

The Influence of Child Corporal Punishment on School Readiness

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Introduction

Child discipline is one of the many responsibilities that come along with parenthood. By definition, discipline draws from basic principles of pedagogy, as it refers to the transmission of mature knowledge and skills of self-control, acceptable behaviour, and respect for oneself and others, to a child (Canadian Paediatric Society, 2004; Durrant, Ensom, & Coalition on Physical Punishment of Children and Youth, 2004).

Corporal Punishment

Corporal punishment (CP), or physical punishment, is a corrective disciplinary practice that is still used by an important proportion of parents today. Distinct from physical abuse, which intends to be injurious (Department of Justice Canada, 2012), CP specifically refers to 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 & Donnelly, 2001, p.4). To this day, global statistics show that any and all variations of this approach (e.g., spanking, slapping, pinching, forcing the child into an uncomfortable position) are prevalent around the world (UNICEF, 2014). In Canada, population trends appear to be marked by a decrease in CP use, with the most recent Canada-wide survey indicating parent-reported rates of 23-26% in 2008-2009 (Fréchette & Romano, 2013), compared to 50-64% based on data from the mid-90’s to early 2000’s (Canadian Press & Leger Marketing, 2002; Fréchette & Romano, 2013).

Remarkably, despite the research showing lower rates in present Canadian homes, CP seems to persist as a parental practice notwithstanding the ongoing controversy surrounding its use. Indeed, as one could expect for an issue so deeply rooted in family and societal values, CP has long been a source of much debate (Benjet

& Kazdin, 2003). Numerous experts have made assertive claims not only with respect to CP's ineffectiveness as a means of child discipline, but also to its violation of children's rights by nature of its discriminative character, and its negative impact on child socio-emotional and behavioural development (Durrant, Ensom, & Coalition on Physical Punishment of Children and Youth, 2004). Others have assumed more reserved standpoints, suggesting that CP is a justifiable approach for reducing child misbehaviour under certain circumstances (Larzelere & Baumrind, 2010; Larzelere & Kuhn, 2005). To date, the use of CP in any setting has been prohibited in 44 countries, whereas it remains lawful in the United States and Canada (Global Initiative to End All Corporal Punishment of Children, 2014).

Research efforts have long documented the risks that CP poses for children's development, particularly on the externalizing and internalizing spectrums of development (Durrant & Ensom, 2012; Ferguson, 2013; Gershoff, 2002). Although less of a research focus over the years, (Gershoff, 2002; Ferguson, 2013) a growing body of evidence is now showing that CP may also pose risks for the development of child cognitive abilities (Berlin et al., 2009; Mackenzie, Nicklas, Waldfogel, & Brooks-Gunn, 2012; Smith & Brooks-Gunn, 1997; Straus and Paschall, 2009; Power & Chapieski, 1986). Altogether, this evidence brings forward several concerns, one of which is the impact of CP use on children's adjustment to the various demands of the formal school setting, and more particularly achievement.

Corporal punishment and school achievement. The issue of school achievement within the context of CP use has received some, although limited, attention in research. Amongst the more rigorous studies that have examined this issue, one study by Bodovski and Youn (2010) considered the longitudinal influence of parent-

reported CP in kindergarten on children's math and reading test scores in the fifth grade. Results showed a strong association between CP and lower grade 5 math achievement, after controlling for a range of socio-demographic variables. Moreover, the former relationship was not significantly reduced by high parental warmth. Expanding the focus to later educational attainment, Straus and Mathur (1994) examined the relation between CP and post-secondary education outcomes based on U.S. nationally representative data. Consistent with a second, though more dated study (Bryan & Freed, 1982), researchers found that young adults' retrospective self-reports of spanking in their teenage years predicted lower rates of college graduation, after controlling for partner violence in the home, age of the respondent, parent education, and ethnicity (Straus & Mathur, 1994). Further evidence for the relationship between CP and school achievement can be drawn from other longitudinal studies (Bradley et al., 2001; Pettit, Bates, & Dodge, 1997).

Taken together, the above evidence is concerning given the negative outcomes associated with school achievement deficits. In particular, lower elementary school achievement has been shown to predict the likelihood of deficits in high school achievement, drop outs (Alexander, Entwisle, & Horsey, 1997), and lower educational attainment (Entwisle, Alexander, Steffel, & Olson, 2005), which can all have important implications for later adult outcomes, such as occupational opportunities and income level (Ceci & Williams, 1997). High-school students who struggle academically may also be at greater risks of dropping out of school, in addition to being more likely to fall into patterns of delinquency and substance abuse (Chavez, Oetting, & Swaim, 1994; Henry, Knight, & Thornberry, 2012). Moreover, school achievement deficits seem to co-exist with poorer mental health (Romano, Babchishin, Marquis, & Fréchette, 2014), whereas

higher achievement is predictive of stronger emotional, behavioural, and cognitive engagement to school (Chase, Hilliard, Geldhof, Warren & Lerner, 2014). Thus, school achievement seems to have important implications not only for children and youth's adjustment, but also for outcomes extending into adult life.

School Readiness

In light of the high stakes associated with school achievement, researchers and policy-makers have paid considerable attention to the enhancement of children's academic outcomes over the last decades (Zill & West, 2001). A prominent focus of research efforts has been on understanding which skills should be promoted during the pre-school period to ensure that children are adequately prepared to enter and succeed in formal schooling. Consequently, school readiness has emerged as both a conceptual and practical application of this thread of literature (Konold & Pianta, 2005; Snow, 2006), and has drawn dramatically more interest from researchers in recent years (Snow, 2006). By definition, school readiness refers to the status of child competencies, measured prior to or at the moment of school entry, with predictive power for later academic success (Snow, 2006). This definition is supported by a wealth of data showing that, in great part, school achievement patterns can be predicted by school readiness indicators (La Paro & Pianta, 2000; Snow, 2006), including children's early number competence, receptive vocabulary, and literacy skills (Duncan et al., 2007; Pagani & Fitzpatrick, 2013; Romano et al., 2010; Snow, 2006). Considering these implications for later achievement, it would seem important to investigate which specific factors can impact the development of school readiness.

School readiness and influencing parental factors. Given the considerable importance of parent-child interactions for early child development (Silber, 1989),

parenting behaviours may be of particular interest in the study of school readiness. A recent study by Dyer, Owen, and Caughy (2014) explored the impact of maternal parenting behaviours on children's developmental outcomes. Results revealed that mothers' harsh or withdrawn styles of parenting, in contrast with child-oriented and directive mothering, were associated with poorer school readiness. Some evidence also suggests that maternal depression, although not a parenting behaviour in and of itself, may be important to take into account when considering the impact of that on school readiness. Depressed mothers may be less likely to engage in child stimulation and scaffolding behaviours that promote early learning (Sohr-Preston & Scaramella, 2006), and thus, as demonstrated in some research, hinder school readiness through parenting behaviour (Okado, Bierman & Welsh, 2014). Furthermore, a literature review by Brooks-Gunn and Markman (2005) highlights that early education programs aimed at increasing parental nurturance and sensitivity, and simultaneously decreasing parental negativity, have shown significant impacts on children's school readiness, as they enhanced child vocabulary, reading achievement, math achievement, and IQ in the later elementary school years (Brooks-Gunn & Markman, 2005). The researchers note, however, that very few of these programs examine changes in parental disciplinary practices, much less how these changes may relate to school readiness outcomes.

Corporal Punishment and School Readiness

Given its intimate link with harsh parenting (Pettit et al., 1997; Smith & Brooks-Gunn, 1997) and, as discussed previously, its potential negative impact on school achievement (Bodovski & Youn, 2010; Bradley et al., 2001; Bryan & Freed, 1982; Pettit et al., 1997; Straus & Mathur, 1994), it would seem important to examine whether parents' use of CP as a disciplinary practice may influence children's development of

school readiness. Previous research that examined CP outcomes during the pre-school period has identified negative relations between both observed and parent-reported CP and toddlers' early cognitive test scores (Berlin et al., 2009; Smith & Brooks-Gunn, 1997; Power & Chapieski, 1986). Of particular interest is a longitudinal study by Mackenzie and colleagues (2012), which examined the impact of CP on pre-schoolers' receptive vocabulary. In this study, caregiver-reported use of spanking was gathered using in-person interviews, and children's receptive vocabulary was assessed 2 years later using the Peabody Picture Vocabulary Test. Findings revealed that frequent spanking at age 3 predicted poorer receptive vocabulary at age 5, after controlling for a range of maternal characteristics (e.g., depressive symptoms), parenting behaviours (e.g., maternal impulsivity), mothers' age, education and employment, and a range of child- and family-level socio-demographics variables. However, this study did not discuss school readiness as an overarching outcome, seeing as only one cognitive outcome was explored.

Additionally, data pulled from a study by Pettit and colleagues (1997) indicate a significant link between mother-reported CP and teacher-reported academic achievement in kindergarten. However, this study focused on the impact of supportive parenting, and therefore did not provide an explicit look into the role of CP in determining cognitive and pre-academic outcomes in pre-school, let alone school readiness specifically. Furthermore, this study used one global teacher-rating to assess the latter outcomes, meaning that no direct assessment of individual child skills was conducted.

In sum, to our knowledge, no research has specifically or explicitly investigated the potential link between CP and school readiness using direct child assessments of

key cognitive and pre-academic skills prior to school-entry. This seems particularly relevant given that, as mentioned previously, CP prevalence and frequency have been shown to be highest during the preschool years (Straus & Stewart, 1999; Vittrup et al., 2006).

The Present Study

This study recognizes the importance of exploring school readiness outcomes in the context of parental CP use. The objective of this study was to examine the influence of child CP on school readiness using standardized measures of children's early number competence, receptive vocabulary, and writing skills. We used data from the Canadian National Longitudinal Survey of Children and Youth (NLSCY) to assess CP use for 2-3 year olds and later school readiness outcomes at 4-5 years of age. In an effort to capture the impact of other parenting factors in conjunction with CP, we also examined co-occurring disciplinary strategies, parenting styles, and caregiver depression as covariates; specifically, we explored their independent influences on school readiness outcomes, as well as their potential interactions with CP. Finally, we controlled for certain child behaviours (i.e., hyperactivity-inattention and physical aggression-opposition) and a range of socio-demographics variables.

We hypothesized that parent-reported CP use would be negatively associated with school readiness. Specifically, we anticipated that CP experiences at 2-3 years would predict lower scores on school readiness measures (i.e., poorer number competence, receptive vocabulary, and early writing skills) at 4-5 years, after taking into account several covariates and controls. Additionally, we expected key covariates (i.e., parenting styles and disciplinary strategies, and caregiver depression) to predict school readiness outcomes and interact significantly with CP.

Method

Data Source

We used data from the National Longitudinal Survey of Children and Youth (NLSCY), a Canadian population-based survey of children and youth that holds extensive longitudinal information about child outcomes and experiences, including CP and school readiness. Since its start in 1994 and up until its last data collection cycle in 2008-2009, the survey was conducted on a biennial basis with different cohorts of children, each of which was nationally representative. The primary data collection measure was a computer-assisted personal home interview with the person most knowledgeable (PMK) about the child, which was the child's biological mother in approximately 90% of cases (Statistics Canada and Human Resources Development Canada, 1995).

Participants

Our study participants included children aged 2-3 years from cycles 6 (2004-2005) and 7 (2006-2007) of the NLSCY. We chose to combine these two cycles of data to allow for a greater sample size of 2-3 year olds. We followed these children over a 2-year span through cycles 7 (2006-2007) and 8 (2008-2009) wherein children were aged 4-5 years, at which point data from the school readiness measures were collected. In the end, our study sample totalled 5,513 children with complete data on CP and school readiness.

Predictor

Corporal punishment. Information on parental use of CP was collected in cycles 6 (2004-2005) and 7 (2006-2007) of the NLSCY by way of parent reports on one item (i.e., *"Please tell me how often you, as his/her parent, do each of the following when this*

child breaks the rules or does things that he/she is not supposed to: ...use physical punishment?"). This item was taken from the Parent Practices Scale (Strayhorn & Weidman, 1988) and was answered based on a 5-point scale from "never" (0) to "always" (4), with higher scores indicating greater frequency of CP use. PMK responses were dichotomized to ensure that any responses other than 0 ("never") indicated CP use. This method is consistent with previous research on CP (Bodovski & Youn, 2010) and takes into account the tendency of parents to underreport their use of CP (Straus, 2010).

Covariates

Our analyses accounted for the independent influences of a number of additional variables, including child- and family-level factors, as all could play an important role in determining children's school readiness.

Co-occurring disciplinary strategies. Co-occurring disciplinary strategies included selected items drawn from the Parent Practices Scale (Strayhorn & Weidman, 1988) and were grouped to reflect the 3 following types of disciplinary strategies: explain/teach (2 items: (1) *Calmly discussing the problem*; (2) *Describing alternative ways of behaving to the child*); psychological aggression (2 items: (1) *Telling the child that he/she is bad or not as good as others*; *Scolding or yelling at the child*); and non-physical punishment (1 item: *Taking away privileges or putting the child in his/her room*).

Parenting practices. Survey items on parenting practices were drawn from the Parent Practices Scale (Strayhorn & Weidman, 1988). The scale included 4 items on parent-child positive interaction, 7 items on ineffectiveness, and 5 items on consistency.

PMK depression. PMK depressive symptoms were assessed through 12 items drawn from the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977).

Controls

In addition to covariates, our analyses controlled for children's behavioural adjustment (hyperactivity-inattention and physical aggression-opposition), and socio-demographics variables (child sex; PMK age, ethnicity, education and employment; spouse education and employment; household size; family structure; and income level) in order to account for potential confounding influences on school readiness.

Outcomes

School readiness. Using data from NLSCY cycles 7 (2006-2007) and 8 (2008-2009), school readiness outcomes were examined using children's scores on 3 standardized tests: Number Knowledge (Griffin & Case, 1997) measured children's number competence, the Peabody Picture Vocabulary Test-Revised (PPVT-R; Dunn & Dunn, 1981) measured their receptive vocabulary, and Who Am I? (de Lemos & Doig, 1999) measured writing skills. These tests were both administered to children and scored by trained NLSCY interviewers (Statistics Canada, 2010).

Data Analysis

To examine the influences of CP and covariates on school readiness outcomes, three multiple linear regression models were ran (i.e., one each for number competence, receptive vocabulary, and writing skills).

Results

Predictors of School Readiness

Results from multiple regression analyses (i.e., unstandardized coefficients [β],

standard errors [SE], and part correlations [r] are presented hereunder for our three school readiness outcomes.

Corporal punishment. Parent-reported CP significantly predicted poorer writing skills in pre-schoolers ($\beta = -1.07$; $p < .05$), accounting for 3% of the variance in their writing skills at 4-5 years of age. We did not find significant associations between CP and children's receptive vocabulary or number competence.

Co-occurring disciplinary strategies. The second explain/teach item (describing alternative ways of behaving) significantly predicted greater number competence ($\beta = .72$; $p < .01$) and stronger writing skills ($\beta = 1.13$; $p < .001$) in pre-schoolers. The item, however, did not emerge as a significant predictor of receptive vocabulary. Non-physical punishment also failed to predict differences in children's receptive vocabulary; however, in contrast with the second explain/teach item, non-physical punishment predicted poorer number competence ($\beta = -.58$; $p < .01$) and writing skills ($\beta = -.73$; $p < .001$) in children. The variance explained by both predictors was 4% for number competence and 5% for writing skills. We did not find significant associations between the first explain/teach item (calmly discussing the problem), both psychological aggression items (telling the child he/she is bad or not as good as others; scolding or yelling at the child), and school readiness outcomes.

Parenting practices. Parent-child positive interaction significantly predicted greater number competence ($\beta = .31$; $p < .01$) and receptive vocabulary ($\beta = .39$; $p < .001$) in children at 4-5 years of age, accounting for 4% and 5% of the variance in the outcomes, respectively; however, positive interaction was not a predictor of significant differences in early writing skills. Consistent parenting significantly predicted greater receptive vocabulary ($\beta = .41$; $p < .001$) in pre-schoolers, accounting for 7% of the variance in this

outcome; however, consistent parenting was not associated with significant differences in number competence or writing skills in children. Lastly, ineffective parenting significantly predicted stronger writing skills ($\beta = .28$; $p < .05$) in pre-schoolers, accounting for 3% of the variance in this outcome; however, ineffective parenting was not a significant predictor of children's number competence or receptive vocabulary.

PMK depression. Greater depressive symptoms in PMKs predicted greater deficits in pre-schoolers' writing skills ($\beta = -1.26$; $p < .05$), and accounted for 3% of the variance in this outcome. We did not find similar associations between PMK depression and children's number competence or receptive vocabulary.

Interactions

We uncovered a total of four significant interactions between parenting covariates and CP in predictive relationships to school readiness. The first two significant interactions we found were between CP and the first explain/teach item in predicting receptive vocabulary scores ($p < .05$) and writing skills ($p < .001$), respectively.

Specifically, children who were exposed to CP displayed significantly poorer receptive vocabulary ($p < .001$) and writing skills ($p < .001$) if their parents were also engaged in fewer calm discussions with them about problem behaviour. CP also significantly interacted with the second psychological aggression item in predicting children's number competence ($p < .001$). Specifically, children who experienced CP displayed significantly lower number competence ($p < .001$) if their parents also frequently raised their voice, scolded, or yelled at them for misbehaving. Finally, we found a significant interaction between CP and non-physical punishment in predicting pre-schoolers' writing skills ($p < .01$). Specifically, children who were exposed to CP displayed significantly poorer writing skills ($p < .001$) if their parents used non-physical punishment techniques less

frequently, relative to other children in the sample.

Discussion

Corporal Punishment as a Predictor of School Readiness

The primary objective of this study was to explore the potential link between parental use of CP in early childhood and children's later school readiness. The hypothesis we set forth, which was that CP would be negatively linked with school readiness, was partially supported by our results. CP experiences at 2-3 years, as reported by parents, predicted significant deficits in pre-schoolers' early writing skills; however, similar deficits in early number competence or receptive vocabulary were not found. This indicates that, after taking into account child behaviours, socio-demographics, and parenting factors, including other parenting styles and disciplinary strategies, CP is still negatively associated with one important component of school readiness in children. Interestingly, our finding on writing skills expands upon past research on CP and school achievement, which identified a link between parent-reported spanking in childhood and results from direct assessments of children's literacy (reading) outcomes throughout grade school (Bradley et al., 2001). More explicitly, our results provide a new window of information into this particular relationship, as they suggest that CP may be impeding the development of preliminary writing skills in early childhood, thus potentially setting the stage for literacy deficits before children actually enter school.

It should be noted that the amount of variance in writing skills that CP accounted for was small (part $r = .03$; Cohen, 1992), but falls within the range obtained in other research (e.g., Pettit et al., 1997). There are a few reasons why such small effects may still be important to consider. Foremost, as highlighted previously, CP has been

identified as a risk factor for negative child outcomes across multiple domains of development (Ferguson, 2013; Gersoff, 2002). While these developmental outcomes may often be studied separately, plausibly, the manifold effects of CP may have a considerable collective impact. For example, small child deficits in one area of functioning (e.g., slight pre-academic deficits) may lead to actual difficulties at school, should they be met with child difficulties in other areas as well (e.g., internalizing and externalizing symptoms). Additionally, given the prevalent use of the practice (Fréchette & Romano, 2013), it has been hypothesized that the small effects of CP may translate into larger cumulative deficits at the population-level (Straus & Paschall, 2009).

With this said, we must bear in mind that children's school readiness is optimally determined by multiple pre-school competencies (Snow, 2006). Thus, in the absence of significant relationships between CP and children's number competence and receptive vocabulary, our ability to draw broader conclusions on how CP impacts children's overall school readiness remains limited. In turning to past literature for comparisons, we note that these findings are not consistent with ones obtained by Mackenzie and colleagues (2012), which revealed a significant relationship between parent-reported spanking at age 3 and pre-schoolers' receptive vocabulary at age 5. To a certain degree, our results also contrast the ones reported by Pettit and colleagues (1997), which indicated a negative link between CP at age 5 and a composite measure of kindergarten achievement that included teacher-rated pre-math skills, early reading, and approaches to learning.

A few factors may help to explain these discrepancies across findings. Foremost, the estimated outcomes in Pettit and colleagues (1997) were based on one composite, teacher-reported measure of kindergarten achievement, whereas we used in-person

standardized performance assessments and examined each school readiness indicator separately. It is also possible that our dichotomous representation of parental CP use failed to capture the differential impact of high-frequency versus low-frequency CP, as was found by Mackenzie and colleagues (2012). As explained previously, we aimed to account for parents' tendency to underreport their use of negative discipline by dichotomizing the CP variable, such that even reports of "rare" CP use were classified as a positive response to the item (i.e., as parent-reported CP use). However, results by Mackenzie and colleagues (2012) and from other studies (Baumrind, Larzelere, & Owens, 2010; Mackenzie et al., 2013; Straus & Paschall, 2009) suggest that while children's cognitive ability is negatively affected by frequent exposure to CP (e.g., spanking twice a week or more; Mackenzie et al., 2012), an occasional or rare use of CP has no such impact. Taking into consideration that approximately 75% of parents in our sample reported using CP "rarely", it is possible that we failed to detect the distinct detrimental impact of more frequent uses of CP (i.e., when used "sometimes", or in rare cases "often" or "always") on outcomes of number competence and receptive vocabulary. However, while our broad estimate of CP use perhaps hindered our ability to detect these differences, it also ultimately lends power to the relationship we did uncover; that is to say, even when considering parents' predominantly rare use of CP, a link between CP and deficits in writing skills still emerged.

Other potential explanations for our findings stem from how information about CP use was gathered, which could have lead to underestimates of both CP prevalence and its outcomes. First, because CP was not explicitly defined in the NLSCY, definitional inaccuracy (e.g., that CP ought to cause injury) could have led to some parents' failures to report on actual CP use. Our reliance on parents' retrospective recall of CP use,

which researchers have claimed is an imperfect capacity (Baumrind, Larzelere, & Cowan, 2002), also could have led to more underreports of CP. Likewise, underreporting could have transpired from reporting biases (e.g., choosing not to report on past CP use because of shame or guilt), especially given the controversial nature of the practice.

Parenting Covariates as Predictors of School Readiness

Because CP is rarely used exclusively by parents (Vittrup et al., 2006), it is also important to consider the influence of other parenting factors in predicting school readiness. As recommended in past research (Gershoff, 2002), we explored CP alongside other disciplinary practices and parenting styles, which accounted for additional variance in children's pre-school skills. Independently of CP, our results indicate that positive child-parent dyads, consistent parenting approaches, and pedagogy-oriented discipline (e.g., describing alternative ways of behaving to the child), may promote the development of school readiness. These findings are consistent with extensive research underscoring that sensible, child-oriented parenting and discipline are conducive to positive outcomes for children's overall adjustment (Newland, 2015), including school readiness (Dyer et al., 2014). As caregiver depression commonly co-occurs with less child stimulation and scaffolding behaviours (Sohr-Preston & Scaramella, 2006), it is also unsurprising that higher PMK depressive symptoms were negatively associated with pre-schoolers' early writing skills.

On the contrary, greater use of non-physical punishment (e.g., time-out procedures) predicted deficits in pre-schoolers' writing skills and number competence. This finding is difficult to interpret independently of other factors, as corrective discipline can prove beneficial and necessary when used adequately – that is, when matched with

proactive disciplinary efforts and ample affective nurturance - but can also be detrimental if appraised from a coercive stance, for example (Baumrind et al., 2010; Stein & Perrin, 1998). We further discuss the role of non-physical punishment when we consider how it interacts with CP in helping predict school readiness outcomes. The finding that ineffective parenting predicted stronger writing skills in pre-schoolers was also unexpected and contrary to past literature (Hindman & Morrison, 2012). Again, we suspect this could be due to underreporting issues, as we see no contributing features to low self-perceived, or actual, parenting competence for the development of children's pre-academic skills.

Corporal Punishment as a Predictor of School Readiness through Other Parenting Variables

As anticipated, we uncovered significant interactions between CP and parenting variables, indicating that the relationship between CP and school readiness is moderated by the use of other disciplinary practices. The first two interactions suggest that the use of CP becomes a greater risk factor for school readiness, or strictly speaking for receptive vocabulary and writing skills, when children also lack opportunities to engage in discussions with their parent about problem behaviour. Equally, these findings suggest that a pedagogy-oriented approach to discipline can perhaps mitigate the negative impact of CP on school readiness. In Pettit and colleagues' (1997) study, this disciplinary strategy (termed "calm discussion") was identified as a key feature of supportive parenting in early childhood and, in fact, was found to be associated with higher school achievement over and above the impact of CP. Furthermore, past research has underscored the importance of verbal interactions, maternal teaching, and responsiveness for the development of children's language and

cognitive competence (Bradley et al., 2001; Hirsh-Pasek & Burchinal, 2006). Owing to this evidence, some researchers (Straus & Paschall, 2009) have hypothesized that CP could be impeding children's cognitive ability specifically by limiting meaningful, problem-focused dialogue between the child and parent, and substituting the latter with physical interventions as means for correcting misbehaviour. Our findings on the interactional effects between CP and the explain/teach strategy lend evidence to this hypothesis, but also situate it within a twofold disciplinary context; as it appears, an overall cutback on verbal interactions, as an inherent consequence of using CP with less parent-child dialogue in disciplinary situations, may be less than ideal when aiming to foster school readiness in preschoolers. Plausibly, we may infer that this relationship would be stronger should a parent consistently favour the use of CP over explaining/teaching in disciplinary interventions. Because our data do not substantiate such an inference, this remains a question for further study.

Yelling and scolding are an understudied disciplinary method (Berlin et al., 2009). Some past research indicates that together with CP (Smith et al., 1997), but not independently of CP (Berlin et al., 2009), verbal punishment or scolding is negatively associated with preschoolers' cognitive outcomes at age 3. The current study echoes these past findings in showing that CP and high yelling/scolding behaviours may together have negative influences on preschoolers' number competence. Indeed, yelling is also most commonly regarded as an inappropriate, harsh parenting behaviour by researchers (Knutson, DeGarmo, & Reid, 2004; Smith et al., 1997) and parents (Passini, Pihet, & Favez, 2014). In keeping with these theoretical and parental insights, our findings therefore indicate that harsh parenting patterns, marked by both verbally and physically coercive discipline, may impede children's ability to perform pre-

academically. Furthermore, we suspect that the increased child stress associated with harsh parenting (Bugental et al., 2003) could be at the source of such deficits, as it could hinder children's ability to attend to cognitively-demanding tasks, such as numeracy. However, further research is warranted to test this hypothesis.

The last significant interaction we uncovered suggests that the negative link between CP and writing skills becomes greater when parents use non-physical punishment techniques infrequently. The use of non-physical corrective discipline proves necessary and effective in instances where limit-setting is required and where persistent misbehaviour must be discouraged (Stein & Perrin, 1998). Further, non-physical punishment strategies, such as the removal of privileges, are perceived as highly acceptable by most parents (Passini et al., 2014). By contrast, CP is not a strategy valued by most parents (Bell & Romano, 2012; Passini et al., 2014) and has evidenced little, if any, benefits in terms of fostering positive behaviour change (Gersoff, 2002). Instead, CP has consistently been linked with increased child externalizing behaviours (Gersoff, 2002), which have been shown to be problematic for school readiness (Konold & Pianta, 2005). Accordingly, we may gather from our findings that, in situations where punishment is in order, the use of physical interventions over non-physical ones (e.g., spanking the child instead of removing a privilege) likely makes for an unfavourable disciplinary approach when aiming to foster school readiness.

Limitations

It is important to acknowledge several study limitations. Foremost, given its correlational design, this study was not able to uncover causal relationships. Although the use of numerous controls and covariates strengthened our study design by helping isolate the relationships we tested, omitted variables may still account for the

differences we obtained. The lack of differentiation between levels of CP severity is also a limitation of our study. We discussed earlier that our dichotomous representation of CP did not distinguish between high- and low-frequency CP; in addition to this, the data provided by the NLSCY did not allow for a differential representation of “mild” CP (e.g., light spanking) versus “severe” CP (e.g., hitting the child with an object), which could have magnified our study outcomes. Our partial reliance on self-reported measures also has its limitations, one of them being retrospective recall. Researchers have put forth that retrospective reports of CP use may be more indicative of the respondent’s mood or feelings at the time of reminiscence (Baumrind et al., 2002), thus potentially leading to failures to report on CP use that truly occurred.

Implications

Altogether, the findings from the present study suggest that CP, when studied alone and alongside other disciplinary strategies, may play a role in hindering children’s prospective school achievement before they actually enter school. These findings, derived from nationally representative data on Canadian children, may be of particular importance for researchers, policy-makers, and most importantly, parents, when considering ways to promote children’s school success from the early years onwards. Given the many implications of school achievement for child, youth, and adult outcomes, our findings are valuable in providing support for early intervention efforts aimed at promoting positive parenting and discipline.

We also hope that our findings can help inform the ongoing discussion around CP. While some researchers (e.g., Larzelere & Baumrind, 2010) have put great emphasis on the justifiability of CP use under a set of very specific conditions, we wish to highlight an alternative perspective. Specifically, with the well-established benefits of

positive parenting and discipline (Newland, 2015), including the ones evidenced in this study, we see no logic in endorsing any form of CP, the outcomes of which may be neutral at best and detrimental at worst. Rather, we see a much more worthwhile endeavour in providing parents with the best possible set of guidelines for raising their children, specifically those that emphasize structure, warmth, and the modeling of positive behaviour.

References

- Alexander, K. L., Entwisle, D. R., & Horsey, C. S. (1997). From first grade forward: Early foundations of high school dropout. *Sociology of education*, 87-107.
- Baumrind, D., Larzelere, R. E., & Cowan, P. A. (2002). Ordinary physical punishment: is it harmful? Comment on Gershoff (2002).
- Baumrind, D., Larzelere, R., & Owens, E. (2010). Effects of pre- school parents' power assertive patterns and practices on adolescent development. *Parenting: Science and Practice*, 10, 157–201.
- Bell, T., & Romano, E. (2012). Opinions about child corporal punishment and influencing factors. *Journal of interpersonal violence*, 27, 2208-2229.
- Benjet, C., & Kazdin, A. E. (2003). Spanking children: The controversies, findings, and new directions. *Clinical psychology review*, 23, 197-224.
- Berlin, L. J., Ispa, J. M., Fine, M. A., Malone, P. S., Brooks-Gunn, J., Brady-Smith, C., ... & Bai, Y. (2009). Correlates and Consequences of Spanking and Verbal Punishment for Low-Income White, African American, and Mexican American Toddlers. *Childdevelopment*, 80, 1403-1420.
- Bodovski, K., & Youn, M. J. (2010). Love, discipline and elementary school achievement: The role of family emotional climate. *Social Science Research*, 39, 585-595.
- Brooks-Gunn, J., & Markman, L. (2005). The contribution of parenting to ethnic and racial gaps in school readiness. *The future of children*, 15, 139-168.
- Bryan, J. W., & Freed, F. W. (1982). Corporal punishment: Normative data and sociological and psychological correlates in a community college population. *Journal of Youth and Adolescence*, 11, 77-87.

Bugental, D. B., Martorell, G. A., & Barraza, V. (2003). The hormonal costs of subtle forms of infant maltreatment. *Hormones and Behavior*, 43, 237-244.

Canadian Paediatric Society. (2004). Effective discipline for children. *Paediatrics and Child Health*, 9, 37-41.

Canadian Press & Leger Marketing. (2002). Child Abuse Report. Montreal, Canada: Author.

Ceci, S. J., & Williams, W. M. (1997). Schooling, intelligence, and income. *American Psychologist*, 52, 1051.

Chase, P. A., Hilliard, L. J., Geldhof, G. J., Warren, D. J., & Lerner, R. M. (2014). Academic Achievement in the High School Years: The Changing Role of School Engagement. *Journal of youth and adolescence*, 43, 884-896.

Chavez, E. L., Oetting, E. R., & Swaim, R. C. (1994). Dropout and delinquency: Mexican-American and Caucasian non-Hispanic youth. *Journal of Clinical Child Psychology*, 23, 47-55.

Claessens, A., Duncan, G., & Engel, M. (2009). Kindergarten skills and fifth-grade achievement: Evidence from the ECLS-K. *Economics of Education Review*, 28, 415-427.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.

de Lemos, M., & Doig, B. (1999). Who Am I?. *Developmental assessment*. Melbourne: Australian Council for Educational Research.

Department of Justice Canada. (2012). *Child abuse is wrong: What can I do?* Retrieved from http://www.justice.gc.ca/eng/pi/fv-vf/pub/caw-mei/pdf/caw_2012.pdf

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., ... & Japel, C. (2007). School readiness and later achievement.

Developmental psychology, 43, 1428.

Dunn, L. M. & Dunn, D. M. (2007). *Peabody Picture Vocabulary Test, Fourth Edition*.

Bloomington, MN: NCS Pearson, Inc.

Durrant, J., & Ensom, R. (2012). Physical punishment of children: lessons from 20 years of research. *Canadian Medical Association Journal, 184*, 1373-1377.

Durrant, J., & Ensom, R., and Coalition on Physical Punishment of Children and Youth (2004). *Joint statement on Physical Punishment of Children and Youth*. Ottawa: Coalition of Physical Punishment of Children and Youth.

Dyer, N., Owen, M. T., & Caughy, M. O. B. (2014). Ethnic Differences in Profiles of Mother–Child Interactions and Relations to Emerging School Readiness in African American and Latin American Children. *Parenting, 14*, 175-194.

Entwisle, D.R., Alexander, K.L., Steffel Olson, L. (2005). First grade and educational attainment by age 22: a new story. *American Journal of Sociology, 110*, 1458–1502.

Ferguson, C. J. (2013). Spanking, corporal punishment and negative long-term outcomes: A meta-analytic review of longitudinal studies. *Clinical Psychology Review, 33*, 196-208.

Fréchette, S., & Romano, E., Change In the Use of Corporal Punishment and Other Disciplinary Strategies Over a 14-Year Period in a Representative Sample of Canadian Parents, *Paper presented at the Society for Research in Child Development Biennial Conference, April, 2012*.

- Gershoff, E. (2002). Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin, 128*, 539–579.
- Global Initiative to End All Corporal Punishment of Children (2014), *Ending legalised violence against children: Global report 2014*. Retrieved from:
<http://www.endcorporalpunishment.org/pages/pdfs/reports/GlobalReport2014.pdf>
- Griffin, S., & Case, R. (1997). Rethinking the primary school math curriculum: An approach based on cognitive science. *Issues in Education, 4*, 1-51.
- Henry, K. L., Knight, K. E., & Thornberry, T. P. (2012). School disengagement as a predictor of dropout, delinquency, and problem substance use during adolescence and early adulthood. *Journal of Youth and Adolescence, 41*, 156–166.
- UNICEF. (2014). *Hidden in Plain Sight: A statistical analysis of violence against children*. Retrieved at: http://www.unicef.org/publications/index_74865.html
- Hirsh-Pasek, K., & Burchinal, M. (2006). Mother and caregiver sensitivity over time: Predicting language and academic outcomes with variable- and person- centered approaches. *Merrill-Palmer Quarterly, 52*, 449–485.
- Konold, T. R., & Pianta, R. C. (2005). Empirically-derived, person-oriented patterns of school readiness in typically-developing children: Description and prediction to first-grade achievement. *Applied Developmental Science, 9*, 174-187.
- Knutson, J. F., DeGarmo, D. S., & Reid, J. B. (2004). Social disadvantage and neglectful parenting as precursors to the development of antisocial and aggressive child behavior: Testing a theoretical model. *Aggressive behavior, 30*, 187-205.

- La Paro, K. M., & Pianta, R. C. (2000). Predicting children's competence in the early school years: A meta-analytic review. *Review of Educational Research, 70*, 443-484.
- Larzelere, R. E., & Baumrind, D. (2010). Are spanking injunctions scientifically supported? *Law & Contemp. Probs.*, 73, 57.
- Larzelere, R.E., & Kuhn, B.R. (2005). Comparing child outcomes of physical punishment and alternative disciplinary tactics: A meta-analysis. *Clinical Child and Family Psychology Review, 8*, 1-37.
- MacKenzie, M. J., Nicklas, E., Waldfogel, J., & Brooks-Gunn, J. (2012). Corporal punishment and child behavioural and cognitive outcomes through 5 years of age: Evidence from a contemporary urban birth cohort study. *Infant and child development, 21*, 3-33.
- Mol, S. E., & Bus, A. G. (2011). To read or not to read: a meta-analysis of print exposure from infancy to early adulthood. *Psychological bulletin, 137*, 267.
- Newland, L. A. (2015). Family well-being, parenting, and child well-being: Pathways to healthy adjustment. *Clinical Psychologist, 19*, 3-14.
- Okado, Y., Bierman, K. L., & Welsh, J. A. (2014). Promoting School Readiness in the Context of Socio-Economic Adversity: Associations with Parental Demoralization and Support for Learning. In *Child & Youth Care Forum* (Vol. 43, No. 3, pp. 353-371). Springer US.
- Pagani, L. S., & Fitzpatrick, C. (2013). Children's School Readiness Implications for Eliminating Future Disparities in Health and Education. *Health Education & Behavior, 41*, 25-33.

- Passini, C. M., Pihet, S., & Favez, N. (2014). Assessing Specific Discipline Techniques: A Mixed-Methods Approach. *Journal of Child and Family Studies*, 23, 1389-1402.
- Pettit, G. S., Bates, J. E., & Dodge, K. A. (1997). Supportive parenting, Ecological Context, and Children's Adjustment: A seven-Year Longitudinal Study. *Child development*, 68, 908-923.
- Power, T. G., & Chapieski, M. L. (1986). Childrearing and impulse control in toddlers: a naturalistic investigation. *Developmental Psychology*, 22, 271.
- Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1, 385-401.
- Romano, E., Babchishin, L., Marquis, R., & Fréchette, S. (2014). Childhood maltreatment and educational outcomes. *Trauma, Violence, & Abuse*.
- Romano, E., Babchishin, L., Pagani, L. S., & Kohen, D. (2010). School readiness and later achievement: replication and extension using a nationwide Canadian survey. *Developmental Psychology*, 46, 995.
- Silber, S. (1989). Family influences on early development. *Topics in early childhood special education*, 8, 1-23.
- Smith, J. R., & Brooks-Gunn, J. (1997). Correlates and consequences of harsh discipline for young children. *Archives of pediatrics & Adolescent medicine*, 151, 777-786.
- Snow, K. L. (2006). Measuring school readiness: Conceptual and practical considerations. *Early Education and Development*, 17, 7-41.
- Sohr-Preston, S. L., & Scaramella, L. V. (2006). Implications of timing of maternal depressive symptoms for early cognitive and language development. *Clinical child and family psychology review*, 9, 65-83.

Stein, M. T., & Perrin, E. L. (1998). Guidance for effective discipline. Committee on psychosocial aspects of child and family health. *Pediatrics*, *101*, 723–728.

Statistics Canada. (2010). *Cycle 8 (2008-2009) user's guide*. Ottawa, Ontario: Statistics Canada.

Statistics Canada and Human Resources Development Canada. (1995). *National Longitudinal Survey of Children and Youth: Overview of survey instruments for 1994-1995 data collection cycle 1*. Ottawa, ON, Statistics Canada and Human Resources Development Canada.

Straus, M. A., & Mathur, A. K. (1994). Corporal punishment by parents and later occupational and economic achievement of children. *Durham, NH: University of New Hampshire, Family Research Laboratory*.

Straus, M. A., & Paschall, M. J. (2009). Corporal punishment by mothers and development of children's cognitive ability: A longitudinal study of two nationally representative age cohorts. *Journal of Aggression, Maltreatment & Trauma*, *18*, 459-483.

Strayhorn, J.M., & Weidman, C.S. (1988). A parent practices scale and its relation to parent and child mental health. *Journal of the American Academy of Child & Adolescent Psychiatry*, *27*, 613-618.

Vittrup, B., Holden, G.W., & Buck, J. (2006). Attitudes predict the use of physical punishment: A prospective study of the emergence of disciplinary practices. *Pediatrics*, *117*, 2055-2064.

Zill, N., & West, J. (2001). *Entering Kindergarten: A Portrait of American Children When They Begin School*. Findings from the Condition of Education, 2000.