,000, and just over one-quarter reported total household incomes above $100,000 per year (compared to 53.0% and 21.6% in the census data; City of Winnipeg & Statistics Canada, 2008). According to 2006 census data, 14.9% of total economic families reported incomes below low-income cut-off guidelines (City of Winnipeg & Statistics Canada, 2008) compared to approximately 10% of the sample. In the sample, only 8.3% of mothers and 13.9% of fathers had less than a high school education, compared to 15.6% of females and 16.7% of males aged 35 to 64 years (which would capture the age range of parents) in the 2006 census data (Statistics Canada, 2006). The level of parental post-graduate training was markedly different in the sample compared to the general population of Winnipeg; in the sample, 10.9% of mothers and 15.8% of fathers had completed a post-graduate degree compared to only 3.7% of the total population of Winnipeg (City of Winnipeg & Statistics Canada, 2008). Most fathers were employed full-time (92.3%) when the participant was 10 years old, and a substantial proportion of mothers also held full- or part-time paid employment (49.7% and 21.2%, respectively) at the time. Both fathers

and mothers reported an unemployment rate of less than 2%. Finally, 25.7% of mothers were full-time parents when the participant was 10, compared to only 3.1% of fathers.

The mother-figures and father-figures on whom participants reported. The majority of participants reported that their biological parents were currently married to each other (72.2%), although almost one in every five reported that their biological parents were separated or divorced (17.8%). Participants were asked to report on the mother- and father-figures who had the biggest role in disciplining them at age 10; therefore, participants were not limited to reporting on their biological parents only. However, the vast majority did, in fact, report on their biological mothers (97.2%) and their biological fathers (92.9%). Other response categories included adoptive parent (1.1% of mother-figures; 1.7% of father-figures), foster parent (0.2% of mother-figures; no father-figures), step-parent (0.8% of mother-figures; 2.2% of father-figures); parent's partner (0.2% of mother-figures; 0.8% of father-figures), and other parental figure (0.6% of mother-figures; 2.4% of father-figures). An additional 0.2% (n = 2) were missing information on a mother-figure and 0.9% (n = 10) were missing information on a father-figure. Combining mother- and father-figures that were reported on by participants, 91.4% of participants reported on both biological parents, 2.2% reported on their biological mother and a step-father, and 1.0% reported on mother and father adoptive parents; less than 1% of the entire sample fell into any other specific mother- and father-figure combination.

Descriptive information regarding experiences of aggressive discipline and protective parenting in childhood and adverse adjustment in adulthood. Means and standard deviations of the aggressive discipline variables, protective parenting variables,

and outcome variables are given in Table 2[6]. Although a substantial proportion of the sample did not experience CP in their tenth year (46.1%), for those that did experience CP, it happened, on average, once a week (*M* = 53.4, *SD* = 262.9, range 0 to 4200). Further, of those experiencing CP, 16.4% experienced CP from their mother only, 13.0% experienced CP from their father only, and 70.6% experienced CP from both parents. This suggests some agreement between the acceptability of CP between parents, as when it is used as a disciplinary technique, it is most often used by both the mother and the father of the child. Although the use of implements for disciplinary purposes was not included in the CP measure, it should also be noted that 23.7% of mothers and 22.0 % of fathers had used "a paddle, hairbrush, belt, or other object" for disciplinary purposes against their children at some point in their lives. In contrast to parental CP use, PA was a common disciplinary practice during participants' tenth year; 90.2% of the sample had experienced some form of PA at age 10. In addition, PA was frequently used by parents, occurring, on average, 250 times a year at age 10 (*M* = 251.9, *SD* = 647.2, range 0 to 5600). Of those experiencing PA, 5.0% experienced PA from their mother only, 2.9% experienced PA from their fathers only, and 92.1% experienced PA from both parents. These findings suggest that PA is both viewed as an acceptable disciplinary practice for children of this age and is a prominent method used by parents to achieve compliance (as seen by the frequency with which it is used).

The mean score on the inductive discipline scale was 3.4 (*SD* = 1.8, range 0 to 9.14). In terms of discrete acts of inductive discipline, participants reported experiencing

[6] It should be noted that a number of variables did not fulfill the assumptions required for multivariate analyses and needed to be log transformed prior to analyses. The means and standard deviations of the log transformations are included in Table 2. Please see section on data transformation in Chapter IV (pp. 85-86) for further explanation.

336.5 (*SD* = 491.6) separate acts of inductive discipline from their mothers and 269.3 (*SD* = 454.6) separate acts of inductive discipline from their fathers during their tenth year. It should be noted that only 1% of the sample reported that they never, at any point in their lifetime, experienced any inductive discipline from their mothers and 3.9% reported that they never experienced any inductive discipline from their fathers. These findings suggest that inductive discipline, like PA, is a frequently used disciplinary technique for children of this age. In the sample, levels of reported parental warmth/support (*M* = 2.8, *SD* = 0.95, range 0 to 4), parental responsiveness (*M* = 2.4, *SD* = 0.83, range 0 to 4), and consistency in discipline (*M* = 2.8, *SD* = 0.72, range 0 to 4) can be characterized as being in the moderate range of positive parenting.

IPV in adulthood, criminal history, and alcohol abuse were the externalizing outcomes under investigation in the current study. As stated previously, an intimate partner was defined as involvement in a romantic relationship lasting one month or more. In the sample, 196 participants have never been in such a relationship and were excluded from analyses. Of those reporting on an intimate partner, 87.3% had never used IPV against an intimate partner. For those using IPV, the vast majority of violence that was reported was from the minor physical violence subscale (i.e., push, slap, shove) of the CTS2S (Straus & Douglas, 2004) with only 2.2% of the sample reporting having ever used acts of severe violence against an intimate partner (i.e., punch, kick, beat-up). While the dichotomous coding of the variable divides participants based on whether or not IPV was ever used, the continuous measure used in multivariate analyses is a past year measure based on the frequency with which IPV was used in the past year. The mean score of past year IPV use was 0.36 (*SD* = 2.05, range 0 to 50), suggesting that IPV

was a relatively rare occurrence in this particular sample. Likewise, mean scores on the criminal history (*M* = 1.5, *SD* = 0.61, range 1 to 4) and alcohol use (*M* = 1.5, *SD* = 0.63, range 1 to 3.67) scales were relatively low in this sample.

Depression, anxiety, and low self-esteem constituted the internalizing adjustment problems under investigation in the current study. In the sample, the mean depression score was 11.1 (*SD* = 9.58, range 0 to 50); a score that falls beneath the empirically derived cut-off point for depression (Olsen et al., 2003). Based on reported depression scores, 83.1% of the sample could be classified as being not depressed, 5.8% reported levels indicative of mild or probable depression, 4.3% reported levels suggesting of moderate depression, and 6.8% of the sample could be classified as suffering from severe depression. The mean score on the anxiety scale was 2.1 (*SD* = 0.87, range 1 to 5), which seems to indicate that, on average, participants were only "a little bit" bothered and/or distressed by symptoms of anxiety in the past 7 days. Relatively high levels of self-esteem were also reported by participants in the study (*M* = 31.1, *SD* = 5.42, range 6 to 40). Taken together, based on these findings participants appeared to represent a relatively well adjusted and well functioning group.

Bivariate Analyses

Relationships between the frequency of parental CP and the demographic and contextual control variables. Nearly half (46.1%) of the sample did not experience CP from either parent at age 10. Of those that did experience CP, 53.8% experienced low frequency CP, 25.7% experienced moderate levels of CP, and 20.5% experienced high frequency CP during their tenth year. Table 3 examines bivariate relationships between the different levels of parental CP use and both the contextual variables and protective

factors included in the study. Bivariate relationships were largely consistent with predictions. Significant gender differences were found regarding parental use of CP (χ^2 = 17.691, df = 3, p = .001). Females were less likely to report that their parents had used CP than males (No CP = 49.2% vs. 37.3%). Females were also less likely to report moderate (12.1% vs. 19.2%) to high levels (10.0% vs. 14.0%) of CP compared to males, suggesting that, in this sample, parents of children around age 10 were both more likely to use CP to discipline their sons, and to use CP at more frequent levels against their sons, relative to their daughters. Racial/ethnic identification also had a significant impact on parental use of CP (χ^2 = 32.454, df = 3, p < .001), with parents of White children being less likely to use CP than parents of visible minority children (50.2% vs. 35.4%). Further, visible minority children were more than twice as likely to experience high frequency CP compared to White children (18.2% vs. 8.2%). Significant differences were also reported based on nativity status (χ^2 = 23.995, df = 3, p < .001): Almost half of the Canadian-born participants did not experience CP in their tenth year, compared to one-third of foreign-born participants. Foreign-born participants were also more likely to report high frequency CP (18.2%) compared to Canadian-born participants (9.8%). Increases in both parental use of CP and the frequency with which CP is used tended to parallel increases on the sociodemographic risk index scores (χ^2 = 65.174, df = 9, p < .001). Approximately half (50.2%) of the participants in the no sociodemographic risk category did not experience CP at age 10 compared to only 11.1% of participants in the high sociodemographic risk category. The high sociodemographic risk group was also almost ten times more likely to experience high frequency CP (50.0%) compared to the no risk sociodemographic risk group (5.7%).

Levels of misbehaviour in childhood were also significantly associated with parental use of CP ($\chi^2 = 64.569$, df = 6, $p < .001$). Increases in levels of misbehaviour were paralleled by increases in parental use of CP. More than half of the participants reporting low misbehaviour in childhood (52.6%) did not experience CP in their tenth year compared to 45.6% of the moderate misbehaviour and 36.6% of the high misbehaviour groups. The high misbehaviour group was also far more likely to report high frequency CP (21.1%) compared to both the moderate and low misbehaviour groups (7.2% and 8.2%, respectively). Finally, both the experience of physical abuse ($\chi^2 = 263.801$, df = 3, $p < .001$) and witnessing interparental violence ($\chi^2 = 119.526$, df = 3, $p < .001$) in childhood were related to the decision to use CP and the frequency with which CP was used by parents. Participants reporting physical abuse in their childhood were two and a half times more likely to report moderate CP (24.5% vs. 9.6%) and almost ten times as likely to report high frequency CP (29.7% vs. 3.5%) compared to participants who did not experience physical abuse in childhood. Participants who witnessed interparental violence in childhood were both more likely to experience CP (51.6% vs. 23.8%) and to experience CP at high rates (29.6% vs. 6.4%) than participants who did not report witnessing interparental violence in their childhood.

Relationships between the frequency of parental CP and protective factors. Bivariate results concerning the relationship between parental CP use and levels of inductive discipline were somewhat unexpected ($\chi^2 = 20.590$, df = 6, $p < .01$; see Table 3). Contrary to prediction, participants experiencing high levels of inductive discipline were more likely to experience CP during their tenth year (57.7%) than either the moderate (54%), or low inductive discipline groups (50%). Further, participants

reporting high levels of parental induction were twice as likely to report high frequency CP (18.0%) than those reporting moderate parental induction (9.2%), and one and a half times more likely to report high frequency CP than the low inductive group (11.4%). Therefore, it appeared that parents in this sample who used high levels of inductive discipline were also more likely to use CP, and to use CP more frequently, than parents with a less inductive disciplinary style.

Consistent with predictions, positive parenting variables (i.e., warmth/support, responsiveness, and consistency in discipline) and the frequency of CP use were largely negatively associated: As levels of positive parenting increased, frequency of parental CP use decreased. Participants reporting low parental warmth and support were more likely to experience CP (79.8%) compared to participants reporting moderate (54.3%) and high (29.3%) levels of parental warmth and support ($\chi^2 = 146.666$, df = 6, $p < .001$). Participants experiencing low parental warmth and support were far more likely to experience high frequency CP (32.5%) compared to participants experiencing moderate (8.8%) and high (1.1%) levels of parental warmth and support. These same patterns were found for both parental responsiveness ($\chi^2 = 62.837$, df = 6, $p < .001$) and parental consistency of discipline ($\chi^2 = 28.513$, df = 6, $p < .001$). Participants reporting low responsiveness were more likely to report parental CP use (65.1%) than those reporting moderate (55.7%) or high parental responsiveness (35.7%); they were also significantly more likely to report high frequency CP (24.0%) compared to the moderate and high responsiveness groups (9.7% and 4.1%, respectively). Similarly, participants reporting low consistency were more likely to report parental CP use (61.8%) than those reporting moderate (55.3%) or high parental consistency in discipline (40.7%); they were also

significantly more likely to report high frequency CP (18.2%) compared to the moderate and high responsiveness groups (10.1% and 7.8%, respectively).

Relationships between the frequency of parental PA and the demographic and contextual control variables. Less than 10% of the sample did not experience some form of PA from a parent during their tenth year, suggesting that PA is a frequently used disciplinary practice for children of this age. Of those experiencing PA, 22.9% experienced low levels of PA, 35.8% experienced moderate levels of PA, and 41.3% experienced high frequency PA at age 10. Table 4 examines bivariate relationships between the different levels of parental PA use and both the contextual variables and protective factors included in the study. No significant gender differences were found regarding parental use of PA ($\chi^2 = 1.495$, df = 3, NS). Regardless of gender, the vast majority of both male and female participants experienced some form of parental PA in their tenth year (91.4% and 89.7%, respectively), and PA was experienced at comparable rates for both genders. The frequency with which PA was used at age 10 suggests that parents of the sampled students viewed PA as an acceptable strategy for disciplining both sons and daughters of this age. Racial/ethnic identification was significantly related to parental use of PA ($\chi^2 = 24.950$, df = 3, $p < .001$). While parents of both White and visible minority children frequently used PA as a disciplinary strategy (88.5% and 94.1%, respectively), parents of White children were less likely to use high frequency PA (32.9%) relative to parents of visible minority children (47.5%). However, no significant differences were reported based on nativity status ($\chi^2 = 6.926$, df = 3, NS). Similar to findings concerning parental CP use, increases in both parental use of PA and the frequency with which PA was used tended to parallel increases on the sociodemographic

risk index scores (χ^2 = 28.814, df = 9, p = .001). Although the vast majority of sample reported experiencing PA during their tenth year, participants in the no risk category were less likely to report parental PA use (88.7%) compared to the low (91.4%), moderate (92.5%), or high (94.4%) risk groups. Further, as sociodemographic risk scores increased, participants were more likely to report high frequency PA. For example, participants in the high risk sociodemographic risk category (66.7%) were two times as likely to experience high frequency PA compared to participants in the no risk category (31.8%).

Initial levels of misbehaviour in childhood were significantly associated with parental use of PA (χ^2 = 94.120, df = 6, p < .001). Parental use of PA increased as levels of misbehaviour increased, and the high misbehaviour group was far more likely to report high frequency PA (59.1%) compared to the moderate and low misbehaviour groups (34.0% and 25.5%, respectively). Both the experience of physical abuse (χ^2 = 167.300, df = 3, p < .001) and witnessing interparental violence (χ^2 = 107.013, df = 3, p < .001) in childhood were significantly related to the experience of PA in childhood as well as the frequency with which PA was used by parents. Of those reporting physical abuse, only 3.1% reported no parental PA at age 10. In comparison, 12.6% of the participants without a physical abuse history reported no parental PA at age 10. Further, participants reporting physical abuse in their childhood were two and a half times more likely to report high frequency PA (65.7%) compared to participants who did not experience physical abuse in childhood (25.6%). Finally, participants who witnessed interparental violence in childhood were both more likely to experience PA (96.4% vs. 88.6%) and to experience PA at high rates (65.9% vs. 30.2%) than participants who did not report

witnessing interparental violence in their childhood.

Relationships between the frequency of parental PA and protective factors. Bivariate results concerning the relationship between parental PA use and levels of inductive discipline are shown in Table 4 ($\chi^2 = 21.004$, df = 6, $p < .01$). Consistent with predictions, participants experiencing high levels of inductive discipline were less likely to experience PA during their tenth year (6.3% experienced PA) than either the moderate (9.9%), or low inductive discipline groups (13.0%). However, contrary to expectations, participants in the high inductive discipline group were more likely to experience high frequency PA (48.7%) than either the moderate (33.7%) or the low (40.2%) inductive discipline groups. Therefore, it appeared that parents in this sample who used high levels of inductive discipline were less likely to use PA, but when it was used, they tended to use it at higher rates than less inductive parents.

For the most part, positive parenting variables (i.e., warmth/support, responsiveness, and consistency in discipline) and the frequency of PA use were largely negatively associated: As levels of positive parenting increased, frequency of parental PA use decreased. Participants reporting low parental warmth and support were more likely to experience PA (96.3%) compared to participants reporting moderate (91.9%) and high (76.4%) levels of parental warmth and support ($\chi^2 = 201.535$, df = 6, $p < .001$). Participants experiencing low parental warmth and support were far more likely to experience high frequency PA (72.4%) compared to participants experiencing moderate (35.9%) and high (9.8%) levels of parental warmth and support. These same patterns were found for both parental responsiveness ($\chi^2 = 96.029$, df = 6, $p < .001$) and parental consistency of discipline ($\chi^2 = 27.849$, df = 6, $p < .001$). Participants reporting low

responsiveness were more likely to report parental PA use (93.1%) than those reporting moderate (91.2%) or high parental responsiveness (82.5%); they were also significantly more likely to report high frequency PA (63.4%) compared to the moderate and high responsiveness groups (34.7% and 21.6%, respectively). Similarly, participants reporting low consistency were more likely to report parental PA use (91.8%) than those reporting moderate (90.0%) or high parental consistency in discipline (85.0%); they were also significantly more likely to report high frequency PA (49.4%) compared to the moderate and high responsiveness groups (37.0% and 25.7%, respectively).

The frequency of aggressive discipline in childhood and externalizing and internalizing problem behaviours in adulthood. Table 5 examines bivariate relationships between the frequency of parental CP use at age 10 and the occurrence of adverse adjustment in adulthood. Table 6 examines these same bivariate relationships but in relation to the frequency with which PA was experienced at age 10. Parental use of CP was significantly related to adverse adjustment across both externalizing and internalizing outcomes. Almost without exception, the risk of adverse adjustment (regardless of the specific outcome assessed) increased incrementally as the frequency of CP increased. Similar to findings regarding CP, parental use of PA was significantly related to all the externalizing and internalizing outcomes under investigation in this study. Again, as the frequency of PA experienced at age 10 increased, so did the risk for adverse adjustment in adulthood, and this relationship held regardless of the specific outcome under investigation.

Both CP and PA at age 10 were significantly associated with externalizing problem behaviours in adulthood. Of those participants who reported having an intimate

partner, 12.7% (n = 119) had reported ever using physical violence against an intimate partner in the past. Only 8.2% of the sample who did not experience CP at age 10 used IPV compared to 23.8% of those participants who reported high levels of CP in childhood (χ^2 = 22.272, df = 3, p < .001). Similarly, only 7.1% of the sample who did not experience PA at age 10 reported using IPV compared to 17.1% of those reporting high frequency PA (χ^2 = 11.769, df = 3, p < .01). Approximately one third of the sample (31.2%) reported engaging in some form of criminal activity since age 15. Participants not experiencing CP (χ^2 = 27.536, df = 3, p < .001) or PA (χ^2 = 35.592, df = 3, p < .001) in their tenth year were less likely to report a criminal history compared to participants who had experienced any level of aggressive discipline at age 10. Differences were most apparent when comparing the no aggressive discipline to the high aggressive discipline groups. Although almost one quarter of the participants who did not experience CP at age 10 reported a criminal history, the percentage reporting a criminal history nearly doubles (47.2%) in the high frequency group. Similarly, the high frequency PA group was over two times as likely (41.2% vs. 18.0%) to report a criminal history as the no PA group. Nearly one third of the sample (28.8%) gave survey responses indicative of potential alcohol abuse problems. The percentage of participants reporting potential alcohol abuse issues was relatively consistent across the no CP or PA, low CP or PA, and moderate CP or PA groups (ranged from 23.4% to 28.7% across the various groups). However, at high levels of CP or PA, the prevalence of alcohol abuse increases dramatically (42.4%, χ^2 = 13.551, df = 3, p < .01 and 35.2%, χ^2 = 14.026, df = 3, p < .01, respectively), suggesting that it may only be high frequency aggressive discipline that has an impact on this specific problem behaviour. Overall, the prevalence of externalizing

problem behaviours in adulthood was associated with the use of aggressive discipline in childhood and especially with the frequency with which it was used.

Both CP and PA at age 10 were significantly associated with internalizing problem behaviours in adulthood. In the sample, 11.1% reported depression scores in the moderate to severe range. Participants not experiencing CP at age 10 were less likely to report moderate to severe depression (7.3%) than those experiencing low CP (11.3%), moderate CP (12.1%), and high frequency CP (24.8%; $\chi^2 = 31.409$, df = 3, $p < .001$). At the bivariate level, the prevalence of depression in adulthood increased incrementally with the level of CP experienced at age 10. Results for PA were not as consistent; although the high PA group was twice as likely to report depression (18.0%) than the no PA (9.0%) and moderate PA groups (9.1%), the low PA group reported the lowest prevalence of depression (only 2.6%; $\chi^2 = 40.317$, df = 3, $p < .001$). Therefore, although high levels of PA seemed to increase the risk of depression among this sample of university students, low levels of PA did not seem especially harmful. As for anxiety, 19.0% of the sample gave responses indicative of potential anxiety problems. The prevalence of anxiety was fairly consistent across the no CP or PA, low CP or PA, and moderate CP or PA groups (ranged from 15.4% to 20.2% across the various groups). The occurrence of anxiety was most pronounced in the high CP (29.6%; $\chi^2 = 13.729$, df = 3, $p < .01$) and the high PA (25.5%; $\chi^2 = 24.288$, df = 3, $p < .001$) groups, suggesting that high frequency aggressive discipline in childhood was related to the development of anxiety in adulthood among the sampled students. Finally, low self-esteem was reported by 14.9% of the sample. Approximately 10% of the no CP and low CP groups gave responses indicative of low self-esteem. The prevalence of low self-esteem doubled in the

moderate CP group (21.0%) and tripled in the high CP group (30.4%; $\chi^2 = 37.885$, df = 3, $p < .001$). Similarly, rates of low self-esteem were fairly consistent across the no PA and low PA groups (6.3% and 4.8%, respectively), but increased to 13.8% in the moderate group and to 23.2% in the high frequency PA group ($\chi^2 = 48.627$, df = 3, $p < .001$). This suggests that low levels of aggressive discipline were not particularly harmful, and it was only at moderate and high levels that aggressive discipline had a long-term detrimental impact on self-esteem among the sampled students.

Multivariate Analyses

Data transformation. Prior to conducting the hierarchical regression analyses, study variables were examined in order to determine whether the assumptions required to conduct multiple regression analyses were met. Specifically, the assumptions of normality, linearity, and homoscedasticity were examined through a variety of techniques including visual inspection of the data (e.g., bivariate scatterplots, P-P plots, Q-Q plots, histograms, residual plots)[7] as well as tests for skewness and kurtosis. The Durbin-Watson *d*-test statistic was also calculated in order to ensure that the assumption of the independence of errors was tenable (Field, 2009)[8]. Further, results from bivariate

[7] The P-P (or probability-probability) plot and the Q-Q (or quantile-quantile) plot are theory driven graphical methods for testing normality (Park, 2008). The P-P plot compares the empirical cumulative distribution function of a variable with a specific theoretical cumulative distribution (i.e., standard normal distribution). The Q-Q plot compares the ordered values of a variable with quantiles of a normal distribution. If the two distributions match, then the points on the plot will form a line. For the most part, the empirical distribution of the variables in the current study showed no extreme departures from the linear pattern.

[8] The Durbin-Watson test statistic is used to test the assumption that the residuals of the multiple regression analyses are independent (Field, 2009). Specifically, it tests whether the adjacent residuals are correlated. The test statistic can vary between 0 and 4 with a value of 2 meaning the residuals are uncorrelated. Values less than 1 or greater than 3 are considered indicative of correlation between adjacent residuals (Field, 2009). In the

analyses provided evidence that a linear relationship between the aggressive discipline variables and the outcome variables existed as increases in the frequency of CP or PA paralleled increases in the percentage of participants reporting each specific problem behaviour (see Table 5 and Table 6). Multicollinearity was also addressed by examining bivariate correlations among the independent variables (see Appendix B for bivariate correlations among study variables).

No substantial deviations from assumptions regarding linearity, homoscedasticity, and multicollinearity were found after the examination of each variable. However, a number of variables (i.e., CP, PA, the level of misbehaviour in childhood, and IPV in adulthood) did not meet the assumption of a normal distribution (highly skewed and kurtotic), and needed to be log transformed in order to approximate normality: "A logarithm is the power (exponent) that a base number must be raised in order to get to the original variable" (Osbourne, 2002, para. 9), and a log with the base 10 was used in the current study. Because all of the aforementioned variables could take the value of 0, and the log of numbers less than 1 are undefined, a constant (+1 in the current study) was added to the original value before transformation. The addition of a constant to the original value only changes the mean of the variable's distribution, while the standard deviation, variance, skew, and kurtosis remain unchanged (Osbourne, 2002). Log transformation retains the original order of the variable, but eliminates the equal spacing between values; in essence, reducing interval level data to an ordinal level of measurement. Log transformation can be used to reduce skew and kurtosis and, generally, improves both normality and linearity for non-normal distributions. After log

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current study, the value of the Durbin-Watson test statistic remained near 2 for all analyses.

transformation, the transformed variables (CP, PA, misbehaviour, and IPV) were re-examined and, with the exception of the IPV measure, were found to no longer grossly violate the assumptions required for multiple regression analyses (i.e., skew and kurtosis in acceptable range, more closely approximated a normal distribution). Because the IPV measure remained highly skewed, kurtotic, and showed more marked deviations from normality after transformation (coupled with a low reliability reported for the scale), results concerning the use of IPV in adulthood should be interpreted with caution[9]. It should be noted that multiple regression is rather robust to violations of assumptions (Hassard, 1991); therefore, these violations likely weakened, rather than invalidated, the findings in the current study.

The effects of aggressive discipline and positive parenting in childhood on IPV in adulthood. In the sample, 196 participants reported that they had never been involved in an intimate partner relationship lasting one month or more and, therefore, were not included in the hierarchical regression analyses. To determine the unique variance in IPV scores explained by CP and PA, each variable was regressed separately on IPV scores. Without considering the effects of other variables, CP alone significantly predicted IPV ($t = 5.826$, $p < .001$) and explained 3.5% of the variance in IPV scores. PA alone also significantly predicted IPV ($t = 4.677$, $p < .001$) and explained 2.3% of the variance in IPV scores. See Table 7 for the results of the hierarchical regression analyses.

[9]Because the intimate partner violence measure showed more substantial deviations from the assumptions underlying multiple regression, both multiple regression and logistic regression analyses using the dichotomous coding of the variable were run. Results from these analyses largely paralleled the findings using the continuous measure, lending some credibility to the study's findings.

In the first step of the hierarchical regression model, CP and PA were entered simultaneously and, taken together, explained 4.0% of the variance in IPV scores and significantly improved prediction of IPV ($\Delta F = 19.284$, $p < .001$) relative to prediction based on chance alone. However, when considered simultaneously, only CP at age 10 continued to significantly predict IPV scores in adulthood ($t = 4.338$, $p = 0.001$); PA in childhood was not significantly related to IPV use in adulthood ($t = 0.937$, NS). This finding is consistent with the hypothesis that the experience of CP would be a stronger predictor of externalizing problems than the experience of PA. In the second step, demographic and contextual control variables including participant race/ethnicity, sociodemographic risk index scores, and witnessing interparental violence were entered. Participant gender, nativity status, levels of misbehaviour in childhood, and the experience of physical abuse in childhood did not significantly improve prediction in the model and were excluded from analyses. The inclusion of the control variables significantly improved the predictive value of the model ($\Delta F = 10.416$, $p < .001$) and explained an additional 3.2% of the variance in IPV scores. Visible minority status ($\beta = .096$, $p < .01$), higher sociodemographic risk ($\beta = .089$, $p < .01$), and witnessing interparental violence ($\beta = .101$, $p < .01$) in childhood all showed a positive relationship with the use of IPV in adulthood. After these controls were introduced, CP continued to significantly predict IPV in adulthood ($t = 3.233$, $p = .001$). An examination of the standardized beta values suggests that CP has a greater impact on the prediction of IPV scores ($\beta = .132$, $p = 0.001$) than the contextual control variables included in the model.

Inductive discipline was entered on the third step of the model. The inclusion of inductive discipline did not significantly improve the model's prediction of IPV scores

(ΔF = 0.005, NS). Further, inductive discipline was not significantly related to IPV scores in adulthood (t = -0.071, NS), suggesting that parental use of inductive discipline in childhood failed to protect the sampled students from using IPV later in life. Parental warmth/support, responsiveness, and consistency of discipline were entered in the final step of the model. The full model explained 7.4% of the variance in IPV scores. However, the inclusion of the positive parenting variables neither improved prediction (ΔF = 0.641, NS) in the model, nor did any specific positive parenting characteristic predict IPV scores in adulthood, suggesting that the protective function of these variables is limited concerning the relationship between the experience of CP in childhood and the use of IPV in adulthood. In the full model, CP continued to significantly predict IPV (t = 3.235, p = .001) and had the greatest predictive value relative to any other variable included in the full model (β = .136, p = .001). However, in order of relative importance, witnessing parental IPV in childhood (β = .096, $p < .01$), participant race/ethnicity (β = .092, $p < .01$), and sociodemographic risk (β = .084, $p < .01$) all continued to significantly predict IPV scores, even after the inclusion of the hypothesized protective factors.

The effects of aggressive discipline and positive parenting in childhood on criminality in adulthood. To determine the unique variance in criminality explained by CP and PA, each variable was regressed separately on criminal history scores. Without considering the effects of other variables, CP alone significantly predicted criminality (t = 8.056, $p < .001$) and explained 5.5% of the variance in criminal history scores. PA alone also significantly predicted criminality (t = 9.416, $p < .001$) and explained 7.3% of the variance in criminality scores. See Table 8 for the results of the hierarchical regression analyses.

In the first step of the hierarchical regression model, CP and PA were entered simultaneously and, taken together, explained 8.1% of the variance in criminal history scores and significantly improved prediction of criminality ($\Delta F = 46.625$, $p < .001$) relative to prediction based on chance alone. When considered simultaneously, both CP ($t = 3.266$, $p = 0.001$) and PA ($t = 5.336$, $p < .001$) at age 10 significantly predicted criminality in adulthood. Contrary to the hypothesis that CP would be a stronger predictor of externalizing problems, an examination of the standardized beta values suggests that PA ($\beta = .196$, $p < .001$) had a greater impact on predicting later criminality than the experience of CP ($\beta = .120$, $p < .001$) in childhood in this sample. In the second step, contextual control variables including gender, sociodemographic risk index scores, levels of misbehaviour in childhood, the experience of physical abuse, and witnessing interparental violence were entered. Participant race/ethnicity and nativity status did not significantly improve prediction in the model and were excluded from analyses. The inclusion of the control variables significantly improved the predictive value of the model ($\Delta F = 21.115$, $p < .001$) and explained an additional 8.4% of the variance in criminal history scores. The amount of variance explained by aggressive discipline and the demographic/contextual control variables were remarkably similar (8.1% and 8.4%, respectively) suggesting that both played a relatively equivalent role in determining criminal behaviour later in life. Male gender, physical abuse, and witnessing interparental violence significantly predicted criminal behaviour in late adolescence/early adulthood. Increases in sociodemographic risk and higher levels of misbehaviour in childhood were also both positively related to criminality scores. In the second step of the model, PA continued to significantly predict criminality in adulthood ($t = 3.434$, $p <$

.001). However, after these controls were introduced, CP no longer predicted criminality in adulthood (t = 0.093, NS).

The inclusion of inductive discipline in the third step marginally improved the predictive value of the model (ΔF = 5.974, $p < .05$), and the total variance explained increased to 17.0% (from 16.5% after step 2). As hypothesized, inductive discipline was negatively related to criminality (β = -.072, $p < .05$), but had less predictive value relative to the other variables included in the model (as seen through an examination of the respective standardized beta values). PA continued to significantly predict criminality (β = .132, $p < .001$) even after the effects of inductive discipline were considered, suggesting that although parental use of inductive discipline in childhood may have decreased the risk of later criminality among the sampled students, its protective function may have been limited in scope when parental psychological aggression was high. Parental warmth/support, responsiveness, and consistency of discipline were entered in the final step of the model. The full model significantly improved prediction in the model (ΔF = 7.645, $p < .001$) and explained 18.8% of the variance in criminal history scores. However, of the positive parenting variables assessed, only parental warmth/support exhibited a significant negative relationship with criminal history scores (t = -3.131, $p < .01$); both parental responsiveness and consistency in discipline were not significantly related to criminal history scores. However, the inclusion of the positive parenting variables in the final step of the model reduced the contributions of both inductive discipline (t = 0.456, NS) and PA (t = 1.638, NS) to non-significance. In the full model, male gender was found to be the strongest predictor of criminal behaviour in late adolescence/early adulthood (β = -.215, $p < .001$), followed by parental

warmth/support (β = -.145, $p < .01$). Levels of misbehaviour in childhood (β = .080, $p < .01$), the experience of physical abuse (β = .089, $p < .05$), and sociodemographic risk (β = .070, $p < .05$) all remained significant in the full model.

The effects of aggressive discipline and positive parenting in childhood on alcohol use in adulthood. To determine the unique variance in alcohol abuse explained by CP and PA, each variable was regressed separately on alcohol use scores. Without considering the effects of other variables, CP alone significantly predicted alcohol abuse ($t = 3.667$, $p < .001$) and explained 1.2% of the variance in alcohol use scores. PA alone also significantly predicted alcohol abuse ($t = 3.618$, $p < .001$) and explained 1.2% of the variance in alcohol abuse scores. See Table 9 for the results of the hierarchical regression analyses.

In the first step of the hierarchical regression model, CP and PA were entered simultaneously and, taken together, explained 1.6% of the variance in alcohol use scores and significantly improved prediction of alcohol use scores ($\Delta F = 8.838$, $p < .001$) relative to prediction based on chance alone. When considered simultaneously, neither CP ($t = 1.956$, NS) or PA ($t = 1.830$, NS) at age 10 significantly predicted alcohol abuse in adulthood, although results concerning CP approached significance ($p = .051$). Contrary to hypotheses, it appeared that the experience of CP and/or PA in childhood did not have a significant impact on the development of potential alcohol problems in early adulthood among the sampled students. In the second step, contextual control variables including gender and nativity status were entered. Participant race/ethnicity, sociodemographic risk, level of misbehaviour, physical abuse, and witnessing interparental violence did not significantly improve prediction in the model and were

excluded from analyses. The inclusion of the control variables significantly improved the predictive value of the model ($\Delta F = 9.205$, $p < .001$) and explained an additional 1.2% of the variance in alcohol use scores. Both male gender and being Canadian-born significantly predicted higher alcohol abuse scores. In the second step of the model, CP did not predict alcohol abuse scores ($t = 1.776$, NS), but PA was found to significantly predict higher alcohol use in adulthood ($t = 1.964$, $p = .05$).

Inductive discipline was entered on the third step of the model. The inclusion of inductive discipline did not significantly improve the predictive value of the model ($\Delta F = 2.882$, NS), and inductive discipline was not significantly related to alcohol use scores ($t = -1.698$, NS). PA continued to significantly predict alcohol abuse scores ($t = 1.980$, $p < .05$), and the relationship between CP and alcohol use approached significance ($t = 1.904$, $p = .057$). Parental warmth/support, responsiveness, and consistency of discipline were entered in the final step of the model. The full model significantly improved prediction in the model ($\Delta F = 4.331$, $p < .001$) and explained 4.6% of the variance in alcohol use scores. Of the positive parenting variables assessed, only consistency of parental discipline in childhood showed a significant negative relationship with alcohol use scores ($t = -2.687$, $p < .01$); both parental warmth/support and parental responsiveness were not significantly related to alcohol use scores. However, the inclusion of the positive parenting variables in the final step of the model reduced the contributions of PA ($t = 0.763$, NS) and CP ($t = 1.576$, NS) to non-significance. In the full model, male gender was found to be the strongest predictor of potential alcohol abuse in early adulthood ($\beta = -.114$, $p \leq .001$), followed by parental consistency in discipline ($\beta = -.102$, $p < .01$), and then nativity status ($\beta = -.079$, $p < .01$). Overall, the independent variables included in

the model were not strong predictors of alcohol use in adulthood; the full model explained less than 5% of the variance in alcohol abuse scores.

The effects of aggressive discipline and positive parenting in childhood on depression in adulthood. To determine the unique variance in depression explained by CP and PA, each variable was regressed separately on depression scores. Without considering the effects of other variables, CP alone significantly predicted depression (t = 8.473, $p < .001$) and explained 6.0% of the variance in depression scores. PA alone also significantly predicted depression (t = 10.698, $p < .001$) and explained 9.2% of the variance in depression scores. See Table 10 for the results of the hierarchical regression analyses.

In the first step of the hierarchical regression model, CP and PA were entered simultaneously and, taken together, explained 9.5% of the variance in depression scores and significantly improved prediction of depression (ΔF = 55.482, $p < .001$) relative to prediction based on chance alone. When considered simultaneously, both CP (t = 2.713, $p < 0.01$) and PA (t= 6.506, $p < .001$) at age 10 significantly predicted depression in adulthood. By examining standardized beta values, the hypothesis that PA (β = .239, $p <$ .001) would be more predictive of internalizing problems relative to the experience of CP (β = .100, $p < .01$) was supported in the first step of the hierarchical regression analyses. In the second step, contextual and demographic control variables including race/ethnicity, sociodemographic risk index scores, levels of misbehaviour in childhood, and witnessing interparental violence were entered. Participant gender, nativity status, and the experience of physical abuse did not significantly improve prediction in the model and were excluded from analyses. The inclusion of the control variables significantly

improved the predictive value of the model ($\Delta F = 13.897$, $p < .001$) and explained an additional 4.6% of the variance in depression scores. Visible minority status and witnessing interparental violence were both significant predictors of depression. Similarly, increases in both sociodemographic risk and levels of misbehaviour in childhood significantly predicted higher depression in adulthood. In the second step of the model, PA continued to significantly predict depression in adulthood ($t = 4.497$, $p < .001$); however, the relative importance of PA in predicting was reduced after these controls were introduced ($\beta = .170$, $p < .001$ in step 2 compared to $\beta = .239$, $p < .001$ in step 1) yet it remained the strongest predictor in the model. After these controls were introduced, CP no longer predicted depression in adulthood ($t = 1.521$, NS).

The inclusion of inductive discipline in the third step significantly improved the predictive value of the model ($\Delta F = 7.664$, $p < .01$), and the amount of variance explained increased to 14.7%. As hypothesized, inductive discipline was significantly negatively related to depression ($\beta = -.082$, $p < .01$), but had somewhat less predictive value relative to the other variables included in the model (as seen through an examination of the respective standardized beta values). PA continued to significantly predict depression ($\beta = .170$, $p < .001$) even after the effects of inductive discipline were considered. Although parental use of inductive discipline in childhood may have decreased the risk of later depression among the sampled students, its protective function may have been limited in the context of aggressive discipline as the relative importance of PA as a predictor in the model remained unchanged with the inclusion of induction. Parental warmth/support, responsiveness, and consistency of discipline were entered in the final step of the model. The positive parenting variables significantly improved

prediction in the model ($\Delta F = 27.286$, $p < .001$) and the full model explained 20.9% of the variance in depression scores. All of the positive parenting variables were found to have a significant, negative relationship with depression. The inclusion of the positive parenting variables in the final step rendered PA non-significant in the full model ($t = 1.216$, NS). It should be noted that sociodemographic risk and levels of misbehaviour in childhood also became non-significant in the full model. Through an examination of the standardized beta values, parental warmth appeared to be the most important protective factor ($\beta = -.231$, $p < .001$) in the relationship between PA and depression, followed by consistency in discipline ($\beta = -.105$, $p < .01$), and then parental responsiveness ($\beta = -.076$, $p < .05$). An interesting finding in the full model was the change in direction concerning the effects of inductive discipline. In the third step, inductive discipline was negatively related to depression, but in the full model, inductive discipline exhibited a positive, and significant, relationship with depression score ($\beta = .086$, $t = 2.531$, $p < .05$). Therefore, it seemed that in the context of a warm, responsive, and consistent disciplinary environment, higher inductive discipline actually contributed to higher depression rather than protecting against its development among the sampled students. In contrast, this same environment eliminated the adverse effects associated with psychologically aggressive discipline.

The effects of aggressive discipline and positive parenting in childhood on anxiety in adulthood. To determine the unique variance in anxiety explained by CP and PA, each variable was regressed separately on anxiety scores. Without considering the effects of other variables, CP alone significantly predicted anxiety ($t = 5.615$, $p < .001$) and explained 2.7% of the variance in depression scores. PA alone also significantly

predicted anxiety (t = 8.400, p < .001) and explained 5.9% of the variance in anxiety scores. See Table 11 for the results of the hierarchical regression analyses.

In the first step of the hierarchical regression model, CP and PA were entered simultaneously and, taken together, explained 6.1% of the variance in anxiety scores and significantly improved prediction of anxiety (ΔF = 36.273, p < .001) relative to prediction based on chance alone. However, when considered concurrently, only PA at age 10 significantly predicted anxiety (t = 6.285, p < .001) in adulthood; CP was not significantly related to anxiety once the effects of PA were controlled (t = 0.866, NS). This finding is consistent with the hypothesis that PA would be more predictive of internalizing problems than the experience of CP. In the second step, only gender was found to be significantly predictive of anxiety, with female gender more predictive of anxiety than male gender. Participant race/ethnicity, nativity status, sociodemographic risk, level of misbehaviour, physical abuse, and witnessing interparental violence did not significantly improve prediction in the model and were excluded from analyses. The inclusion of gender significantly improved the predictive value of the model (ΔF = 24.933, p < .001) and explained and additional 2.1% of the variance in anxiety scores. With the inclusion of gender, PA at age 10 continued to significantly predict anxiety in adulthood (t = 6.080, p < .001).

Inductive discipline was entered on the third step of the model. The inclusion of inductive discipline did not significantly improve the predictive value of the model (ΔF = 0.571, NS), and the predictive value of PA remained unchanged (β = .218, p < .001 in both step 1 and step 2) after parental induction was introduced into the model. Parental warmth/support, responsiveness, and consistency of discipline were entered in the final

step of the model. These variables significantly improved prediction in the model (ΔF = 5.198, p = .001) and the full model explained 9.5% of the variance in anxiety scores. Parental responsiveness (t = -2.100, p < .05) and consistency in discipline (t = -2.198, p < .05) significantly predicted anxiety, with consistency having a slightly greater impact (β = -.081, p < .05) than responsiveness (β = -.075, p < .05). Parental warmth was not significantly related to anxiety (t = -.160, NS) in the full model. The inclusion of the positive parenting variables in the final step did not reduce the effects of PA to non-significance (t = 4.367, p < .001), and PA continued to be the strongest predictor of anxiety (β = .176, p < .001) relative to all other variables included in the full model.

The effects of aggressive discipline and positive parenting in childhood on self-esteem in adulthood. To determine the unique variance in self-esteem explained by CP and PA, each variable was regressed separately on self-esteem scores. Without considering the effects of other variables, CP alone significantly predicted lower self-esteem (t = -7.311, p < .001) and explained 4.6% of the variance in self-esteem scores. PA alone also significantly predicted lower self-esteem (t = -10.670, p < .001) and explained 9.2% of the variance in self-esteem scores. See Table 12 for the results of the hierarchical regression analyses.

In the first step of the hierarchical regression model, CP and PA were entered simultaneously and, taken together, explained 9.8% of the variance in self-esteem scores and significantly improved prediction of self-esteem (ΔF = 60.408, p < .001) relative to prediction based on chance alone. When considered simultaneously, only PA at age 10 significantly predicted low self-esteem in adulthood (t = -7.943, p < .001). CP was not found to be significantly related to self-esteem scores (t = -1.390, NS) once the effects of

PA were controlled. Again, the hypothesis that PA ($\beta = -.282$, $p < .001$) would be more predictive of internalizing problems relative to the experience of CP ($\beta = -.048$, NS) was supported. In the second step, only the experience of physical abuse in childhood was found to significantly predict low self-esteem in adulthood. Participant gender, race/ethnicity, sociodemographic risk, levels of misbehaviour, and witnessing interparental violence did not significantly improve prediction in the model and were excluded from analyses. The inclusion of physical abuse significantly improved the predictive value of the model ($\Delta F = 12.424$, $p < .001$) and explained an additional 2.0% of the variance in self-esteem scores. PA continued to significantly predict lower self-esteem in adulthood ($t = -7.127$, $p < .001$) after controlling for the effects of physical abuse. Because CP was not significantly related to self-esteem, it appeared that only more severe physically aggressive parenting practices had a negative effect on self-esteem among the sampled students. However, the relative importance of PA in predicting low self-esteem ($\beta = -.256$, $p < .001$) was greater than predictive value ascribed to physical abuse ($\beta = -.117$, $p < .001$), suggesting that, within this sample, parental psychological aggression was more detrimental to an individual's self-esteem than even severe parental physical aggression.

In the third step, the inductive discipline variable was entered. The inclusion of inductive discipline significantly improved the predictive value of the model ($\Delta F = 15.983$, $p < .001$), and the amount of variance explained increased to 12.1%. As hypothesized, inductive discipline was significantly and positively related to higher self-esteem ($\beta = .116$, $p < .001$); however, PA continued to significantly predict depression ($\beta = -.265$, $p < .001$) even after the effects of inductive discipline were considered. Through

an examination of changes in standardized beta values, it appeared that parental use of inductive discipline was more protective against low self-esteem in the context of physical abuse (β = -.117, $p < .001$ in step 2 compared to β = -.085, $p < .05$ in step 3) than in the context of parental use of PA (β = -.256, $p < .001$ in step 2 compared to β = -.265, $p < .001$ in step 3). Although parental use of inductive discipline in childhood predicted higher self-esteem in adulthood, its protective function appeared to be limited in the context of high PA. Parental warmth/support, responsiveness, and consistency of discipline were entered in the final step of the model. The positive parenting variables significantly improved prediction in the model ($\Delta F = 25.859$, $p < .001$) and the full model explained 17.9% of the variance in self-esteem scores. Of the positive parenting variables considered, only parental warmth/support significantly predicted higher self-esteem in adulthood ($t = 6.049$, $p < .001$). Parental responsiveness ($t = 1.812$, NS) and consistency of discipline ($t = 1.392$, NS) were not significantly related to self-esteem scores. Further, once the effects of parental warmth/support were considered, the predictive value of parental use of inductive discipline became non-significant ($t = -1.053$, NS) as did the experience of physical abuse in childhood ($t = -1.555$, NS). On the other hand, PA continued to significantly predict lower self-esteem ($t = -3.091$, $p < .01$) even after the effects of warmth/support were considered. Through an examination of the standardized beta values, parental warmth/support appeared to be a more important predictor of self-esteem (β = .270, $p < .001$) than the experience of PA in childhood (β = -.119, $p < .01$) in this particular sample of students.

CHAPTER V

Discussion

Both CP and PA have been linked to both externalizing and internalizing problem behaviours in childhood (Barber & Harmon, 2002; Gershoff, 2002), and there is evidence to suggest that these negative effects extend into adulthood (e.g., Allen, 2008; Gershoff, 2002; Miller-Perrin et al., 2009; Straus, 2001). However, these two types of aggressive disciplinary practices do not occur in isolation, and other factors likely play an important role in determining how CP and PA impact long term adjustment. Parental use of inductive discipline has been linked to a number of positive developmental outcomes (Baumrind, 1997b; Hart et al., 1992; Hoffman, 1994), and has been found to promote positive behaviour and decrease negative behaviour among children when compared to parental use of aggressive discipline (Kerr et al., 2004; Krevans & Gibbs, 1996). Parental warmth, support, and responsiveness along with consistency in disciplinary practices have also been shown to impact development in positive ways and to moderate the impact of aggressive discipline on child adjustment (Baumrind, 1997a). Therefore, the purpose of the current study was to determine how aggressive discipline and these various protective factors interact in order to predict developmental outcomes in adulthood. It has been suggested that CP and PA are not harmful provided they occur within a more inductive disciplinary environment characterized by high levels of parental warmth, support, and responsiveness. However, findings in the current study suggest that there may, in fact, be long term developmental consequences associated with the experience of aggressive discipline in childhood that are not entirely eliminated when they occur within an otherwise positive parenting environment.

Parental Use of Aggressive Discipline

Both CP and PA were experienced by a substantial proportion of the sample, suggesting that these types of aggressive discipline were considered acceptable and effective means of disciplining children around 10 years of age among parents in this particular sample.

Corporal punishment. In this sample, 53.9% of participants experienced some form of CP at age 10. Although CP was generally used at low to moderate levels among participants who reported parental CP use, 20.5% of participants reporting parental CP experienced high frequency CP (more than once a week). It is difficult to directly compare these rates to those reported elsewhere due to differences in measures, definitions, and time frames assessed. Nonetheless, these numbers suggest that CP was considered an acceptable disciplinary strategy for children around 10 years of age by parents in this sample. It should also be noted that although the item regarding the use of implements for disciplinary purposes was removed from the CP scale, nearly one quarter of the sample reported being hit with "a paddle, hairbrush, belt, or other object" by a parent for the purpose of discipline. This finding is disconcerting given that this specific disciplinary technique has been defined as an unreasonable application of force under Canadian law (*Canadian Foundation for Children, Youth and the Law v. Canada* [Attorney General], 2004). These parental actions likely took place before the Supreme Court ruling as participants reported retrospectively about events that took place over a decade before. However, Durrant, Sigvaldson, and Bednar (2008) found that the vast majority of the Canadian public surveyed viewed this ruling as reaffirming their right to use physical force, rather than as imposing limits on its use as it was intended. It seems

that Canadian parents may be receiving mixed and contradictory messages regarding both the effectiveness of CP as a disciplinary strategy and the harmful effects associated with its use.

In this sample, participants who were male, visible minority, foreign-born, and exposed to higher sociodemographic risk in childhood were both more likely to experience CP, and to experience CP at higher rates, than females, White, Canadian-born, and children living in more sociodemographically advantageous circumstances. Not only should these basic demographic characteristics be considered in analyses, but they could also be used to identify vulnerable groups that may be at especially high risk for frequent CP in childhood and associated negative developmental outcomes. Levels of misbehaviour in childhood were also related to parental use of CP, suggesting that individual child characteristics do have an impact on both the parental decision to use CP and the frequency of its use as has been reported elsewhere (Lau et al., 2006; Stoolmiller, 2001). The measure used to assess misbehaviour in childhood only asked how often participants repeated misbehaviour after being corrected for it by parents, which likely underestimates the influence children have on parental disciplinary decisions. Although this measure was intended to serve as a proxy for antisocial behaviour in childhood, it failed to account for a number of factors, such as temperament and internalizing behaviour, which may also have had an important influence on parental disciplinary decisions. Consistent with the developmental psychopathological perspective, these findings suggest that children play an active role in the disciplinary process (Cummings et al., 2000).

Participants experiencing CP, especially high frequency CP, were also more likely

to report physical abuse and interparental violence in childhood. CP has not only been identified as a significant risk factor for physical abuse (Gershoff, 2002), but exposure to all forms of family violence has been shown to significantly increase the risk of behaviour and adjustment problems (Straus & Kaufman Kantor, 1994). The current study's findings suggest that participants who experienced CP in childhood were more likely to come from violent homes than those not experiencing CP. Participants experiencing CP also reported significantly lower levels of parental warmth/support, responsiveness, and less consistency in discipline in childhood compared to participants not experiencing CP. Therefore, among the sampled students it seems that parental use of CP occurred within an environment that is not recommended by those advocating for its use. Even if CP is not harmful within a warm and supportive environment, the fact that it is less likely to occur within this type of environment should be of concern. Consistent with a developmental psychology perspective, the context within which any specific parental action occurs needs to be considered as the context plays an important role in contributing to both adaptive and maladaptive development.

Psychological aggression. Like Straus and Field (2003) have suggested, the use of PA as a disciplinary technique in childhood can be considered a near universal phenomenon for participants in this particular sample: Only 5% of the entire sample reported never experiencing PA from either parent during the course of their entire childhood, and more than 90% reported experiencing parental PA at age 10. Participants, on average, experienced 250 separate acts of PA during their tenth year, which suggests that PA is also a frequently used disciplinary technique for children of this age. These findings are especially concerning due to the number of long term negative effects found

in this study associated with the experience of PA in childhood. At the bivariate level, PA was found to significantly predict every internalizing and externalizing adjustment problem assessed in the study. Even after the effects of controls and protective factors were considered, childhood experiences of PA continued to significantly predict anxiety and low self-esteem in adulthood, suggesting that PA may be particularly detrimental to long term developmental health.

No gender differences regarding parental use of PA were found in this study. Coupled with the fact that more than 90% of the sample had experienced some form of PA at age 10, findings suggest that PA was considered an appropriate and acceptable disciplinary practice among parents in this particular sample. Visible minority participants were more likely to report experiencing PA, and to report experiencing it more frequently, than White participants. It is important to note that the vast majority of participants, regardless of racial or ethnic group identification, had experienced PA during their tenth year. Further, PA was not significantly related to nativity status, suggesting that it is a common disciplinary practice both in Canada and abroad. Future research should be aimed at identifying whether different types of PA (e.g., verbal aggression, guilt induction, love withdrawal) are more predominant among certain cultural groups, and whether these different forms of PA have differential impacts depending on the specific culture within which they occur. It has been suggested that differences in parental use of CP may reflect cultural differences in beliefs regarding how to socialize children most effectively (Pinderhughes et al., 2000), and it could be that these cultural differences play a role in both parental use of PA and how the experience of PA impacts developmental health.

Like CP, PA was also associated with levels of misbehaviour in childhood in this sample, suggesting that parents of children who are more difficult to manage resort to the use of PA, and use it more frequently, than parents of less difficult children. As stated previously, the measure of levels of misbehaviour included in this study represented an attempt to control for levels of antisocial behaviour in childhood. A limitation of the current investigation is that no parallel measure existed to assess internalizing symptoms among participants in childhood, and it remains unknown as to how manifestations of internalizing difficulties may impact parental decisions to use PA. Although it seems unlikely that these types of problem behaviours elicit parental CP (Turner & Finklehor, 1996), it is plausible that internalizing difficulties could invoke a psychologically aggressive parental response.

Higher exposure to sociodemographic risk factors was associated with parental use of PA. Positive discipline can be a difficult task for parents, especially when contextual factors interfere with their ability to interact in a calm and consistent manner (Capaldi et al., 1997), which may help to explain the more frequent reliance on both CP and PA in these more sociodemographically disadvantaged circumstances. Also similar to the findings on CP, in homes where physical abuse and interparental violence were present, participants were more likely to experience PA, and experience it at higher rates, than in less violent homes. Participants experiencing PA also reported significantly lower levels of parental warmth/support, responsiveness, and less consistency in discipline in childhood compared to participants not experiencing PA. These findings suggest that PA tends to occur within the context of a less positive home environment.

Externalizing Problems

IPV. Of those participants who were ever involved in an intimate partner relationship, 12.7% reported having ever used IPV, and 9% reported using IPV in past year. Further, only 2.2% reported ever using severe violence. In this particular sample, a substantially lower prevalence of violence perpetration was reported compared to rates reported in other college/university samples (cf., 20% lifetime prevalence in Department of Justice Canada, 2003; past year median prevalence of 29% in Straus, 2004). These differences in prevalence rates could be partially attributable to a number of factors. Participants were asked to report on their most recent relationship in the study, therefore, reported rates may have underestimated the prevalence of IPV because IPV use prior to the most recent relationship would not have been captured in survey responses. Further, the short form of the CTS2 has been found to be less sensitive in detecting the prevalence of IPV when compared to the original full version of the CTS2 (Straus & Douglas, 2004). Finally, the lower prevalence could also represent a tendency for survey respondents to underreport socially undesirable behaviours. Nonetheless, the fact that approximately 1 in every 10 students in the sample reported perpetrating physical violence against an intimate partner in the past year is cause for concern.

The hypothesis that CP in childhood would be a stronger predictor of IPV scores in adulthood was supported in the analyses. When the effects of aggressive discipline were considered simultaneously, only childhood CP predicted IPV scores in adulthood. Results also indicated that neither inductive discipline nor positive parenting characteristics served a protective function in the relationship between childhood CP and perpetration of IPV; these variables were not significantly related to IPV scores and they had no impact on the strength of the association between CP and IPV. CP continued to

be the strongest predictor of later IPV even after control variables and protective factors were included in the model. The relationship between CP and IPV has been documented in a number of studies (Capaldi & Clark, 1998; Douglas & Straus, 2006; Fang & Corso, 2008; Gershoff, 2002; Straus & Kaufman Kantor, 1994; Straus & Yodanis, 1996; Swinford et al., 2007), and these findings provide further evidence for the existence of this relationship. Further, the second strongest predictor of IPV score in the full model was witnessing interparental violence in childhood. These findings are consistent with social learning theory; children learn (both through the experience of CP and through observing aggressive parental behaviour) that violence is an acceptable and efficient means to resolve interpersonal conflict. It should also be noted that demographic factors play an important role in the prediction of IPV in early adulthood as sociodemographic risk exposure as well as participant race/ethnicity remained significant predictors in the full model.

Criminality. The relationship between CP in childhood and criminal behaviour, especially violent offending, has received some support in past research (Fergusson & Lynskey, 1997; Gershoff, 2002; Swinford et al., 2000). However, the relationship between PA in childhood and later criminality remains unexplored in research to date. In the current investigation, 31.2% of the participants gave responses indicating that they had engaged in criminal activity since the age of 15 (i.e., they "agreed" or "strongly agreed" that they had engaged in at least one of the specific items on the criminal history scale). When considered simultaneously, both CP and PA significantly predicted criminality scores. The inclusion of the demographic and contextual control variables reduced the effects of CP to non-significance yet the effects of PA remained significant

after these controls were introduced. This finding was somewhat inconsistent with predictions as it was hypothesized that CP would be a stronger predictor of criminal behaviour than PA. Physical abuse did, in fact, predict criminality scores, so it may be that only more severe forms of physical aggression in childhood are associated with criminal behaviour in adulthood. Although inductive discipline was significantly and negatively related to criminal history scores, it did not reduce the predictive value of PA (or the predictive value of physical abuse) in the model. This suggests that although parental use of inductive discipline in childhood has a direct effect on the risk of criminal behaviour later in life, it fails to serve a protective function in the relationship between PA (or physical abuse) and criminality. Parental warmth/support was found to reduce the effects of PA to non-significance, suggesting that warmth and support in childhood play a more important role in determining later criminality than the experience of PA. It is also important to note that parental warmth and support failed to protect against later criminal behaviour for those individuals who reported having experienced physical abuse in childhood, suggesting that more severe forms of parental aggression are associated with deviant behaviour later in life regardless of whether this violence is used in a context that is otherwise warm and supportive.

Alcohol use. In a survey of Canadian university undergraduate students on past year alcohol consumption, 43.9% reported at least one indicator of harmful drinking (guilt, memory loss, injury, others concerned about drinking) and 31.6% reported at least one indicator of dependent drinking (unable to stop, fail to perform everyday activities, need drink in the morning; Centre for Addiction and Mental Health, 2005). In the current study, 28.8% of the participants responded affirmatively to at least one indicator of

problematic alcohol consumption patterns (i.e., “agreed” or “strongly agreed” with at least one specific item on the alcohol use scale). Therefore, patterns of alcohol use in this particular sample seem comparable to patterns reported on other Canadian campuses.

Contrary to predictions, parental use of aggressive discipline was not found to be a strong predictor of alcohol use in adulthood. Taken together, CP and PA only explained 1.6% of the total variance in alcohol use scores and were not significantly related to alcohol use scores when considered simultaneously. As a matter of fact, only 4.6% of the total variance in alcohol abuse scores was explained by all the independent variables included in the model, including aggressive discipline, demographic and contextual control variables, and the protective parenting variables. However, findings do suggest that the experience of PA in childhood is associated, albeit weakly, with alcohol use later in life. The effects of PA became significant ($\beta = .072$, $p = .05$) once control variables were introduced into the model; however, both male gender and being Canadian-born were stronger predictors of alcohol use than the experience of PA. Inductive discipline was not significantly related to alcohol use scores and did not serve a protective function in the relationship between the experience of PA in childhood and alcohol use in adulthood. The introduction of the positive parenting variables reduced the effects of PA to non-significance. Of all the protective factors considered, only parental consistency in discipline exhibited a significant, negative relationship with alcohol use scores, suggesting that consistency in discipline serves a protective function against alcohol use later in life in the context of aggressive discipline. Given the poor predictive value of the full model, and the limited contribution of both aggressive discipline (1.6% of the total variance) and positive parenting characteristics (1.2% of total variance) in

predicting alcohol use scores, it seems that alcohol abuse among the sampled adult students cannot adequately be explained by the discipline strategies nor the parenting characteristics assessed in this study.

CP and PA as risk factors. According to bivariate analyses, both CP and PA experienced at age 10 were related to IPV scores, criminal behaviour, and higher alcohol use in adulthood for participants in this sample. This is consistent with predictions that both CP and PA experienced in childhood would be associated with externalizing problem behaviours in early adulthood. After the effects of the control variables and protective factors were considered, CP continued to predict IPV in the full model. Neither CP nor PA remained significant in any other externalizing model. Therefore, the hypothesis that CP in childhood would be a stronger predictor of externalizing behaviours in adulthood than childhood PA was partially supported in analyses. Given the fact that physical abuse in childhood continued to significantly predict criminal behaviour in early adulthood, even after the effects of the various protective factors were taken into account, these data suggest the possibility that physically aggressive parenting behaviours are more important determinants of externalizing outcomes in adulthood than childhood experiences of PA. It is reasonable to argue that the stronger association between physical aggression and externalizing problems is due to the fact that physical aggression serves as a more direct model for aggressive and antisocial behaviours. These behaviours modelled and learned in childhood likely become entrenched over time, leading to externalizing behaviour problems in adulthood.

Inductive discipline and positive parenting as protective factors. The limited protective role of inductive discipline in the development of externalizing problem

behaviours is surprising. Contrary to predictions, parental use of inductive discipline at age 10 was not significantly related to IPV scores or alcohol use in adulthood. Further, inductive discipline was only marginally predictive of criminality scores. Although parental use of inductive discipline has been reported to promote prosocial behaviour and to decrease antisocial behaviour among children (Baumrind, 1997b; Hart et al., 1992; Hoffman, 1994; Kerr et al., 2004; Krevans & Gibbs, 1996), the data in the current study suggest that this positive function does not extend into the adult period. Parental use of aggressive discipline likely redirects a child's attention away from the parental disciplinary message, making parental induction less effective when it is used concurrently with either CP or PA. The failure to internalize that parental disciplinary message in childhood likely contributes to the development of externalizing problem behaviours later on.

Parental warmth/support, responsiveness, and consistency in discipline were hypothesized to serve a protective function in the relationship between aggressive discipline in childhood and externalizing behaviour in adulthood. For the most part, these variables neither predicted externalizing problem behaviours nor reduced the effects of aggressive discipline. Therefore, based on these data, the protective function of positive parenting against the development of externalizing behaviours in the context of PA or CP seems limited. Although consistency in discipline protected against alcohol abuse in adulthood, the actual contribution of consistency in the model was minimal as only an additional 1.2% of the variance in total alcohol use scores was explained by the inclusion of the positive parenting variables ($\Delta F = 4.331$, $p \leq .01$). An exception to this general rule was the impact of parental warmth/support in reducing the risk of criminal

behaviour in adulthood associated with PA in childhood.

Internalizing Problems

Depression. According to Public Health Agency of Canada (2002), between 4% and 5% of the adult population will meet criteria for major (i.e., severe) depression in any given 12 month period. In this sample, 4.3% of participants gave responses indicative of moderate depression and 6.8% reported levels that can be considered within the severe range. Therefore, although university samples are often assumed to be high functioning, the prevalence of depression among study participants is comparable to general population rates.

Consistent with hypotheses, PA was found to be a stronger predictor of depression than CP. In fact, CP was no longer significantly related to depression when the effects of demographic and contextual controls were considered. Inductive discipline significantly reduced the risk of depression among participants, yet did not substantially reduce the effects of PA. This suggests that although children of more inductive parents are less likely to be depressed as adults, parental use of this positive technique cannot compensate for the negative effects associated with the experience of PA. As anticipated, parental warmth/support, parental responsiveness, and consistency in discipline were all significantly and negatively related to depression scores and, in contrast to predictions, reduced the effects of PA to non-significance in the full model. Therefore, it appears that these positive parenting characteristics play an important role in determining mental health in adulthood, and can protect against the development of depression that is predicted by the use of psychologically aggressive disciplinary strategies in childhood. The limited impact of CP on depression is somewhat surprising given that a number of

studies have found a relationship between CP in childhood and depression in adulthood (Afifi et al., 2006; Holmes & Robins, 1988; Straus, 2001; Straus & Kaufamn Kantor, 1994; Straus & Yodanis, 1996; Turner & Muller, 2004). However, none of these studies considered the effects of PA in analyses and results from this investigation suggest that the experience of childhood PA has a far greater impact on the development of depression in adulthood than the experience of CP.

Anxiety. In any given 12 month period, 12.2% of Canadians are believed to suffer from anxiety disorders (Public Health Agency of Canada, 2002). Because only a limited number of items were used to assess anxiety, the actual prevalence of anxiety disorders among study participants cannot be established, and higher or lower anxiety scores only represent deviations from the sample mean rather than the presence or absence of anxiety disorder among this sample. Consistent with predictions, PA in childhood was a stronger predictor of anxiety symptoms in adulthood than the experience of childhood CP. As a matter of fact, CP did not significantly predict anxiety once the effects of PA were considered. Contrary to hypotheses, inductive discipline and parental warmth/support did not predict anxiety scores, and, therefore, did not serve a protective function in the relationship between PA and anxiety. However, consistent with predictions, increases in parental responsiveness and consistency in discipline significantly predicted lower levels of anxiety in adulthood. As anticipated, PA continued to predict anxiety even after the effects of the protective factors were considered, and remained the strongest predictor in the full model.

The broad general category of "anxiety disorders" actually encompasses a number of somewhat distinct types of problem behaviours related to anxiety including

generalized anxiety disorder, specific phobias, obsessive compulsive disorder, post-traumatic stress disorder, panic disorder, and social phobia/social anxiety disorders (Public Health Agency of Canada, 2002). It should be noted that the items used to assess anxious behaviour in the current study (i.e., worry too much, nervousness or shakiness inside, and spells of terror or panic) are more akin to symptoms of general anxiety or panic than other types of anxiety disorders. There is some indication that different types of childhood PA predict specific psychological outcomes in adulthood (Allen, 2008). This study found that childhood PA significantly predicted anxiety in adulthood, and because a number of different manifestations of anxious behaviour can occur, future research should investigate whether the different forms of childhood PA are predictive of specific anxiety disorders in adulthood.

Self-esteem. As a group, university and college samples tend to report higher self-esteem scores than reported in the general population; "low" scores among these samples represent relatively "high" self-esteem scores in the absolute sense (Blascovich & Tomaka, 1991). The mean self-esteem score for this particular sample was 31.1 (*SD* = 5.42), which is remarkably similar to scores reported in other Canadian samples of university/college students also using the RSE (cf. *M* = 31.0 in Rusticus, Hubley, & Zambo, 2004; *M* = 30.22 in Schmitt & Allik, 2005). The mean RSE score in the current sample is well above the hypothetical mean (i.e., 25), suggesting that the majority of participants had high levels of self-esteem, and lower scores are not necessarily indicative of poor self-esteem. That being said, the current study's findings suggest that the experience of PA in childhood does have a negative impact on self-esteem in adulthood.

Consistent with predictions, PA in childhood was a stronger predictor of lower

self-esteem in adulthood than childhood experiences of CP. In fact, CP did not significantly predict self-esteem scores when the effects of PA were considered. Although CP failed to predict self-esteem scores, the experience of physical abuse in childhood was significantly and negatively related to self-esteem, suggesting that only more severe forms of physical aggression have an impact on self-concept later in life. As hypothesized, inductive discipline significantly predicted higher self-esteem, but did not entirely eliminate the risk of low self-esteem associated with PA. In fact, inductive discipline seemed to have a greater impact on reducing the risk associated with physical abuse than in reducing the risk associated with PA. However, the effects of both inductive discipline and physical abuse were reduced to non-significance once positive parenting characteristics were considered. Of the positive parenting characteristics considered, only parental warmth/support significantly predicted higher self-esteem scores and was a stronger predictor of self-esteem than PA. Consistent with hypotheses, PA remained significant in the full model, suggesting that the negative effect that PA has on self-concept is not entirely eliminated even when it occurs within a loving and supportive parenting context.

CP and PA as risk factors. According to bivariate analyses, both CP and PA experienced at age 10 were associated with depression, anxiety, and lower self-esteem in adulthood for participants in this sample. This is consistent with predictions that both CP and PA experienced in childhood would be associated with internalizing problem behaviours in early adulthood. After the effects of the control variables and protective factors were considered, PA continued to predict anxiety and low self-esteem in the full models; however, PA no longer predicted depression in the full model. CP was not found

to be a significant predictor in any of the full models. This is consistent with the hypothesis that PA experienced in childhood would be a stronger predictor of internalizing problems in adulthood than the experience of childhood CP. Parental use of PA has been hypothesized to interfere with the achievement of three basic psychological needs required for healthy development: the need for autonomy, competence, and relatedness (Soenens & Vansteenkiste, 2010). PA has a devastating effect on the development of psychological autonomy; competence is undermined by the critical tone that accompanies contingent regard, guilt induction, and shaming; and because parental love is experienced as inauthentic and/or conditional, PA can have a long-term negative impact on feelings of relatedness and connection to parents (Soenens & Vansteenkiste, 2010). These negative effects associated with the experience of PA likely manifest as internalizing problem behaviours throughout the lifespan.

Inductive discipline and positive parenting as protective factors. Inductive discipline played a more prominent role in the relationship between aggressive discipline and internalizing behaviours than for externalizing problems. Parental use of inductive discipline did not significantly predict anxiety; thus, it failed to serve any protective function in the relation between childhood experiences of PA and the development of anxious symptomatology in adulthood. Consistent with hypotheses, inductive discipline significantly predicted both depression and self-esteem scores; yet it did not eliminate the negative effects of PA on either depression or self-esteem scores. PA continued to strongly predict both depression and lower self-esteem even after the effects of induction were considered. An interesting finding was the change in direction of effect for inductive discipline in the depression model. When induction was initially entered into

the model, it was significantly and negatively related to depression, indicating that higher parental induction at age 10 predicted lower depression in adulthood. However, with the inclusion of the positive parenting variables, inductive discipline exhibited a significant positive relationship with depression, indicating that higher induction at age 10 predicted higher depression in adulthood. Based on the current study, it appears that for depression, parental use of induction may serve a limited protective function in the context of PA, but in highly warm, supportive, and responsive environment, inductive discipline actually increases the risk of depression. This change in direction of influence is difficult to explain. Future research directed at disentangling the effects of the specific components of inductive discipline may help to explain this unexpected finding.

The positive parenting variables assessed in the study were also found to decrease the risk of internalizing problem behaviours in this sample. Both parental responsiveness and consistency in discipline during childhood significantly predicted lower anxiety scores in adulthood. As anticipated, the inclusion of these variables failed to eliminate the negative effects associated with the experience of PA in childhood; PA continued to predict anxiety even after the effects of positive parenting were considered, and it remained the strongest predictor of anxiety in the full model. Similarly, although parental warmth/support significantly predicted higher self-esteem, the negative effects associated with childhood PA were not eliminated when the effects of parental warmth/support were controlled. In this case, however, the relative contribution of parental warmth/support on self-esteem was greater than the relative contribution of PA in the full model, suggesting that the levels of parental warmth and support experienced in childhood may be more important determinants of later self-esteem than the experience

of PA. As for depression, all of the positive parenting variables significantly predicted lower depression. The effects of these variables eliminated the risk of depression in adulthood associated with childhood experiences of PA. Again, parental warmth was found to be the strongest predictor of depression scores in the full model. Taken together, these findings suggest that positive parenting, particularly parental warmth and support, protects against the development of internalizing problem behaviours in adulthood, yet this protective function is somewhat limited in scope. As hypothesized, with the exception of depression, PA experienced at age 10 continued to significantly predict internalizing problem behaviours in adulthood even after the effects of these variables were controlled in analyses.

The Importance of Examining both CP and PA in Analyses

When considered independently, the experience of both CP and PA in childhood significantly predicted IPV, criminality, alcohol use, depression, anxiety, and lower self-esteem in adulthood. There was a strong correlation between CP and PA in this study (Pearson's $r = .640$, $p < .01$) suggesting that these types of parental disciplinary strategies tended to co-occur within this sample. A surprising finding in the current investigation was that the negative effects of childhood CP were often eliminated when PA was included in the model. When CP and PA were considered simultaneously, CP no longer predicted alcohol use, anxiety, or lower self-esteem. Therefore, it could be that reported relationships between CP and problem behaviours in extant research are actually due to the psychologically aggressive parental behaviour that tends to accompany CP rather than due to the negative effects of physical aggression alone. PA is rarely investigated as a unique and specific form of aggressive parenting, and the vast majority of studies

concerning the long term effects of CP fail to consider PA in their analyses (see Miller-Perrin et al., 2009 for an exception). The present findings suggest that in order to disentangle the specific effects of CP and PA, both should be considered in future analyses.

Researchers have speculated that the experience of PA may have even greater developmental consequences than the experience of CP (e.g., Garbarino et al., 1986; Hart & Brassard, 1997; O'Hagan, 1993). With the exception of IPV, PA continued to predict, and more strongly predict, both externalizing and internalizing problems in adulthood when the effects of childhood CP were controlled. This finding lends support to the assertion that PA may have greater developmental consequences than CP, at least among this sample of university students. Miller-Perrin et al. (2009) also found that mild CP at age 13 did not predict psychological maladjustment in adulthood, but PA in the form of verbal aggression did. In fact, the effects of PA were found to be a stronger predictor of psychological outcome than the occurrence of physical abuse. These findings are consistent with those reported in the current study. However, this consistency in findings may be partially attributable to similarities in research designs: both of these studies were cross-sectional and based on retrospective reports from university students. Parental use of CP has been found to decline as children age (Straus, 2001), and perhaps decreases in parental use of CP are paralleled by increases of parental PA. So it could be that by age 10, or age 13 in the Miller-Perrin et al. (2009) study, PA becomes a more predominant form of parental discipline than CP. This change in parental disciplinary practices could lead to mistakenly attributing negative outcomes to PA when, in fact, they are related to CP experienced much earlier on in life. Because temporality cannot be established in

cross-sectional designs, it is impossible to draw conclusions about how parental patterns of discipline change over time, and how these changes are related to later functioning and behaviour. Nonetheless, these findings do highlight the importance of investigating PA as a specific disciplinary practice, and to determine precisely how CP and PA interact to predict long term developmental outcomes.

Findings Concerning Parental Use of Inductive Discipline

It was hypothesized that high frequency CP and PA in childhood would be accompanied by low levels of concurrent inductive discipline. This was based on the speculation that parents relying more heavily on aggressive disciplinary techniques would be more concerned with achieving immediate compliance than with promoting long term socialization goals. Further, the fact that inductive discipline has been found to foster compliance and internalization of the parental disciplinary message (Baumrind, 1997b; Grusec & Goodnow, 1994; Hoffman, 1994), would seem to suggest that a reliance on aggressive discipline would not be necessary in the context of high induction. In this sample, high CP and high PA tended to be accompanied by high levels of parental induction. It could be that this combination represents the authoritative parenting model in that firm, consistent, control of children is a central tenet of this parenting style (Baumrind, 1997a). Yet the fact that high frequency CP and PA also coincided with lower levels of warmth, support, and consistency in discipline, which are also central tenets of this model, suggest that these findings could be indicative of a more authoritarian parenting style, which has been linked to both psychologically controlling parenting and adverse adjustment in extant research (Berk & Shanker, 2006). If the high levels of inductive discipline were, in fact, associated with a more authoritarian parenting

model, this could help to explain the limited protective function of inductive discipline within the context of aggressive discipline for the majority of analyses that were conducted in this study.

The limited effectiveness of inductive discipline reported in this study could also be indicative of the problems associated with the typological approach to the study of parenting. The concept of inductive discipline encompasses many different, and perhaps distinct, components. Explanation, reasoning, teaching, monitoring, restorative behaviour, and praise are all components of inductive discipline, and the inductive discipline scale used in the current investigation was designed to tap into each of these specific dimensions. The findings that parental warmth/support, parental responsiveness, and consistency in discipline had different influences depending on the outcome under investigation highlights the importance of investigating specific dimensions of parenting separately in order to identify and assess specific effects. It could be that the specific dimensions of inductive discipline have specific effects on specific outcomes. Research aimed at disentangling the effects of the various components encompassed within the inductive discipline style is an important area to address in future research.

Limitations

The current research is subject to a number of limitations that should be borne in mind when extrapolating from the results. Although childhood experiences of CP and PA were found to predict adverse adjustment in adulthood, the fact that the temporal sequence of constructs cannot be established in a cross-sectional design makes inferences about causality impossible. Further, the study is retrospective in nature, which invokes the possibility of recall bias. A limitation of retrospective questionnaires is that

participants may have difficulty remembering childhood disciplinary experiences and, as such, accounts may not be fully accurate. As well, current adjustment may have an influence on perceptions regarding past events. For example, more depressed participants may reflect on their childhood experiences in a more negative light than more well-adjusted participants, which may have an impact on participants' recall. A single source of information is being used to measure all constructs, which introduces same-source bias.

The fact that relatively few items (between 2 to 4 items per scale) are used to assess certain aspects of childhood experiences also needs to be viewed as a limitation. The low reliabilities reported on some of the scales, particularly the IPV scale (2 items, $\alpha = .544$) and the criminal history scale (3 items, $\alpha = .661$), could indicate that the scales did not accurately represent the construct of interest. The fact that only 2 or 3 items were used to measure these constructs contributes to the low reliability reported on these scales, because alpha coefficients are also partially contingent on the number of items used to assess a construct (Straus & Fauchier, 2007).

Finally, the sampling procedure used in the current study is also subject to a number of limitations. The sample represents a convenience sample of students at the University of Manitoba. Therefore, results are not generalizable to the community at large, or even to the student population at the University of Manitoba. Additionally, almost three quarters of the sample was female, which certainly does not accurately reflect the student population at the University of Manitoba. This gender bias in participation rates also compromises the findings in the current study. However, the nature of the sample is sufficient for examining hypotheses derived from theories as well

as allowing cross-cultural comparisons that are to be conducted in the IPS as each university site involved is using a comparable sample of students.

Conclusions

Consistent with the developmental psychopathology and risk and resiliency perspectives, these findings highlight the importance of investigating both risk and protective factors, and how they interact to predict both adaptive and maladaptive development. Further, because CP and PA do not occur in isolation, the parenting context within which they occur also plays an important role in determining developmental outcomes. Effective discipline is not only about punishing misbehaviour, but also about reinforcing positive behaviour and promoting the parent-child relationship. It is important that research aims at identifying the specific component processes that work to both hinder and facilitate development. That being said, a number of implications can be suggested based on the current study's findings.

Consistent with hypotheses, the experience of CP and PA in childhood predicted less adaptive functioning across multiple domains of functioning in adulthood. Although parental warmth/support, responsiveness, and consistency in discipline did, in fact, attenuate both externalizing and internalizing outcomes, they did not entirely eliminate the negative effects of aggressive discipline in certain domains of functioning. Specifically, CP continued to predict later IPV, and PA continued to predict anxiety and lower self-esteem, even after the effects of both parental induction and positive parenting were considered in analyses. Further, nothing in the current findings suggest that CP or PA is in any way associated with enhanced long term adjustment. This suggests that both CP and PA are related to long term adjustment difficulties that extend into the adult

periods.

The elements of positive parenting included in analyses are characteristic of the authoritative parenting style, which advocates high acceptance (i.e., warmth/support, responsiveness, nurturance) along with firm, consistent control (i.e., discipline, supervision, monitoring; Baumrind, 1997a), and is the recommended parenting strategy, at least in the North American context. Results in the current study highlight the importance of promoting these elements of positive parenting as they are clearly related to more positive development in the long run. A problem with the authoritative parenting model is that it does not explicitly rule out the use of CP within its framework, and some advocates of this parenting style argue that CP is not harmful provided it occurs within the context of a warm and supportive parent-child relationship characterized by the use of induction for disciplinary purposes (Baumrind, 1996; Larzelere, 2000). Participants who experienced CP in this study were significantly more likely to report low parental warmth, low parental responsiveness, and less consistent parental discipline than participants not experiencing CP. Therefore, based on these data, it seems that CP is far more likely to occur in an environment that is in complete opposition to what advocates of CP use recommend.

Like CP, PA is also more likely to occur within a less positive parenting environment. It can be argued that psychologically aggressive parental disciplinary strategies are inconsistent with the authoritative parenting model. Many aspects of PA are antithetical to key components of authoritative parenting. Guilt induction, degradation, love withdrawal, and verbal aggression seem to represent marked departures from the warmth, support, nurturance, and responsiveness that the authoritative model

recommends. The findings regarding the long term effects of parental use of PA do seem to suggest that PA may have even greater developmental consequences than experiences of CP in childhood, which is especially concerning given the frequency with which it is used. Therefore, although advocating for the elimination of CP as a disciplinary strategy seems warranted, the data in the current study suggest that it is not enough. Parents also need to be made aware of the harmful effects that PA has on long term developmental health.

Table 1
Individual and Parental Demographic Characteristics of the Sample

Characteristic	Percentage (*n*) or Mean (*SD*)	Characteristic	Percentage (*n*) or Mean (*SD*)
Gender		Mother Education	
Male	26.0 (294)	Less than high school	8.3 (94)
Female	74.0 (837)	Completed high school	21.3 (241)
		Some college/technical school	27.3 (308)
Age (in years)	24.2 (6.03)	Completed college/university	26.1 (295)
		Some post-graduate	6.1 (69)
Racial/Ethnic Identification		Completed post-graduate	10.9 (123)
White	71.3 (803)		
Biracial	8.3 (94)	Father Education	
Chinese	4.6 (52)	Less than high school	13.9 (156)
South Asian	3.3 (37)	Completed high school	14.7 (164)
Aboriginal[a]	3.1 (35)	Some college/technical school	24.5 (273)
Filipino	3.0 (34)	Completed college/university	25.6 (286)
Black	1.8 (20)	Some post-graduate	5.5 (61)
Latin American	1.6 (18)	Completed post-graduate	15.8 (176)
Other[b]	3.0 (31)		
		Mother Employment[f]	
Current Relationship Status		Full-time paid work	49.7 (559)
Single	39.0 (442)	Part-time paid work	21.2 (238)
Dating	33.6 (380)	Full-time parent	25.7 (289)
Living with partner	11.2 (127)	Unemployed	1.2 (13)
Married	13.3 (151)	Student	1.8 (20)
Other	2.8 (32)	Retired	0.4 (5)

(Table 1 Continued)

Table 1. *Individual and Parental Demographic Characteristics of the Sample* (Continued)

Characteristic	Percentage (*n*) or Mean (*SD*)	Characteristic	Percentage (*n*) or Mean (*SD*)
Parental Marital Status[c]		Father employment[f]	
Married to each other	72.2 (818)	Full-time paid work	92.3 (1026)
Currently together	0.7 (8)	Part-time paid work	1.9 (21)
Separated/Divorced	17.8 (202)	Full-time parent	3.1 (34)
Never lived together	1.7 (19)	Unemployed	1.4 (16)
Parent(s) died	6.7 (76)	Student	0.4 (4)
Adopted	0.9 (10)	Retired	1.0 (11)
Total Household Income[d]			
Less than $10,000	2.4 (26)		
$10,000 – $19,999	3.9 (43)		
$20,000 - $29,999	4.4 (48)		
$30,000 - $39,999	7.8 (86)		
$40,000 - $49,999	8.6 (94)		
$50,000 - $59,999	11.5 (126)		
$60,000 - $79,999	20.3 (223)		
$80,000 - $99,999	15.6 (171)		
$100,000 or more	25.5 (280)		

[a]Aboriginal category includes Native American, Metis, and Inuit. [b]Other category includes Southeast Asian, Arab, West Asian, Korean, Japanese, and Other. Less than 1% of the entire sample fell into each of these respective categories. [c]Parental marital status referred to biological parents' status at the time of the survey. [d]Total household income refers to the family's gross total household income in the year before the participant started university. [e]Mother and father employment status refers to parental employment status at the referent reporting age (i.e., when the participant was age 10).

Table 2
Mean Scores on Independent (Parental Discipline and Parenting Characteristics in Childhood) and Dependent (Outcome Status in Adulthood) Variables

Independent Variable Scales	*n*	Mean (*SD*)	Dependent Variable Scales	*n*	Mean (*SD*)
Corporal punishment	1131	53.43 (262.93)	IPV	938	0.31 (2.05)
Log transformed CP[a]	1131	0.66 (0.79)	Log transformed IPV[a]	938	0.05 (0.17)
Psychological aggression	1131	251.90 (647.21)	Criminal history	1128	1.49 (0.61)
Log transformed PA[a]	1131	1.54 (0.90)	Alcohol use	1125	1.53 (0.63)
Inductive discipline	1130	3.37 (1.78)	Depression	1129	11.11 (9.58)
Warmth/support	1126	2.77 (0.95)	Anxiety	1129	2.09 (0.87)
Responsiveness	1122	2.44 (0.83)	Self-Esteem	1124	31.05 (5.42)
Consistency	1127	2.79 (0.73)			

Note. CP – corporal punishment; PA = psychological aggression; IPV = intimate partner violence.
[a]In order to meet the assumptions of normality and linearity required for multiple regression analyses, it was necessary to log transform (to the base 10) these variables.

Table 3
Contextual, Protective, and Outcomes Variables by the Frequency of Parental Corporal Punishment Use at Age 10 (%)

Independent Variables	Corporal Punishment			
	No CP *n = 521*	Low CP *n = 328*	Moderate CP *n = 157*	High CP *n = 125*
Contextual Variables				
Gender				
Male	37.3	29.5	19.2	14.0
Female	49.2	28.7	12.1	10.0***
Race/ethnicity				
White	50.2	27.8	13.7	8.2
Visible Minority	35.4	32.0	14.6	18.0***
Nativity				
Born in Canada	48.2	29.4	12.6	9.8
Foreign born	33.5	27.1	21.2	18.2***
Socioeconomic risk index				
No risk (0)	50.2	29.9	14.2	5.7
Low risk (1)	43.0	29.0	13.4	14.6
Moderate risk (2-3)	40.9	25.8	14.5	18.8
High risk (4-5)	11.1[a]	33.3	5.6[a]	50.0***
Misbehavior in childhood				
Low misbehavior	52.6	31.0	8.2	8.2
Moderate misbehavior	45.6	32.8	14.4	7.2
High misbehavior	36.6	22.6	19.7	21.1***
Physical child abuse				
No	57.8	29.1	9.6	3.5
Yes	17.1	28.7	24.5	29.7***
Witness IPV				
No	51.6	28.9	13.1	6.4
Yes	23.8	29.1	17.5	29.6***
Protective Factors				
Inductive discipline				
Low	50.0	30.4	8.2	11.4
Moderate	46.0	30.3	14.5	9.2
High	42.3	22.8	16.9	18.0**

(Table 3 Continued)

Table 3. *Contextual and Protective Variables by the Frequency of Parental Corporal Punishment Use at Age 10 (%)* (Continued)

Independent Variables	Corporal Punishment			
	No CP *n = 521*	Low CP *n = 328*	Moderate CP *n = 157*	High CP *n = 125*
Parental warmth/support				
Low	20.2	30.7	16.6	32.5
Moderate	45.7	30.5	15.1	8.8
High	70.7	21.8	6.3	1.1[a]***
Parental responsiveness				
Low	34.9	25.7	15.4	24.0
Moderate	44.3	31.0	15.1	9.7
High	64.3	24.6	7.0	4.1***
Consistency in discipline				
Low	38.2	34.1	9.4	18.2
Moderate	44.7	29.7	15.5	10.1
High	59.3	21.6	11.4	7.8***

Note. CP = corporal punishment. No CP = no CP at age 10; Low CP = CP experienced less than once a month; Moderate CP = CP experienced once a month to once a week; High CP = CP experienced more than one time per week.
[a]Results should be interpreted with caution due to low counts in cells (i.e., cell count < 5).
*$p < .05$, **$p < .01$, ***$p < .001$

Table 4
Contextual, Protective, and Outcome Variables by the Frequency of Parental Psychological Aggression at Age 10 (%)

Independent Variables	Psychological Aggression			
	No PA *n = 111*	Low PA *n = 234*	Moderate PA *n = 365*	High PA *n = 421*
Contextual Variables				
Gender				
Male	8.6	20.9	30.8	39.7
Female	10.3	20.7	32.6	36.4
Race/ethnicity				
White	11.5	22.3	33.3	32.9
Visible Minority	5.9	16.5	30.1	47.5***
Nativity				
Born in Canada	10.6	20.8	32.5	36.0
Foreign born	5.3	19.4	31.2	44.1
Socioeconomic risk index				
No risk (0)	11.3	22.5	34.4	31.8
Low risk (1)	8.6	21.7	30.9	38.9
Moderate risk (2-3)	7.5	14.5	28.5	49.5
High risk (4-5)	5.6[a]	5.6[a]	22.2	66.7***
Misbehavior in childhood				
Low misbehavior	15.1	27.4	32.1	25.5
Moderate misbehavior	8.6	20.2	37.2	34.0
High misbehavior	5.0	13.6	22.2	59.1***
Physical child abuse				
No	12.6	25.6	36.2	25.6
Yes	3.1	8.9	22.3	65.7***
Witness IPV				
No	11.4	24.3	34.1	30.2
Yes	3.6	5.8	24.7	65.9***
Protective Factors				
Inductive discipline				
Low	13.0	21.2	25.5	40.2
Moderate	9.9	21.7	34.7	33.7
High	6.3	15.9	29.1	48.7**

(Table 4 Continued)

Table 4. *Contextual, Protective, and Outcome Variables by the Frequency of Parental Psychological Aggression at Age 10 (%)* (Continued)

Independent Variables	Psychological Aggression			
	No PA *n = 111*	Low PA *n = 234*	Moderate PA *n = 365*	High PA *n = 421*
Parental warmth/support				
Low	3.7	4.3	19.6	72.4
Moderate	8.1	19.7	36.3	35.9
High	23.6	40.8	25.9	9.8***
Parental responsiveness				
Low	6.9	10.9	18.9	63.4
Moderate	8.8	20.0	36.5	34.7
High	17.5	33.9	26.9	21.6***
Consistency in discipline				
Low	8.2	15.3	27.1	49.4
Moderate	9.1	20.2	33.7	37.0
High	15.0	28.7	30.5	25.7***

Note. PA = psychological aggression. No PA = no PA at age 10; Low PA = PA experienced less than once a month; Moderate PA = PA experienced once a month to once a week; High PA = PA experienced more than one time per week.
[a]Results should be interpreted with caution due to low counts in cells (i.e., cell count < 5).
*$p < .05$, **$p < .01$, ***$p < .001$

Table 5
The Frequency of Parental Use of Corporal Punishment in Childhood and Externalizing and Internalizing Problem Behaviours in Adulthood (%)

Frequency of CP	Intimate Partner Violence		Criminal History	
	IPV *n* = 119	No IPV *n* = 819	CH *n* = 353	No CH *n* = 777
No CP	8.2	91.8	24.7	75.3
Low CP	13.7	86.3	32.7	67.3
Moderate CP	17.4	82.6	36.3	63.7
High CP	23.8	76.2***	47.2	52.8***

Frequency of CP	Alcohol Abuse		Depression	
	Abuse *n* = 325	No Abuse *n* = 805	Depressed *n* = 125	No Depression *n* = 1004
No CP	26.2	73.8	7.3	92.7
Low CP	28.7	71.3	11.3	88.7
Moderate CP	26.1	73.9	12.1	87.9
High CP	42.4	57.6**	24.8	75.2***

Frequency of CP	Anxiety		Self-esteem	
	Anxiety *n* = 214	No Anxiety *n* = 915	Low SE *n* = 166	Normal SE *n* = 958
No CP	15.4	84.6	11.5	88.5
Low CP	20.2	79.8	10.8	89.2
Moderate CP	19.1	80.9	21.0	79.0
High CP	29.6	70.4**	30.4	69.6***

Note. CP = corporal punishment; IPV = intimate partner violence; CH = criminal history; SE = self-esteem. No CP = no CP at age 10; Low CP = CP experienced less than once a month; Moderate CP = CP experienced once a month to once a week; High CP = CP experienced more than one time per week.
*$p < .05$, **$p < .01$, ***$p < .001$

Table 6
The Frequency of Parental Use of Psychological Aggression in Childhood and Externalizing and Internalizing Problem Behaviours in Adulthood (%)

Frequency of PA	Intimate Partner Violence		Criminal History	
	IPV *n* = 119	No IPV *n* = 819	CH *n* = 353	No CH *n* = 777
No PA	7.1	92.9	18.0	82.0
Low PA	8.5	91.5	24.4	75.6
Moderate PA	12.4	87.6	27.8	72.2
High PA	17.1	82.9**	41.2	58.8***
Frequency of PA	Alcohol Abuse		Depression	
	Abuse *n* = 325	No Abuse *n* = 805	Depressed *n* = 125	No Depression *n* = 1004
No PA	23.4	76.6	9.0	91.0
Low PA	24.8	75.2	2.6	97.4
Moderate PA	25.3	74.7	9.1	90.0
High PA	35.2	64.8**	18.1	81.9***
Frequency of PA	Anxiety		Self-esteem	
	Anxiety *n* = 214	No Anxiety *n* = 915	Low SE *n* = 166	Normal SE *n* = 958
No PA	12.6	87.4	6.3	93.7
Low PA	11.1	88.9	4.8	95.2
Moderate PA	18.2	81.8	13.8	86.2
High PA	25.5	74.5***	23.2	76.8***

Note. PA = psychological aggression; IPV = intimate partner violence; CH = criminal history; SE = self-esteem. No PA = no PA at age 10; Low PA = PA experienced less than once a month; Moderate PA = PA experienced once a month to once a week; High CP = CP experienced more than one time per week.
*$p < .05$, **$p < .01$, ***$p < .001$

Table 7
Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Intimate Partner Violence (n = 918)

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Step 1							
Constant	0.012	.010		-0.008 – 0.033			
Aggressive Discipline							
CP	0.036	.008	.176***	0.020 - 0.052			
PA	0.007	.007	.038	-0.007 - 0.021			
					.201	.040	19.284***
Step 2							
Constant	0.002	.010		-0.019 – 0.022			
Aggressive Discipline							
CP	0.027	.008	.132***	0.011 – 0.043			
PA	-0.001	.007	-.005	-0.015 - 0.013			
Contextual Variables[a]							
Race/ethnicity	0.036	.012	.096**	0.012 – 0.060			
Sociodem. Risk	0.015	.006	.089**	0.004 – 0.026			
Parental IPV	0.041	.014	.101**	0.013 – 0.069			
					.269	.072	10.416***
Step 3							
Constant	0.002	.014		-0.026 – 0.031			
Aggressive Discipline							
CP	0.027	.008	.132***	0.010 – 0.044			
PA	-0.001	.007	-.005	-0.015 – 0.013			
Contextual Variables							
Race/ethnicity	0.036	.012	.096**	0.012 – 0.060			

(Table 7 Continued)

Table 7. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Intimate Partner Violence (n = 918)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Sociodem. Risk	0.015	.006	.089**	0.004 – 0.026			
Parental IPV	0.041	.014	.101**	0.013 – 0.069			
Alternative Discipline							
Inductive Discipline	0.000	.003	-.002	-0.006 – 0.006			
					.269	.072	0.005
Step 4							
Constant	0.029	.032		-0.033 – 0.092			
Aggressive Discipline							
CP	0.028	.009	.136***	0.011 - 0.045			
PA	-0.001	.008	-.008	-0.018 - .015			
Contextual Variables							
Race	0.034	.012	.092**	0.010 – 0.059			
Sociodem. Risk	0.014	.006	.084*	0.003 – 0.026			
Parental IPV	0.039	.015	.096**	0.010 – 0.068			
Alternative Discipline							
Inductive Discipline	0.001	.004	.015	-0.006 – 0.008			
Positive Parenting							
Warmth/support	0.004	.009	.022	-0.014 – 0.021			
Responsiveness	-0.003	.008	-.018	-0.019 – 0.012			
Consistency	-0.011	.009	-.050	-0.030 – 0.007			
					.272	.074	0.641

(Table 7 Continued)

Table 7. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Intimate Partner Violence (n = 918)* Continued

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Note. *b* = unstandardized beta value; β = standardized beta value; *SE* = standard error; CI = confidence interval; R = multiple correlation coefficient; CP = corporal punishment; PA = psychological aggression; Sociodem. Risk = sociodemographic risk index score; IPV = intimate partner violence.

[a]Participant gender, nativity status, level of misbehaviour in childhood, and the experience of physical abuse did not significantly predict IPV and were removed from the model.

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 8
Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Criminal History (n = 1058)

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Step 1							
Constant	1.230	.036		1.159 – 1.300			
Aggressive Discipline							
CP	0.093	.028	.120***	0.037 – 0.149			
PA	0.132	.025	.196***	0.084 – 0.181			
					.285	.081	46.625***
Step 2							
Constant	1.377	.050		1.279– 1.475			
Aggressive Discipline							
CP	0.003	.029	.004	-0.055 – 0.060			
PA	0.087	.025	.129***	0.037 – 0.136			
Contextual Variables[a]							
Gender	-0.300	.040	-.215***	-0.378 – [-0.222]			
Sociodem. Risk	0.062	.019	.096***	0.024 – 0.099			
Misbehaviour	0.078	.025	.092**	0.028 - 0.128			
Physical Abuse	0.163	.047	.121***	0.071 – 0.256			
Parental IPV	0.121	.049	.079*	0.024 – 0.218			
					.406	.165	21.115***
Step 3							
Constant	1.451	.059		1.337 – 1.566			
Aggressive Discipline							
CP	0.014	.030	.018	-0.044 – 0.072			
PA	0.089	.025	.132***	0.039 – 0.138			

(Table 8 Continued)

Table 8. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Criminal History (n = 1058)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Contextual Variables							
Gender	-0.299	.040	-.214***	-0.377 – [-0.221]			
Sociodem. Risk	0.055	.019	.086**	0.018 – 0.093			
Misbehaviour	0.086	.026	.101***	0.036 - 0.136			
Physical Abuse	0.142	.048	.105**	0.048 – 0.236			
Parental IPV	0.116	.049	.076*	0.019 – 0.213			
Alternative Discipline							
Inductive Discipline	-0.025	.010	-.072*	-0.045 – [-0.005]			
					.412	.170	5.974*
Step 4							
Constant	1.887	.110		1.672 – 2.103			
Aggressive Discipline							
CP	-0.001	.030	-.002	-0.059 – 0.057			
PA	0.044	.027	.066	-0.009 – 0.097			
Contextual Variables							
Gender	-0.300	.039	-.215***	-0.377 – [-0.223]			
Sociodem. Risk	0.045	.019	.070*	0.007 – 0.082			
Misbehaviour	0.068	.026	.080**	0.017 - 0.118			
Physical Abuse	0.121	.048	.089*	0.027 – 0.214			
Parental IPV	0.094	.049	.061†	-0.002 - 0.191			
Alternative Discipline							
Inductive Discipline	0.005	.012	.016	-0.018 – 0.029			

(Table 8 Continued)

Table 8. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Criminal History (n = 1058)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Positive Parenting							
Warmth/support	-0.093	.030	-.145**	-0.151 – [-0.035]			
Responsiveness	-0.009	.026	-.013	-0.060 - 0.042			
Consistency	-0.049	.031	-.058	-0.109 – 0.011			
					.433	.188	7.645***

Note. *b* = unstandardized beta value; β = standardized beta value; *SE* = standard error; CI = confidence interval; R = multiple correlation coefficient; CP = corporal punishment; PA = psychological aggression; Sociodem. Risk = sociodemographic risk index score; IPV = intimate partner violence.

[a]Participant race/ethnicity and nativity status did not significantly predict criminal history and were removed from the model.

†p = .056, *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 9
Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Alcohol Use (n = 1111)

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Step 1							
Constant	1.424	.037		1.352 – 1.497			
Aggressive Discipline							
CP	0.057	.029	.072†	0.000 – 0.115			
PA	0.047	.026	.068	-0.003 – 0.097			
					.125	.016	8.838***
Step 2							
Constant	1.562	.050		1.464 – 1.660			
Aggressive Discipline							
CP	0.053	.030	.066	-0.005 – 0.111			
PA	0.050	.026	.072*	0.000 – 0.100			
Contextual Variables[a]							
Gender	-0.161	.043	-.113***	-0.246 – [-0.077]			
Nativity	-0.132	.053	-.076*	-0.235 – [-0.029]			
					.178	.028	9.205***
Step 3							
Constant	1.619	.060		1.501 – 1.737			
Aggressive Discipline							
CP	0.056	.030	.071††	-0.002 – 0.115			
PA	0.051	.026	.073*	0.000 – 0.101			
Contextual Variables							
Gender	-0.161	.043	-.113***	-.0246 – [-0.077]			
Nativity	-0.134	.053	-.077*	-0.237 – [-0.031]			

(Table 9 Continued)

Table 9. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Alcohol Abuse (n = 1111)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Alternative Discipline							
Inductive Discipline	-0.018	.010	-.050	-0.038 – 0.003			
					.185	.034	2.882
Step 4							
Constant	1.928	.111		1.710 – 2.147			
Aggressive Discipline							
CP	0.048	.030	.060	-0.012 – 0.107			
PA	0.022	.029	.032	-0.034 – 0.078			
Contextual Variables							
Gender	-0.163	.043	-.114***	-0.247 – [-0.079]			
Nativity	-0.138	.052	-.079**	-0.241 – [-0.035]			
Alternative Discipline							
Inductive Discipline	0.006	.013	.016	-0.019 – 0.030			
Positive Parenting							
Warmth/support	-0.024	.032	-.036	-0.086 – 0.039			
Responsiveness	-0.009	.028	-.013	-0.064 – 0.045			
Consistency	-0.088	.033	-.102**	-0.153 – [-0.024]			
					.214	.046	4.331**

Note. *b* = unstandardized beta value; β = standardized beta value; *SE* = standard error; CI = confidence interval; R = multiple correlation coefficient; CP = corporal punishment; PA = psychological aggression; Sociodem. Risk = sociodemographic risk index score; IPV = intimate partner violence.
†p = .051; ††p = .057; *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 10
Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Depression (n = 1055)

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Step 1							
Constant	6.389	.556		5.299– 7.480			
Aggressive Discipline							
CP	1.205	.444	.100**	0.334 – 2.077			
PA	2.523	.388	.239***	1.762 – 3.283			
					.309	.095	55.482***
Step 2							
Constant	4.932	.642		3.672 – 6.192			
Aggressive Discipline							
CP	0.548	.443	.045	-0.321 - 1.417			
PA	1.795	.399	.170***	1.012 – 2.579			
Contextual Variables							
Race	2.188	.628	.103***	0.955 – 3.421			
Sociodem. Risk	0.973	.306	.097**	0.373 – 1.574			
Misbehaviour	0.965	.405	.073*	0.171 – 1.759			
Parental IPV	2.994	.758	.125***	1.506 – 4.482			
					.375	.141	13.897***
Step 3							
Constant	6.269	.802		4.695 – 7.843			
Aggressive Discipline							
CP	0.677	.444	.056	-0.195 – 1.548			
PA	1.801	.398	.170***	1.020 – 2.581			

(Table 10 Continued)

Table 10. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Depression (n = 1055)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Contextual Variables							
Race	2.128	.627	.101***	0.899 – 3.358			
Sociodem. Risk	0.859	.308	.086**	0.255 – 1.463			
Misbehaviour	1.119	.407	.085**	0.320 – 1.918			
Parental IPV	2.821	.759	.117***	1.332 – 4.309			
Alternative Discipline							
Inductive Discipline	-0.439	.159	-.082**	-0.750 – [-0.127]			
					.384	.147	7.644**
Step 4							
Constant	19.108	1.626		15.917 – 22.299			
Aggressive Discipline							
CP	0.162	.437	.013	-0.695 – 1.019			
PA	0.508	.418	.048	-0.312 – 1.328			
Contextual Variables							
Race	1.876	.608	.089**	0.684 – 3.069			
Sociodem. Risk	0.531	.299	.053	-0.056 – 1.118			
Misbehaviour	0.599	.397	.045	-0.180 – 1.378			
Parental IPV	2.034	.737	.085**	0.588 – 3.480			
Alternative Discipline							
Inductive Discipline	0.463	.183	.086*	0.104 – 0.823			
Positive Parenting							
Warmth/support	-2.328	.456	-0.231***	-3.223 – [-1.434]			
Responsiveness	-0.870	.401	-.076*	-1.657 – [-0.083]			
Consistency	-1.396	.476	-.105**	-2.330 – [-0.463]			

(Table 10 Continued)

Table 10. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Depression (n = 1055)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
					.457	.209	27.286***

Note. *b* = unstandardized beta value; β = standardized beta value; *SE* = standard error; CI = confidence interval; R = multiple correlation coefficient; CP = corporal punishment; PA = psychological aggression; Sociodem. Risk = sociodemographic risk index score; IPV = intimate partner violence.

[a]Gender, nativity status, and physical abuse in childhood did not significantly predict depression and were removed from the model.

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 11
Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Anxiety (n = 1116)

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Step 1							
Constant	1.728	.050		1.630 – 1.826			
Aggressive Discipline							
CP	0.034	.040	.031	-0.043 – 0.112			
PA	0.218	.035	.227***	0.150 – 0.286			
					.247	.061	36.273***
Step 2							
Constant	1.514	.065		1.385 – 1.642			
Aggressive Discipline							
CP	0.061	.040	.056	-0.017 – 0.138			
PA	0.209	.034	.218***	0.141 – 0.276			
Contextual Variables[a]							
Gender	0.285	.057	.145***	0.173 – 0.397			
					.286	.082	24.933***
Step 3							
Constant	1.547	.079		1.392 – 1.703			
Aggressive Discipline							
CP	0.063	.040	.058	-0.015 – 0.141			
PA	0.209	.034	.218***	0.142 – 0.276			
Contextual Variables							
Gender	0.285	.057	.145***	0.173 – 0.397			
Alternative Discipline							
Inductive Discipline	-0.011	.014	-.022	-0.038 – 0.017			

(Table 11 Continued)

Table 11. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Anxiety (n = 1116)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
					.287	.082	0.571
Step 4							
Constant	1.992	.149		1.701 – 2.284			
Aggressive Discipline							
CP	0.051	.040	.047	-0.028 – 0.131			
PA	0.168	.039	.176***	0.093 – 0.244			
Contextual Variables							
Gender	0.285	.057	.145***	0.174 – 0.397			
Alternative Discipline							
Inductive Discipline	0.021	.017	.044	-0.012 – 0.054			
Positive Parenting							
Warmth/support	-0.007	.043	-.007	-0.090 – 0.077			
Responsiveness	-0.078	.037	-.075*	-0.152 – [-0.005]			
Consistency	-0.097	.044	-.081*	-0.183 – [-0.010]			
					.308	.095	5.198***

Note. *b* = unstandardized beta value; β = standardized beta value; *SE* = standard error; CI = confidence interval; R = multiple correlation coefficient; CP = corporal punishment; PA = psychological aggression; Sociodem. Risk = sociodemographic risk index score; IPV = intimate partner violence.

[a]Race/ethnicity, nativity status, sociodemographic risk, level of misbehaviour, physical abuse, and witnessing interparental violence did not significantly predict anxiety and were removed from the model.

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 12
Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Self-Esteem (n = 1113)

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
Step 1							
Constant	33.889	.306		33.288 – 34.490			
Aggressive Discipline							
CP	-0.337	.242	-.049	-0.812 – 0.139			
PA	-1.686	.212	-.282***	-2.102 – [-1.269]			
					.313	.098	60.408***
Step 2							
Constant	33.871	.305		33.273 – 34.469			
Aggressive Discipline							
CP	-0.049	.254	-.007	-0.548 – 0.450			
PA	-1.535	.215	-.256***	-1.968 – [-1.113]			
Contextual Variables							
Physical Abuse	-1.389	.394	-.117***	-2.162 – [-0.616]			
					.329	.108	12.424***
Step 3							
Constant	32.750	.413		31.941 – 33.560			
Aggressive Discipline							
CP	-0.202	.256	-.030	-0.703 – 0.300			
PA	-1.586	.214	-.265***	-2.007 – [-1.166]			
Contextual Variables							
Physical Abuse	-1.010	.403	-.085*	-1.801 – [-0.220]			
Alternative Discipline							
Inductive Discipline	0.352	.088	.116***	0.179 – 0.525			

(Table 12 Continued)

Table 12. *Results of Hierarchical Regression Analyses for Effects of the Independent Variables on Self-Esteem (n = 1113)* Continued

Independent Variables	*b*	SE	β	95% CI (*b*)	R	R^2	ΔF
					.348	.121	15.983***
Step 4							
Constant	26.340	.857		24.658 – 28.022			
Aggressive Discipline							
CP	0.119	.251	.017	-0.374 – 0.612			
PA	-0.715	.231	-.119**	-1.169 – [-0.261]			
Contextual Variables							
Physical Abuse	-0.611	.393	-.051	-1.381 – 0.160			
Alternative Discipline							
Inductive Discipline	-0.107	.101	-.035	-0.305 – 0.092			
Positive Parenting							
Warmth/support	1.542	.255	.270***	1.041 – 2.042			
Responsiveness	0.405	.224	.062	-0.034 – 0.844			
Consistency	0.366	.263	.049	-0.150 – 0.882			
					.422	.179	25.859***

Note. *b* = unstandardized beta value; β = standardized beta value; *SE* = standard error; CI = confidence interval; R = multiple correlation coefficient; CP = corporal punishment; PA = psychological aggression; Sociodem. Risk = sociodemographic risk index score; IPV = intimate partner violence.

[a]Gender, race/ethnicity, nativity status, sociodemographic risk, level of misbehaviour, and witnessing interparental violence did not significantly predict self-esteem and were removed from the model.

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Appendix A: Sample size and power analyses calculations

In order to protect against both Type I (finding a significant group difference when no difference actually exists) and Type II (failure to find a group difference when one actually exists) errors, a power analysis was conducted in order to determine the required sample size. As logistic regression analyses were the originally intended form of data analysis (later changed to hierarchical regression), sample size calculations were conducted prior to data collection using formulas that were based on the comparison between two proportions (i.e., the proportion of individuals from two different groups that show evidence of a specific outcome). It was also likely that there would be an unequal number of participants in each group. Therefore, in order to calculate sample size, the researcher is required to (a) estimate the likely relative size differences for the two groups under comparison, and (b) estimate the likely outcome proportion for each group under comparison (Hassard, 1991).

According to Clément and Chamberland (2007), 43% of Canadian children aged 0 to 17 years experienced minor CP and 80% experienced PA from parents in 2004. Therefore, the disparity between group size (i.e., CP vs. no CP compared to PA vs. no PA) was likely to be greater in the PA versus no PA groups, with a ratio of approximately 4:1 (i.e., for every 4 individuals who experienced PA in childhood, there will be 1 participant who did not experience PA). Therefore, for the purposes of sample size calculation, relative group size was based on the anticipated group size difference between the PA and no PA groups. As well, because a number of different outcomes were being considered in the proposed study, a conservative estimate of the outcome proportions based on a review of the literature was used. It was estimated that

approximately 10% of participants not experiencing aggressive discipline in childhood would demonstrate adverse adjustment compared to 25% of participants who experienced aggressive discipline in childhood. As well, a power index of 3.60 ($\alpha = 0.05$ and $\beta = 0.05$) was used in calculations, which ensured 95% power to detect group differences and allows for some degree of error in outcome proportion estimates that could reduce the power of the study (but would still ensure that an acceptable level of power was maintained).

As outlined by Hassard (1991), the sample size calculation is given by:

$$n = \frac{(R + 1)}{R} \; (PI)^2 \; \frac{\bar{p} \; (1 - \bar{p})}{(p_1 - p_2)^2}$$

Where n is the size of group 1 (the smaller group); R is the relative size of the two groups; PI is the desired power index; p_1 is the anticipated proportion in group 1; p_2 is the anticipated proportion in group 2; and $\bar{p}$ is the overall mean proportion (calculated as $\bar{p} = p_1 + Rp_2 / 1 + R$). Sample size is given by $(1 + R)$ (n). Therefore, based on the aforementioned estimates and the given sample size formulas, a sample size of 617 was required to protect against both Type I and Type II errors at the 0.05 level.

Appendix B: Bivariate Correlations Among Study Variables

Variable/Scale	1	2	3	4	5	6	7	8	9
1. CP	X	.640***	.037	-.274***	-.196***	-.082**	.088**	.091**	.070*
2. PA		X	-.050	-.482***	-.321***	-.174***	.106***	.205***	.065*
3. Induction			X	.376***	.300***	.444***	.035	-.077**	-.033
4. Warmth/support				X	.580***	.557***	-.088**	-.313***	-.136***
5. Repsonsiveness					X	.448***	-.084**	-.210***	-.103***
6. Consistency						X	-.071*	-.206***	-.130***
7. IPV							X	.088**	.058
8. Criminality								X	.387***
9. Alcohol Abuse									X
10. Depression									
11. Anxiety									
12. Self-Esteem									
13. Gender									
14. Race/ethnicity									
15. Nativity									
16. Sociodem. Risk									
17. Misbehaviour									
18. Physical abuse									
19. Parental Violence									

Note. CP = corporal punishment; PA = psychological aggression; IPV = intimate partner violence; Sociodem. risk = sociodemographic risk

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ (p values refer to tests of Pearson's correleation coeffecient r) (C**ontinued)**

Appendix B: Bivariate Correlations Among Study Variables (Continued)

Variable/Scale	10	11	12	13	14	15	16	17	18	19
1. CP	.231***	.130***	-.139***	-.025	.140***	.085**	.161***	.367***	.260***	.217***
2. PA	.289***	.266***	-.212***	.011	.135***	.013	.190***	.380***	.365***	.311***
3. Induction	-.086**	-.006	.107***	-.012	-.049	-.008	-.145***	.061*	-.150***	-.085**
4. Warmth/support	-.410***	-.192***	.396***	.019	-.150***	-.037	-.270***	-.224***	-.426***	-.335***
5. Repsonsiveness	-.292***	-.169***	.278***	.019	-.123***	-.008	-.217***	-.151***	-.265***	-.212***
6. Consistency	-.279***	-.130***	.236***	.001	-.164***	-.046	-.227***	-.106***	-.206***	-.213***
7. IPV	.087**	.081*	-.083*	-.031	.141***	.033	.065*	.044	.059	.065*
8. Criminality	.259***	.114***	-.264***	-.231***	.101***	.034	.179***	.183***	.263***	.206***
9. Alcohol Abuse	.175***	.096***	-.171***	-.118***	-.022	-.047	.041	.082**	.088**	.094**
10. Depression	X	.529***	-.614***	-.039	.179***	.096***	.190***	.193***	.243***	.245***
11. Anxiety		X	-.428***	.129***	.054	-.011	.096***	.093**	.124***	.124***
12. Self-Esteem			X	.059*	-.143***	-.087**	-.118***	-.119***	-.228***	-.180***
13. Gender				X	-.087**	-.140***	.042	-.064*	-.099***	.019
14. Race/ethnicity					X	.426***	.212***	.033	.188***	.133***
15. Nativity						X	.113***	-.013	.146***	.109***
16. Sociodem. Risk							X	.144***	.230***	.286***
17. Misbehaviour								X	.163***	.117***
18. Physical abuse									X	.406***
19. Parental Violence										X

Note. CP = corporal punishment; PA = psychological aggression; IPV = intimate partner violence; Sociodem. risk = sociodemographic risk

* $p \leq .05$; **$p \leq .01$; ***$p \leq .001$ (p values refer to tests of Pearson's correleation coeffecient r)

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