

**DETERMINANTS OF MATERNAL USE OF PHYSICAL PUNISHMENT:
IMPLICATIONS FOR CHILD ABUSE PREVENTION**

BY

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**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of
DOCTOR OF PHILOSOPHY**

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Abstract

The link that has been found between parental use of physical punishment and increased risk of child physical abuse has led public health professionals to target physical punishment as part of their child abuse prevention strategies. However, current programs are limited in their effectiveness because the major reasons for its use are unclear. The purpose of this study was to examine the roles of cognition and affect in maternal use of physical punishment. A social information processing model was used to identify distal (pre-existing) and proximal (situational) maternal predictors. A random sample of 110 mothers of 3-year old children were interviewed regarding two disciplinary situations that occurred during the previous two-week period: one which resulted in the use of physical punishment and one which did not. Logistic regression analysis was conducted to assess the relative individual contributions of both distal and proximal predictors of physical punishment use. The distal variable of maternal attitude toward physical punishment and the proximal maternal variables of perceived seriousness and intent of the child misbehaviour and anger in response to the child misbehaviour predicted physical punishment use. Logistic regression analysis was conducted on a modified social information processing model that included both cognitive and affective predictors of physical punishment use. This model explained 53% of the variance in physical punishment use. The identification of these key components of the decision making process in disciplinary situations can be utilized to establish priorities in educational programming aimed at decreasing the rates of parental use of physical punishment and child physical abuse.

Dedication

This dissertation is dedicated to my family. To my husband Curwood Ateah for his love, encouragement, support and unwavering faith in my abilities, and to my daughters Jaymie and Alexandra who are my teachers in all that is important in life.

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Chapter One: Introduction

Physical punishment as a strategy to control or correct the behaviour of children has a long history of practice in Western culture. For example, ancient philosophers were known to beat their students and, along with parents of that time, considered this to be the only useful response to the “foolishness” demonstrated by children (Radbill, 1974). In the sixteenth and seventeenth centuries European Jewish and British and American Puritan parents viewed their children as needing physical punishment due to their immaturity and inability to understand reasoning (Sather, 1991). In 1646, legislation in the United States permitted parents to put to death any child over the age of sixteen who cursed or did not obey his/her parents, unless it was proven that the action was due to the lack of parenting skills on the part of the parents (Bremner, 1970). Eighteenth century British law sanctioned beatings of servants by employers, of wives by husbands and of children by teachers and parents. Section 43 of the Canadian Criminal Code is considered a modified version of this law (Lindfield, 1994/95) where physical force (such as physical punishment), by parents or persons acting in place of parents, is allowed “within reason” for purposes of correction.

However, in recent years, this practice has been questioned as to its effectiveness and perhaps more importantly, its potential harmfulness. The use of physical punishment with children has been linked to many negative developmental outcomes, such as aggression (e.g., Azrin & Holz, 1966; Crick & Dodge, 1996; Parke & Slaby, 1983; Steinmetz, 1979) and anti-social and criminal behaviour (e.g., Dodge, Bates, & Pettit, 1990; Rodgers, Rowe & Chengchang, 1994; Straus, Sugarman & Giles-Sims, 1997). In

particular, concern has been raised regarding the role that physical punishment plays in the emergence of child physical abuse and its related morbidity and mortality (e.g., Gil, 1979a; Kadushin & Martin, 1981; Straus, 1994; Wolfe, 1991).

Despite such research findings, use of physical punishment with children is not uncommon in North America. An estimated 71% to 75% of Canadian parents (Durrant, 1994; Durrant, Rose-Krasnor & Broberg, 1997) and 70% to 90% of American parents (Holden, Coleman, & Schmidt, 1995; Knutson & Selner, 1994; Wauchope & Straus, 1990 and Straus, 1991) have used physical punishment with their children.

The purpose of the present study is to investigate the relative contributions of an array of proximal and distal factors to maternal use of physical punishment in an attempt to identify the key components of the decision-making process in disciplinary situations. The findings of the present study could provide a foundation on which to construct effective primary prevention programs for child physical abuse. In the following section, the literature on correlates of physical punishment will be reviewed. This review will be followed by an overview of programs aimed at decreasing the practice of physical punishment. Finally, the state of current knowledge of the factors that contribute to its use will be described and a theoretical model will be presented to provide an organizing framework for the examination of the interrelationships of predictors. First, definitional issues will be discussed.

Definitions

Punishment has been defined as an act directed at an individual to stop or decrease an unwanted behaviour (Sabatino, 1991). Parents frequently use punishment to obtain

compliance to a request or demand to change or stop a particular behaviour. Corporal or physical punishment has been defined as “the use of physical force with the intention of causing a child to experience pain but not injury for the purposes of correction or control of the child’s behaviour” (Straus, 1995, p. 75). Under this definition, the parent’s motivation in using physical punishment is to manage the child’s behaviour, not to cause injury.

Physical punishment involves the use of the caretaker’s hand or an inanimate object to strike some part of the child’s body, such as the buttocks or hand (Holden & Zambarano, 1992). It commonly includes such acts as spanking, slapping (Graziano, Hamblen & Plante, 1996; Straus, 1994) and grabbing or shoving a child roughly (Straus, 1994). The intensity of physical punishment can vary widely across incidents of its use, so it can be difficult for researchers to clearly differentiate “normative” physical punishment from physical abuse.

Following an examination of parental accounts of physical punishment with children, Gough and Reavey (1997) determined that defining physical punishment is difficult because it has been associated with a range from gentle to severe manifestations. Whipple and Richey (1997) attempted to differentiate between physical discipline, corporal punishment and child physical abuse in order to determine where a line could be drawn between normative parenting and abuse. However, their findings were limited in that measurement of corporal punishment was restricted to the number of spankings per day rather than a qualitative evaluation of the physical punishment administered. Similarly, Larzelere (1986) also used number of spankings administered to define

“moderate spanking.” The definition of physical punishment or spanking in terms of frequency rather than form is inadequate to differentiate between normative physical punishment and abuse. Straus (1994) has attempted to address this issue by excluding “hitting with an object” from the definition of corporal punishment because although traditional cultural norms may allow for its use, it poses a significant risk of injury to children (p. 5). The most commonly accepted difference between physical punishment and physical abuse appears to be that the latter results in physical injury to the child (Straus, 1994). For the purposes of this research the definition of physical punishment that will be utilized is any physical means used in the management and discipline of children without resultant physical injury. However, it is acknowledged that this definition remains problematic because injury cannot always be assessed, for example, in retrospective reports, parental reports and surveys.

Correlates of Physical Punishment

The number of studies examining physical punishment has been steadily increasing. The American Psychological Association’s Psych-Lit database lists 18 studies on physical punishment published up to 1966. For the ensuing twenty years, between 1967 and 1987, 129 studies are listed; and over the past ten years, between 1988 and 1998, one hundred and seventy-eight (178) studies are listed on this topic. The majority of these studies have focused on the association between physical punishment and negative developmental outcomes, such as the link between physical punishment and childhood aggression, while others have examined the contribution of physical punishment to immediate child compliance. Recently, two major reviews of this body of research have been conducted by

Larzelere (1996) and Thompson (1997). The findings of these reviews will be presented here in order to document the risks associated with parental use of physical punishment that underlie efforts to reduce its prevalence.

Methodologies

Larzelere (1996) conducted a review of empirical studies on outcomes of parental use of “nonabusive” physical punishment, which was defined as spanking. Research studies were included in this review if: 1) they were published between 1984 and 1994 in a peer-reviewed journal, 2) there was at least one measure of nonabusive physical punishment by parents, and, 3) the parental discipline measure clearly preceded the child outcome measure. Outcome was conceptualized as beneficial, neutral or detrimental, and was based on whether spanking significantly predicted a desirable outcome such as compliance or a negative outcome such as lower self-esteem. Thirty-five empirical research articles were determined to have met the inclusion criteria. Of these, Larzelere found that 34% identified predominantly detrimental outcomes, such as lower self-esteem or aggression, 40% identified neutral outcomes (neither beneficial or detrimental) and 26% found predominantly beneficial outcomes. However, because Larzelere used a vote-counting method to tally outcomes rather than a statistically based meta-analysis, these results do not take into account research design and sample and effect size.

An extensive meta-analysis conducted by Thompson (1997) also examined the relation of corporal punishment to both positive and negative outcomes, but categorized these effects into both short- and long-term outcomes. Studies were included in this review if they met the following criteria: 1) use of corporal punishment was a predictor

variable, 2) punishment was administered by a parent, 3) corporal punishment was not abusive, (i.e., parental infliction of pain without injury), 4) corporal punishment was examined separately from other disciplinary strategies, such as time-out, 5) the dependent variable was related to one of Thompson's hypotheses, and 6) there was sufficient statistical data to permit inferences of effect size and significance level. Unpublished dissertations were included to avoid publication bias. Studies identifying techniques that clearly constituted physical abuse were excluded from the meta-analysis. However, since Thompson's review of studies on the practice of physical punishment indicates that hitting children with objects is not uncommon, these behaviours were included in the category of corporal punishment.

Thompson's findings indicate that the use of corporal punishment by parents is positively associated with the short-term benefit of compliance. However, it is also positively associated with increased risk of physical abuse, child aggression, adult aggression, child criminal and anti-social behaviour, adult criminal and anti-social behaviour and adult abuse of one's own children or spouse. In addition, her findings indicate that the use of corporal punishment is negatively associated with children's moral internalization, conscience and empathy development, positive relationships with parents (e.g., trust and closeness), and mental health in childhood and adulthood. In the next section, each of these correlates will be elaborated upon and will include relevant findings from each of Larzelere's and Thompson's reviews.

Compliance

A self-evident rationale for the use of corporal punishment with children is to

secure compliance with parental demands. Parents have identified non-compliance by their children as one of the most serious behavioural transgressions (Forehand, 1977). Although there is general agreement that physical punishment can be effective in the immediate situation (Newsom, Favell & Rincover, 1983), long term efficacy requires an increased intensity, duration and frequency and, although it may temporarily suppress undesired behaviour, it does not teach desired behaviour (Bongiovanni, 1979). These findings support the principal rule of operant theory that behaviour is controlled by its immediate consequences (Bandura, 1977). However, although punishment may be effective to varying degrees in decreasing undesirable behaviour (Azrin, Hake, Holz, & Hutchinson, 1965), one of its major disadvantages is the resulting tendency of the punished individual to escape from situations that may involve punishment rather than to refrain from misbehaviour to avoid punishment.

Power and Chapieski (1986) examined the correlates of maternal disciplinary strategies directed at impulse control in toddlers and found that those children whose mothers relied on physical punishment demonstrated the lowest levels of compliance. These authors concluded that these differences were most likely due to: 1) the ineffectiveness of physical punishment in teaching impulse control and compliance and 2) the tendency of caregivers to utilize physical punishment with children who are slow to develop compliance and impulse control.

Although findings from studies included in Thompson's (1997) meta-analysis revealed that immediate compliance to corporal punishment had the largest composite mean effect size of all reviewed studies, only five studies met the criteria for inclusion and

represented the fewest participants (180). In addition, the analysis did not demonstrate homogeneous effect sizes or internal consistency in direction of individual effect sizes. Thompson attempted to account for the heterogeneity of the mean effect size by conducting categorical tests of the effects of possible moderators. The only moderator that demonstrated significance was that of age of target child. Corporal punishment was associated with higher values in children aged 6 to 13 than in children aged 2 to 6 years. Although Thompson cautions that these results cannot be viewed with confidence due to lack of internal homogeneity of the classes, because children between the ages of 2 and 5 years are the most likely to receive corporal punishment (Institute for the Prevention of Child Abuse, 1990; Wauchope & Straus, 1990), the increased frequency of use with this age group may be due to the greater frequency of noncompliance among these children.

In five out of the six clinical treatment studies identified by Larzelere (1996) as having beneficial outcomes (increased compliance or a decrease in escape from time-outs), physical punishment was utilized in conjunction with the use of time-out. Since physical punishment was not examined as a treatment on its own to measure compliance, it cannot accurately be reported as a beneficial outcome in and of itself. The relative effectiveness of time-out alone, other non-physical disciplinary techniques and spanking are unclear. In one study, the effectiveness of time-out periods was compared between those that were child controlled (ending when the child agreed to cooperate) or parent controlled (ending after 2 minutes and 15 seconds) (Bean and Roberts, 1981). Children in the parent controlled time-out treatment were administered two spans on the buttocks if they left the chair before the specified time allotment. Although the findings from this study

indicate that the parent controlled time-out (with spanking back-up) was more effective in securing compliance, the child controlled time-out lasted on average only 9.2 seconds. The findings of an earlier study on the effectiveness of various durations of time-out periods indicated that a time-out period of 1 minute duration was associated with significantly greater compliance than a time-out period of 10 seconds (Hobbs, Forehand, & Murray, 1978). Therefore, in the study by Bean and Roberts (1981) the parent controlled time-out may have been more effective because of its increased length, rather than because spanking was used as a back-up.

In subsequent studies, also reviewed by Larzelere, Roberts and his colleagues held the length of time-out constant in order to examine the relative contributions of spanking and time-out to child compliance (Day & Roberts, 1983; Roberts & Powers, 1990). When a two slap back-up for time-out was administered, there was no significant increase in compliance beyond that obtained by time-out alone. Day and Roberts (1983) concluded that there was no support for the necessity of physical punishment in the use of the time-out strategy and Roberts & Powers (1990) concluded that parents who had a history of child abuse should be trained in alternatives to spanking.

Aggression

Aggression is the most widely studied correlate of physical punishment (e.g., Crick & Dodge, 1996; Parke & Slaby, 1983; Steinmetz, 1979; Travillion & Snyder, 1993). The more children are physically punished for aggressive behaviours at home, the more aggressive they tend to become (Weiss, Dodge, Bates & Pettit, 1992) and, therefore, punishment can an effect opposite to that intended (Eron, 1996). Although the most

obvious connection of physical punishment to aggression might be the modeling or imitative effect (McCord, 1996; Straus, 1996) there are other hypotheses suggesting effects on child behaviour such as operant, elicited or cognitively mediated aggression (Thompson, 1997).

In Thompson's meta-analysis, the examination of corporal punishment and its effects on child aggression was the largest of the analyses in that it was comprised of 30 studies and 15,298 participants. The effect size was classified as small to medium and was strongly consistent in that all 30 studies demonstrated a positive association between use of physical punishment and subsequent child aggression.

Thompson (1997) also found corporal punishment to be associated with significant increases in aggression in adulthood. In this analysis, eight studies were included with a total number of 2805 participants. Seven of the eight studies provided positive effect sizes and one provided a negative effect size. Receiving corporal punishment as a child is, therefore, associated with an increase in aggressive behaviour among children and adults.

Criminal and Anti-social Behaviour

Criminal and anti-social behaviour have been positively correlated with the use of physical punishment with children (e.g., Dodge et al., 1990; Rodgers et al., 1994; Straus et al., 1997). Straus (1991) has determined that among juveniles who have been physically punished, theft rates are higher than among those who have not been so punished. Among a study group of community college students, those students who reported receiving high levels of corporal punishment also reported having engaged in juvenile delinquent behaviour acts more frequently than the other groups (Bryan & Freed, 1982).

In Thompson's (1997) meta-analysis of the relation between physical punishment and child criminal and anti-social behaviour, six studies with a total of 2460 participants were examined. This analysis yielded a small to medium, yet significant, effect size. In addition, Thompson's analysis of the relation between adult criminal or anti-social behaviour and corporal punishment received in childhood (four studies with 1257 participants) demonstrated a homogenous effect size consistent in direction. These analyses demonstrate that corporal punishment is significantly associated with child and adult criminal or anti-social behaviour.

Internalization

Through internalization, the values and attitudes of a society are assumed by children whose behaviour is then motivated by intrinsic factors rather than the possibility of external consequences (Grusec & Goodnow, 1994). In other words, internalization is manifested in long-term compliance and is viewed as indicating the effectiveness of a disciplinary strategy.

Physical punishment may actually undermine moral internalization because the attraction of an activity or object may be enhanced when it is forbidden (McCord, 1991). The goal of the child may become avoidance of getting caught rather than doing what is demanded or desired by the parent (Bettelheim, 1985). The tendency to avoid punishment, rather than the ineffectiveness of punishment, has been speculated to be one of the major disadvantages of its use for behaviour control. Based on their research on operant conditioning and motivational aspects of escape, Azrin et al. (1965) have argued that although punishing a child for undesirable behaviour might be successful in reducing

that behaviour, any behaviour that resulted in escape from the punishing behaviour would be reinforced. Indeed, earlier research (Azrin, 1958 cited in Azrin et al., 1965) demonstrated that subjects typically refused to return to an experimental setting where intense noise had been used as an aversive stimulus to reduce behaviour. In a study of impulse control in toddlers, Power and Chapieski (1986) found that those toddlers whose mothers relied on physical punishment demonstrated the lowest levels of compliance in not handling breakable objects. These authors surmised that these data are consistent with previous research indicating that physical punishment as a disciplinary strategy is ineffective in the long-term.

The relation of corporal punishment to moral internalization was evaluated in Thompson's (1997) meta-analysis of 10 studies representing 881 participants. A significant negative relationship was found. However, because of a small mean effect size and the fact that three out of 10 studies deviated in direction, Thompson concluded that moderating variables may affect this relationship.

Child-Parent Relationship

There is evidence that children whose mothers display angry and punitive behaviours (e.g., slapping, spanking and/or threatening) can become angry and non-compliant and distance themselves from them (Crockenberg, 1987) and that frequent corporal punishment can weaken the parent-child relationship (Van Houten, 1983). Parental empathy may defuse parents' use of punitive discipline (Feshbach, 1989); a lack of empathic and warm responses has been found to predict unfavourable outcomes in children, such as low self-control and behaviour problems (Feshbach, 1987). In addition,

Straus (1994) observed that among the aversive behaviours that accompanied the parental use of corporal punishment were verbal attacks on the child and a lack of warmth.

Although caregivers who are negative and punishing may be successful at generating immediate compliance, experimental research has demonstrated that adults who respond in a like manner were later avoided in play situations and rated as least preferred by the child subjects (Redd, Morris, & Martin, 1975). A primary parental focus on the short-term goal of child compliance, then, may be detrimental to the child-parent relationship if that goal is met through punishment.

In Thompson's (1997) meta-analysis, 13 studies of the relation between corporal punishment and the quality of the parent-child relationship, representing a total of 2414 participants, were reviewed. The results indicated that physical punishment is significantly and negatively associated with the quality of the child-parent relationship. All individual effects sizes were consistent in representing a negative relationship.

Mental Health

The experience of harsh corporal punishment in childhood has been found to increase the probability of depression and alcoholism in adulthood, regardless of socioeconomic status or family history of psychiatric illness (Holmes & Robins, 1988). In a nationally representative sample of 2000 youth between the ages of 10 and 16 years, Turner and Finkelhor (1996) found a positive association between the frequency of corporal punishment experienced and the experience of psychological distress and depression in adolescence. They conclude that even "ordinary and acceptable" (p. 165) disciplinary practices may detrimentally affect child development and well-being. Further,

the experience of corporal punishment during the teenage years has been found to be associated with a greater likelihood of depressive symptoms and suicidal thoughts (Straus, 1995) and women diagnosed with a history of bulimia nervosa are more likely to have experienced physical punishment and family dysfunction in childhood (Rorty, Yager, & Rossotto, 1995).

Thompson's (1997) meta-analysis of the effects of corporal punishment on child mental health was comprised of 12 studies representing 3931 participants. Corporal punishment was found to have a significant negative relation of a medium magnitude to child mental health. In addition, Thompson's analysis of the relation of corporal punishment to adult mental health, comprised of 8 studies and 5995 participants, indicated a significant negative association that, although small in size, was consistent in direction.

Physical Abuse

In social service assessments, the identification of child physical abuse is generally based on whether or not the physical violence has gone beyond that which is legally permissible as physical punishment (Belsky, 1993). Since pain is a necessary component of effective physical punishment (Newsom et al., 1983), the commission of such acts may lead to injury and, therefore, abuse. Although once thought to be the result of psychopathology, many forms of child physical abuse are now considered to be acts of discipline carried to extremes. That is, child abuse can be viewed as including those acts considered to be normative, except in terms of their intensity (Wolfe, 1991).

Professional support for the use of spanking has generally been in reference to the "calm and rational" application of one or two spanks applied to the buttocks,

supplemented by explanations of expectations (Larzelere, 1994; Trumbell, 1996).

However, the act of physical punishment is often emotionally charged for both the parent and the child, leading easily to parental loss of control (Patterson, 1982). Very young children are particularly vulnerable to physical injury because they do not have the physical capability to withstand the force that might be associated with physical punishment. In addition, since the very young child is not competent at social interaction, parental frustration may lead to the belief that physical punishment is the only course of action to get a message across (Gelles, 1974). Gelles and Straus (1979) determined that children aged 3 to 4 years comprise one of the peak age ranges for violent victimization because parents find verbal control, such as reasoning or ordering to be ineffective. Since punishment is unlikely to be effective in modifying behaviour that is not under a child's control due to immature development, parental anger and further punishment are likely to occur (Reid, Patterson, & Loeber, 1982). As the intensity of physical punishment increases, so does the risk of injury to the child. Escalation of 'ordinary' corporal punishment to abuse can also occur because of the relatively ineffective and temporary effects of methods such as spanking, where the intensity of the punishment must be increased in order to obtain the desired behaviour. If only momentary control is achieved, a more intense response may occur on future occasions which may lead to an abusive level of parental punishment (Parke, 1977).

Although not all physical punishment results in injury to the child, studies of child abuse cases indicate that most are the result of incidents of physical discipline in which parents have lost control or underestimated their own strength (Gil, 1979b; Kadushin &

Martin, 1981). For example, Kadushin and Martin (1981) conducted a retrospective study of 66 confirmed cases of child physical abuse committed by a parent (biological, step or foster) for which the abuse was acknowledged by the abuser. Interviews were conducted with these parents to elicit a retrospective-introspective recapitulation and analysis of the abusive incident. Findings from this study indicate that the abuse was almost invariably precipitated by a child behaviour that initiated a disciplinary response by the parent. Most frequently, the parent initiated this response in an effort to change behaviour or “teach a lesson” to the child (p. 190). These authors concluded that acceptance of corporal punishment as a disciplinary measure is directly linked to physical child abuse.

In her analysis of the relationship between corporal punishment and child abuse, Thompson (1997) identified ten studies involving 2488 participants. These findings yielded the second largest effect size in the meta-analysis (after immediate compliance). The effect size was in the medium to large range and all associations were positive.

Summary

Larzelere's and Thompson's reviews differed primarily in terms of how they defined “outcome” of physical punishment. Larzelere classified findings into the broad categories of “beneficial,” “neutral,” and “detrimental,” while Thompson classified outcomes into long- and short-term categories. For example, whereas Larzelere defined compliance as a beneficial outcome, Thompson defined it as a short-term effect. The majority of the studies classified by Larzelere as demonstrating beneficial outcomes examined physical punishment as a back-up to time-out and therefore the research focus was not on the effects of physical punishment per se. In contrast, because Thompson's

review focused on short- and long-term effects of physical punishment on children, it resulted in a more finely grained analysis of development outcomes. Thompson determined that although physical punishment was positively associated with the short-term benefit of compliance, it is also positively associated with increased risk of physical abuse, child aggression, adult aggression, child criminal and anti-social behaviour, adult criminal and anti-social behaviour and adult abuse of one's own children or spouse. In addition, the use of corporal punishment was negatively associated with the development of children's moral internalization, conscience and empathy, positive relationships with their parents (e.g., trust and closeness), and mental health in childhood and adulthood. Another difference between the two reviews is in their methods of documentation of effects. Larzelere used a vote-counting method which simply tallied outcomes, whereas Thompson examined sample size, effect size and research design in her evaluation of the strength of the relationships found.

Such findings regarding the negative outcomes of physical punishment have led public health professionals to attempt to decrease its prevalence as part of child health promotion and child abuse prevention strategies. In the following section, examples of such strategies will be discussed.

Approaches to Reducing Physical Punishment

Many experts in child development (e.g., Gil, 1979a; Kadushin & Martin, 1981; Straus, 1994) have argued that the societal sanctioning and prevalent use of physical punishment are primary causes of child physical abuse and have identified the need to reduce its use in order to decrease rates of abuse. In North America, there are no wide

scale public education programs directed toward this goal. This is likely due to two factors. First, there is not consensus among public health officials and government decision-makers that decreasing the use of physical punishment with children would decrease rates of child physical abuse (Gil, 1979a; Straus & Smith, 1990) and other negative outcomes. Second, not all professionals who are in agreement regarding the importance of decreasing physical punishment use are in agreement with which is the best method of accomplishing this goal. Strategies that have been developed to decrease the use of physical punishment include parent training programs to improve knowledge of alternatives to physical punishment, changing attitudes toward the use of physical punishment and anger management. These strategies can be considered as part of a larger effort to prevent child abuse. Child abuse prevention programs, like other prevention programs in public health, are delineated into three levels namely, primary, secondary and tertiary. Each of these levels will be described in relation to programs aimed at decreasing parental use of physical punishment.

Primary Prevention

Primary prevention initiatives are those that are directed at the general population to address underlying causes and reduce incidence (Meston, 1993); essentially, to decrease the risk for a whole population (Straus & Smith, 1990). Ideally, primary prevention programs aimed at reducing child abuse should reach people prior to or shortly after becoming parents, and should impart information on such topics as the use of non-violent punishment and child development (Straus & Smith, 1990; Wolfe, 1991).

Parent training. No wide-scale primary prevention programs exist in North

America that have the goal of providing alternatives to physical punishment. Some programs that teach non-physical discipline strategies (e.g., Parent Effectiveness Training: P.E.T.) are available, usually for a fee, to small groups of interested parents. Since such programs are only offered to interested individuals, and since parents who seek parenting information are primarily from middle-class backgrounds (Seginer, 1983), they are not likely to be successful as a primary prevention strategy. However, the concept of providing information on alternatives to physical punishment has been supported in research. Durrant (1994) found that parents identified the major outcome of using physical punishment as parental guilt, rather than desirable outcomes such as the child's learning of acceptable behaviour, respect for the parents, or obedience. This finding implies that to decrease the practice of physical punishment, the focus of prevention programs should be on increasing parental knowledge of alternatives, since parents continue to use this method, despite feelings of guilt, possibly because they do not know what else to do. Graziano et al. (1996) found that parents in their study indicated that physical punishment is only effective in the short-term, causes their children distress, and would use alternatives if they were effective and available.

Altering attitudes. In North America, there are no wide scale public education programs that overtly discourage the use of physical punishment with children. It can be speculated that the high rates of its approval and use further perpetuates its acceptance as a normal, even an expected, part of childrearing. Straus and Smith (1990) have observed that programs which offer alternatives to physical punishment generally fail to take a clear stance against its use, possibly because of the ambivalence of the authors of such

programs, or because of a concern that overtly condemning the use of physical punishment may cause anxiety and a subsequent loss of rapport with previously interested parents. It has been proposed that if child experts did take a firm position opposing the use of physical punishment in child rearing, that this would be an important contribution to preventing family violence (Straus and Smith, 1990).

Secondary Prevention

Secondary prevention of child abuse consists of the early identification of parents who are considered to be at-risk for abusing their children, such as those who are single, young, and socially and/or economically disadvantaged. These parents may be offered parenting skills improvement programs. Such programs generally do not overtly describe themselves as child abuse prevention programs, likely because of the stigmatization that could result (Hay & Jones, 1994). Examples of such secondary prevention programs are Nobody's Perfect and the Better Beginnings, Better Futures Project. These two programs focus on the enhancement of parenting skills (including use of non-physical discipline) and knowledge about children and their needs, as well as the development of support networks. Both programs appear to look at the interplay of many factors that contribute to positive parenting behaviours.

The Nobody's Perfect Program was developed for parents who have children aged five and younger and who have been identified as having inadequate time and resources for childrearing. In particular, the program was designed for parents who have one (or more) of the following attributes: young, single, low-income, low-education and isolated (socially, culturally or geographically) (VanderPlatt, 1989). The Better

Beginnings, Better Futures Project is a prevention program directed at a number of communities that have been identified as economically disadvantaged. These communities participate in programs which promote all aspects of healthy child development, including parenting skills (Peters & Russell, 1994). Both of these programs can be considered as secondary prevention programs because they are directed at a sub-group of the population which is considered to be at-risk; the economically disadvantaged.

Tertiary Prevention

The purpose of tertiary prevention is the treatment of attributed factors in families where child abuse has already occurred, in order to prevent recurrence. Such programs (treatments) generally have either short- or long-term goals as their primary focus. Programs with short-term goals are likely to involve crisis intervention (Marion, 1982). Programs with long-term goals are directed at parents who have been abusive and, as part of a treatment program, may be required to complete a parenting skills program where alternatives to physical punishment and anger management skills are taught (Altepeter & Walker, 1992; Wolfe, 1991). Traditionally, and until relatively recently, programs directed at decreasing the occurrence of child abuse have been almost exclusively at the tertiary level (i.e., protecting the individual child from further abuse), rather than at the truly preventive (primary and secondary) levels (Meston, 1993).

Basis for Prevention Programs

Programs that have the goal of decreasing the use of parental physical punishment have focussed primarily on teaching parents alternative disciplinary

strategies, whether these parents are identified as at risk or are self-selected. Clearly then, such training programs are based on the notion that knowledge of alternatives to physical punishment will eliminate, or at least decrease its use. However, research findings have demonstrated that parents may choose to use physical punishment despite knowledge of alternatives (Wissow, 1996). There are other factors, perhaps more proximal to the disciplinary encounter itself, that may influence the parent's decision-making. For example, parental anger may lead to use of physical punishment, even in a knowledgeable, skilled parent. The fact that anger control strategies (which increase parents' awareness of their anger arousal patterns and enhance self-control) are not generally part of primary or secondary prevention strategies implies that its role in physical punishment and child abuse is not considered to be substantial. However, there is no empirical evidence to support the assumption that knowledge of alternatives is a better predictor of parental use of physical punishment than is anger. If decreasing the use of physical punishment is indeed a major factor in the prevention of child physical abuse, programs must focus on the most important predictors of its use. The implications, for example, of focussing on cognitive factors (such as knowledge of alternatives) when affective factors (such as anger) may be the most important predictors of physical punishment use could mean the difference between effective and ineffective programming. In the following section, the current state of knowledge regarding the predictors of parental use of physical punishment will be reviewed.

Parental Use of Physical Punishment

A number of studies have attempted to explain why parents use physical

punishment. Parental factors can be distal (pre-existing) or proximal (in the immediate time frame) to the behavioural transgression. Distal factors that have been examined and found to be associated with the use of physical punishment are: experience of physical discipline as a child, approval of its use, knowledge of child development, socioeconomic level, child temperament, and religious ideology. Proximal factors that have been associated with parental use of physical punishment are: type of child transgression, causal attribution, and parental affective state. In this section, these distal and proximal factors will be discussed.

Distal Factors

Personal history of physical punishment. The intergenerational transmission of parenting practices has been described as the influence of parents' own childhood experiences on their childrearing practices and attitudes; it may be purposeful or unintended (Van Ijzendoorn, 1992). The amount of physical punishment that parents received in their own upbringing has been found to be an important determinant of their approval of it (Buntain-Ricklefs, Kemper, Bell & Babonis, 1994; Durrant, 1994; Ringwalt, Browne, Rosenbloom, Evans & Kotch, 1989) and actual use of it (Buntain-Ricklefs et al., 1994; Graziano et al., 1996; Holden & Zambarano, 1992; Rodriguez & Sutherland, 1999; Socolar & Stein, 1995; Stattin, Janson, Klackenberg-Larsson & Magnusson, 1995; Straus, 1990). The frequency of spankings one received as a child has been positively correlated with the frequency with which one spansks one's own children (Hemenway, Solnick, and Carter, 1994).

The specific types of discipline experienced by children can influence their

approval as adults of those disciplinary actions, including those that can be considered abusive in nature (Belsky, 1978, 1980; Herzberger & Tennen, 1985; Kempe & Kempe, 1978; Parke & Collmer, 1975). In a survey of 679 college students regarding their childhood experiences with corporal punishment, 93% of the students reported that they were spanked as children, and 87% of those spanked agreed that parents should have the right to spank children. Of all students surveyed, 83% indicated that they intend to spank their own future children, yet those who reported never having been spanked as children were significantly less accepting of spanking than those who were. The study's authors concluded that the experience of being spanked as a child is associated with the greater acceptance of this practice (Graziano & Namaste, 1990).

Approval of physical punishment. Straus (1994) has speculated that for some childhood transgressions, such as continuing to misbehave after being told to stop or endangering self or others, the parental response of hitting children is a cultural norm, even an expectation. However, some parents who approve of physical punishment may have children who do not misbehave in a manner in which physical discipline is "needed," and some parents who are opposed to its use may find themselves lashing out at their difficult children (Straus, 1994, p. 52). Since corporal punishment is so prevalent, particularly for preschoolers aged 3 to 5 years (Wauchope & Straus, 1990), it is difficult to determine the role that approval plays in its use. For example, Straus (1994) concluded that almost all parents hit their four year old children, whether or not they believe in corporal punishment, and yet the attitudes of parents of teenaged children toward physical punishment are positively correlated with its use.

Other research has clearly demonstrated a positive relationship between the approval and use of physical punishment by parents. For example, strong intercorrelations were found between attitudes, intentions and practices of physical punishment (Holden & Zambarano 1992). Although a positive attitude toward physical punishment alone does not determine its rate of use, it has been found to be a significant predictor (Jackson, Thompson, Christiansen, Colman, Wyatt, Buckendahl, Wilcox & Peterson, 1999; Holden et al., 1995) and, in a Canadian sample, was found to be the best predictor (Durrant et al., 1997) of its use. Socolar and Stein's (1995) finding of a strong correlation between the approval and practice of spanking and a weak correlation between anger and the practice of spanking suggests that approval may be more important than affect or impulse in explaining parental use of physical punishment.

Knowledge of child development. Parents' expectations of and subsequent responses to their children's behaviour will necessarily be affected by their knowledge level of child development. This knowledge is based on education and experience with children as well as cultural influences. However, it has been determined that even experienced parents may continue to hold firmly to beliefs about children, such as the age at which children should reach developmental milestones, even if their own children fail to do so (Grusec, Hastings, & Mammone, 1994; Hess, Kashiwagi, Azuma, Price & Dickson, 1980; Ninio, 1979). The importance of how well parents know their children or the level of achievement they believe their children can attain at any give time may lie in the consequences of unrealistic expectations. When parents underestimate their children's abilities or levels of achievement and children surpass expectations, this may make for a

pleasant surprise. However, when parents think that children should be able to function at higher levels and perhaps take greater responsibility for their own actions (“know better”), they may respond in a more negative manner. Belsky (1993) has observed that since young children, particularly self-assertive and defiant toddlers, have difficulty controlling their emotions they may meet with hostile care and strong parental resistance. Parents who are not aware of these normal stages of child development may mistake such behaviour as active defiance or disobedience, which are violations found to be most likely to result in parental physical punishment (Graziano et al., 1996).

Parents begin socializing their children when they believe them capable of acting intentionally, which is usually at about age two (Maccoby & Martin, 1983). In a study of mothers’ disciplinary practices, Socolar and Stein (1996) found that use of a negative approach (e.g., yelling and shaming) increased as the child’s age in disciplinary vignettes increased; frequent comments were made by mothers that older children should “know better” (p. 6).

Rickard, Graziano & Forehand (1984) conducted a study to determine why children without behavioural problems were being referred by their mothers to a behaviour therapy clinic. These authors hypothesized that children who were referred to the clinic likely had mothers who had a limited knowledge of normal growth and development, unreal expectations and employed relatively ineffective child control strategies. In addition to finding support for their hypotheses, it was also observed that the lower a parent’s knowledge level of child development norms, the more frequently the parent reported spanking her child.

Socioeconomic status. Research on the relationship between socioeconomic class and parental use of physical punishment has resulted in mixed findings. Some researchers (e.g., Bronfenbrenner, 1979; Daro, 1988; Kohn & Schooler, 1983) have found higher rates of physical punishment by parents of lower socioeconomic backgrounds. The stress related to economic hardship may be a factor in parenting behaviours. Research findings have supported the notion that stressed parents are less likely than non-stressed parents to use nurturing parenting practices, such as positive reinforcement, and more likely to use ineffective and inconsistent punishment practices (Maccoby & Martin, 1983; Patterson, 1983). In a review of 14 studies of physical punishment use and social class, Gecas' (1979) overall assessment was that there is a weak but consistent negative relationship between parental use of physical punishment and social class. He also observed that the more recent studies show less of a class difference than those completed earlier, which supports Bronfenbrenner's (1958, cited in Gecas, 1979) observation that class differences regarding parental discipline techniques are decreasing.

Stark and McEvoy (1970) found that middle class parents demonstrated higher rates of physical punishment than high and low class parents. Based on the U.S. National Family Violence Survey of 1985, Straus (1994) has reported that when a Socioeconomic Status (SES) Index was utilized and factors such as ethnicity and parental age were taken into account, there was no relation between social class and parental use of physical punishment. Although economic hardship and lower socioeconomic status may result in psychological distress in parents (Gecas, 1979), such distress is likely also due to a

number of other related factors such as culture, marital conflict, single parenting, education level and lack of social supports (McLoyd, 1990). One study found that parental education level, closely linked with SES, predicted attitudes that devalued children and physical punishment use (Jackson et al., 1999). Therefore, although social class alone does not appear to have a strong and/or direct affect on parental use of physical punishment, a number of factors related to lower socioeconomic class appear to have an indirect effect on its use.

Child temperament. Temperament has been defined as inherited personality traits that are present in early childhood; the major dimensions being emotionality, activity and sociability (Buss & Plomin, 1984). These authors propose that problems between parent and child may occur when there is a mismatch between their temperaments, particularly when both parent and child are emotional. Ambert (1992) notes that parents who view their children negatively may respond in an adverse manner more frequently whereas a positive perception of the child may diminish the adverse responses. Although the role of child temperament has not been clearly identified as a determinant of physical punishment use, Day, Peterson, and McCracken (1998) found that children who are perceived as socially competent are likely to receive fewer spankings than children perceived as argumentative. These authors underscored the importance of understanding parental perceptions of children's attributes and their influences on disciplinary responses.

Religious ideology. The ideology of physical measures as a disciplinary technique has been attributed to Christian religious doctrine and biblical references along with the rights of parents to choose the manner of child rearing that they have deemed

appropriate (Lindfield, 1994/95). Both the belief in biblical inerrancy and the value of hierarchical role structures within the family have been described as influential factors in the use of physical punishment in that it influences a broader world view that highly values obedience in children (Ellison, Bartkowski, & Segal, 1996). Protestant Christians have been ardent supporters of physical punishment use with children and put forward the perspective that it has a vital and necessary role in “breaking the wills” of children (Greven, 1991). Conservative or Fundamentalist Protestants were found to disproportionately support the use of physical punishment with children by parents (Ellison & Sherkat, 1993; Flynn, 1996) and in schools (Grasmick, Morgan & Kennedy, 1992). Other research found that even when sociodemographic variables were controlled, Conservative Protestant denominations (which includes Adventist, Assemblies of God, Apostolic, and other Pentecostal or evangelical churches) were found to report spanking or slapping their children more often than other denominations of parents (Ellison, et al., 1996).

Proximal Factors

Type of transgression. Parental choice of disciplinary strategy depends in part, on the nature of the violation (Catron & Masters, 1993; Grusec & Goodnow, 1994). Parents are more likely to approve of physical punishment for self-endangerment (Durrant, 1994; Socolar & Stein, 1995), antisocial acts, such as harming another child (Catron & Masters, 1993; Durrant, 1994), and violating property rights of others than for breaches of convention, such as refusal to eat supper (Durrant, 1994). Holden et al. (1995) found that moral transgressions, such as aggression or the violation of someone else’s rights, were

three times more likely to result in a spanking than breaches of convention such as not picking up clothing. Durrant (1994) found that acts that involved psychological harm to others and failure to act in a prosocial manner were also less likely to warrant physical punishment than acts of physical harm to people or objects. Similarly, in a survey of college students' attitudes toward spanking, Flynn (1998) found that students believed that spanking children was most appropriate for serious violations such as stealing, talking back to parents, and hitting less appropriate for less serious violations such as not cleaning one's room. Graziano et al. (1996) determined that parents were most likely to respond to their children with physical punishment in situations when children directly challenged their authority or were disobedient. Therefore, it would seem that even parents who approve of the use of physical punishment are selective in choosing which child behaviours are serious enough to warrant this response.

Attribution. Attribution theory emphasizes that a response to a behaviour depends on the actor's inferences regarding the cause of that behaviour (Dix & Grusec, 1985). In applying this theory to parent-child interactions, Dix, Ruble, Grusec and Nixon (1986) have noted that parents who infer that a child who misbehaved had the knowledge and ability to do otherwise are likely to be more upset with that child than if it was believed that the behaviour was not under the control of the child. This means that parents make inferences about the developmental limitations and motives of their children at various ages. For example, if a mother infers that her two-year-old child is resisting help with getting dressed as an intentional attempt to irritate her, she will likely respond to that behaviour more harshly than if she perceives this action as a normal and

expected attempt at independence. This may relate to parental assessment of fault or purposefulness of the act, and whether or not the parent believes that the child could and should have done otherwise.

In a recent study it was found that parents who believe that a child misbehaved intentionally and that the behaviour was unstable are more likely to utilize physical punishment than parents who believe that the child's behaviour was unintentional and stable (Rose-Krasnor, Durrant & Broberg, 1997). Dix and Grusec (1985) outline a number of attributional biases or influences on how parents perceive their children, such as self-serving bias, where people perceive events in such a manner as to protect their own values and self-esteem, and also parental affect, which may affect parents' evaluations of intent.

Affect Parental affect preceding or following the child's transgression will affect the type and intensity of the parent's response (Cohen, 1996). Negative parental mood prior to the disciplinary episode (Holden et al., 1995) and anger-proneness (Engfer & Schneewind, 1982) have been associated with the use of corporal punishment with children. Parental anger following the transgression has also been found to be related to parental use of physical punishment (Graziano et al., 1996; Peterson, Ewigman & Vandiver, 1994; Rose-Krasnor et al., 1997; & Straus, 1996). Straus (1996) found that 44% of respondents indicated that in over half of the times where they used physical punishment that it was due to losing control of their emotions. Delivery of physical punishment by an adult who is both angry and emotionally aroused may result in an increased risk of venting behaviour that may not be in proportion to the child's

misbehaviour (Wolfe, 1991).

Perhaps parents who do not necessarily believe in the effectiveness of physical punishment might still use it if their anger exceeds a certain threshold. In such cases, physical punishment may be used, not to prevent similar transgressions in the future, but to vent anger or retaliate against the child. Anger may also impair parents' abilities to think of alternative, non-aggressive responses. In a study of college students' experience of receiving corporal punishment as children, 91% reported that their parents had been angry when spankings occurred (Graziano & Namaste, 1990). Peterson et al. (1994) have concluded that the tendency to use physical discipline is positively correlated with the number of behaviour problems the parent perceives the child to have, which is positively related to anger. In other words, the more behaviour problems the parent perceives the child to have, the angrier the parent becomes and the more likely the parent will be to use physical punishment.

However, other studies have not found a clear association between anger and use of physical punishment. For example, Durrant, Broberg and Rose-Krasnor (1999) found that anger was not a significant predictor of the likelihood with which mothers would prescribe physical punishment for a range of child misbehaviours. Similarly, Peterson et al. (1994) and Socolar and Stein (1995) found that maternal anger did not correlate with the practice of, or belief in, the use of spanking.

These conflicting findings may reflect methodological differences among studies. In those studies demonstrating a link between anger and physical punishment use, most methodologies involved questioning about actual experiences and circumstances of

physical punishment (e.g., Graziano & Namaste, 1990), whereas in those studies that have not found such an association, the methodology consisted of hypothetical descriptions of disciplinary situations (e.g., Durrant et al., 1999) or a general recall of anger levels not associated with any particular disciplinary encounters. It may be that the relationship between affect and use of physical punishment would be best understood by the measurement of anger levels during or shortly after actual child transgressions to determine how anger affects the decision to use of physical punishment.

Gaps in Research

Although there has been a substantial amount of research conducted on the correlates of parental use of physical punishment, most of these studies have examined only one or two predictors at a time (e.g., Crockenberg, 1987; Peterson et al., 1994; Ringwalt et al., 1989; Socolar & Stein, 1995; Stolley & Szinovacz, 1997). Both distal factors (such as a history of being physically punished, approval of its use, knowledge of child development and socioeconomic level) and proximal factors (such as the perceived seriousness of the behavioural transgression, attribution and parental affect) are clearly important contributors to parental use of physical punishment. One factor that has not been studied specifically in relation to parental physical punishment use is parental goals during the disciplinary encounter. Hastings and Grusec (1998) have determined that there are three primary categories of parental goals which would result in different responses to children in disciplinary and other situations. Parent-centered goals are most likely to result in responses directed at terminating the situation immediately; child-centered goals are most likely to result in parental actions that are supportive and empathic toward the child;

and relationship-centered goals are most likely to result in parental responses that are directed at child-approved outcomes. Parental goals have been identified as important determinants of general types of disciplinary responses and yet their role in parental use of physical punishment specifically has not been studied.

It is not known how all these identified factors might interact to predict parental use of physical punishment. Few studies have examined the interrelationships of proximal and distal factors to determine their relationships in the decision-making process leading to the use of physical punishment with children. It is not known, for example, whether parental anger might override non-approval of physical punishment thereby resulting in use of physical punishment; or if knowledge of child development might override anger during a behavioural transgression thereby resulting in an alternate disciplinary response.

One study that has considered the interplay of some of the aforementioned correlates of physical punishment was conducted by Holden et al. (1995). These researchers considered both parent and child factors in their analysis. The parent factors considered were attitude toward spanking and affect. The child factors considered were gender, temperament and behaviour. This study also is one of a very few that have examined actual disciplinary encounters between parents and children rather than laboratory simulations or vignettes. The contributions of parent and child factors were examined to test the effects on the dependent variable of the frequency of spanking over a 2-week period. This analysis revealed that the significant predictors were maternal attitude toward spanking and child misdeed.

Although this study serves as an excellent model for future studies, it has several

limitations. First, although the variable of parental mood was measured before and immediately after the misbehaviour and then following the disciplinary response, only the mood immediately before the misbehaviour was included in the regression analysis. It may be that the mood of the parent after the misbehaviour is a more important predictor. If high anger levels following the behavioural transgression predict the use of physical punishment, even when parents may not approve of its use, preventive programs that focus on anger management may be the most effective in decreasing the physical punishment response.

Second, although child misbehaviour was categorized as a breach of convention, destruction, rights violation, or aggression in order to analyze the types of misbehaviours most likely to end in a spanking, it may be more pertinent to ask parents about their perspective on the seriousness of the particular transgression that resulted in use of physical punishment. In some situations, a parent may view defiance as more serious than aggression; in other situations, the reverse may be the case. It may be helpful to know if it is the perception of an act's seriousness or the action itself that is the stronger predictor of physical punishment. If the perceived seriousness of transgressions is an important predictor of physical punishment, preventive programming should focus on normative child development and parental expectations for child behaviour.

Third, neither parental knowledge of child development nor alternatives to physical punishment was measured. If these variables were found to be significant predictors, this would lend further support to preventive programs emphasizing parental knowledge and skills. Another variable that was not examined was the parental goal in the disciplinary

situation. Knowing what a parents hoped to accomplish as a result of the disciplinary response may be helpful in predicting when physical punishment is most likely to be chosen as a response. Finally, this study was conducted with only 39 mothers. It would help to strengthen the findings if a larger number of respondents were included in any further research of this nature.

In summary, while many studies have examined isolated variables, and a few have assessed their interrelationships in a limited way, gaps remain in our knowledge of predictors of parental use of physical punishment. Of particular need are data on the interaction of cognitive and affective factors in parental decision-making during disciplinary situations. This information is vital in order to deliver effective programming to decrease parental use of physical punishment and risk of physical abuse of children. A useful model for examining the interaction of these factors in this decision-making process is the social information-processing model which will be described in the next section.

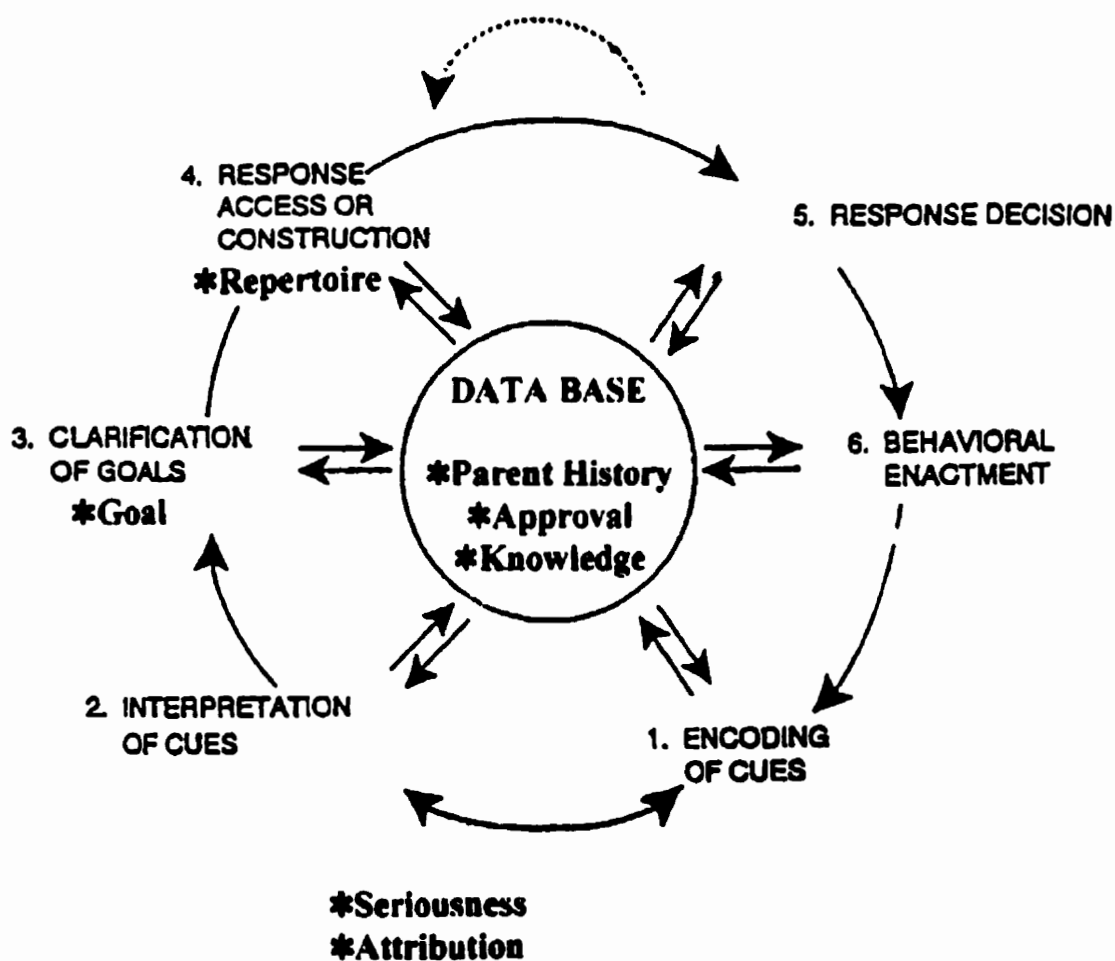
Social Information-Processing Model

The information processing system approach (Newall & Simon, 1972) describes humans as constant learners, processors of information and problem solvers. An essential feature of this model is the view that any behavioural response is the result of a sequence of cognitive processing steps. Theoretical models based on this approach identify internal cognitive mechanisms that account for particular behaviours that occur in response to specific stimuli.

Although the social-information processing (SIP) model (see Figure 1, Crick & Dodge, 1994) was developed primarily to examine children's responses in social situations

Figure 1

Social Information-Processing and Parental Disciplinary Decision-Making



of peer conflict, it may also be useful for understanding parental responses in childrearing situations. Both involve the behaviour of an individual in a conflict situation. Whereas early SIP models proposed a linear structure of events, where each step was completed before another began, Crick and Dodge's (1994) model posits a cyclical structure reflecting the ability of individuals to engage in a number of social information-processing activities simultaneously. The model proposes that behavioural responses are based on capabilities and a data base of memories of past experiences. An array of cues is received as input and the response is the result of the processing of those cues. It has been suggested that although individuals may be perpetually engaged in each of the steps of SIP and that processing is simultaneous for all of the steps with the existence of feedback loops, the path from a particular stimulus to a response follows a particular sequence (Crick & Dodge, 1994). Emotions and cognition are hypothesized to interact in all steps of the model. In the following section, the steps of the social information-processing model, as hypothesized by Crick & Dodge (1994), will be described.

Steps One and Two: Encoding and Interpreting of Cues

In the initial step a particular social situation is encountered and perceived. Then, schemata may be recalled in relation to particular cues, including those that are external (such as an observed behaviour) and internal (such as emotional arousal) which are used to encode and interpret or give meaning to the current situation. Schemata are memory structures containing information regarding the perception of and response to a similar situation in the past. Schemata guide the interpretation of cues through the generation of causal and/or intent attributions for the current situation and through the evaluation of

past experiences in similar situations.

Step Three: Clarification of Goals

Based on the encoding and interpretation of cues, a goal or desired outcome for the present situation is determined. Goals can be internal, such as avoiding embarrassment, or external such as stopping behaviour. In addition, goals may be short-term or long-term, or some consideration of both. Individuals bring goal orientations to situations on the basis of such things as emotion or cultural norms, but these may be revised or changed in response to particular cues.

Step Four: Response Access or Construction

Following the interpretation of the stimulus and the formulation of a goal, memories of past responses are accessed. Such memories may be of strategies used to attain a similar goal in the past or memories of a variety of responses across a range of past experiences. In this way, both past experience and knowledge of a variety of responses will affect the range of possible responses generated. Alternatively, this step may involve the construction of new behaviours not previously enacted that have been triggered by the selected goal.

Step Five: Response Decision

Once responses for enactment have been generated, these responses are analyzed such that the one with the most positive evaluation is selected. This evaluation entails a review of the response itself (likely based on moral rules or values), outcome expectation (what is likely to occur after enactment), and confidence in performing the response. Clearly, past successes or failures with a particular response can affect the decision to

repeat a particular action. Step Six is the enactment of the chosen response.

Parental Social-Information Processing and Use of Physical Punishment

Crick and Dodge's model is potentially useful for understanding the process by which parents decide to use physical punishment in disciplinary situations. In this section, the relevance of each step of the SIP model to parental use of physical punishment will be described. An example of a behavioural transgression and possible parental SIP processes will be used to illustrate the utility of the model for research in this area.

In Steps One and Two, a parent encounters a situation that has the potential for some kind of disciplinary response. The parent will first encode or decipher the child's behaviour and then interpret it. For example, when a parent observes her three-year-old child enacting an aggressive behaviour, such as throwing toys, the parent forms a mental picture of the event and begins to give some meaning to the behaviour in relation to other cues, such as the child's facial expression or the presence of other children. The parent's experience in similar situations can affect how situations are interpreted via memories, rules, schemas and knowledge. In this stage, then, classification of the seriousness of the transgression, beliefs regarding the child's attribution and intent, values, knowledge of child development, behavioural expectations, memories of previous disciplinary successes and failures in similar situations, all contribute to the particular interpretation made. In the current example, both parents who use and do not use physical punishment may interpret the child's throwing behaviour as inappropriate based on their assessment of situational factors, such as lack of provocation, and other cues of the particular milieu.

If the behaviour is determined to require a disciplinary response, the parent would

then continue to Step Three and formulate a goal for the situation. Parenting goals, or outcomes for their interactions with their children, have been determined to be of key importance in selecting their parenting behaviours (Dix, 1992, Kuczynski, 1984). This may take the form of a number of types of goals, such as a short-term parent-centered goal, as for example, wanting the child to immediately stop the throwing behaviour (i.e., obtaining compliance), and/or a long-term child-centered goal, such as wanting to teach the child values (i.e., socializing appropriate behaviours for the future benefits of the child) (Hastings & Grusec, 1998). In Step Four, the parent would evaluate her success with various strategies in past similar situations. The comprehensiveness of her evaluation would be affected by the number of strategies in her response repertoire. If the parent recalls that physical punishment was previously ineffective, has never used physical punishment, and/or has a wide range of non-physical responses in her repertoire, she would probably be less likely to construct a response involving physical punishment. If the parent recalls that physical punishment stopped a similar behaviour in the past and/or has a limited repertoire of responses, she is more likely to construct a physical punishment response.

In Step Five, the potential responses generated in the previous step are evaluated and the “best” one is selected. As the response evaluation is theorized to be based on moral rules or values (Crick & Dodge, 1994), the parent’s response decision would reflect these factors. For example, the parent may consider physical punishment to be morally wrong, to have the potential to cause the child injury, or to be likely to elicit disapproval from observers. The response decision is based on the interrelationships of factors such as

past experience, knowledge level, beliefs and values and is made in relation to the predicted outcome of the current situation. Step Six is the enactment of the decision; its outcome will play a role in future decision-making regarding a disciplinary response (Parke, 1981). To understand why parents choose the response of physical punishment, it is important to determine which factors are more likely to predict this response decision.

Parental Emotion and Decision-Making

Negative emotions in parent-child relationships are inevitable because the process of guiding and teaching children appropriate social behaviours parents necessarily requires the imposing of rules that conflict with children's immediate desires (Baumrind, 1971). Although Crick and Dodge (1994) view the role of emotion in SIP models as an integral component of each step of the model, these authors have observed that little research has been conducted that addresses the role of emotion in SIP. Emotion researchers (e.g., Frijda, 1986; Izard, Kagan & Zajonc, 1984) describe emotion as central to human behaviour regulation in that affective processes are the means by which individuals identify events of significance and coordinate adaptive responses (Dix, 1991). Since physical disciplinary responses have been found to be highly emotionally charged events (Patterson, 1982), the role of emotion in parents' decision-making is intuitively and empirically one of importance. Anger levels in particular, as discussed in previous sections, have been examined as to their connection to the use of physical punishment. However, it may be that the key to understanding the parental decision-making process is the cognition-affect relationship. Ultimately, it will be factors related to both affect and cognition that must be instantaneously reviewed, experienced, considered and weighed prior to making a

decision. The SIP model can provide a helpful framework to help understand how affect and cognition might interact with one another and/or override one another in the selection of a disciplinary strategy.

In Steps One and Two of SIP, when the parent is encoding and interpreting a child's behaviour based on the assessment of situational factors (e.g., attribution) and influenced by distal factors (e.g., knowledge of child development), the parent also is likely to be reacting emotionally. Research findings have suggested that specific appraisals of events will be reflected in resulting emotions (Frijda, 1986; Kelley, 1984), which subsequently activate and orient adaptive processes (Dix, 1991). Therefore the reaction of a parent who feels anger in response to her child throwing toys will likely be influenced by such feelings of anger in her initial assessment of the situation.

A parent, influenced by affect and other proximal and distal factors, would formulate a goal for the situation (Step Three). Emotional state may enhance or inhibit a parent's motivation in formulating a goal response. For example, feelings of anger may serve as an impetus for the parental goal of immediate compliance which might override a child-centered goal, such as wanting to teach a child values and societal rules for future benefit of the child. Child- or relationship-centered goals have been found to require more moderate levels of positive and negative emotions than do parent-centered goals such as immediate compliance (Hastings & Grusec, 1998). Strong negative emotions can interfere with a parent's cognitive evaluation of a situation (Dix, 1991).

In Step Four of SIP (response access), even without enacting a particular response, the thought or memory of a particular response can lead to changes in emotional

state (Crick & Dodge, 1994). For example, accessing a particular response, such as physical punishment, may elicit feelings of approval if the parent experienced success in changing child behaviour the last time it was used. Alternatively, accessing this response may elicit parental feelings of guilt and subsequent disapproval if the parent remembers how upset the child was after last receiving physical punishment. Therefore, in Step Five when the response is chosen, it will depend in part, on the parent's prediction of the outcome and related emotions.

The relative roles of affect and cognition in the parental disciplinary response decision-making process is unclear. Although a number of distal and proximal factors, including affect, have been studied, most have relied on hypothetical disciplinary situations and vignettes. Actual disciplinary encounters in which the parent recalls her emotional state would provide rich data from which to examine the relationships among affective and cognitive factors. The SIP model serves to illustrate processes of parental cognition in this decision-making process and the potential major role of affect in this process. Parental affect, such as anger, may be the strongest predictor of parental physical punishment use, particularly in combination with other distal and/or proximal variables. To decrease parental use of physical punishment through primary prevention, programming must be designed to address the most important predictors of its use.

Purpose

Currently, prevention programs that focus on decreasing the use of parental physical punishment are not based on a clear model of why parents use physical punishment with their children. The foci of such programs are commonly centered on

changing attitudes toward acceptance of physical punishment or the teaching of non-physical alternatives to its use. The purpose of the present study is to examine the roles of cognition and affect in maternal use of physical punishment. Specifically, the roles of previously defined determinants of maternal use of physical punishment will be examined in a multivariate context in order to assess and rank their relative contributions and their interactions in maternal decision-making and use of physical punishment. The findings will assist professionals in establishing priorities in educational programming aimed at decreasing parental use of physical punishment.

Hypotheses

Based on previous research and/or the SIP model, four hypotheses have been generated; two general hypotheses, a model-based hypothesis and an exploratory hypothesis.

General Hypotheses

First, it is hypothesized that a mother's pre-existing data base of disciplinary information (distal factors) will predict her use of physical punishment. Specifically, her history of receiving physical punishment as a child, her approval of its use, her knowledge of child development norms, and her repertoire of positive disciplinary strategies are expected to predict her use or non-use of physical punishment

Second, it is hypothesized that a mother's interpretation of child misbehaviour immediately following its commission and her affective state (proximal factors) will also predict her use of physical punishment. Specifically, her perception of the seriousness of the misbehaviour, her attribution regarding the child's intent, her affective state (both

preceding the behavioural transgression and as a result of it), and her outcome goals for the disciplinary episode are expected to predict her use or non-use of physical punishment.

Model-Based Hypothesis

The SIP model was developed to describe children's behavioural responses to peer conflict. However, it has been applied in the present study to provide a framework for understanding parents' responses to conflicts with their children. It is expected that this model will have utility in predicting whether a parent does or does not use physical punishment in a disciplinary situation. Specifically, it is hypothesized that each step in the model will predict physical punishment use, but its predictive power is expected to be enhanced by the addition of each subsequent step such that the variance accounted for will be increased cumulatively with each step.

Exploratory Hypothesis

While all of the factors identified in the SIP model are expected to play a role in the emergence of physical punishment, it is expected that some of these factors will be more powerful predictors of maternal physical punishment than others. In addition, although emotion has been proposed to play a role in SIP decision-making (Crick & Dodge, 1994), it is not overtly included in the model and its role has not been well defined. Therefore, an exploratory hypothesis has been generated regarding the relative contribution of each independent variable to the prediction of physical punishment use. This hypothesis is based on previous research and the SIP model.

In the SIP model, the data base of knowledge and memory is considered to contribute to each step of this process. This data base, as applied to parental disciplinary

decision-making, includes parental history of receiving physical punishment, approval of its use, and knowledge of child development norms. While each of these components of the parent's data base is expected to predict physical punishment use, history of receiving physical punishment and approval of its use are expected to be stronger predictors than knowledge of child development norms. In addition, because levels of approval have been found to vary even when past history is strong, based on past research findings (Buntain-Ricklefs et al., 1994; Graziano et al., 1996; Holden & Zambarano, 1992; Socolar & Stein, 1995; Stattin et al., 1995; Straus, 1990) it is predicted that approval of physical punishment will be the strongest predictor within the maternal data base and will be the primary predictor of physical punishment use.

Encoding and interpretation of the child's misbehaviour are the first steps of the SIP. Previous research has demonstrated that even among parents who approve of physical punishment, their use or approval of its use varies according to their perception of the nature of the misbehaviour (Catron & Masters, 1993; Durrant, 1994; Graziano et al., 1996; Holden et al., 1995; Socolar & Stein, 1995) and their attributions regarding the child's intent (Rose-Krasnor et al., 1997). Although maternal attribution of child intent is predicted to play a role in use or non-use of physical punishment, it is expected that perceived seriousness of the misbehaviour will play a stronger role in determining use because although a parent may determine that a child did not act in a purposeful manner, the mother may use physical punishment if the misbehaviour is considered to be a serious transgression. Further, although approval of physical punishment is expected to be the primary predictor, it is expected that its effect will be moderated by perceptions of

seriousness of the misbehaviour. That is, even when approval is low, the likelihood of physical punishment is expected to increase when the misbehaviour is considered to be serious; when approval is high, the likelihood of physical punishment is expected to decrease when the misbehaviour is not considered to be serious.

Although the role of affect has not been well defined in the SIP model, it is speculated to be an important factor that interacts with cognitive variables to increase or decrease the likelihood of physical punishment use. Previous research has demonstrated a relationship between negative parental mood prior to the transgression and parental use of physical punishment (Holden et al., 1995), and between parental anger following the transgression and parental use of physical punishment (Graziano et al., 1996; Peterson et al., 1994; Rose-Krasnor et al., 1997; Straus, 1996). Although previous parental mood is predicted to contribute to use or non-use of physical punishment, it is expected that parental anger in response to child misbehaviour will be a stronger predictor, as it results following the misbehaviour and may mediate the disciplinary response. Therefore, it is predicted that maternal anger in response to child misbehaviour will moderate the relationship between approval of physical punishment and its use. That is, although approval of physical punishment is expected to be the primary predictor, even when approval is low, the likelihood of physical punishment is expected to increase when anger is high; when approval is high, the likelihood of physical punishment is expected to decrease when anger is low.

Parental goal variations have been determined to play a pivotal role in guiding parental actions in general (Dix, 1992; Kuczynski, 1984) and responses to parent-child

disagreement specifically (Hastings & Grusec, 1998). The SIP model identifies goal setting as an important step toward behavioural enactment. Although parental goals have not been examined specifically in relation to physical punishment use, parent-centered goals have been determined to have been associated with power assertive behaviours which include physical punishment (Hastings & Grusec, 1998). It is expected that the parental goal will moderate the relationship between approval and use of physical punishment. That is, although approval of physical punishment is expected to be the primary predictor, even when approval is low, the likelihood of physical punishment is expected to increase when a parent's goal is parent-centered; when approval is high, the likelihood of physical punishment is expected to decrease when the parent's goal is child-centered or relationship centered.

Although it has not been extensively studied, the role of maternal knowledge of alternatives to physical punishment is predicted to play an important role as a step of the SIP model. Holden et al. (1995) concluded from their research that parental spanking is likely to be representative of a limited knowledge base of disciplinary methods. Because physical punishment is one of a number of disciplinary responses to child misbehaviour, it is hypothesized that knowledge of alternatives to physical punishment will moderate the association between approval and use of physical punishment. Therefore, it is predicted that although approval of physical punishment is expected to be the primary predictor, even when approval is low, the likelihood of physical punishment is expected to increase when mothers have a low knowledge level of alternatives to its use; when approval is high, the likelihood of physical punishment is expected to decrease when mothers have a higher

knowledge level of alternatives to physical punishment.

Therefore, the fourth hypothesis is that the most important predictor of maternal use of physical punishment will be approval of its use and the effects of this predictor will be moderated by maternal perceptions of the seriousness of the misbehaviour, degree of maternal anger in response to the misbehaviour, maternal goals for the disciplinary response and maternal knowledge of alternatives to physical punishment.

Chapter Two: Method

Design

A cross-sectional survey design was used for this study of the determinants of maternal use of physical punishment. Data were collected between June and September, 1999 through interviews conducted by the researcher and occurring primarily in subjects' homes following initial contact by mail and then telephone. Subjects were selected through a mixture of random and convenience sampling techniques from an initial random sample provided by Manitoba Health.

Sample

Sample Size

The recommended minimum ratio of cases to independent variables in multivariate designs ranges from 4:1 (Halli & Rao, 1992) to 20:1 (Tabachnick & Fidell, 1989). The present study which examined 8 independent variables, required a minimum of 32 to 160 subjects. However, power may be unacceptably low if the number of total subjects is less than 100, regardless of the case to variable ratio (Tabachnick & Fidell, 1989). Therefore, a power analysis was conducted to estimate the number of subjects required to detect a medium effect size for a regression analysis with 8 independent variables, where power = .80, alpha = .05 (Cohen, 1992). This number was determined to be 107. In order to meet the minimum requirement, yet maintain the study's feasibility, the sample consisted of 110 subjects.

Inclusion and Exclusion Criteria

All participants were mothers of three-year old children. As preschool-aged

children are the ones most likely to receive physical punishment (Jackson et al., 1999; Wauchope & Straus, 1990), the likelihood of physical punishment occurring in the sample was maximized. By limiting the age of the target children to three years, rather than the entire preschool range, the potential confounding effects of different developmental norms for children of varying ages were minimized and homogeneity of the sample was increased. Further, a mother was included only if her three-year old child was her first-born in order to minimize the potential confounding effects of prior parenting experience. Mothers were excluded if they were responsible for the care of any other children over the age of 3 years, if the target child was a twin or triplet, and if the target child had any physical or mental disabilities.

Method of Obtaining Sample

Through the Access and Confidentiality Committee (ACC), Manitoba Health, it was determined that approximately 2000 women living in Winnipeg who were registered with Manitoba Health met the inclusion and exclusion criteria previously described. From this original list, ACC provided to the researcher a computer generated randomly selected list of names and addresses of 750 of the eligible women. Although personal interviews generally have a higher response rate than mailed questionnaires (Shaughnessy & Zechmeister, 1990) and although it was anticipated that prospective participants would have an interest in the topic, it was expected that some women would not be willing to participate due to the sensitive nature of the topic and the time that would be required of them. Therefore, a list of 750 names of eligible women was requested in order to maximize the likelihood of obtaining the desired sample size of 110 participants.

The final sample was obtained through three mailings of recruiting letters to prospective subjects. The letter introduced the study and requested the mother's participation (see Appendix A). In order to increase the participation rate, a \$10 toy store gift certificate (or cash equivalent) was offered. Subjects were asked to call the researcher if they were interested in participating or to seek additional information. A form of systematic random sampling (Shaunessy & Zechmeister, 1990) was utilized with the initial random sample of 750 names. The first mailing went to every sixth woman on the list of 750 names - a total of 125 women. The second mailing went to every third woman on the remaining list of 625 names, resulting in 208 letters. The third mailing went to every third woman on the remaining list of 417 names, resulting in 139 letters. In total, 472 letters were sent out to perspective participants. Forty-nine (10.4%) of the letters were returned due to incorrect/changed addresses, with 423 letters presumably reaching the correct address and individual.

Through initial telephone contact with participants who responded to the letter, the purpose of the study and the inclusion and exclusion criteria were outlined and, as appropriate, an interview was arranged. From one to three weeks after the recruiting letters had been mailed, follow-up telephone calls were made to randomly selected individuals on the mailing list who had not yet indicated their interest in participating and whose name appeared in the Winnipeg Telephone Directory (phone numbers were not provided by ACC, Manitoba Health). When telephone contact was made the general purpose of the study was outlined, the mother's level of interest in participating and her eligibility were determined and, as appropriate, an interview was arranged. This

procedure continued until a final sample of 110 participants had agreed to participate and interviews had been arranged. Of the 423 mothers assumed to have received recruiting letters, 65 (15.4%) called to indicate their interest in participating. Of these, 2 individuals indicated that their children had actual or potential behavioural or physical disabilities which resulted in their exclusion from the sample. Therefore, in the majority (63; 57.3%) of cases, participants responded to the recruiting letter and indicated their interest in participating. Of the remaining 358 individuals who were assumed to have received an introductory letter but who did not respond with a phone call, 106 randomly selected individuals were contacted by the researcher by telephone to determine their eligibility and willingness to participate. Of those contacted, 49 (46.2%) agreed to participate. Of these, 2 individuals were excluded after having indicated that their children had actual or potential behavioural or physical disabilities. Therefore, 47 (42.7%) of the final sample of 110 had been contacted by the researcher following the mailing of the recruiting letter.

Maternal age range was the only demographic variable that demonstrated a significant group difference, $U = 1184.5$, $p = .04$, between those participants who responded to the letter by phoning the researcher, and those who were contacted by follow-up phone calls. Mothers in the youngest age group were the least likely to have contacted the researcher to participate in the study. It is unlikely that a systematic self-selection process related to mothers' practice or beliefs about physical punishment occurred in mothers who declined to participate since those who declined to participate would not have been aware of the focus of the study, other than that it dealt with decision-making around disciplinary practices with young children.

Sample Characteristics

Table 1 summarizes sample characteristics. Almost all (98.2%) respondents were the biological mothers of the target child; the remainder were adoptive mothers. Most participants were aged 20 to 29 years (41.8%), or 30 to 39 years (52.7%). This sample demonstrated a high education level; 55.4% had completed post-secondary education of some type such as a college diploma or undergraduate degree and 2 individuals had completed a graduate degree. Subjects were asked to identify their current or most recent occupation. Responses were categorized using the National Occupation Classification Code (Employment and Immigration Canada, 1993). These 26 categories were collapsed into six, following the coding system of the Winnipeg Area Study (The University of Manitoba, 1997). However, as the respondents were asked to identify their most recent occupation if not currently working, the sixth category of houseperson was not utilized in this study. Therefore, only five categories of occupations were identified. Except for the category of manufacturing and industry (2 or 1.8%), respondents were fairly evenly distributed across the categories, with about one-quarter of the sample falling within each of the following classifications: professional/management (e.g., nurse, teacher, accountant), mid-management/technical (e.g., administrative assistant, personnel officer), clerical/para-professional (e.g., secretary, home care attendant), and service (e.g., waitress, hair stylist). Approximately one third of participants were not currently employed in salaried occupations outside the home. Of those who did work outside the home, 29.1% worked up to 26 hours per week, and 36.3% worked from 27 to 40 hours per week. Approximately 46% of respondents reported a total family income for the past year

Table 1

Sample Characteristics of Participants (N = 110)

Characteristic	Frequency	Percent
Relationship to target child		
Biological	108	98.2
Adoptive	2	1.8
Age		
20 to 29 years	46	41.8
30 to 39 years	58	52.7
40 to 49 years	6	5.5
Education level		
Less than grade 12	7	6.4
High school graduate	42	38.2
Completed post-secondary	61	55.4
Current or previous occupation		
Professional/management	23	20.9
Mid-management/technical	30	27.3
Clerical/para-professional	25	22.7
Service	28	25.5
Manufacturing/industry	2	1.8
Missing	2	1.8

Employment status

Not employed	38	34.5
Employed 1 - 26 hours per week	32	29.1
Employed over 27 hours per week	40	36.3

Total family income for past year

Under \$20,000	20	18.5
\$20,001 - 40,000	30	27.2
\$40,001 - 60,000	23	20.9
Over \$60,001	35	32.4
Declined to answer	2	1.8

Marital status

Cohabiting/married	93	84.5
Single	11	10.0
Separated/divorced	6	5.4

Younger children

0	48	43.6
1	60	54.5
2	2	1.8

Years lived in Canada

Less than 4 years	3	2.7
Over 5 years	15	24.6
All of life	92	83.6

Ethnicity

Canadian	41	37.3
European	27	24.5
British Isles	16	14.5
Asian	6	5.4
French	5	4.5
Aboriginal	3	2.7
Caribbean	2	1.8
Multiple origins	10	9.1

Religion in which raised

None	12	10.9
Catholic	37	33.6
Protestant	55	50.0
Jewish	3	2.7
Other	3	2.7

Current Religion

None	26	23.6
Catholic	27	24.6
Protestant	46	41.8
Jewish	3	2.7
Other	8	7.3

Primary responsibility for discipline

Mother	62	56.4
Father	1	0.9
Equal	47	42.7

of up to \$40,000 and 53.3% reported an income of over \$40,000.

The majority of respondents (84.5%) were either married or cohabiting, and the remainder of the sample identified themselves as either single, separated or divorced. Slightly more than half of the respondents were parents of more than one child (56.3%); the remaining respondents were parents of one child. Most (83.6%) of the respondents had lived in Canada all their lives.

Respondents were asked to identify the cultural or ethnic group (other than Canadian) to which they belonged. However, more than one third of respondents identified their cultural or ethnic group as Canadian. Some of the comments related to this question were, "I really don't identify with any particular ethnic group," " Just Canadian, nothing else," and "I really can't say I am any other ethnicity but Canadian since my parents were born here too." Of those who named another cultural or ethnic identity, most (39%) identified themselves as either British or European.

Respondents were asked about the religion in which they were raised and their current religion. Findings are summarized in Table 1. Identified religions were categorized according to the major classification groups utilized by Statistics Canada (1993) in the 1991 Canadian census, which was the last time this information was included in the census questionnaire. The major category of Protestant includes the following denominations: Protestant, United, Anglican, Baptist, Presbyterian, Lutheran, Pentecostal, Mennonite, Methodist, Mormon, First Alliance, and Evangelical. When asked about their current religion, over one third identified a denomination within the Protestant category, and the categories of Catholic or no religion each accounted for a quarter of the sample.

When asked who had primary responsibility for discipline in the family, slightly more than half (56.4%) of mothers responded that they did. The remainder (42.7%) responded that it was shared equally between the child's mother and father. Only one respondent stated that the father had primary responsibility for discipline.

Representativeness

It was not possible to obtain information on the characteristics of the approximately 2000 mothers who made up the sampling frame, as this information was held in confidence by Manitoba Health. However, a few of the characteristics of the final sample, namely education level, ethnicity and religious affiliation, can be compared to either the 1996 or 1991 Canadian Census for Winnipeg, Manitoba. These findings are summarized in Table 2.

Education. Statistics Canada gathered data on the highest level of schooling for the female population age 15 years of age and over. These figures can only be used as a rough guideline of representativeness since the census considered the age range from 15 years and upward and the present study considered women who were between the ages of 20 and 50 years. Another difference in categorization is in the area of post-secondary education where Statistics Canada included females who may or may not have completed the particular level of education whereas in the present study only those respondents who completed post-secondary education were included in this category. However, as a rough guideline, the present study is fairly representative compared to the 1996 census of the Educational Statistics for Winnipeg females, in that in both slightly less than half attended and/or completed high school and slightly over half attended and/or completed post-

secondary education.

Ethnicity. In the present study, respondents were asked to identify the cultural or ethnic group to which they belong. The 1996 census asked respondents to identify their cultural or ethnic group which was identified as the ethnic group to which their ancestors belong. Therefore there will necessarily be differences in the findings. For example in the present study, almost 40% of respondents identified their ethnicity as Canadian whereas only 7.5% did so in the 1996 census. The other major difference is in the identification of multiple origins. Since the present study asked for the cultural or ethnic group, less than 10% reported multiple origins whereas in the Canadian census, over 40% of Winnipeg residents identified themselves as having multiple origins. These two groups (Canadian and multiple origins) have the largest discrepancies. It is likely that subjects who identified themselves as Canadian actually were of multiple origins which would make a closer comparison. Other comparisons of ethnic groups from the present study and census data are listed in Table 2 and demonstrate a fair representation.

Religious affiliation. The present study sample can be compared to the 1991 Manitoba census of population by religion. The major differences in categories being that respondents in the present study identified themselves twice as frequently to have no affiliation as those in the census survey and almost 20% more of the census sample identified themselves to be affiliated with one of the Protestant religions than in the present study.

Table 2

Sample Representativeness: Education, Ethnicity and Religion

Characteristic	Sample percentage	Manitoba census percentage
Education*		
Less than Grade 12	6.4	missing
Attended/completed		
high school	44.6	47.9
Attended/completed		
post-secondary	55.4	52.1
Ethnicity**		
Canadian	37.3	7.5
European	24.5	21.2
British Isles	14.5	14.5
Asian	5.4	7.1
French	4.5	3.3
Aboriginal	2.7	3.2
Caribbean	1.8	0.7
Multiple origins	9.1	42.5
Current Religion***		
None	23.6	13.7
Catholic	24.6	30.3
Protestant	32.7	51.0

Jewish	2.7	1.3
Other	16.4	4.0

***Province of Manitoba, 1996, female population aged 15 years and over (Statistics Canada, 1997a)**

****Province of Manitoba, 1996, population by ethnic origin (Statistics Canada, 1997b)**

*****Province of Manitoba, 1991 between the ages of 20 and 49 (Statistics Canada, 1993).**

Sample Characteristics of Target Children

Table 3 summarizes the sample characteristics of the target children. All target children were aged three years at the time of data collection (range: 36 to 46 months). The gender distribution was approximately equal. Forty-two (38.2%) of the children did not have any other regular care givers aside from the mother, over a third attended day care and a quarter received care from a care giver other than the mother or day care. Just under 10% of were identified by their parents as having a diagnosed mild medical condition (e.g., allergies, requires glasses) but none were identified as having a physical disability.

Measures

All measures were piloted on 5 parents to determine if any of the questions were difficult to understand or too sensitive or personal to discuss. No major changes were made to the initial questionnaire as a result of the pilot study.

Demographic Questionnaire

The demographic questionnaire is presented in Appendix B. Participants were questioned as to their age range, marital status, number of years of residing in Canada, level of education, paid employment, occupation, total family income, ethnicity, religion and who has primary responsibility for discipline in her family. In addition, participants were questioned regarding the target child as to their gender, date of birth, number of siblings, attendance at day-care, and past or present health problems.

Dependent Variable: Maternal Use of Physical Punishment

Parental self-report is the preferred method to study physical punishment because

Table 3

Sample Characteristics of Target Children (N = 110)

Characteristic	Frequency	Percent
Gender		
girl	57	51.8
boy	53	48.2
Attends day care		
no	70	63.6
1 - 26 hours per week	18	16.4
27 - 40 hours per week	22	20.0
Diagnosed health problem		
No	100	90.9
Yes	10	9.1

first, it occurs relatively infrequently (perhaps once or twice a week), making home observation extremely difficult, particularly as the presence of an observer has the potential to have a stifling effect (Chapman & Zahn-Waxler, 1982; Holden et al., 1995). In the present study, this variable was measured through maternal reports of disciplinary situations that occurred during the previous two-week period. Each mother was asked about two child transgressions within the last two weeks that elicited the strongest reactions in her: one that resulted in her use of physical punishment (if this occurred) and one that did not. A discipline record was created by the author to allow for proximal data collection of each disciplinary situation reported by the mother (see Appendix C). Each mother was then asked about which disciplinary response(s) she implemented (e.g. gave a time-out, yelled, spanked, scolded, slapped, took away a privilege, threatened or other). These responses were classified as either physical punishment (i.e., spanked, slapped or other identified physical punishment) or non-physical punishment. As identified previously, for the purposes of this study, physical punishment is defined as any physical means used in the management and discipline of children without resultant physical injury.

Independent Variables (Distal)

Personal history of physical punishment. Each mother was asked to estimate the frequency with which her parents used seven disciplinary responses (time-out, spank with hand, spank with object, withdrawal of privileges, yell, scold, slap) with her when she was a child. She was asked to rate, on a 5-point Likert-type scale ranging from never (0) to very often (4) how often her parents used each method (see Appendix D). For the purpose of the present study, only the physical punishment ratings were used. As three of

the options consist of physical punishment responses (spank with hand, spank with object, slap), and “other physical punishment” was also identified, each mother’s physical punishment response had a possible range from 0 to 4 for each of the 4 responses with a total score range from 0 to 16.

Approval of physical punishment. The Attitudes Toward Spanking/Slapping My Child Questionnaire (ATS: Holden, Coleman & Schmidt, 1995) (see Appendix E) assesses attitudes of parents toward spanking their young children. It is a 10-item Likert-type questionnaire measuring, on 7-point scales (1 = strongly disagree, 7 = strongly agree), agreement with statements about the appropriateness of spanking. Sample items are, “Spanking is a normal part of my parenting,” and “Overall, I believe spanking is a bad disciplinary technique.” Some items are phrased negatively to control for response set. Scale totals have a possible range from 10 to 70. Higher scores indicate more positive attitudes towards spanking. Median Cronbach’s alphas ranged from .89 to .91 for five independent samples of parents and test-retest correlations over a three-week period averaged .76 for a sample of 20 mothers (G.W. Holden, personal communication, October 15, 1998). Validity was assessed through the correlation of subjects’ scores with their reported weekly rates of spanking ($r = .73$) (G.W. Holden, personal communication, October 15, 1998).

Knowledge of child development. Mothers were asked to complete the Parent Knowledge of Child Development Norms (PKCDN) subscale of the Maternal Expectations, Attitudes and Belief Inventory (Rickard et al., 1984) (see Appendix F). This scale is designed to assess maternal knowledge of development norms of preschool

aged children. Twenty statements are listed that represent expected developmental norms for preschool children (aged 4 to 5) and include items in the motor, cognitive/intellectual, self-help, moral and behavioural domains. Respondents were asked to indicate their agreement, on 7-point scales (1 = strongly disagree, 7 = strongly agree), with statements describing expected behaviours of a child who is 4 or 5 years old. Sample items are, "A 4 or 5 year old should be able to correctly carry out the following: 1) Go to bed unassisted, 2) Stop having problems with temper." Some items are phrased negatively to control for response set. Scores can range from 20 to 140. Higher scores indicate a higher level of knowledge of child development norms. The authors report a median Cronbach's alpha of .67, which is considered marginally acceptable (Holden, 1990), and convergent and discriminant validity coefficients ranging from -.21 to .41 (Rickard et al., 1984).

Repertoire of positive disciplinary responses. Respondents were read two scenarios describing child misbehaviours - oppositional behaviour in a store and hitting a playmate. (See Appendix G). These scenarios were selected from the Parental Discipline Interview (PDI: Scarr, Pinkerton & Eisenberg, 1991). Respondents were asked to generate all possible disciplinary responses, of which they are aware, to the misbehaviour. Non-physical responses were coded into the categories of 1) distracting the child, 2) implementing a "time-out," 3) removing the child from the situation, 4) explaining/discussing why the behaviour was unacceptable, 5) giving a choice to the child, 6) removal of privileges, and 7) ignoring behaviour. The number of responses falling into these categories for both scenarios were added. The total score can range from 0 - 14, where 0 indicates no identified non-physical responses for either scenario and 14 indicates

identification of all 7 categories of non-physical responses for both scenarios.

Child temperament. Although not identified as a predictor of physical punishment use in this research, child temperament was assessed to determine its contribution to physical punishment use and subsequent possible inclusion as a control variable. The EAS (emotionality, activity, sociability/shyness) Temperament Survey for Children (Buss & Plomin, 1984) is a 20 Likert-type item scale (see Appendix H). The internal consistencies of the scales of the EAS (emotionality, activity and sociability/shyness) are reported by the authors (Buss & Plomin, 1984) to have averaged .83, and test-retest correlations were .72 for emotionality, .80 for activity and .58 for sociability/shyness. In a recent study by Spinath and Angleitner (1998) similar psychometric data were identified. For each of the temperaments (emotionality, activity, sociability and shyness) a score of 1-5 was obtained, where 1 is not characteristic and 5 is very characteristic of the child.

Independent Variables (Proximal)

The proximal variables were measured through maternal report of two disciplinary situations that occurred over the previous two week period. Each mother was asked to recall two child transgressions that elicited strong reactions in her; one which resulted in her use of physical punishment with the target child, and one that did not result in her use of physical punishment with the target child. For each transgression (mothers who did not use physical punishment in the past two weeks described only one transgression), the Discipline Record was completed (See Appendix C).

Perceived seriousness. Mothers were asked to rate the seriousness of the behavioural transgression on a four-point Likert-type scale, ranging from not at all serious

(0) to very serious (3). Therefore, for each transgression, a mother's perceived seriousness score could range from 0 to 3.

Perceived intent. Respondents were asked whether they thought the misbehaviour that led to either a physical or non-physical disciplinary response was intentional or unintentional on the part of the child, yielding a dichotomous attribution measure.

Maternal affect. Each mother was asked to indicate, on a series of 4-point Likert-type scales, the degree to which she felt each of several emotions prior to the misbehaviour (angry, content, stressed, happy, frustrated, calm, other), immediately following the misbehaviour (angry, scared, calm, displeased, frustrated, scared, embarrassed, other), and 10 minutes following her disciplinary response (angry, sad, pleased, guilty, frustrated, satisfied, other) (0= not at all, 3 = very). These ratings provide the maternal affect scores in the present study.

Maternal goals. Mothers were asked about their goals or desired outcomes for their disciplinary response(s) to the misbehaviour. Goals can be coded into the categories of parent-centered, child-centered, or relationship-centered. Each of these categories can be further subdivided into short-and long-term goals (Hastings & Grusec, 1998). Parent-centered short-term goals are concerned with immediate compliance, while parent-centered long-term goals focus on the desire to have an obedient child in the future. Child-centered short-term goals are concerned with wanting to promote a child's happiness or understand his/her point of view, while child-centered long-term goals involve wanting to teach a child societal rules for future benefit. Relationship-centered short-term goals are concerned with wanting a fair resolution to the current encounter to

promote everyone's happiness, while relationship centered long-term goals are directed at building or maintaining trust and close connections. For the purposes of this research, identified goals were coded into the categories of parent-centered (PC) short- or long-term or child/relationship-centered (C/RC) short-or long-term. Inter-rater reliability was estimated on a sample of 25 maternal responses to this measure. The coders agreed in 88% of cases.

Procedure

Where verbal consent was obtained by telephone, an interview was arranged to take place at a time convenient to the participant, and in all but one instance, in the participant's home. At the beginning of the interview, written consent was obtained (see Appendix I). Since a number of the measures involve potentially sensitive information, it was determined that the interview should begin with the demographic questions which could be answered most readily. Next the participants were asked to give two examples of misbehaviour by the target child within the previous two week period: one that resulted in the maternal response of physical punishment (if this occurred) and one that did not. Then, for each example provided, participants were questioned about the situational circumstances related to each disciplinary response (proximal variables), namely its seriousness, the mother's attribution for intent of the child, the mother's goal and the mother's affect prior to and immediately following the disciplinary incident. Finally, the instruments measuring the distal variables were administered to determine maternal attitude toward physical punishment, maternal childhood history of receiving physical punishment, maternal knowledge of child development norms and maternal repertoire of

non-physical discipline strategies. In addition, mothers were asked questions about their child's temperament. By focusing on the child and his/her personality at the end of the interview, the interview ended positively having moved away from some of the more sensitive topics that had been discussed previously. Each respondent was given an opportunity to provide any additional information regarding the behavioural transgression(s) and/or her disciplinary response(s). The interviewer coded responses and took notes at the time of the interview. All participants were given an opportunity to ask any questions regarding the study and were offered a copy of the results of the study. A \$10 toy store gift certificate (or cash equivalent, as preferred) was given to each mother at the conclusion of the interview.

Ethical Considerations

Ethical approval was obtained from Ethics Review Committee for the Faculty of Human Ecology at the University of Manitoba prior to contacting any potential participants.

Procedures to obtain consent. The purpose of the study, its relevance, and the expectations of the subjects were explained verbally to each participant and then written informed consent was obtained from each participant. The consent form also included the name and phone number of the researcher in the case of further questions. Two copies of the consent form (see Appendix I) were signed by the participant and the researcher and a copy was retained by each.

Procedures to protect confidentiality. The consent forms were kept by the researcher in a locked and secured cabinet along with addresses of the participants who

wished to have a copy of the results of the study. To maintain anonymity of participants, each questionnaire was assigned a number, recorded on a master list. No names appeared on any questionnaires. Only the researcher had access to the names, addresses and code numbers of participants. The original list of 750 names and addresses remains the property of Manitoba Health as required. Respondents could withdraw at any time, or refuse to answer any questions without any explanation to the researcher.

Procedures to minimize potential harm to participants. No perceived harmful effects of the study were anticipated, although participants were informed that there was a risk that the recall of childhood disciplinary experiences had the potential to cause some discomfort or anxiety. Subjects were informed that if this did happen, the researcher could provide the names and telephone numbers of people they could talk to. No participants expressed a need to speak to anyone following disclosure of their childhood experiences.

Procedures for reporting suspected child abuse. If a situation arose that indicated that a child of a participant had been abused or was at risk of abuse, the researcher would have followed the guidelines of the Manitoba Family Services (1993) handbook for nurses regarding child protection and abuse which is based on the Child And Family Services Act of Manitoba (March, 1986; amended June, 1989). This Act states that "...where a person has information that leads the person reasonably to believe that a child is or might be in need of protection..., the person shall forthwith report the information to an agency." In addition, the duty of professionals, such as registered nurses, is to report suspected abuse applies even where the person has acquired the information within a confidential

relationship (excluding lawyer and client). Participants were informed prior to their consenting to participate that if the researcher was made aware during the course of the interview that a child was at risk of physical injury or had been physically injured, that she was obliged by law to report that information to the appropriate agency. No abuse was detected or suspected during the completion of the interviews.

Chapter Three: Results

Method of Analysis

This study is concerned with two populations: mothers who reported utilizing physical punishment in the two weeks previous to the interview and those who did not. Since the response variable is dichotomous not continuous, it is not normally distributed as is usually assumed for inference purposes in regression analysis. In the current study, most of the predictor variables are measured on a Likert-type scale or are dichotomous and therefore do not follow a multivariate normal distribution. Logistic regression analysis procedures are often used when the predictor variables are not normally distributed and have been identified as the most popular regression approach for dealing with dichotomous response variables (Kleinbaum, Kupper, Muller, & Nizam, 1998).

In fitting a logistic regression model, the regression parameters are generally measured using the method of maximum likelihood. The regression coefficients in a logistic regression model are interpreted in terms of the odds ratio or adjusted odds ratio for a type of response (Keinbaum et al., 1998). This method assumes that each member of the population with a given set of characteristics has some probability of success on the dependent variable (Halli & Rao, 1992). The goal of logistic regression analysis, like any regression analysis, is to determine the best-fitting model to describe the relation between a set of predictors and the dependent variable (Halli & Rao, 1992). The odds ratio or relative risk represents how many times more (or less) likely the dependent variable is to occur in relation to exposure to the predictor variable(s), in this study indicating the relative likelihood of the predictor(s) being related to physical punishment use. The level

of significance is based on the Wald statistic which has a chi-square distribution (SPSS, 1999). In the present study the software program Statistical Package for the Social Sciences 9.0 (1999) was used for data analysis.

Descriptive and Frequency Statistics

Dependent Variable: Physical Punishment Use

The sample was divided fairly evenly between those respondents who reported using physical punishment with the target child in the two weeks previous to the interview, and those who had not. Fifty-nine percent (59.1%, $n = 65$) had used physical punishment with the target child in the previous two weeks (PP group), and 40.9% ($n = 45$) had not used physical punishment with the target child in the previous two weeks (non-PP group). Of the 65 episodes of physical punishment reported, the majority (87.7%) involved either spanking or slapping. The remainder involved firmly grabbing the child's shoulders, grabbing with the fingernails, dragging, pushing and dragging, and spraying the child's face with water (see Table 4).

Maternal and child characteristics. Tables 5 and 6 summarize the maternal and child characteristics, respectively, for the PP and non-PP groups. The following maternal characteristics did not differ between the groups: relationship to target child, $\chi^2 = 2.94$, $p = .09$; age, $U = 1350.5$, $p = .44$; occupation, $\chi^2 = 4.62$, $p = .33$; employment status, $U = 1439.5$, $p = .88$; total family income, $U = 1353.0$, $p = .78$; marital status, $\chi^2 = 0.26$, $p = .61$; having younger children, $U = 1209.5$, $p = .08$; number of years lived in Canada, $U = 1383.5$, $p = .46$; ethnicity, $\chi^2 = 1.97$, $p = .85$; religion in which raised, $\chi^2 = 1.23$, $p = .87$;

Table 4

Physical Punishment Use

Physical Punishment		Frequency	Percent
Used	(<u>N</u> = 110)		
	Yes	65	59.1
	No	45	40.9
Type	(<u>n</u> = 65)		
	Spank or slap	57	87.7
	Firmly grabbed shoulders	4	6.2
	Grabbed with fingernails	1	1.5
	Dragged	1	1.5
	Pushed and dragged	1	1.5
	Sprayed face with water	1	1.5

Table 5

Maternal Demographics of PP Group and Non-PP Group

Variable	Used PP (n = 65)		Non-PP (n = 45)	
	Frequency	%	Frequency	%
Relationship to target child				
Biological	65	100.0	43	95.6
Adoptive	0	0.0	2	4.4
Age				
20 to 29 years	29	44.6	17	37.8
30 to 39 years	33	50.8	25	55.6
40 to 49 years	3	4.6	3	6.7
Current or previous occupation				
Professional/management	10	15.4	13	28.9
Mid-management/tech.	18	27.7	12	26.7
Clerical/para-professional	15	23.1	10	22.2
Service	19	29.2	9	20.0
Manufacturing/industry	2	3.1	0	0.0
Missing	1	1.5	1	2.2
Employment status				
Not employed	23	35.4	15	33.3
Employed 1 - 26/week	18	27.7	14	31.2

Employed over 27/week	24	36.9	16	35.6
Total family income past year				
under \$20,000	14	21.5	6	13.3
\$20,001 - 40,000	14	21.5	16	35.6
\$40,001 - 60,000	15	23.1	8	17.8
over \$60,000	22	33.9	13	28.9
declined to answer	0	0.0	2	4.4
Marital status				
Cohabiting/married	54	83.1	39	86.7
Single/separated/divorced	11	16.9	6	13.3
Younger children				
0	23	35.4	25	55.6
1	42	64.6	18	40.0
2	0	0.0	2	4.4
Years lived in Canada				
Less than 4 years	1	1.5	2	4.4
Over 5 years	11	16.9	4	8.9
All of life	53	81.5	39	86.7
Ethnicity				
Canadian/multi.	30	46.2	21	46.6
European	12	18.5	12	26.7
British Isles	12	18.5	7	15.7

Asian	5	7.7	3	6.7
French	2	3.1	1	2.2
Aboriginal	3	4.6	0	0.0
Caribbean	1	1.5	1	2.2
Religion in which raised				
None	6	9.2	6	13.3
Catholic	24	36.9	13	28.9
Protestant	31	47.7	24	53.3
Jewish	2	3.1	1	2.2
Other	2	3.1	1	2.2
Current religion				
None	11	16.9	15	33.3
Catholic	17	26.2	10	22.2
Protestant	30	46.2	16	35.6
Jewish	2	3.1	1	2.2
Other	5	7.7	3	6.7
Primary responsibility for discipline				
Mother	36	55.4	26	57.8
Father	0	0.0	1	2.2
Equal	29	44.6	18	40.0

Education level

Less than grade 12	5	7.7	2	4.4
High school graduate	30	46.2	12	26.7
Completed post-secondary	30	46.2	31	68.9

Note: Mid-management/tech. = middle management/technician, Canadian/multi. =

Canadian/multiple ethnicities

Table 6

Target Child Characteristics of PP Group and Non-PP Group

Variable	Used PP (n = 65)		Non-PP (n = 45)	
	Frequency	%	Frequency	%
Gender				
girl	34	52.3	23	51.1
boy	31	47.7	22	48.9
Attends day care				
no	43	66.2	27	60.0
1 - 26 hours per week	11	16.9	7	15.6
27 - 40 hours per week	11	16.9	11	24.4
Diagnosed health problem				
No	60	92.3	40	88.9
Yes	5	7.7	5	11.1

current religion, $\chi^2 = 4.02$, $p = .40$; and primary responsibility for discipline, $\chi^2 = 0.06$, $p = .80$. In addition, there was no difference in groups between those mothers who responded by calling to participate in the study as compared to those who were called by the researcher, $U = 1310.0$, $p = .28$. Only maternal education level demonstrated a significant group difference, $U = 1209.5$, $p = .02$. None of the demographic characteristics of the target children differed between the PP and the non-PP groups: gender, $\chi^2 = 0.02$, $p = .90$, attendance at day care, $U = 1346.0$, $p = .41$, and diagnosed health problem, $\chi^2 = .38$, $p = .54$.

Independent Variables: Distal

Table 7 summarizes the descriptive statistics for the variables that were distal to the disciplinary response. Statistics are presented for the entire sample and separately for the PP group and the non-PP group.

Personal history of physical punishment. The possible range of scores on this variable was 0 to 16. Higher scores indicate a greater incidence and/or frequency of receiving physical punishment in childhood. In the present study, responses ranged from 0 to 12; the mean score was 3.65 for the total sample. The mean scores of the PP group ($M = 3.83$) and the non-PP group ($M = 3.38$) did not differ, $U = 1300.00$, $p = .32$.

Approval of physical punishment. The scale totals for this variable had a possible range from 10 to 70. Higher scores indicate stronger support for the use of physical punishment as a disciplinary response. In the present study, responses ranged from 10 to 68; the mean score was 30.33 for the total sample. The mean score of the PP group ($M = 35.89$) was higher than that of the non-PP group ($M = 22.29$), $U = 659.00$, $p = .0001$.

Knowledge of child development. Scores on this variable could have ranged from 20 to 140. Higher scores indicate a higher level of knowledge of child development norms. In the present study, the response scores ranged from 84 to 121, with a mean of 99.23 for the total

Table 7

Descriptive Statistics for Distal Variables

Variable	n	Mean	S.D.	Range
History	110	3.65	2.61	0 - 12
PP	65	3.83	2.64	0 - 12
Non-PP	45	3.38	2.58	0 - 12
ATS	110	30.33	14.84	10 - 68
PP	65	35.89	14.20	10 - 68
Non-PP	45	22.29	11.85	10 - 54
MKCDN	109	99.23	7.24	84 - 121
PP	64	98.86	6.74	84 - 112
Non-PP	45	99.76	7.95	88 - 121
Repertoire	110	5.48	1.29	2 - 9
PP	65	5.40	1.16	2 - 8
Non-PP	45	5.60	1.47	2 - 9
EAS				
Emotionality	110	3.01	0.84	1 - 5
PP	65	3.07	0.80	1 - 5
Non-PP	45	2.91	0.90	1 - 5

Activity	110	3.29	0.34	2 - 4
PP	65	3.31	0.33	2 - 4
Non-PP	45	3.26	0.45	2 - 4
Sociability	110	3.39	0.55	2 - 4
PP	65	3.41	0.59	2 - 4
Non-PP	45	3.36	0.47	2 - 4
Shyness	110	3.39	0.38	2 - 5
PP	65	3.42	0.38	3 - 5
Non-PP	45	3.34	0.37	2 - 4

Note: History = total score of physical discipline received as a child; ATS = total score of Attitude Toward Spanking/Slapping; MKCDN = total score of Maternal Knowledge of Child Development Norms; Repertoire = total score of non-physical disciplinary responses; EAS = EAS (emotionality, activity, sociability, shyness) Temperament Survey for Children (Buss & Plomin, 1984).

sample. There was one missing case, as the individual had difficulty with comprehension of the measure likely due to her difficulty with the English language. The mean scores of the PP group ($M = 98.86$) and the non-PP group ($M = 99.76$) did not differ, $U = 1428.00$, $p = .94$.

Repertoire of positive disciplinary responses. The total score for this variable could have ranged from 0 to 14, where 0 indicates no identified non-physical responses for either scenario and 14 indicates identification of all 7 categories of non-physical responses for both scenarios. For the total sample the range of responses was 2 to 9, with a mean of 5.48. The mean scores of the PP group ($M = 5.40$) and the non-PP group ($M = 5.60$) did not differ, $U = 1334.5$, $p = .42$.

Child temperament. For each of the EAS temperament scales (emotionality, activity, sociability and shyness) the score could have ranged from 1 to 5, where 1 is not characteristic and 5 is very characteristic of the child. The mean scores of the PP group and the non pp group did not differ on any of the four temperament scales: emotionality, $U = 1219.0$, $p = .21$; activity, $U = 1383.5$, $p = .62$; sociability, $U = 1339.5$, $p = .45$; and shyness, $U = 1326.0$, $p = .40$. An attempt was made to determine whether recoding the EAS temperament scores into binary responses based on mean splits (i.e., high versus low scores) would yield group differences. No differences were found.

Correlations Among Distal Predictor Variables

A weak, positive correlation was found between ATS scores and history of receiving physical punishment, $r = .19$, $p = .05$. No correlations were found between MKCDN scores and repertoire of non-physical disciplinary methods, $r = .067$, $p = .81$; ATS and MKCDN scores, $r = -.119$, $p = .22$; ATS scores and repertoire of positive responses, $r = -.021$, $p = .83$; history of receiving physical punishment and repertoire of

non-physical disciplinary responses, $r = .147$, $p = .12$; or history of receiving physical punishment and MKCDN scores, $r = .011$, $p = .91$.

Other Distal Variables

Religion. No group differences were found in respondents' past or current religious affiliations. However, when the categories of religious denomination were analyzed through logistic regression, using individuals who indicated they did not currently affiliate with any religion as the comparison group, there was a trend for respondents of Protestant background to have a greater likelihood of belonging to the PP group ($\text{Exp}(B) = 2.56$, $p = .06$). The remaining categories of religious denomination were not predictors of physical punishment use ($p > .10$).

Respondents were asked whether or not they believed that their religious beliefs influenced their disciplinary-decision making. Although this question did not predict physical punishment use through logistic regression analysis, comparisons were made between the category of no current religious affiliation and the religious denomination categories. Protestants were over 3 times more likely than those with no religious affiliation to agree that their religious beliefs affected their disciplinary decision-making ($\text{Exp}(B) = 3.06$, $p = .04$). The other religious denomination categories did not predict an affirmative response to this question ($p > .05$) with the exception of the category of "other" religion ($\text{Exp}(B) = 5.56$, $p = .05$). However, there were too few respondents in the subcategories of "other" religion to analyze their individual influences.

Independent Variables: Proximal

Table 8 summarizes the descriptive statistics for the predictor variables that were proximal to the disciplinary response. Statistics are presented separately for the PP and

Table 8

Frequency Statistics for Proximal Independent Variables

Variable	Used PP ($n = 65$)		Non-PP ($n = 45$)	
	Frequency	%	Frequency	%
Perceived seriousness				
Not at all	1	1.5	2	4.4
Not very	9	13.8	22	48.9
Serious	31	47.7	16	35.6
Very	24	36.9	5	11.1
Perceived intent				
Intentional	51	78.5	25	55.6
Unintentional	14	21.5	20	44.4
Affect prior to misbehaviour				
Angry				
Not at all	53	81.5	41	91.1
Not very	2	3.1	3	6.7
Somewhat	5	7.7	1	2.2
Very	4	6.2	0	0.0
Missing	1	1.5	0	0.0
Frustrated				
Not at all	35	53.8	30	66.7

Not very	5	7.7	4	8.9
Somewhat	15	23.1	10	22.2
Very	9	13.8	1	2.2
Missing	1	1.5	0	0.0

Affect following misbehaviour, before disciplinary response

Angry

Not at all	5	7.7	11	24.4
Not very	5	7.7	6	13.3
Somewhat	31	47.7	23	51.1
Very	23	35.4	5	11.1
Missing	1	1.5	0	0.0

Frustrated

Not at all	5	7.7	8	17.8
Not very	2	3.1	7	15.6
Somewhat	24	36.9	18	40.0
Very	33	50.8	12	26.7
Missing	1	1.5	0	0.0

Maternal goal

Parent

Short-term	31	47.7	13	28.9
Long-term	12	18.5	9	20.0

Child/relationship

Short-term	1	1.5	10	22.2
Long-term	20	30.8	13	28.9
Missing	1	1.5	0	0.0

the non-PP groups.

Perceived seriousness of transgression. Maternal perceived seriousness scores had a possible range of 0 to 3. The two groups differed in that 84.6% of the PP group rated the child's misbehaviour as either serious or very serious whereas 46.7% of the non-PP group rated the child's misbehaviour as either serious or very serious, $U = 795.0$, $p = .000$.

Perceived intent. Responses on this variable were dichotomous; intentional or unintentional. Whereas 78.5% of the PP group believed that the child's misbehaviour was intentional, 55.6% of the non-PP group indicated that the child's misbehaviour was intentional, $U = 1127.5$, $p = .01$.

Maternal affect. Maternal emotional state ratings prior to the child's misbehaviour, immediately following the child's misbehaviour but before the disciplinary response, and following the disciplinary response could have ranged from 0 (not at all) to 3 (very). Of primary interest were negative emotions (anger, frustration) prior to and immediately following the transgression.

Although 13.9% of the PP group reported feeling somewhat or very angry prior to the child's misbehaviour compared to 2.2% of the non-PP group, the groups did not differ significantly, $U = 1306.0$, $p = .17$. Feelings of frustration (somewhat, very) prior to the child's misbehaviour were reported by 36.9% of the PP group compared to 24.4% of the non-PP group, but this difference was not significant, $U = 1209.5$, $p = .11$.

There were group differences in reported anger following the child's misbehaviour; in the PP group, 83.1% of mothers reported feeling either somewhat or very angry

compared to 62.2% of the non-PP group, $U = 921.5$, $p = .001$. Group differences also were found in reported feelings of frustration following the child's misbehaviour; 87.7% of the PP group reported feeling somewhat or very frustrated compared to 66.7% of the non-PP group, $U = 974.0$, $p = .002$.

Maternal goals. Mothers' disciplinary goals were classified into four categories: parent-centered (short- or long-term) and child/relationship-centered (short- or long-term). Of the PP group, the majority (66.2%) identified parent-centered goals (both short- and long-term), while 51.1% of the non-PP group identified parent-centered goals (both short- and long-term). This difference was not significant, $U = 1208.5$, $p = .13$.

Other Proximal Data

Table 9 summarizes the descriptive statistics for the additional data that were collected regarding individual disciplinary episodes. Statistics are presented separately for the PP and the non-PP groups.

Location. More than 80% of PP group episodes took place in the home compared to 66.7% of the non-PP group, and 7.7% of PP group episodes occurred in a public place compared to 18.2% of non-PP group episodes. These differences were not significant, $U = 1255.5$, $p = .10$.

Time of day. Group differences were found in the time of day that the misbehaviour episodes occurred. Most (57.9)% of the child misbehaviour episodes within the PP group occurred before 3:00 p.m. in the afternoon, whereas 68.2% of child misbehaviour episodes within the non-PP group occurred after 3:00 p.m., $U = 1096.0$, $p = .04$. This finding does not appear to be an artefact related to maternal employment status,

Table 9

Additional Proximal Data

Variable	PP (n = 65)		Non-PP (n = 45)	
	Frequency	%	Frequency	%
Location				
home	53	81.5	30	66.7
yard	2	3.1	3	6.7
car	1	1.5	1	2.7
public	5	7.7	8	17.8
other home	4	6.2	3	6.7
Time of day				
7:00 to 10:59 am	10	15.4	5	11.1
11:00 am to 2:59 pm	27	41.5	9	20.0
3:00 to 6:59 pm	15	23.1	19	42.2
7:00 to 10:59 pm	12	18.5	11	24.4
Missing	1	1.5	1	2.2
Type of misbehaviour				
self-endangerment	11	16.9	4	8.9
damage	6	9.2	3	6.7
aggression to child	13	20.0	5	11.1
aggression to adult	11	16.9	0	0.0

disobedience	23	35.4	19	46.7
tantrum	8	12.3	5	11.1
rudeness, unkindness	7	10.8	8	17.8
talking back	1	1.5	2	4.4

as there was no correlation between time of day of the misbehaviour and maternal employment status, $r = .09$, $p = .34$.

Type of misbehaviour. Group differences were found in two types of child misbehaviours, aggression against another children, $U = 1170.0$, $p = .001$, and aggression against an adult, $U = 1215.0$, $p = .004$. Twenty percent (20%) of child misbehaviours in the PP group involved aggression against another child compared to 11.1% of the non-PP group and 16.9% of child misbehaviours in the PP group involved aggression toward an adult compared to none in the non-PP group.

In both groups, disobedience was the misbehaviour most likely to result in either a physical (35.4%) or non-physical (46.7%) disciplinary response, $U = 1297.5$, $p = .24$. The other types of misbehaviours that elicited disciplinary responses also did not differ between groups; self-endangerment, $U = 1345.0$, $p = .23$; damage, $U = 1425.0$, $p = .63$; tantrum, $U = 1445.0$, $p = .85$; rudeness and/or unkindness, $U = 1360.0$, $p = .29$; and talking back, $U = 1420.0$, $p = .36$.

Tests of Hypotheses

As the PP and the non-PP groups differed in maternal education level, $U = 1130.00$, $p = .02$, this variable was controlled in the tests of hypotheses. Through logistic regression analysis, maternal education level predicted physical punishment use ($\text{Exp}(B) = .48$, $p = .03$). That is, for each level increase in maternal education (less than high school, high school graduate and completion of post-secondary education), respondents were almost half as likely to have used physical punishment.

Hypothesis One

The first hypothesis stated that a mother's pre-existing data base of disciplinary information (distal factors) would predict her use of physical punishment. Specifically, her history of receiving physical punishment as a child, her approval of its use, her knowledge of child development norms, and her repertoire of positive disciplinary strategies were expected to predict her use or non-use of physical punishment. This hypothesis was partially supported.

Through simple logistic regression, each predictor variable was entered individually to describe its effect on the use/non-use of physical punishment after controlling for maternal education. In each equation, the criterion variable was membership in the PP group ($n = 65$) or the non-PP group ($n = 45$). The results of these analyses are presented in Table 10.

Personal history of physical punishment. The explained variance in physical punishment use did not change with the addition of the variable of history as a separate step following the control variable ($R^2 = .06$, $p = .07$). For every unit of increase in the history of physical punishment score, the subject was 4% more likely to have reported using physical punishment. However, the odds ratio, or relative likelihood of personal history of physical punishment being related to the dependent variable, was not significant ($\text{Exp}(B) = 1.04$, $p = .59$).

Approval of physical punishment. The explained variance in physical punishment use increased to 32% with the addition of ATS score as a separate step following the control variable ($R^2 = .32$, $p = .0000$). For every unit of increase in ATS score, the

Table 10

Logistic Regression Statistics for Distal Predictor Variables Entered Individually

Variable	n	B	Exp(B)	Wald	p
History	110	0.04	1.04	0.28	.59
ATS	110	0.08	1.08	18.63	.0000
MKCDN	109	-0.01	0.99	0.04	.84
Repertoire	110	-0.09	0.92	0.32	.57

Note: History = total score of physical discipline received as a child; ATS = total score of Attitude Toward Spanking/Slapping; MKCDN = total score of Maternal Knowledge of Child Development Norms; Repertoire = total score of non-physical disciplinary responses.

likelihood of reporting physical punishment use increased by 8% ($\text{Exp}(B) = 1.08$, $p = .0000$).

Knowledge of child development. The explained variance in reported physical punishment use did not change with the addition of MKCDN score in a separate step following the control variable ($R^2 = .06$, $p = .11$). Therefore, mothers' MKCDN scores did not demonstrate predictive power. The odds ratio of a lower MKCDN score predicting physical punishment use was not significant ($\text{Exp}(B) = .99$, $p = .84$).

Repertoire of positive disciplinary responses. The explained variance in reported physical punishment use was not increased with the addition of the repertoire variable ($R^2 = .06$, $p = .07$) in a separate step following the control variable. Although there was a 7% increase in likelihood of physical punishment for every unit decrease in repertoire score (predicted direction), this odds ratio was not significant ($\text{Exp}(B) = .92$, $p = .57$).

An attempt was made to determine whether recoding the distal variables based on their frequency distributions would improve their ability to predict physical punishment. Each distal predictor variable was recoded into 2, 3, and 5 levels based on their frequency distributions. This did not improve the predictive power of any of these variables.

Hypothesis Two

It was hypothesized that a mother's interpretation of child misbehaviour immediately following its commission and her affective state (proximal factors) would predict her use of physical punishment. Specifically, her perception of the seriousness of the misbehaviour, her attribution regarding the child's intent, her affective state (both preceding the behavioural transgression and as a result of it), and her outcome goal for the

disciplinary episode were expected to predict her reported use of physical punishment.

This hypothesis was supported.

Through simple logistic regression, each proximal predictor variable was entered individually to describe its effect on the use/non-use of physical punishment controlling for maternal education by entering it into the logistic regression equation prior to any subsequent analyses. Maternal education accounted for 6% of the explained variance in physical punishment use ($R^2 = .06$, $p = .03$) prior to any subsequent analysis. In each equation, the criterion variable was membership in the PP group ($n = 65$) or the non-PP group ($n = 45$). These results are summarized in Table 11.

Perceived seriousness of transgression. The explained variance in physical punishment use increased to 27% with the addition of the seriousness variable ($R^2 = .27$, $p = .0000$) in a separate step following the control variable. Mothers' ratings of the seriousness of the child's transgressions predicted their use/non-use of physical punishment ($\text{Exp}(B) = 3.32$, $p = .0001$). For each unit increase in seriousness ratings, the likelihood of physical punishment use increased by a factor of 3.32.

Perceived intent of child. The explained variance in physical punishment use increased to 13% with the addition of the intent variable ($R^2 = .13$, $p = .03$) in a separate step following the control variable. The odds ratio of intent score being related to physical punishment use is significant ($p = .02$) at 2.86. Respondents who perceived their child's misbehaviour as intentional were 2.86 times as likely to report using physical punishment as those who did not perceive their child's misbehaviour as intentional.

Maternal affect. Negative maternal affect prior to and as a result of the

Table 11

Logistic Regression Statistics for Individual Proximal Predictor Variables

Variable	B	Exp(B)	Wald	p
Perceived seriousness	1.20	3.32	15.75	.0001
Perceived intent	1.05	2.86	5.88	.02
Prior anger	0.68	1.97	3.43	.06
Resultant anger	0.77	2.17	11.11	.001
Maternal goal	-0.77	0.46	3.53	.06

misbehaviour (but prior to disciplinary response) were of primary interest. As frustration, stress and anger prior to the misbehaviour were correlated (r 's ranged from .31 to .64, $p < .01$ in all cases), only anger was entered into the regression equation. And, as frustration and anger as a result of the misbehaviour were positively correlated ($r = .33$, $p < .01$) (stress as a result of the misbehaviour was not an option provided), only anger as a result of the misbehaviour was entered into the regression equation.

The explained variance in physical punishment use increased to 11% with the addition of the variable of pre-existing anger ($R^2 = .11$, $p = .03$) in a separate step following the control variable. For each increase in level of maternal anger prior to the discipline episode, the likelihood of physical punishment use almost doubled. Pre-existing maternal anger was not a significant predictor of physical punishment use ($\text{Exp}(B) = 1.97$, $p = .06$), but did demonstrate a trend toward prediction of physical punishment.

The explained variance in physical punishment use increased to 20% with the addition of the variable of anger resulting from the misbehaviour ($R^2 = .20$, $p = .001$) in a separate step following the control variable. Maternal anger following the misbehaviour episode was predictive of reported physical punishment use ($\text{Exp}(B) = 2.17$, $p = .001$). For each unit increase in maternal anger, the likelihood of physical punishment use more than doubled.

Maternal goals. The explained variance in physical punishment use increased to 9% with the addition of the variable of maternal goal ($R^2 = .09$, $p = .02$) in a separate step following the control variable. Mothers who identified parent centered goals were nearly twice as likely to have reported using physical punishment than those who identified

child/relationship centered goals. Although maternal goals did not predict physical punishment use, ($\text{Exp}(B) = .46$, $p = .06$) there was a trend toward such an effect.

Hypothesis Three

It was hypothesized that each step in the SIP model would predict physical punishment use, and its predictive power was expected to be enhanced by the addition of each subsequent step such that the variance accounted for would be increased cumulatively with each step. This hypothesis was partially supported. These findings are summarized in Table 12.

To test this hypothesis, the maternal knowledge base and each step in the SIP model (encoding and interpreting, goal formation and response access) were given a summary score representative of the measure(s) of the variable(s) that comprised each step. A forced-entry multiple logistic regression procedure was used to determine the increase in the variance accounted for by the addition of each step, controlling for maternal education. The control variable was entered first into the logistic regression equation prior to the subsequent steps which were entered individually through a forced-entry method.

The knowledge base score is comprised of a total score representing maternal history of physical punishment, ATS, and MKCDN. A summary score ranging from 1 to 5 was constructed for each of these variables. The history, ATS, and MKCDN scores were determined by dividing the frequency distributions on these variables into quintiles and recoding respondents' scores. The MKCDN score was reversed prior to being

Table 12

Logistic Regression Analysis of SIP Steps (Hypothesis 3)

Block	Nagelkerke R^2	Model chi-square	df	p
1. Control variable	.06	4.96	1	.03
2. Knowledge base	.17	14.33	2	.001
3. Encoding and interpreting (SIP steps 1 and 2)	.35	32.31	3	.0000
4. Goal (SIP step 3)	.37	35.45	4	.0000
5. Repertoire (SIP step 4)	.38	36.89	5	.0000

included into the maternal knowledge base score, since a lower score of child development knowledge was hypothesized to be a predictor of physical punishment use. The sum of these summary scores comprised the knowledge base score, which could have ranged from 3 to 15. In the first step of the logistic regression analysis, the control variable was entered. The control variable accounted for 6% of the model ($R^2 = .06$, $p = .03$). In Step 2, maternal knowledge base was entered into the equation which increased the explained variance to 17% ($R^2 = .17$, $p = .001$). Step 3 of the equation, encoding and interpreting, consisted of a summary score of maternal perception of the seriousness and intent of the child misbehaviour. Mothers' ratings on the 4-point perceived seriousness scale were collapsed into not serious (0) or serious (1) to yield a summary score. This score was added to the attribution score (not intentional = 0, intentional = 1). Therefore, the summary score (encoding and interpreting) could have ranged from 0 to 2. This summary score was entered as step three and increased the explained variance to 35% ($R^2 = .35$, $p = .0000$).

Step 4 of the equation consisted of the next step of the SIP model, goal formation, which was measured by subjects' scores on the maternal goal measure. Entry of this variable into the model increased the explained variance to 37% ($R^2 = .37$, $p = .0000$).

Step 5 of the equation consisted of the next step of the SIP model, response access, which was measured by the number of alternatives to physical punishment identified by respondents on the discipline repertoire measure. Its addition to the model increased the explained variance by 1% to 38% and the model remained significant ($R^2 = .38$, $p = .0000$).

Hypothesis Four

It was hypothesized that the most important predictor of maternal use of physical punishment would be approval of its use and the effects of this predictor would be enhanced by maternal perceptions of the seriousness of the misbehaviour, degree of maternal anger in response to the misbehaviour, maternal goals for the disciplinary response and maternal knowledge of alternatives to physical punishment. This hypothesis was partially supported.

To test this hypothesis, a series of stepwise multiple logistic regression analyses were conducted in an attempt to identify the most useful predictors of physical punishment based on the SIP model. In the first equation (after the control variable was entered), ATS, history, and MKCDN were entered to determine whether approval, as measured by ATS, was the strongest predictor of physical punishment use. Approval was the strongest and only significant predictor of physical punishment use ($\text{Exp}(B) = 1.08$, $p = .0000$). For every unit of increase in ATS score, the likelihood of reported physical punishment use increased by 8%. See Table 13.

In the second equation, perceived seriousness and perceived intent were entered to determine whether perceived seriousness was the stronger predictor. Maternal perception of the seriousness of the child's misbehaviour was found to be a stronger predictor of physical punishment ($p = .001$) than perception of intent ($p = .34$). For every unit of increase in perceived seriousness score, the likelihood of reported physical punishment use increased threefold ($\text{Exp}(B) = 3.00$). When perception of intent was entered into the same

Table 13

Logistic Regression Statistics for Selected Distal and Proximal Predictor Variables

Variable	B	Exp(B)	Wald	p
Equation 1				
ATS	0.08	1.08	18.03	.0000
History	-0.02	.98	0.04	.84
MKCDN	0.01	1.01	0.12	.73
Equation 2				
Seriousness	1.09	3.00	12.06	.001
Intent	0.47	1.61	0.92	.34
Equation 3				
Anger before misbehaviour				
	0.63	1.87	2.66	.10
Anger following misbehaviour				
	0.76	2.13	10.24	.001

equation as perceived seriousness, it was found that the likelihood of reported physical punishment was increased by 1.61 times if the misbehaviour was perceived as intentional than if it was not, but perceived intent was not a significant predictor ($\text{Exp}(B) = 1.61$, $p = .34$).

In the third equation, pre-existing maternal anger and anger following the misbehaviour were entered to determine whether the latter was the stronger predictor. Anger following the misbehaviour was determined to be the stronger predictor of physical punishment use ($p = .001$). For every unit of increase in level of anger, the likelihood of reported physical punishment use more than doubled ($\text{Exp}(B) = 2.13$). Although subjects who indicated that they were in an angry mood prior to the misbehaviour were 1.87 times more likely to have reported using physical punishment than those who did not, pre-existing anger was not a significant predictor of reported physical punishment use ($\text{Exp}(B) = 1.87$, $p = .10$). See Table 13.

Finally, the odds ratio was calculated for a model including the strongest predictors of physical punishment use from the previous reported equations. These results are summarized in Table 14. After the control variables were entered as a block, the variable ATS was entered. The variance accounted for increased from 6% to 32% ($R^2 = .32$, $p = .0000$). Maternal perception of the seriousness of the misbehaviour was entered next into the equation. The explained variance in reported physical punishment use increased to 44% ($R^2 = .44$, $p = .0000$). When maternal anger following the misbehaviour was added to the model, the explained variance in reported physical punishment use increased to 49% ($R^2 = .49$, $p = .0000$). The addition of maternal goal to

Table 14

Logistic Regression Analysis of Model Equation (Hypothesis 4)

Block	Nagelkerke R^2	Model chi-square	df	p
1. Control variables	.06	4.96	1	.03
2. ATS	.32	29.00	2	.0000
3. Perceived seriousness	.44	43.58	3	.0000
4. Anger following	.49	49.06	4	.0000
5. Maternal goal	.53	53.88	5	.0000
6. Repertoire	.53	54.05	6	.0000

the model increased the explained variance by only 4% but the model remained significant ($R^2 = .53$, $p = .0000$). In the last step, maternal repertoire was added to the model. The explained variance did not increase, but the model remained significant ($R^2 = .53$, $p = .0000$). See Table 14.

In summary, maternal attitude toward physical punishment use was determined to be the strongest predictor of reported physical punishment use. The effects of maternal attitude were enhanced by the additional variables entered separately into the final model which included both cognitive and affective variables. By selecting the variables with the greatest predictive abilities as determined from testing the SIP model, and by including additional affect variables, this model accounted for 15% more variance in reported physical punishment use than the cumulative SIP model specified in Hypothesis 3.

Other Analyses

Within Subjects Analyses

The previously described results compared two groups: those who reported utilizing physical punishment in the two weeks previous to the interview ($n = 65$) and those who did not ($n = 45$). Those subjects who did report using physical punishment during the previous two weeks also provided an example of a disciplinary episode that elicited a strong reaction in them, but did not result in the use of physical punishment. This resulted in proximal data for both episodes within the PP group. See Table 15. Within group analyses were carried out to determine if there were significant differences in disciplinary responses between the reported episodes that resulted in physical punishment and those that did not. Dichotomous measures of the same subject can be analyzed to

Table 15

Frequency Statistics for Proximal Independent Variables (Within PP Group, n = 65)

Variable	Used PP		Did not use PP	
	Frequency	%	Frequency	%
Perceived seriousness				
Not at all	1	1.5	5	7.7
Not very	9	13.8	25	38.5
Serious	31	47.7	25	38.5
Very	24	36.9	10	15.4
Perceived intent				
Intentional	14	21.5	17	26.2
Unintentional	51	78.5	48	73.8
Angry prior to misbehaviour				
Not at all	53	81.5	61	93.8
Not very	2	3.1	3	4.6
Somewhat	5	7.7	0	0.0
Very	4	6.2	0	0.0
Missing	1	1.5	1	1.5
Angry following misbehaviour, before disciplinary response				
Not at all	5	7.7	11	16.9

Not very	5	7.7	13	20.0
Somewhat	31	47.7	30	46.2
Very	23	35.4	10	15.4
Missing	1	1.5	1	1.5

Maternal goal

Parent	43	66.2	33	50.8
Child/Relationship	21	32.3	31	47.7
Missing	1	1.5	1	1.5

Table 16

Differences in Perceived Seriousness of Child's Misbehaviour for Episodes Ending in Physical Punishment (PP) and Non-Physical Punishment (Non-PP) (Within-Group)

		Perceived seriousness (non-PP)		
		Not serious	Serious	Total
<u>Perceived</u>	Not serious	7.7% (5)	7.7% (5)	15.4% (10)
<u>seriousness</u>	Serious	38.5% (25)	46.2% (30)	84.6% (55)
<u>(PP)</u>	Total	46.2% (30)	53.9% (35)	100% (65)

McNemar $p = .000$

Note: Figures in parentheses are raw frequencies

determine change over time utilizing the McNemar test. The McNemar test of significance measures change in the reported response from one time (physical punishment episode) to another (non-physical punishment episode) using a chi-square distribution and the information from the discordant pairs (Kleinbaum et al., 1998; Monroe, 1997).

Since the distal variables did not change from one disciplinary episode to the next, only the proximal independent variables were included in these analyses. A cross-tabulation was carried out for each proximal variable comparing the non-physical punishment episode with the physical punishment episode within the group of individuals who used physical punishment in the previous two weeks ($n = 65$).

Perceived seriousness. Table 16 presents the cross-tabulation results for perceived seriousness of the misbehaviour. The difference in perceived seriousness between the non-physical discipline episode and the physical discipline episode was significant ($p = .000$). Over a third of all respondents (38.5%) differed in their perception of seriousness of child misbehaviour between the two episodes by rating the misbehaviour that resulted in physical punishment as serious and rating the misbehaviour that did not result in physical punishment as not serious. However, nearly half (46.2%) of these respondents identified all misbehaviours, whether or not they resulted in reported physical punishment, as serious.

Perceived intent. Table 17 presents the cross-tabulation results for perceived child intent in performing the misbehaviour. The difference in perception of the child's intent between the non-physical discipline episode and the physical disciplinary episode was not significant ($p = .65$). The majority of respondents (61.5%) identified the misbehaviour as

Table 17

Differences in Perceived Intent of Child Misbehaviour for Episodes Ending in Physical Punishment (PP) and Non-Physical Punishment (Non-PP) (Within-Group)

		Perceived child intent (non-PP)			
<u>Perceived</u>		Not intentional		Intentional	Total
<u>child</u>	Not intentional	9.2%	(6)	12.3% (8)	21.5% (14)
<u>intent</u>	Intentional	16.9%	(11)	61.5% (40)	78.5% (51)
<u>(PP)</u>	Total	26.2%	(17)	73.9% (48)	100% (65)

McNemar $p = .65$

Note: Figures in parentheses are raw frequencies

intentional by the child whether or not it resulted in reported physical punishment use.

Maternal anger prior to misbehaviour. Table 18 illustrates the cross-tabulation results for maternal anger prior to the child's act. Mothers were more likely to report that they were angry prior to a physical punishment discipline episode than they were prior to a non-physical punishment episode ($p = .008$). While the majority of respondents (82.8%) did not report an angry mood prior to either misbehaviour episode, 12.5% reported that they were angry prior to the physical punishment episode and not prior to the non-physical punishment episode, whereas no respondents reported the reverse situation.

Maternal anger following misbehaviour. Table 19 illustrates the cross-tabulation results for maternal anger levels following the child's misbehaviour. The difference between maternal anger following the child's misbehaviour during the non-physical discipline episode and the physical discipline episode was significant ($p = .007$). Nearly one third (29.7%) of respondents reported feeling angry following the misbehaviour that resulted in reported physical punishment use, but not following the misbehaviour that did not result in physical punishment use. Over half (54.7%) reported anger as a result of the child's misbehaviour whether or not it resulted in physical punishment use.

Goal. Table 20 illustrates the cross-tabulation results for maternal disciplinary goal. The difference in maternal goal between the non-physical discipline episode and the physical discipline episode was not significant ($p = .13$). Over one third (35.9%) identified a parent-centered goal for physical punishment disciplinary responses and a child and/or relationship centered goal for non-physical punishment disciplinary responses. More than twice as many goals were parent-centered (67.2%) than child-

Table 18

Differences in Maternal Anger Prior to Child Misbehaviour for Episodes Ending in Physical Punishment (PP) and Non-Physical Punishment (Non-PP) (Within-Group)

		Prior maternal anger (non-PP episode)			
		Not angry		Angry	Total
<u>Prior</u>					
<u>maternal</u>	Not Angry	82.8%	(53)	--	82.8% (53)
<u>anger</u>	Angry	12.5%	(8)	4.7% (3)	17.19% (11)
<u>(PP episode)</u>	Total	95.3%	(61)	4.7% (3)	100% (64)

Missing = 1

McNemar $p = .008$

Note: Figures in parentheses are raw frequencies

Table 19

Differences in Maternal Anger Following Child Misbehaviour for Episodes Ending in Physical Punishment (PP) and Non-Physical Punishment (Non-PP) (Within-Group)

		Maternal anger following misbehaviour (non-PP episode)		
		Not angry	Angry	Total
<u>Maternal</u> <u>anger</u> <u>following</u> <u>misbehaviour</u> <u>(PP episode)</u>	Not angry	7.8% (5)	7.8% (5)	15.6% (10)
	Angry	29.7% (19)	54.7% (35)	84.4% (54)
	Total	37.5% (24)	62.5% (40)	100% (64)

Missing = 1

McNemar $p = .007$

Note: Figures in parentheses are raw frequencies

Table 20

Differences in Disciplinary Goals for Episodes Ending in Physical Punishment (PP) and Non Physical Punishment (Non-PP) (Within-Group)

		Disciplinary goal (non-PP episode)		
		Parent-centered	Child/rel.centered	Total
<u>Disciplinary goal (PP episode)</u>	Parent-centered	31.3% (20)	35.9% (23)	67.2% (43)
	Child/rel.centered	20.3% (13)	12.5% (8)	32.8% (21)
	Total	51.6% (33)	48.4% (31)	100% (64)

Missing = 1

McNemar $p = .13$

Note: Figures in parentheses are raw frequencies

Child/rel. centered = child and/or relationship centered

centered (32.8%) in the physical punishment episodes. In the non-physical punishment episodes, parent and child-centered goals were equally likely (51.6% and 48.4%, respectively).

Chapter Four: Discussion

This chapter is organized into four sections. First, the findings will be interpreted, explained, and integrated with past literature. Second, the implications of the findings to theory, research and practice will be presented. Third, the limitations of the study's validity and generalizability will be discussed. The last section will consist of a discussion of future research needed in light of the findings of this study.

Summary and Integration of Findings

Maternal and Child Characteristics

Maternal education. Of the maternal and child characteristics measured, only the variable of maternal education level resulted in significant differences between the PP group and the non-PP group. Mothers with the highest level of education were the least likely to have reported using physical punishment. This finding supports recent findings by Jackson et al. (1999) and Day et al. (1998) that parental education level predicted physical punishment use. One reason that higher levels of education, particularly post-secondary education, are associated with decreased use of physical punishment use may be that post-secondary education programs often include a number of liberal arts courses that may provide a background in basic psychology and/or human development. Day et al. (1998) have speculated that educational differences in parental use of physical punishment may be due in part to the older age of respondents in the higher education categories and the influence of their life experiences on their parenting responses. Although the present study did not demonstrate a significant group difference in age, this result may be due to the categorical rather than interval measurement of age. The finding of a group difference in maternal education level in this study resulted in the control of

this variable in all logistic regression analyses.

Child temperament. There were no significant group differences in child temperament as measured by the EAS. Although the EAS is a commonly used temperament measure, it may not be an adequate measure of the child personality traits that influence disciplinary decision-making. It has been proposed that the interaction between a child's and parent's temperament is a source of positive or negative influences on the relationship (Buss & Plomin, 1984) thereby affecting parental interpretation of child behaviour and subsequent responses. The current study did not measure maternal temperament to determine if this might be the case. Similarly, although Ambert (1992) notes that parents who view their children negatively may respond in an adverse manner more frequently, subjects in this study were not asked about how they viewed their child's personality, but were given the EAS which assesses personality in a relatively objective manner. Alternatively, parental disciplinary responses may be determined primarily by the situational factors related to each misbehaviour episode, rather than maternal perception of child temperament.

Hypothesis One

The first hypothesis stated that individual distal variables would predict maternal use of physical punishment. These distal independent variables were: history of receiving physical punishment, attitude toward physical punishment use, knowledge of child development, and repertoire of non-physical punishment measures. This hypothesis was partially supported. Only one of these distal variables, attitude toward physical punishment, was a significant predictor of reported physical punishment use. There are a

number of possible explanations for these findings.

History. Although subjects in the PP group had a higher mean history score than those in the non-PP group, history was not a significant predictor of reported physical punishment use. This finding is divergent from a number of studies in which history of receiving physical punishment was linked to its use with children (Buntain-Ricklefs et al., 1994; Graziano et al., 1996; Holden & Zambarano, 1992; Rodriquez & Sutherland, 1999; Socolar & Stein, 1995; Stattin et al., 1995; Straus, 1990). One reason for the difference in findings might be the particular measure used in the current study. Since data were obtained through face-to-face interviews, subjects may have been reluctant to divulge their own experiences with physical punishment in order to preserve a positive family memory or to not present their parents in a negative manner. It might have been less threatening for respondents to have answered these questions in writing rather than discussing the kinds and amount of physical punishment that they received as children.

Another reason for the difference in findings might be because decades had passed since some participants were children and their recollections may not have been accurate. This might be the case in particular for some of the subjects in the older age category (40 - 49 years) who were asked to recall events that occurred some thirty years previously. In addition, the Likert-type scale that measured the number of times physical punishment had been received was open to interpretation. For example, some individuals may have interpreted "rarely" to have meant once or twice in a lifetime, while others may have interpreted it as once or twice a month. If one's history of receiving physical punishment does affect the likelihood of its use with one's own children, having received it on a

monthly versus a yearly basis would make its current use more likely. The measure used in the current study was not fine enough to detect such an effect.

However, it is also possible that an intergenerational shift has occurred and that this shift is unique to Canada. The studies that found a strong relationship between history and physical punishment use have been conducted in the United States (e.g., Buntain-Ricklefs et al., 1994; Graziano et al., 1996; Hemenway et al., 1994; Holden & Zambarano, 1992; Jackson et al., 1999; Rodriguez & Sutherland, 1999; Socolar & Stein, 1995; Stattin et al., 1995; Straus, 1990). The present study's findings converge with those by Durrant et al. (1999) who found that physical punishment history did not predict the likelihood of physical punishment use in a Canadian sample. These findings indicate that a childhood history of receiving physical punishment does not necessarily translate into parental use of physical punishment with one's own children. One reason may be the increasing public awareness of the potential risks of physical punishment use and the promotion of alternatives for its use. Although the present study demonstrated a significant correlation between history of receiving physical punishment as a child and having a positive attitude toward its use, it was a very weak correlation. In some instances, childhood experience with physical punishment may have the opposite effect on the decision to use physical punishment with one's own children. One respondent in this study commented that her childhood experience of being frequently spanked by hand or object, and in rare occurrences punched, had influenced her to not use physical punishment at all with her child. This suggests another explanation for the findings in the present study may be that the relationship between history of receiving physical punishment is curvilinear. That is,

the experience of receiving physical punishment in childhood either rarely or frequently may result in a lower likelihood of the use of physical punishment with's one's own children than the experience of receiving moderate amounts of physical punishment in childhood.

Attitude. A positive attitude toward the use of physical punishment was found to be a significant predictor of reported physical punishment use. This finding was not surprising in light of other research findings linking a positive attitude toward physical punishment with its use. Other findings indicate that the more strongly a mother approved of spanking as a useful and effective disciplinary response, as determined by ATS scores, the more frequently she utilized it, (Durrant et al., 1997; Holden et al., 1995). In another study in which attitude toward physical punishment predicted its use, measurement was by a composite variable that included endorsement by parents on statements representing attitudes that devalued children and approval of physical punishment as a disciplinary measures (Jackson et al., 1999).

Knowledge of child development. Maternal knowledge of child development norms did not predict physical punishment use. This finding is divergent from the finding by Rickard et al. (1984) who observed that the lower a mother's knowledge level of child development norms, the more frequently she reported spanking her child. There are two possible explanations for the findings obtained in the current study. First, the MKCDN may not have measured the aspects of child development that are essential for parental understanding of why misbehaviour might occur. Specifically, knowledge of expected cognitive, gross and fine motor development of children older than the target child may

not accurately represent how well the mother understands the target child's level of development and incorporates this knowledge into her decision-making. For example, one subject from this study commented that although she spanked her child occasionally when he was younger, she is now able to give him alternatives since he understands more than he had previously.

Second, presuming that the MKCDN did accurately measure subjects' level of knowledge of normal child development for the preschooler, knowledge of whether or not the child's behaviour is appropriate may not be as relevant as the circumstances surrounding the misbehaviour, such as maternal mood or interpretation of seriousness of the misbehaviour. It is not known if knowledge of normal child development is considered during the interpretation of seriousness of the misbehaviour or attribution of intent.

Repertoire. Maternal repertoire of non-physical punishment strategies did not predict whether or not physical punishment use was reported. This variable had been selected to fill a gap in research regarding the effect of maternal knowledge of alternatives to physical punishment on disciplinary decision-making. Although this finding supports previous research which demonstrated that parents may choose to use physical punishment despite knowledge of alternatives (Wissow, 1996), the lack of predictive power of this variable may in fact be related to its measurement rather than its relevance to the decision-making process. In this study, subjects were read two scenarios of child misbehaviour and then asked to respond with as many disciplinary responses as they could generate. These instructions may have been confusing in light of the scenarios given because the scenarios were presented as referring to the subject and the target child. For

example, they were read the scenario that begins “You are shopping in a store and your child is with you.” This could have been interpreted to mean that the answer should be related to what the participant would do with her child. However, the intent of the measure was to evaluate all disciplinary responses of which the subject had knowledge. Responses may have reflected more accurate repertoire levels if the scenarios had involved hypothetical mothers and children. Utilizing such hypothetical situations may decrease the likelihood of participants’ “screening” their responses to include only those responses predicted to work with the target child in that given situation. There is support for the notion of differences in maternal perception between descriptions of child misbehaviour of their own children and scenarios describing hypothetical mothers and children. A recent study found that self-serving bias occurred when mothers placed more responsibility for the child’s misbehaviour on the parent in the hypothetical situation than did mothers who responded to situations involving their own child’s behaviour (Rees & Durrant, 1999).

Hypothesis Two

The second hypothesis stated that the proximal variables, namely maternal perception of the seriousness and intent of the child’s misbehaviour, maternal affect prior to and following the child’s misbehaviour, and maternal disciplinary goal would predict the use of physical punishment. Most components of this hypothesis were supported.

Perceived seriousness. Participants’ perceptions of the seriousness of the child’s misbehaviour predicted the reported use of physical punishment. As well, the within-PP group analysis demonstrated a significant difference in mothers’ perceptions of seriousness of child misbehaviour between the non-physical punishment episode and the physical

punishment episode. Therefore, the nature of the misbehaviour and the surrounding events appear to be assessed prior to making a decision regarding a disciplinary response. The type of misbehaviour that was most likely to result in either a physical or non physical disciplinary response was disobedience. However, respondents were not limited to selecting only one child misbehaviour which preceded the disciplinary response. For example a respondent may have identified that the child was both disobedient and rude. One misbehaviour that predicted an increased likelihood of physical punishment was aggression (i.e., hitting) directed toward a child or adult. This finding supports previous research findings that parents approve more strongly of physical punishment for antisocial acts, such as harming another child (Catron & Masters, 1993; Durrant, 1994; Holden et al., 1995), than for breaches of convention, such as refusal to eat supper (Durrant, 1994).

However, since there was no correlation between aggressive child misbehaviours and perceived seriousness there are likely other factors that influence the interpretation of seriousness, other than the type of behaviour, that were not measured. For example, the length of time the child had been misbehaving or the number of times the mother had asked the child to cease the misbehaviour could influence perceived seriousness.

Perceived intent. Perceived purposefulness of the misbehaviour was a significant predictor of reported physical punishment use. Presumably, mothers who believed that their children committed the offensive behaviour after making an informed choice were more likely to use physical punishment than mothers who believed the offensive behaviour was unintentional. That is, mothers believed that the child could have done otherwise if she or he had chosen to do so. This finding is convergent with previous research

findings that parents who believe that a child misbehaved intentionally are more likely to utilize physical punishment than parents who believe that the child's behaviour is unintentional (Rose-Krasnor et al., 1997).

However, in the within-PP group analysis, there was not a significant difference in perception of intent of child misbehaviour between the non-physical punishment episode and the physical punishment episode. One possible explanation is that mothers who use physical punishment are more inclined to view child misbehaviour generally as intentional and therefore less likely to differentiate between intentional and non-intentional behaviours.

Maternal affect prior to the child's misbehaviour. Maternal affect prior to the child's misbehaviour did not predict physical punishment use. This finding is divergent from previous findings that negative parental mood prior to a disciplinary episode is associated with the use of corporal punishment (Holden et al., 1995). In contrast, the within-PP group analysis demonstrated a significant difference in maternal anger prior to the child misbehaviour between the non-physical punishment episode and the physical punishment episode. This finding implies that mothers with a greater tendency to use physical punishment may be more apt to respond with physical punishment in relation to a negative mood prior to the misbehaviour than mothers less inclined to use physical punishment.

Maternal anger resulting from misbehaviour. Anger as a result of the misbehaviour episode was found to be a significant predictor of physical punishment use. The within-PP group analysis demonstrated a significant difference in maternal anger resulting from the

child misbehaviour between the non-physical punishment episode and the physical punishment episode. Other researchers have obtained similar findings (Graziano et al., 1996; Peterson et al., 1994; Rose-Krasnor et al., 1997; & Straus, 1996). Parental anger may affect perception of intent and seriousness of the child misbehaviour, thus affecting the decision to use physical punishment. In previous research maternal anger was found to induce negative parental judgement and approval of negative reactions to noncompliance (Dix, Reinhold, & Zambarano, 1990). Although other research has not found such a clear association between anger and the likelihood of a physical punishment response (Durrant et al., 1999), it may be that the use of actual disciplinary episodes in the current study rather than scenarios in the aforementioned research may have provided a more accurate reflection of the role of anger in the response of physical punishment.

Maternal goal. There was a trend for the maternal disciplinary goal to predict physical punishment use. Mothers were twice as likely to respond with physical punishment if they had parent-centered goals, defined as acts intended to stop the child's behaviour from occurring now and/or in the future to meet the parent's needs, rather than to meet the child's learning needs. This trend supports previous findings where parenting goals have been determined to be of key importance in selecting parenting behaviours (Dix, 1992, Kuczynski, 1984). Therefore, if the parental goal for the disciplinary response is parent-centered and based on obtaining compliance, the parent may be more likely to respond with physical punishment. Examples of parent-centered goals identified in this study are: "To get him dressed," "To snap him out of it," "To come in the house" and "So she will start listening to me." Alternatively, if the parental goal is child- or

relationship-centered goal and based on teaching values or preserving the parent-child relationship, the parent may be less likely to respond with physical punishment. Examples of child/relationship goals identified from this study are: "Wanted him to understand about sharing," "Wanted her to know that rules are for safety," "So he knew it was wrong to play like that," and "Needs to learn to think about others' feelings."

Within-group analysis for the PP group demonstrated no significant difference in maternal goal resulting from the child misbehaviour between the non-physical punishment episode and the physical punishment episode. It may be the case that parents in the PP group are more likely to identify parent-centered goals for child misbehaviours in general, and less likely to consider child and/or relationship setting goals, regardless of the disciplinary response. Although parental goals have been identified in the literature as important determinants of disciplinary responses in general (Hastings & Grusec, 1998), their role in parental use of physical punishment specifically had not previously been examined.

Third Hypothesis

The third hypothesis was based on the SIP model and its utility in predicting the use of physical punishment. Specifically, the predictive power of the model was expected to be enhanced and the explained variance increased, by the addition of each subsequent step as represented by the distal and proximal variables. This hypothesis was partially supported. The model overall demonstrated utility in predicting the reported use of physical punishment.

As demonstrated through the testing of the first hypothesis, the only distal variable

that predicted the use of physical punishment was attitude. However, maternal knowledge base, which was comprised of a total score (based on representative quintiles) of history of receiving physical punishment, attitude toward physical punishment use (ATS) and knowledge of child development norms (MKCDN), accounted for a significant increase in the variance when entered together as an initial step in the SIP model equation. This may have been due to the strong predictive power of ATS regarding physical punishment use. However, when the proximal variables representing the steps of the model were added to the equation it became evident that the decision-making process regarding maternal use of physical punishment can be understood, at least in part, through the SIP model.

The first two steps of the model, encoding and interpreting, as represented by the combined variables of perceived seriousness and perceived intent, accounted for the greatest increase in the model's variance. Step Three of the SIP model occurs once the behaviour has been determined to require a disciplinary response and a goal is formulated for the situation. As determined in the testing of the second hypothesis, a trend was identified for parent-centered goals, based on meeting the parent's needs, to be more likely to result in physical punishment use than a goal that was child and/or relationship centered. However, as maternal goal was not a significant predictor of physical punishment use, it did not make a significant contribution to the model when entered into the logistic regression analysis subsequent to maternal knowledge base and Steps One and Two of the SIP model.

In Step Four, it was predicted that the mother would evaluate her success with various strategies in past similar situations and this evaluation would be affected by the

number of strategies in her response repertoire. However, in this study, access to non-physical discipline responses, as represented by the repertoire variable, did not make a significant contribution to the overall model. Although this result is not surprising given the findings from the testing of the first hypothesis in which repertoire failed to demonstrate significance as a predictor, it is surprising theoretically. Therefore, although the additive effect of Steps Three and Four of the SIP model were not demonstrated as predicted, the overall model accounted for 38% of the total variation of reported physical punishment use.

Hypothesis Four

To test the last hypothesis, which was exploratory in nature, one variable was selected to represent each step of the SIP model, in addition to the variable of maternal anger, to see if the predictive ability of the model could be increased. This hypothesis stated that approval of physical punishment would be the most important predictor of its use and that this effect would be enhanced by the variables of perception of seriousness, maternal anger in response to the misbehaviour, goals for the disciplinary response and knowledge of alternatives. This hypothesis was supported. Maternal attitude toward physical punishment demonstrated the strongest predictive ability, accounting for nearly a third of the variance after controlling for maternal education level. Each subsequent step entered (with the exception of the last step, repertoire) increased the explained variance in the model and improved upon the SIP model tested in the third hypothesis by 15%. This model explained 53% of the variance in reported physical punishment use. By selecting the best predictor variables from each step of the SIP model and including the variable of

maternal affect, a stronger model emerged. These findings make an important contribution to the understanding of maternal use of physical punishment. Although the SIP model demonstrated utility in examining the cognitive processes of disciplinary decision-making, since the parent-child interaction prior to a parental disciplinary response is usually an emotionally charged event, the role of affect must be considered. Since the information-processing that occurs prior to a physical punishment response involves the interplay of pre-existing and situational cognitive and affective factors, any primary preventive programs directed at decreasing physical punishment use will require a multifaceted approach to this issue.

Other Distal Variables

Time of day of transgression. It could be predicted that most misbehaviour episodes occur during the late afternoon due to late or missed naps and the hectic pace of dinnertime activities. Although this was the case for the majority of misbehaviour episodes that did not result in physical punishment, the majority of misbehaviour episodes that resulted in physical punishment occurred in the late morning to mid-afternoon time period. This finding is divergent from that by Holden et al. (1995) who found that spankings were twice as likely to occur in the evening than in either the morning or the afternoon. It is difficult to draw any specific conclusions from these findings. However, it may be that the lunch to mid-afternoon period may also be a stressful time related to the noon meal and nap time issues. In addition, it is also possible that because of the general awareness of late afternoon as a potentially difficult time, parents may be more likely to believe that misbehaviour is not purposeful and therefore to respond with non-physical

disciplinary responses. There was no correlation between maternal employment and time of day of misbehaviour suggesting that daytime maternal employment outside the home was not a clear factor in maternal use of physical punishment.

Implications of Findings

Theoretical Implications

Social information-processing model. Although the social information-processing (SIP) model (Figure 1, Crick & Dodge, 1994) was developed primarily to examine children's responses in social situations of peer conflict, it has been utilized in this study as a framework to examine maternal disciplinary responses in child misbehaviour situations. The model proposes that behavioural responses of an individual in a conflict situation are based on capabilities, memories, and past experiences. Although the steps of the model follow a particular sequence, individuals may be perpetually engaged in each of the steps and processing is essentially simultaneous for all of the steps. Although Crick and Dodge (1994) have suggested that emotions and cognition interact in all steps of the model, they have not included emotions within these steps. In the present study, anger as a result of the child misbehaviour was a predictor of physical punishment use, and when anger was included along with the other steps of the SIP model, the explained variance increased significantly.

This study has demonstrated the utility of the SIP model to examine maternal disciplinary decision-making. In particular, the initial steps of the model namely, encoding and then interpretation of cues followed by the formulation of a parental goal have been determined to be influential in this process. Parental goals during the disciplinary

encounter had not been studied previously to determine their role in the decision to use physical punishment.

Child physical abuse. Child abuse theories can be generally categorized into two types: ecological, in which the social structure influences maladaptive parenting behaviour (e.g., Belsky, 1980), and social-interactional, in which the parent-child relationship influences maladaptive parenting behaviour (e.g., Maccoby & Martin, 1983). A number of studies of child physical abuse include reference to the contributory roles of physical punishment use (e.g., Kadushin & Martin, 1981; Wolfe, 1987), and parental anger (e.g., Crockenberg, 1987; Rodriguez & Green, 1997). A dual-component model of child abuse, which includes both ecological and social-interactional components has been proposed by Vasta (1982). In this model, the abuse sequence includes predisposing factors such as age-inappropriate expectations and the influence of cultural norms, and the precipitating conditions of child misbehaviour and current stressors. When the subsequent mediating response involves the selection of physical punishment, the resulting “instrumental aggression” combines with a negative emotional arousal the result can be “irritable aggression” and subsequent physical abuse (p. 142). Support for the role of emotion in child abuse has been obtained in studies that demonstrate increased physiological reactions to child-related stimuli in child physical abusers compared to non abusers (e.g., Frodi & Lamb, 1980; Wolfe, Fairbank, Kelley, & Bradlyn, 1983). As discussed by Wolfe (1991) delivering physical punishment essentially requires that the adult becomes emotionally aroused and angry which decreases the ability to respond rationally, thus increasing the risk of harm to the child. Vasta (1982) proposed that efforts

to prevent child physical abuse should include activities that reduce both the instrumental component of physical punishment (i.e., its use as a disciplinary strategy), and the irritable component of negative emotional arousal (i.e., anger). Application of the findings from the current study in the development of primary prevention strategies directed at decreasing physical punishment use would therefore incorporate specific strategies developed by Vasta to decrease the incidence of child physical abuse.

Research Implications

Although a substantial amount of research has been conducted on the correlates of parental use of physical punishment, most of these studies have examined only one or two predictors at a time (e.g., Crockenberg, 1987; Peterson et al., 1994; Ringwalt et al., 1989; Socolar & Stein, 1995; Stolley & Szinovacz, 1997). In the present study, an examination was made of the cumulative effects of a number of factors in predicting maternal use of physical punishment. Few previous studies have examined the interrelationships of proximal and distal factors, both cognitive and affective, to determine their relative contributions to the decision-making process leading to the use of physical punishment with children.

Only one of the distal factors, attitude toward physical punishment was a predictor of physical punishment use, whereas the majority of the proximal factors demonstrated predictive abilities. One reason why proximal factors demonstrated such an important role in the decision-making process may be due to the examination of recent actual disciplinary encounters. It is unlikely that affect can be measured with any degree of accuracy when scenarios are presented to subjects. Since the role of anger as a result of the misbehaviour

is predictive of the type of disciplinary response, future research on parental discipline should focus primarily on the examination of actual misbehaviour episodes and subsequent disciplinary responses.

Practice Implications

Findings from this study demonstrate the additive effects of pre-existing and situational cognitive and affective factors in parental decision-making during disciplinary situations. This information is vital in order to deliver effective programming to decrease parental use of physical punishment and the risk of physical abuse of children. To date, parenting programs with the objective of decreasing the use of parental physical punishment have focussed primarily on teaching alternative disciplinary strategies. Such training programs are based on the notion that knowledge of alternatives to physical punishment will eliminate, or at least decrease, its use. However, a pre-existing positive attitude toward physical punishment use and factors more proximal to the disciplinary encounter itself were demonstrated to be more influential in parental decision-making than knowledge of alternatives. Although the teaching of alternatives to physical punishment is clearly a vital component of any program intended to decrease physical punishment use, widespread public education directed at changing general attitudes toward physical punishment is also essential.

Although maternal level of child development knowledge did not significantly predict use of physical punishment, the fact that the majority of respondents perceived their children's acts as serious or very serious and that perceptions of child intent predicted physical punishment use suggest that the majority of mothers saw the misbehaviours as intentional. Since the study children were first born, respondents likely

had limited knowledge of and experience with child behaviour. Therefore, programs that are developed to decrease the use of physical punishment use should include material on expected child behaviours, such as behaviours associated with natural curiosity which may be interpreted as purposeful disobedience. This information may help parents to view some child misbehaviours as less serious and subsequently to select disciplinary goals and responses that are more child-centered. The notion that parental beliefs about the nature of children's behaviour influence disciplinary decision-making is supported by findings from a comparison study of Canadian and Swedish mothers in which the Swedish mothers viewed the child misbehaviours as less serious and used less physical punishment than did the Canadian mothers (Durrant et al., 1999).

However, even if parents understand why misbehaviours may be occurring, there is still a high likelihood of negative parental affect as a result of the misbehaviour. Anger control strategies (which increase parents' awareness of their anger arousal patterns and enhance self-control) are not identified as a focus in primary, secondary or tertiary programming to address prevention of child abuse (Health Canada, 1999; Meston, J., 1993). Primary programming strategies are directed at increasing awareness of the issue and influencing attitudes (Health Canada, 1999). The lack of emphasis on anger management in child abuse prevention programming generally implies that its role in physical punishment use and child abuse is not considered to be substantial. However, the results from this study have demonstrated that anger is a predictor of maternal use of physical punishment. The implications of focussing primarily on cognitive factors (such as knowledge of alternatives) when affective factors (such as anger) may be the most important predictors of physical punishment use could mean the difference between

effective and ineffective programming.

Limitations

Internal Validity

To decrease threats to internal validity and control for possible confounds, inclusive and exclusive criteria for participation were developed. Only mothers whose first born child was three years old at the time of the interview were eligible for inclusion in order to decrease the effects of previous experience in raising a child and to minimize variation in developmental level among the target children. In addition, children who had a behavioural or physical disability were excluded from the study in an attempt to control for the modified parenting responses that might occur in those cases. As the PP and non-PP groups differed in maternal education level, this variable was controlled in the logistic regression analyses of the hypotheses.

Three possible threats to internal validity have been identified. The first is a possible historical or cohort effect. As physical punishment use has received considerable press and public discussion in recent months, participants may not have been as open about their use of physical punishment if they felt that this response may be viewed as socially unacceptable. In addition participants were informed that if, during the course of the interview, the researcher was made aware that a child had been injured or was at risk of injury that this would be reported to the appropriate agency. Acknowledging the sensitivity of the subject may have impacted on some participants' willingness to be open and forthcoming about their use of physical punishment. Regarding recall of childhood experience with physical discipline, respondents may have been reluctant to reveal the

extent to which they received physical punishment from their parents, and therefore may have diminished the extent of their experience.

Second, as the dependent variable was measured as a binary response rather than as a frequency, some relationships may have been masked. In addition, only the previous two week period was considered. Therefore, some respondents in the non-PP group may have used physical punishment on an occasional basis, although not in the previous two week period. Therefore, the non-PP group cannot be assumed to never have used physical punishment.

Third, since the age range of participants was between 20 and 50 years, varying amounts of time had past since their own experiences of childhood discipline occurred. Therefore, the measure of history of receiving physical punishment may be confounded by participants' ages and accuracy of recall due to the passage of time.

External Validity

Sample. The study sample was obtained from a computer generated randomized list of approximately one third of all possible subjects who met the inclusion criteria and who were registered with Manitoba Health. Although attempts were made to have the final sample determined by random means, this was not always possible. Once recruitment letters were sent, individuals who were interested called to participate. Follow-up phone calls were then initiated to others who had been sent letters to determine their interest. Therefore, a certain degree of self-selection bias may have occurred. Overall, the sample had a higher education level than expected. This may indicate that individuals with higher levels of education were more interested in participating in such a study. However, the

fact that the list of 750 names from which the final sample was obtained was randomly generated did at least provide the opportunity for individuals from a variety of backgrounds to participate. Ten percent (10%) of the recruitment letters were returned due to incorrect addresses. It is possible that this group may include a high percentage of potential participants in the lower educational and socioeconomic levels who tend to have higher mobility levels.

Measures. Although the distal variables of history, repertoire and knowledge of child development did not predict physical punishment use, these findings may be due in part to the measures themselves. The measure of history of childhood disciplinary experiences relied on recall of events in childhood and terms such as “rarely” are open to subjective interpretation. The measure of repertoire may have limited subjects’ responses to what they believed would work best for their child in that particular scenario rather than measuring their knowledge of non-physical disciplinary strategies. The MKCDN measure may not have been an accurate measure of respondents’ knowledge of the level of child development that is relevant to determining appropriate disciplinary strategies.

Future Directions

An important step required to decrease the incidence of physical child abuse and to promote healthy parent-child relationships is to discourage the use of physical punishment. In order to do so, a full understanding of why parents continue to use physical punishment, in light of its demonstrated negative developmental consequences, is required. In the present study it has been demonstrated that the parental response of physical punishment is largely a result of the interplay of cognitive and affective factors that are

both pre-existing and immediately present. Although the majority of participants indicated that they had primary responsibility for discipline, a large percentage of participants indicated that they shared this responsibility with their spouse or partner. Therefore, a natural extension of this study would be to include fathers to determine if processes underlying maternal and paternal use of physical punishment are similar.

Future studies should focus on the development, testing and evaluation of parenting education programs that should ideally start during the pre-natal time period or around the time that the first born child arrives in a household. The present findings suggest that such education programs should have three primary foci. First, positive attitudes toward the use of physical punishment should be discouraged by informing parents of the negative child development outcomes that have been found to result from its use. Research findings should be presented in a clear and meaningful way as a means to illustrate the importance of ending the cultural sanctioning and acceptance of this practice. Second, information on normative child development, as well as effective and developmentally appropriate non-physical disciplinary strategies, should be provided. Parents should be informed that parental responses that encourage self-discipline are ideal, acknowledging that such strategies may require considerably more effort compared with physical responses. Third, information on the role of affect in response to child misbehaviour should be given. A vital component of such programming should be a focus on emotional self-awareness and self-control techniques.

Although the use of physical punishment with children has clearly demonstrated negative developmental outcomes, its use continues. In the current study, almost 60% of

respondents had used physical punishment with their children in the previous two weeks. This is a surprisingly high rate given its emerging socially undesirable status. An individual's own history of receiving physical punishment did not predict physical punishment use in this study. Instead, a positive attitude toward physical punishment use and circumstances of the child misbehaviour episode were found to be most influential in the disciplinary decision-making process. Therefore, parental use of physical punishment with one's own children is not an automatic outcome of one's experience.

This study examined the roles of cognition and affect in maternal disciplinary decision-making and use of physical punishment. The findings can assist in establishing priorities in educational programming aimed at decreasing rates of parental use of physical punishment and child physical abuse.



Appendix A
Recruitment Letter

June 21, 1999

Dear Parent:

Looking after a pre-school child can be a frustrating and challenging experience! Young children seem to be constantly testing their parents. As a parent myself and a children's nurse, I know the challenges of looking after young children, especially when it comes to discipline. We all respond in different ways when our children misbehave and it's hard to know how best to set limits. There is much to learn about children, parenting, and discipline.

I am a PhD student at the University of Manitoba. Your name was randomly selected by Manitoba Health from a listing of mothers of young children who reside in Winnipeg. I hope that you are willing to take part in a research study that will look at how parents decide which child behaviours need discipline and the kinds of discipline that parents use in different situations.

After taking part in the study, which will involve a single interview lasting approximately one hour, you will receive either a \$10 gift certificate for Toys R Us, or the cash equivalent, whichever you prefer. If you are willing to participate and/or have any questions about the study, please call me at 489-6357.

I hope that you will be able to help by participating in this study, and after it's finished, I would be happy to send you a summary of my findings.

Sincerely,

Christine Ateah, RN, PhD Student
University of Manitoba
Phone: 489-6357
Research Supervisor
Dr. Joan Durrant,
Associate Professor
Department of Family Studies (474-8060).

Appendix B

Demographic Questionnaire

1. What is your child's date of birth? Month_____Day_____Year_____
2. Are you the child's biological parent? Yes/No stepparent? adoptive parent? Other
3. In your family, who is the person with primary responsibility for discipline?
 _____Mother
 _____Father
 _____Equal
4. Is your child a girl or boy?
5. If your child has siblings living at home, please state the age and gender of each one:
 Age_____ Gender _____
 Age_____ Gender _____
 Age_____ Gender _____
 Age_____ Gender _____
6. How old are you?
 Less than 20 _____
 20-29 years _____
 30-39 years _____
 40-49 years _____
 50-59 years _____
 Over 59 years _____
7. What level of education did you complete?
 8 years or less _____
 9-12 years _____
 High School Graduate _____
 College or University Education _____
 Postgraduate or Professional School _____

8. Approximately how many hours of paid employment do you complete each week?

Not working for pay	_____	Looking for Work	_____	Not	_____
1-15 hours per week	_____				
16-26 hours per week	_____				
27-40 hours per week	_____				
over 40 hours per week	_____				

9. What is your current occupation? Or if not working, what was your most recent occupation?

10. Does your child(ren) attend day-care (specify), or is cared by someone else each week?

No other caregivers	_____
1-15 hours per week	_____
16-26 hours per week	_____
27-40 hours per week	_____
over 40 hours per week	_____

11. Does your child have any health problem(s)? _____ Diagnosed? _____ Please explain.

12. Does your child have a behaviour disorder? _____ Diagnosed? _____ Please explain.

13. Was your child born premature? _____ Please explain.

14. Did your child have any health difficulties after being born? _____ Please explain.

15. How long have you lived in Canada?

All my life _____
 Over 10 years _____
 5-10 years _____
 1-5 years _____
 Less than 1 year _____

16. What is your marital status?

Cohabiting	_____	How many years?_____
Married	_____	How many years?_____
Single	_____	
Divorced	_____	
Separated	_____	
Widowed	_____	
Other	_____	

The following questions may be considered of a sensitive nature and of course are optional for you to answer.

17. What is your total family income for the past year (before taxes)?

Under 10,000 _____
 10,000 - 20,000 _____
 20,001 - 30,000 _____
 30,001 - 40,000 _____
 40,001 - 60,000 _____
 60,001 - 75,000 _____
 Over 75,000 _____

18. Other than Canadian, to which cultural or ethnic group do you belong?

19. In which religion were you raised? _____

20. What is your current religion? _____

Appendix C

Discipline Episode Record

1. Date _____ Time _____ am pm Location _____

2. What did your child do?

- _____ Did something dangerous to self or others
- _____ Did something that did or could cause damage
- _____ Hit another child
- _____ Hit an adult
- _____ Was disobedient
- _____ Had a tantrum
- _____ Was rude or unkind (with words or actions)
- _____ Talked back to me

Something else (please describe)

3. This misbehaviour by my child was most likely (check one):

- _____ Intentional _____ Not Intentional

4. This misbehaviour by my child was (check one):

- _____ Very Serious _____ Serious _____ Not Very Serious _____ Not at all Serious

5. My response to this misbehaviour was (check all that apply):

- _____ Gave a time-out (e.g., sent child to room)
- _____ Yelled
- _____ Spanked
- _____ Scolded
- _____ Slapped
- _____ Took away a privilege (e.g., TV, playing with friends)
- _____ Threatened

Something else (please describe)

6. What was the goal you had in mind, or what were you trying to achieve with your response?

7. Before my child misbehaved I was feeling:

angry	_____	very	_____	somewhat	_____	not very	_____	not at all
content	_____	very	_____	somewhat	_____	not very	_____	not at all
stressed	_____	very	_____	somewhat	_____	not very	_____	not at all
happy	_____	very	_____	somewhat	_____	not very	_____	not at all
frustrated	_____	very	_____	somewhat	_____	not very	_____	not at all
calm	_____	very	_____	somewhat	_____	not very	_____	not at all
other	_____	very	_____	somewhat	_____	not very	_____	not at all

8. When I saw and/or heard my child's misbehaviour, I felt:

angry	_____	very	_____	somewhat	_____	not very	_____	not at all
scared	_____	very	_____	somewhat	_____	not very	_____	not at all
calm	_____	very	_____	somewhat	_____	not very	_____	not at all
displeased	_____	very	_____	somewhat	_____	not very	_____	not at all
frustrated	_____	very	_____	somewhat	_____	not very	_____	not at all
embarrassed	_____	very	_____	somewhat	_____	not very	_____	not at all
other	_____	very	_____	somewhat	_____	not very	_____	not at all

9. Ten minutes after my disciplinary response, I felt:

angry	_____	very	_____	somewhat	_____	not very	_____	not at all
sad	_____	very	_____	somewhat	_____	not very	_____	not at all
pleased	_____	very	_____	somewhat	_____	not very	_____	not at all
guilty	_____	very	_____	somewhat	_____	not very	_____	not at all
frustrated	_____	very	_____	somewhat	_____	not very	_____	not at all
satisfied	_____	very	_____	somewhat	_____	not very	_____	not at all
other	_____	very	_____	somewhat	_____	not very	_____	not at all

10. Do you think that your religious beliefs influence your disciplinary decision-making?

_____ Yes _____ No

11. Please feel free to add any further information.

Appendix D

Childhood Disciplinary Experience

Please indicate the frequency with which your parents used each of the following disciplinary responses with you when you were a child.

RESPONSEFREQUENCY

Time Out Never____Rarely____Sometimes____Often ____Very Often ____

Spank
(with hand) Never____Rarely____Sometimes____Often ____Very Often ____

Spank
(with object) Never____Rarely____Sometimes____Often ____Very Often ____

Withdraw privileges
(e.g., no TV) Never____Rarely____Sometimes____Often ____Very Often ____

Yell Never____Rarely____Sometimes____Often ____Very Often ____

Scold Never____Rarely____Sometimes____Often ____Very Often ____

Slap Never____Rarely____Sometimes____Often ____Very Often ____

Other (specify)_____Rarely____Sometimes____Often ____Very Often ____

Other (specify)_____Rarely____Sometimes____Often ____Very Often ____

Other (specify)_____Rarely____Sometimes____Often ____Very Often ____

Appendix E

Attitudes Toward Spanking/Slapping My Child

Using the rating scale below, rate how much you currently agree or disagree with each statement about spanking or slapping your child(ren). (The word spank will be used below but you can also think of slaps or slapping).

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

- _____ 1. Spanking is a normal part of my parenting.
- _____ 2. Sometimes a spank is the best way to get my child to listen.
- _____ 3. A spank is not an effective method to change my child's behavior for the long term.
- _____ 4. Spanking is never necessary to instill proper moral and social conduct in my child.
- _____ 5. Sometimes, the only way to get my child to behave is with a spank.
- _____ 6. One of the best ways for my child to learn "no" is to spank him/her after disobedience.
- _____ 7. If my child is spanked for a misbehaviour, he or she should always be spanked for that misbehaviour.
- _____ 8. When all is said and done, spanking is harmful for my child.
- _____ 9. I believe it is the parent's right to spank their children if they think its necessary.
- _____ 10. Overall, I believe spanking is a bad disciplinary technique.

Appendix F

Parent Knowledge of Child Development Norms

Please circle the number that most closely approximates your answer to each question.

EXAMPLE:

A 4 OR 5 YEAR OLD SHOULD BE ABLE TO CORRECTLY CARRY OUT THE FOLLOWING:

Count his/her fingers.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

A 4 OR 5 YEAR OLD SHOULD BE ABLE TO CORRECTLY CARRY OUT THE FOLLOWING:

1. Copy a square.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

2. Tell own sex (whether a boy or girl).

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

3. Ride a bicycle.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

4. Recite numbers to 30's.

			Neither Agree Nor			
<u>Strongly</u> <u>Disagree</u>	<u>Moderately</u> <u>Disagree</u>	<u>Slightly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Slightly</u> <u>Agree</u>	<u>Moderately</u> <u>Agree</u>	<u>Strongly</u> <u>Agree</u>
1	2	3	4	5	6	7

5. Tell how a boat and an airplane are alike.

			Neither Agree Nor			
<u>Strongly</u> <u>Disagree</u>	<u>Moderately</u> <u>Disagree</u>	<u>Slightly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Slightly</u> <u>Agree</u>	<u>Moderately</u> <u>Agree</u>	<u>Strongly</u> <u>Agree</u>
1	2	3	4	5	6	7

6. Stop having specific fears (e.g., fear of the dark, fear of dogs, etc.).

			Neither Agree Nor			
<u>Strongly</u> <u>Disagree</u>	<u>Moderately</u> <u>Disagree</u>	<u>Slightly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Slightly</u> <u>Agree</u>	<u>Moderately</u> <u>Agree</u>	<u>Strongly</u> <u>Agree</u>
1	2	3	4	5	6	7

7. Go to bed unassisted.

			Neither Agree Nor			
<u>Strongly</u> <u>Disagree</u>	<u>Moderately</u> <u>Disagree</u>	<u>Slightly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Slightly</u> <u>Agree</u>	<u>Moderately</u> <u>Agree</u>	<u>Strongly</u> <u>Agree</u>
1	2	3	4	5	6	7

8. Draw a man consisting of 4 part (e.g., head, body legs)

			Neither Agree Nor			
<u>Strongly</u> <u>Disagree</u>	<u>Moderately</u> <u>Disagree</u>	<u>Slightly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Slightly</u> <u>Agree</u>	<u>Moderately</u> <u>Agree</u>	<u>Strongly</u> <u>Agree</u>
1	2	3	4	5	6	7

9. Be over food finickiness.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

10. Stop having problems with temper.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

11. Comb or brush own hair.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

12. Answer phone and take messages.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

13. Feel miserable when naughty.

Strongly <u>Disagree</u>	Moderately <u>Disagree</u>	Slightly <u>Disagree</u>	Neither Agree Nor <u>Disagree</u>	Slightly <u>Agree</u>	Moderately <u>Agree</u>	Strongly <u>Agree</u>
1	2	3	4	5	6	7

14. Ask to go to the toilet.

			Neither Agree Nor			
Strongly	Moderately	Slightly	Nor	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

15. Brush own teeth.

			Neither Agree Nor			
Strongly	Moderately	Slightly	Nor	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

16. Walk down stairs alternating feet (one step per tread).

			Neither Agree Nor			
Strongly	Moderately	Slightly	Nor	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

17. Tell own age.

			Neither Agree Nor			
Strongly	Moderately	Slightly	Nor	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

18. Give names for “penny”, “nickel”, and “dime”.

			Neither Agree Nor			
Strongly	Moderately	Slightly	Nor	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

19. Understanding taking turns.

Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

20. Wash own face.

Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
<u>Disagree</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>	<u>Agree</u>
1	2	3	4	5	6	7

Appendix G

Repertoire of Disciplinary Responses

Here are two situations of child misbehaviour. Please respond with as many kinds of disciplinary responses of which you are aware, for each situation.

1. You are shopping in a store and your child is with you. S/he sees something s/he likes and asks if s/he can have it. You say NO, but s/he demands to have it and starts crying and screaming.

2. Your child and a neighbour's child are playing together in your living room. Your child asks to play with a toy, but the other child refuses. Your child becomes angry, hits the playmate, and takes the toy.

Appendix H

Temperament Survey for Children

Rate each of the items for your preschool child on a scale of 1 (not characteristic or typical of your child) to 5 (very characteristic or typical of your child).

	Not Typical			Very Typical	
1. Child tends to be shy.	1	2	3	4	5
2. Child cries easily.	1	2	3	4	5
3. Child likes to be with people.	1	2	3	4	5
4. Child is always on the go.	1	2	3	4	5
5. Child prefers playing with others rather than alone.	1	2	3	4	5
6. Child tends to be somewhat emotional.	1	2	3	4	5
7. When child moves about, he usually moves slowly.	1	2	3	4	5
8. Child makes friends easily.	1	2	3	4	5
9. Child is off and running as soon as he wakes up in the morning.	1	2	3	4	5
10. Child finds people more stimulating than anything else.	1	2	3	4	5
11. Child often fusses and cries.	1	2	3	4	5
12. Child is very sociable.	1	2	3	4	5
13. Child is very energetic.	1	2	3	4	5
14. Child takes a long time to warm up to strangers.	1	2	3	4	5

15. Child gets upset easily.	1	2	3	4	5
16. Child is something of a loner.	1	2	3	4	5
17. Child prefers quiet, inactive games to more active ones.	1	2	3	4	5
18. When alone, child feels isolated.	1	2	3	4	5
19. Child reacts intensely when upset.	1	2	3	4	5
20. Child is very friendly with strangers.	1	2	3	4	5

Appendix I

Consent Form

Principle Investigator Name: Christine Ateah

Phone Number: 489-6357

Please tick either YES or NO in response to the following questions:

1. Do you understand that you have been asked to be in a research study? YES ☐ NO ☐
2. Have you heard the verbal explanation of the investigator? YES ☐ NO ☐
3. Do you understand the benefits and risks involved in taking part in the research study? YES ☐ NO ☐
4. Have you had an opportunity to ask questions and discuss the study? YES ☐ NO ☐
5. Do you understand that you are free to withdraw from the study at any without having to give a reason and without any detriment to your ongoing association with the University of Manitoba? YES ☐ NO ☐
6. Do you understand that you can refuse to answer any questions or provide information or samples during your participation in the study? YES ☐ NO ☐
7. Has the issue of confidentiality been described to you and do you understand: a) who will have access to the information that you provide, b) that no reports will identify you as an individual? YES ☐ NO ☐

I agree to take part in this study

YES ☐ NO ☐

Signature of participant

Printed name of participant

Date

Signature of researcher

Date

Two copies of the form are provided for you to complete, one of which you are expected to keep. The second copy will be kept by the principal investigator.

Thank-you.

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