Fall 2004

Corporal punishment as a determinant of developmental outcomes: Longitudinal and process models

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CORPORAL PUNISHMENT AS A DETERMINANT OF DEVELOPMENTAL OUTCOMES: LONGITUDINAL AND PROCESS MODELS

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Submitted to the University of New Hampshire in Partial Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy

in

Psychology

September, 2004

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DEDICATION

This dissertation research is dedicated equally to my parents and to Shannon.

Judith Harris is wrong. Parents do matter and mine have mattered more than most. Any successes that I have had in life, including the completion of this dissertation, are a direct result of my parents' efforts to instill in me academic aspirations and their tireless efforts to ensure that I carry through with them. They worry that, as a researcher interested in issues of parenting, I will identify the things that they did wrong as parents. They need not worry; they did nothing wrong and everything right. I will be forever indebted to them.

I also want to thank my new wife, Shannon. Throughout the past 5 years, she has done so much to help me through graduate school. I am fortunate to have her as a source of support going forward.

ACKNOWLEDGMENTS

I owe a particular debt of gratitude to Carolyn Mebert for all of the support that she has provided to me throughout the past five years. With this dissertation research and with other projects, she has taught me more than she could know about developmental psychology and about how to do good research. I count myself as extremely fortunate for having had the opportunity to work with her and will always be grateful for everything that she has taught me.

I would like to thank the rest of my committee members for the various support that they offered throughout the formulation and writing of this dissertation. I was originally inspired to begin this line of research by the exceptional work that Dr. Murray Straus has done in this area. He has been extremely helpful throughout the development of this research. Toni Bisconti, John Mayer, and Glenda Kaufman Kantor have all provided assorted assistance with the dissertation and I thank all of them.

I would also like to thank the department of psychology and the graduate school at the University of New Hampshire for the financial support that I have received for the past couple of years. Through travel grants, dissertation support, summer fellowships, and assistantships, I was able to focus more intently on my research. It was instrumental to the completion of this work.

Finally, I would like to thank all of the participants who volunteered their time for both of these research projects. I would like to thank the families and site administrators of the NICHD Study of Early Child Care and Youth Development. I would also like to thank the professors, administrators, and students of Waynesburg College for participating in this project.

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ABSTRACT

CORPORAL PUNISHMENT AS A DETERMINANT OF DEVELOPMENTAL OUTCOMES: LONGITUDINAL AND PROCESS MODELS

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There were two goals of this research: 1) to establish that normative corporal punishment has an impact on children's mental health and the parent-child relationship and 2) to identify intrapersonal variables that determine the impact of this parenting behavior. The first study examined the influence of corporal punishment across infancy and early childhood with longitudinal analyses performed on data from the NICHD Study of Early Child Care and Youth Development. The results suggest that corporal punishment does have a direct, unique impact on children's mental health and on the mother-child relationship. For the second study, a college sample was studied to examine the intervening role of individuals' subjective experiences of their parents' use of corporal punishment. The results of this study indicate that both perceived stress and attitudes towards corporal punishment play an important intervening role in determining the impact of physical punishment. These findings are relevant to the current debate among social scientists regarding the potential negative effects of corporal punishment and for formulating theoretical models of the effects of corporal punishment. The policy implications of these findings are discussed.

CHAPTER I

INTRODUCTION

Parenting plays a crucial role in determining children's development (e.g., Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). While there is continuing controversy about the relative influence of parenting on children's personality, Collins et al. (2000) review the available evidence and convincingly argue for the unique influence of parenting, beyond genetic and extrafamilial influences. There are two distinct components to this influence: parenting styles, or the overall emotional climate afforded by parents, and parenting practices, or specific parenting behaviors (Darling & Steinberg, 1993). Behavior and style are interrelated, yet distinct in determining outcomes. Consequently, Darling & Steinberg maintain that research should be focused on discriminating the unique effects of parenting practices from the overall parenting style and on examining how those effects are expressed in conjunction with the overall style. Such a distinction should provide a clearer picture of the true influence of parenting on development.

Research is especially needed to clarify the role of corporal punishment on developmental outcomes, largely because of the prevalence of this form of parenting behavior. Corporal punishment is defined as "the use of physical force with the intention of causing a child pain, but not injury, for the purposes of correction or control of the child's behavior" (Straus, 2001, p. 4). The term refers to a wide variety of parental discipline techniques, including spanking, pinching, etc. This project is concerned with

corporal punishment that is normative and that may be more appropriately termed customary physical punishment (Holden, 2002).[1] While there are contextual variations in the administration of physical punishment, in that the frequency of administration increases with male, African American, and poor children (Straus & Stewart, 1999), this type of disciplinary technique is nearly universal among American parents, with more than 90% of children and approximately 50% of adolescents receiving corporal punishment at least once (Graziano & Namaste, 1990; Straus & Stewart, 1999). Children who are spanked are spanked frequently- on average three times per week (Straus, 2001).

Most parents use normative corporal punishment in an effort to teach their children to learn appropriate standards of behavior (Holden, Miller, & Harris, 1999). Some researchers argue that corporal punishment is an effective way to extinguish children's problem behavior and that it is more effective than other forms of discipline for extinguishing children's problem behaviors (Larzelere, 1994 & 2000). Especially when this behavior is used judiciously and in conjunction with other discipline techniques, such as reasoning, researchers argue that it is an effective method of modifying children's behavior. Indeed, ethically problematic research indicates that corporal punishment is effective at stopping a child's misbehavior during a discipline episode (Bean & Roberts, 1981).

Despite the fact that the intended purpose of most physical discipline is to socialize children and that so many parents use it as a disciplinary technique, there is no evidence that there are any positive developmental outcomes associated with the use of corporal punishment, beyond immediate compliance with a parent's directive (Gershoff,

[1] For this paper, corporal punishment and physical punishment will be used interchangeably. Both terms will refer to parenting practices that would not be defined as abusive from a legal standpoint.

2002a; Larzelere, 2000). In fact, a growing body of research suggests there may be unintended negative consequences. Parents' use of corporal punishment has been linked to a wide variety of negative developmental outcomes, including aggressive behavior, delinquency, and poor psychological and cognitive functioning (e.g., Gershoff, 2002a; Straus, 2001; Smith & Brooks-Gunn, 1997). Perhaps the strongest link is between corporal punishment and externalizing behavior problems, especially aggression (e.g.,Bryan & Freed, 1982; Strassberg et al., 1994; Straus, 1994; Straus & Kantor, 1994). Delinquency and antisocial behavior in adolescence have also been found to be associated with corporal punishment in childhood (Agnew, 1983; Straus, 1991; Straus & Moradian, 1998), as have internalizing characteristics such as depression and lower self-esteem (e.g., Bryan & Freed, 1982; Holmes & Robins, 1987; Straus, 2001; Rohner, Bourque, & Elordi, 1996; Turner & Finkelhor, 1996). It appears as though parental corporal punishment deters some unwanted behavior in the short-term but that it may inhibit internalization of appropriate standards of behavior and may therefore actually lead to more delinquent and aggressive behavior later in life (Gershoff, 2002a; Grusec & Goodnow, 1994). Although there are some contrary findings (e.g., Joubert, 1991), the accumulating evidence suggests that corporal punishment is related to negative developmental outcomes across a wide range of behavioral domains.

However, there is continuing debate among social scientists and policymakers regarding the interpretation of these findings and the overall conclusions that can be drawn from this wide body of research. Much of the research examining the impact of corporal punishment relies on correlational methodology and fails to control adequately for third-variable concerns. It is therefore unclear as to what message should be

communicated to parents regarding the effects of corporal punishment. In fact, the inherent methodological problems in corporal punishment research have led prominent researchers to challenge the conclusions of those studies implicating corporal punishment as a causal contributor to negative developmental outcomes (e.g., Baumrind, 1996; Baumrind, Larzelere, & Cowan, 2002). In order to eliminate confounding interpretations, there is a need for research designs that explicitly incorporate the suggested methodological refinements of skeptical policymakers.

Child maltreatment is often a constellation of parenting behaviors, including corporal punishment, physical abuse, and neglect (e.g., Higgins & McCabe, 2003). Studies in this area often confound other forms of parenting behaviors, and it is critical to differentiate between severe and normative patterns of corporal punishment (e.g., Larzelere, 2000). Many studies that purport to examine the effects of corporal punishment include behaviors that are certainly nonnormative, if not abusive. As one example, one element of Rohner, Bourque, & Elordi's (1996) conception of corporal punishment included "beating severely with an object (leaving a mark on the body) (p. 844)," which would be defined as abusive by almost all criteria. Indeed, there is no real debate among developmental psychologists as to whether those types of parenting behaviors are harmful to children's development (e.g., Gershoff, 2002b). Even if abusive behaviors are not assessed in a particular study, observed associations between corporal punishment and developmental outcomes may simply be reflecting the shared associations between corporal punishment and other forms of maltreatment. Corporal punishment may simply be a marker of more severe maltreatment and not a unique

determinant of behavior. It is therefore crucial to disentangle the effects of these differing forms of parent maltreatment and to account for the interrelations among these variables.

Even in nonabusive families, it is imperative to consider the effects of corporal punishment with other elements of parenting. Baumrind (1973) found that corporal punishment was used in the context of all normative parenting styles, but that it was used differently across parenting styles. While it is used by many primarily authoritative parents, it is used much more frequently by authoritarian parents. Reported associations between corporal punishment and developmental outcomes may simply be reflecting the influence of the broader parenting style (authoritarianism) rather than the specific parental behavior of corporal punishment. This form of discipline is also employed by permissive parents, although they tend to use it less frequently and more harshly (Parke & Collmer, 1975). The findings of Larzelere, Kleinn, Schumm, & Alibrando (1989) support the idea that the reported associations of corporal punishment are spurious due to their covariation with other, unmeasured, components of parenting. Specifically, they found that the amount of corporal punishment received in adolescence predicted decreased self-esteem but that the associations were nonsignificant after controlling for the amount of positive communication in the parent-child relationship. Similarly, Simons, Johnson, & Conger (1994) found that corporal punishment significantly predicted aggressiveness and delinquency but that the effects became nonsignificant after controlling for parental involvement.

However, not all research supports the notion that found effects of corporal punishment are epiphenomenal to broader parenting styles. Buehler & Gerard (2002) found that corporal punishment influenced global psychological functioning, even after

controlling for parental involvement. Similarly, McCabe, Clark, & Barnett (1999) found that corporal punishment predicted acting out behavior, even after controlling for parental warmth and demandingness. It is unclear as to what contributes to the discrepancy in the findings of these studies. Consequently, the issue of whether corporal punishment influences development beyond the context in which it is used is far from resolved. Maccoby & Martin (1983) have further refined Baumrind's and other's typologies and suggest that the key components of parenting style are responsiveness (sensitivity) and demandingness. The sensitivity component is especially critical to understand because researchers argue that corporal punishment done in the context of a loving relationship will have no effect. Consequently, it should be included as the key dimension of parenting styles in research concerning the effects of corporal punishment.

Parenting style may also moderate the effects of corporal punishment. For instance, Turner & Finkelhor (1996) found that corporal punishment interacted with parental support in its association with psychological distress. Parental support was generally found to buffer some of the effects of corporal punishment. However, when children received high amounts of corporal punishment, high support actually produced more distress than did lower support. The authors speculate that this may be due to the children's attributions of the parental behavior. In the context of high support and frequent corporal punishment, children may blame themselves for being spanked, thereby causing psychological distress. It points to the importance of considering the broader dimensions of parenting (parenting styles) when attempting to identify the influence of corporal punishment. These findings also suggest that parenting styles may influence

children's interpretations of parents' behavior and that these interpretations are important variables to consider for explaining the influence of corporal punishment.

Children as Contributors and Interpreters of Experience

An additional problem with the reliance on correlational research is that it is difficult to identify the direction of effects (e.g., Baumrind, 1997). Children play an active role in experiences that result in corporal punishment, and this role needs to be explored to a greater degree. Studies of the influence of corporal punishment, in general, rarely incorporate characteristics of children into models. Within-child characteristics likely play an important role in evoking different kinds of parenting behaviors (Bell, 1979; Grusec & Kuczynski, 1980; Scarr & McCartney, 1983). Specifically, children who exhibit more rule-breaking and aggressive behavior and who have a poorer relationship with their parents elicit different discipline than more docile children (Bugental & Shenum, 1984). So, distinguishing the direction of effects between parental behaviors and child outcomes is imperative. Beyond experimentation, which is implausible as a research design in this field, an effective way to deal with this issue is to employ developmental designs in which the outcome behavior of interest is statistically controlled at the initial time point (Collins et al., 2000). The genetic influence on a particular behavior would be expressed in the initial assessment. Statistical control of the outcome variable at the initial analysis would therefore partial out that variance which is attributed to genetics, as well as the socialization practices up to that point in development. Recent studies in the realm of physical discipline have begun to incorporate such designs and have provided more convincing evidence for a parent-to-child effect in

antisocial behavior (e.g., Straus, Sugarman, & Giles-Sims, 1997). Such methodology should be applied to studies examining the effects of these parental behaviors on other developmental outcomes, including children's mental health, externalizing behaviors as a whole, and the quality of the parent-child relationship.

In addition to the role that children may play in evoking corporal punishment, it is also important to consider how they differentially interpret that punishment. A number of researchers (Gershoff, 2002a; DeAngelis, 1997; Holden, 2002) have pointed to the need for investigating corporal punishment from the recipients' perspective. It is improbable that all children interpret the experience in the same manner, and this interpretation may determine the impact of corporal punishment on developmental outcomes. Gershoff's (2002a) theoretical model of the effects of corporal punishment incorporates this idea and posits that the effects of corporal punishment are mediated by various psychological mechanisms within the children. Little research has explored how children actively interpret these parenting behaviors and how these interpretations influence developmental outcomes.

Exploring children's perceptions of parental discipline may prove to be useful in explaining individual variability in the relation between parenting behaviors and children's development. Considering that almost all children receive corporal punishment and negative effects are not observed in the vast majority of them, conceptual models are needed that explain that variability. Recent theoretical and empirical work suggests that the subjective experience of parenting behavior plays a crucial role in determining how parenting behaviors affect a particular child (Neiderhiser, Pike, Hetherington, & Reiss, 1998; Powers, Welsh, & Wright, 1994). This notion reflects the phenomenological

perspective of ecological influences in childhood (Robson, 1999), in which it is thought that the only way to understand psychological functioning is through distinct experiences of the individual. Within this perspective, children may experience the same parenting behavior in a variety of different ways, and it is the individual experience of the behavior that may be the most important determinant of the effects of the parenting behavior, rather than the specific behavior itself.

As noted, both Gershoff (2002a) and Gunnoe & Mariner (1997), employing contextual models of development, have explicitly incorporated the individualistic experience of children into their models of the effects of corporal punishment. Especially when considering the influence of corporal punishment on psychological functioning outcomes, it seems important to consider the child's perceptions of the parenting behavior, including their approval/ disapproval of such practices, and recalled affective experiences associated with them (Powers et al., 1994). Learning theory, and particularly social learning theory, may account for behavioral difficulties that arise from experiencing corporal punishment but it is likely that the relation between corporal punishment and psychological functioning is more complex, with both cognitive and affective mechanisms playing important roles in determining the effects.

Perceptions of parenting practices are determined by a number of developmental and contextual factors including individual-level variables, such as temperamental qualities and level of development (Powers et al., 1994). Children make evaluative decisions about the legitimacy of their parents' behavior (Tisak, 1986) which may differentially impact how they experience that behavior. Piaget (1977) described a developmental shift in which children increasingly favor reasoning as opposed to harsh

disciplinary practices as they mature. This observation has been supported by research that indicates children's approval of parents' use of corporal punishment declines with age (Catron & Masters, 1993; Siegal & Cowen, 1984). Thus, there are individual age-related attitudinal changes that will contribute to children at different developmental levels experiencing the behaviors differently.

Research confirms that there is considerable variability in how children view similar aversive parenting behaviors, including corporal punishment (e.g., Barnett, Quackenbush, & Sinisi, 1996). Not surprisingly, individuals' representations of parenting behaviors may be impacted by their own experiences with the behavior. That is, they tend to describe acts that have happened to them as nonabusive while labeling the same experience for others, including their own siblings, as abusive (Berger, Knutson, Mehm, & Perkins, 1988; Bower & Knutson, 1996). However, Bower & Knutson (1996) found that this is not the case for acts that are clearly abusive (i.e., resulting in an injury). This also seems to be somewhat unique to childrearing practices, since there is some evidence suggesting that receiving corporal punishment is not associated with greater acceptance of violence as a whole (MacIntyre & Cantrell, 1995). It is thought that the acceptance or rejection of this punishment may be related to the likelihood that the recipient will engage in abusive behaviors (Bower & Knutson, 1996). Adults who label harsh disciplinary practices as abusive are much less likely to abuse their own children. The effects on other developmental outcomes have not been studied but it is likely that negative views of the parenting may have important consequences for development. Children or adolescents who have a negative view of corporal punishment and believe it to be outside of the

realm of appropriate parental authority may be more impacted by the behavior than individuals who do not hold such attitudes.

One of the important determinants of adolescents' evaluations of parenting behavior is the ecological context in which it is used (Powers et al., 1994). Some research has identified ethnic group differences in the effects of corporal punishment, thereby supporting such a notion. Specifically, corporal punishment has been found to be associated with aggression in European-American children but not among African-American children (Deater-Deckard & Dodge, 1996; Deater-Deckard & Dodge, 1997). These authors speculate that this lack of an association between corporal punishment and developmental outcomes may be due to a greater degree of cultural acceptance of corporal punishment within African-American communities. This cultural discrepancy causes children from African-American cultures to differentially interpret the experience of corporal punishment. Similar results are reported when comparing the associations between corporal punishment and developmental outcomes between communities that have a high acceptance of corporal punishment versus communities that do not have a high acceptance of corporal punishment (Simons et al., 2002).

To further test the hypothesis that cultural groups in which there are favorable attitudes towards corporal punishment buffer the negative effects of corporal punishment, it would be useful to replicate these findings using different cultural groups that have similar favorable attitudes towards corporal punishment. Conservative Christians have more favorable attitudes towards corporal punishment than do less conservative Christians or other religious groups (Greven, 1990; Gershoff, Miller, & Holden, 1999). So, to test whether it is approval of corporal punishment within a child's sociocultural

context that is determinative of the effects, Christian religious groups may be a useful population to sample from. Further research is needed because a fair number of studies fail to find a moderating effect of ethnicity with respect to the influence of corporal punishment (Amato & Fowler, 2002; McLoyd & Smith, 2002; Rohner, Kean, & Cournoyer, 1991), indicating that culture may play an important role but that its effects are complex. This suggests that the proximal variable of interest should be the recipients' evaluation of the punishment rather than culture, per se. Indeed, no researchers have as yet evaluated the individual's attitudes as a moderator, and it would be useful to examine acceptance and approval of corporal punishment on an individual level along with broader contextual indices of corporal punishment attitudes.

Even if attitudinal variables do not moderate the impact of corporal punishment, it is important to understand what contributes to a positive attitude towards this behavior in its own right. People who hold more favorable attitudes about the behavior are, not surprisingly, much more likely to use it with their own children. As a result, researchers have begun to examine the role that various developmental experiences, including corporal punishment and physical abuse play in determining attitudes towards corporal punishment (Bower & Knutson, 1996; Deater-Deckard et al., 2003). Physical discipline plays a complex role in determining attitudes towards corporal punishment. Generally, it is found that the more corporal punishment that individuals receive as children, the more that they approve of it as a disciplinary technique. However, for those who are also physically abused, there is no association between experiences with corporal punishment and approval of corporal punishment. Further research is needed to understand the

complex interrelationship between corporal punishment, physical abuse, and various sociodemographic variables, including religion, and approval of corporal punishment.

Corporal Punishment as a Stressor in the Home Environment

Beyond attitudinal variables, other subjective components, including the stress response, should be examined as an explanatory mechanism through which corporal punishment influences developmental outcomes and to account for individual differences in the impact of this parenting behavior. Even researchers who conceptualize parenting within a contextual model note that corporal punishment is a universally distressing experience (Steinberg & Avenevoli, 2000). They suggest that the use of harsh discipline, including corporal punishment, has a negative effect regardless of the cultural context. This is supported by the fact that even those researchers who find a moderating effect of culture do not find any conditions in which corporal punishment is associated with positive outcomes. This suggests that culture and other intervening variables do not necessarily moderate the association between the parenting behaviors and outcome variables but can provide a useful explanatory framework for how the effects of corporal punishment are expressed. It may be more appropriate to view those characteristics that reduce the negative effects of corporal punishment (such as favorable interpretations of its use) as buffers, or protective factors, and not as moderating variables. Identifying such variables that reduce the effects of corporal punishment may be important from a public health perspective as well as for understanding the role of parenting in development.

One particularly relevant aspect of subjective interpretations would be the extent to which corporal punishment is perceived as stressful. While stress has a variety of

working definitions, Locke & Taylor (1991) describe it as "the emotional response, typically consisting of fear and/or anxiety and associated physical symptoms, resulting from: (1) the appraisal of an object, situation, outcome, idea, etc., as threatening to one's physical or psychological well-being or self-esteem; (2) the implicit belief that action needs to be taken to deal with the threat thus producing conflict; and (3) felt uncertainty regarding one's ability to successfully identify and carry out the requisite action" (p. 157). As noted in this definition, there is an important evaluative component to stressful experiences that determines the extent that a stressor impacts an organism. This notion that cognitive appraisals play a critical role in determining the degree to which an event is threatening has been termed the transactional perspective of stress (as described by Singer & Davidson, 1991). Within this perspective, there are varied individual responses to stressors, and it is these individualized responses that determine the effects of the stressor in the environment. Negative experiences may have little impact if they are not appraised as stressful by the people who are experiencing them.

Perceived stress in childhood does seem to have a negative impact on psychological functioning, and the effects may continue to be expressed in later development (e.g., Grant et al., 2003; Hammen, Henry, & Daley, 2000). That is, children who are continuously exposed to stressors in their environment and perceive them as stressful show increased internalizing and externalizing behaviors (e.g., Cicchetti & Toth, 1991; Grant et al., 2003). Repetti, Taylor, & Seeman (2002) present a broader model of familial stress and suggest that ongoing stress within the family environment will have long-term effects on mental health via stress-induced changes in the biological self-regulatory systems of the child. Beyond physiological changes in the child that increase

susceptibility to mental health disorders, they also describe the impact of stressful familial environments as a transactional process in which stress in the family environment also leads to additional developmental problems, including decreased emotion processing and poorer peer relationships. This, in turn, contributes to poorer mental health.

Considering corporal punishment is a potential stressor for children in their home environments may provide a useful explanatory framework for understanding the process through which corporal punishment impacts development and in the individual variations in the influence of corporal punishment. Turner & Finkelhor (1996) have, in fact, argued that the impact of corporal punishment can best be understood by conceptualizing it within a stress-process framework. The effects of corporal punishment may best be understood by the extent to which this behavior stresses the children who receive it. As stress is largely a subjective aspect of children's functioning, it is likely that these parenting practices induce different amounts of stress in different children, which may be a driving force for the variation in outcomes observed by children who experience this discipline.

It would therefore be useful to identify parenting behaviors, including disciplinary practices, that cause children to experience stress and the contexts in which that experienced stress is reduced or magnified. Little research has actually been aimed at understanding the stress appraisal process in childhood and no work has examined the appraisals of normative corporal punishment. Researchers note the importance of both assessing the appraisal and examining it in conjunction with the prevalence of the stress event (Grant et al., 2003). Indeed, they note that little research has directly examined the

appraisals of potential childhood stressors; most research has relied on examining frequencies of the stressful events. Thus, examining how appraisals of corporal punishment impact development beyond the actual frequency of this behavior would have implications not only for understanding the process through which corporal punishment impacts development, but it would further contribute to a general understanding of the appraisal process in the influence of childhood stress.

Of course, appraisal of stressors is only an important process for children who have cognitive capabilities that allow them to uniquely appraise threats in their environment. For very young children, there are likely other factors that contribute to individual differences in the stress that they experience from environmental events, including aversive parenting behaviors. Of particular importance may be individual children's temperament. That is, children may have particular temperament characteristics that may make them more susceptible to stress in their environment (Gunnar & Cheatham, 2003). In fact, temperament has been found to play a role in determining the impact of parental hostility and control (Morris et al., 2002). Children who have a temperamental propensity to be distressed and who are lacking self-regulatory skills are more impacted by high levels of parental control and parental hostility, including corporal punishment, than are children with more resilient temperaments.

Corporal Punishment and the Parent-Child Relationship

Because of the potentially stressful nature of corporal punishment, it is especially likely that this parenting behavior negatively affects the quality of the parent-child relationship. The attachment bond, or affectional tie, that parents and children share is thought to arise out of a child's viewing the primary attachment figure, usually the

mother, as a secure base (Ainsworth, Blehar, Water, & Wall, 1978). Attachment theory posits that children will seek out their primary attachment figure in times of stress; physical proximity with the mother reduces stress. The attachment relationship is thought to play a crucial role in facilitating optimal development across several developmental domains and, therefore, the quality of that relationship is a central aspect of a children's development (e.g., Ainsworth et al., 1978). A wide body of research has supported the notion that the quality of the mother-child relationship is an important predictor of psychological functioning through childhood and into adolescence (e.g., Arbona & Power, 2003; Bates & Bayles, 1988; McCormick & Kennedy, 1994; Sund & Wichstrom, 2002; Sroufe, Carlson, Levy, & Egeland, 1999). In fact, one potential mechanism for this association is that attachment to mothers promotes effective self-regulation by children in stressful situations (e.g., Nachmias, Gunnar, Mangelsdorf, & Parritz, 1996) and serves as a buffer to other stressors in a child's environment. Therefore, parenting behaviors that negatively affect the quality of the parent-child relationship across the lifespan should be identified as they are likely to play a significant role in determining mental health via direct and moderating processes.

If the mother's behavior is itself stressful to the child, the child may develop a behavioral pattern of avoidance and consequently develop an insecure attachment. It is clear that physical abuse is associated with poor parent-child relationships (e.g., Cicchetti & Barnett, 1991). However, it may also be the case that physical disciplinary practices may also impact the quality of the parent-child relationship via the same, but less pronounced, process. Several studies have revealed associations between corporal punishment and poorer quality mother-child relationships (e.g., Barnett, Kidwell, &

Leung, 1998; Crockenberg, 1987; DeVet, 1997). However, most evidence for this association is from data that is concurrent or retrospective in nature or that samples abusive behaviors. Longitudinal analyses are needed to clarify the directional influence of corporal punishment on the quality of the parent-child relationship.

With respect to adolescents, the effects of various parenting practices may be even more pronounced as a result of the cumulative effects within the relationship context. However, the mechanisms through which they influence the mother-child relationship may be different from childhood, since the attachment status of adults is based more on how adults construct, represent, and recall attachment-related behaviors of the parents (Grossman, Fremmer-Bombik, Rudolph, & Grossman, 1988). Therefore, any negative effects of aversive disciplinary practices on the parent-child relationship will be in the adolescents' representations of those behaviors and the meaning that they assign to them. For instance, corporal punishment may be retrospectively recalled as a sign of interpersonal aggression (Gunnoe & Mariner, 1997) which may cause the child to feel resentment. Alternatively, adolescents may recall corporal punishment as a reflection of parental concern and thus not be negatively impacted. In fact, there may be a wide range of attachment-related representations that may be attributed to parenting behavior. Rohner and his colleagues (Rohner, Borque, & Elordi, 1996; Rohner, Kean, & Cournoyer, 1991) have provided initial findings pointing to the importance of this idea. Through their research, they have shown that the influence of corporal punishment on developmental outcomes is expressed via the impact that it has on children's feelings of rejection by their parents. In this research, they revealed that the effects of corporal punishment on children's internalizing and externalizing disorders are complex and

indirect. The effects of corporal punishment on a variety of psychological outcomes, including aggression, self-concept, and positive emotionality are mediated by the children's interpretation of corporal punishment as a sign of parental rejection.

Current Study

Broadly conceived, the main purpose of this dissertation research is to examine whether normative, corporal punishment in childhood negatively affects psychological characteristics of children and adolescents and to examine intervening variables that may enhance or buffer those effects. Two overarching hypotheses were tested in two distinct studies. The first is that parents' use of corporal punishment has detrimental effects on developmental outcomes of their children and the second is that adolescents' evaluations of their parents' use of such behaviors as stressful is an important intervening variable through which parenting practices influence adolescents' outcomes.

In the first study, the effects of corporal punishment on psychological outcomes in early childhood were examined through analyses of previously collected longitudinal data. The primary focus of this study was to clarify the existence and direction of influence of these parenting practices on developmental outcomes. Longitudinal analyses were performed that include controlling for outcome variables at an initial time point, which allows for stronger claims to be made about the direction of effects (Collins et al., 2000). Because of the broad array of control variables available in the original data, it was possible to control for a variety of other variables implicated in the relation between corporal punishment and negative child outcomes (e.g., parenting style, income, maternal depression, and ethnicity). It was hypothesized that, even after incorporating relevant

control variables, corporal punishment will negatively influence the quality of the parent-child relationship and be associated with broadband mental health problem behaviors. It was also hypothesized that child temperament and African-American ethnicity would moderate the influence of corporal punishment on these developmental outcomes.

The second study involved older adolescents and focused on whether adolescents' evaluations of parental corporal punishment were more predictive of the adolescents' mental health than was reported frequency and severity of punishment. As noted earlier, there are relatively few studies that explore the processes by which the effects of parental corporal punishment may affect psychological functioning. An implicit assumption seems to be that the effects are direct. No study has directly examined recipients' attitudes towards corporal punishment; attitudes have largely been inferred from cultural or ethnic group differences in outcomes. An important component of this study is the direct examination of participants' attitudes regarding corporal punishment. It was hypothesized that participants who reported greater acceptance of corporal punishment would be less stressed by it than individuals who did not approve of it.

CHAPTER II

STUDY I: LONGITUDINAL MODELS OF CORPORAL PUNISHMENT IN INFANCY AND EARLY CHILDHOOD

Method

Sample[2].

Participants for study 1 were assessed as part of the National Institute of Child Health and Human Development Study of Child Care and Youth Development (NICHD SECCYD). This is a multi-site longitudinal study that was originally designed to examine the effects of child care on children's development. Recruitment and data collection began in 1991 and continues presently. Data collection was focused on 31 hospitals that were located near the home sites of the principal investigators: Little Rock, Arkansas; Irvine, California; Lawrence, Kansas; Boston, Massachusetts; Philadelphia, Pennsylvania; Pittsburgh, Pennsylvania; Charlottesville, Virginia; Morganton, North Carolina; Seattle, Washington; and Madison, Wisconsin. The following criteria were employed to determine eligibility for this study: (1) the mother was over 18 years of age, (2) the mother spoke English, (3) both the mother and the child were healthy, and (4) the family lived in a neighborhood that was sufficiently safe for research assistants to travel to. The mothers who met these criteria were conditionally sampled so that the composition of the study would include the following percentages of mothers: 60% who planned to work full time, 20% who planned to work part time, and 20% who planned to

[2] Note: All sample information taken from Research Triangle Institute (2002) or from data analyses conducted with the sample.

stay at home with their children. Sampling procedures were also employed so that the demographics of each site would be reflective of the population of the surrounding area. Of the original 8,956 mothers who gave birth in the hospitals during the first 11 months of 1991 in the selected hospitals, 1364 were enrolled in the study.

The sample originally consisted of 705 male (51.7%) and 659 (48.3%) female children. There were 5 Native American (.37%), 22 Asian American or Pacific Islander (1.61%), 176 African American (12.9%), 1014 Caucasian, non-Hispanic (74.34%), and 83 Hispanic (6.09%) children, with 64 (4.69%) classified as not belonging to any of these categories. The mean age of the mothers was 28.11 with a standard deviation of 5.63. 24% of the families were classified as living in poverty, as indicated by an income-to-needs ratio of less than 1. For more detailed recruitment procedures of the NICHD SECCYD, see the NICHD Early Child Care Research Network (1997).

By the first grade assessment, there were slightly more than 1000 participants remaining, depending on the measure used. For the measures in this study, 1033 participants had information available for at least one of the first grade assessments. Subject attrition occurred in a nonrandom fashion. Independent-samples t tests, with status in first grade as the between-subjects factor (dummy-coded as still participating or not participating in first grade), were analyzed to compare mean group differences in maternal education and average income. Families that remained in the study had a higher average income-to-needs ratio ($M = 3.54$, $SD = 2.68$) than did families that dropped out of the study ($M = 2.70$, $SD = 2.93$), $t(1353) = 5.73$, $p < .001$. Mothers of families that remained in the study had more years of education ($M = 14.45$, $SD = 2.46$) than did the mothers of families who were not participating during the first grade assessments ($M =$

13.55, $SD = 2.57$), $t(1361) = 5.73$, $p < .001$. A chi square test of independence revealed that ethnicity was also associated with subject attrition, $\chi^2(5, N = 1364) = 12.69, p < .05$. Examination of the cells revealed that this association was likely due to an increased proportion of Caucasian families and a decreased proportion of African American families in the first grade sample.

Measures

Data collection occurred in a variety of settings, including the participants' homes, in laboratory settings, and over the phone. See Table 1 for an overview of the variables included in the present study.

Maternal Depression. When the children were 1, 6, 15, 24, 36, and 54 months of age, as well as during the 1st grade assessment, the mothers in this sample were administered the Center for Epidemiological Studies Depression Scale (CES-D), (Radloff, 1977). This measure asks the participants to consider how many times in the past week they have felt a certain way. A sample item is "I felt sad." The participants were asked to rate it on a 1-4 scale that ranged from "Less than once a week" to "Most or all the time." Radloff (1977) found the measure discriminated well between clinical and general population samples. Overall, this is a well-known measure and has good psychometric properties. Cronbach's α for this sample was equal to or greater than .88 for each assessment.

Income-to- Needs. Income-to-needs information was gathered at 1, 6, 15, 24, 36, and 54 months as well as when the children were in first grade via interviews with the parents regarding their finances. At each age, the income of the total household from all

sources was divided by the cutoff point for poverty for that particular year, as based on the number of people in the household, with guidelines established by the U.S. Bureau of the Census.

Maternal Sensitivity. Maternal sensitivity was assessed at 1, 6, 15, 24, 36 and 54 months, as well as when the children were in first grade. This procedure was specifically designed for the NICHD SECCYD by D. L. Vandell and M. T. Owen. For detailed information about the development and administration of the scale, see NICHD Early Child Care Research Network (1999a). The assessment is largely the same across time points, but the type of tasks in which the mother and child engage are changed to be appropriate to the child's age. For example, at 15 and 24 months, the dyads played with storybooks, a toy stove, and a toy house with figures; at 36 months they played with a washable marker set, dress up clothes, a cash register, and toy blocks, and at 54 months the children played with an Etch-a-Sketch with a maze attached to it, wooden blocks, and a set of 6 hand puppets. The 6- and 15- month measures were assessed in the family's home. The 24-, 36-, and 54- month, as well as the first grade measures were assessed in a laboratory. The interactions were coded for a number of child, mother, and dyadic characteristics. For the 6-, 15-, and 24-month assessments, a composite measure of sensitivity was created by summing ratings of sensitivity to nondistress, intrusiveness (reverse-scored), and positive regard. At 36 and 54 months, as well as in first grade, the sensitivity composite was constructed by summing supportive presence, hostility (reverse-scored), and respect for autonomy. To ensure standardization in scoring, all interactions were videotaped and shipped to a central location for coding purposes. At all ages, approximately 20% of the interactions were coded by a second coder and yielded

the following interrater reliability coefficients: .87, .83, .84 .84, .79, and .84 for the 6-, 15-, and 24-, 36-, 54- month and first grade composite measures, respectively. Higher scores indicate more sensitive parenting. Support for the measure's construct validity comes from the found associations between this measure and attachment (NICHD Early Child Care Research Network, 1997).

Corporal Punishment. The corporal punishment variable was derived from the Home Observation for the Measurement of the Environment (H.O.M.E.; Caldwell & Bradley, 1984) that was administered when the children were 15, 36 and 54 months of age. The H.O.M.E. assesses the overall quality of the family environment by both interviewing the mother and by observing the family in a naturalistic setting during an extensive observation process. Two items from the H.O.M.E. were used to construct the corporal punishment variable. The first is an interview item that asked the parents how many times in the previous week they had spanked their children. The second item was an indication of whether or not the children were spanked in the presence of the test administrators. A composite measure of corporal punishment was constructed by assigning the following values: Mothers who did not spank their children during the administration of the H.O.M.E. and who did not report spanking their children in the past week were assigned a 0, mothers who spanked their children more than once during the previous week received a 1, and mothers who spanked their children during the administration of the measure were assigned a 2. This composite variable therefore included both self-report as well as observational aspects, which should enhance the validity of the measure. The measure was scored in this manner because it fits with established methods of scoring the measure. See Figure 1 for a display of the N and the

percentages of the number of participants who scored at each level. While the use of single-items, or even two items, is not ideal because of decreased reliability, it is unavoidable in this study. Despite the decreased reliability, researchers have still been able to employ this measure, or a very similar measure, to investigate developmental outcomes associated with corporal punishment (McLoyd & Smith, 2002; Smith & Brooks-Gunn, 1997).

Maternal Control. During the first-grade assessment, the Raising Children Questionnaire (Shumow, Vandell, & Posner, 1998) was administered to the mothers in the sample. It is a substantial revision of the Raising Children Checklist (Greenberger & Goldberg, 1989). Mothers are asked to respond on a 4-point scale, ranging from "definitely no" to "definitely yes," the degree to which they endorse items regarding their own parenting. The measure contains 30 items. A sample item, from the harsh subscale, is "Do you expect your child to obey you without asking any questions?" The measure yields three scales of parenting: lax, firm, and harsh parenting. These scales roughly correspond to Baumrind's (1973) classic parenting styles; the lax parenting scale reflects permissive parenting, the firm scale reflects authoritative parenting, and the harsh scale reflects authoritarian parenting. The 8 items from the harsh scale had acceptable inter-item consistency (Cronbach's $\alpha = .69$). Cronbach's α was less than .60 for the other scales and so they were not used in this study.

Temperament. When the children were six months of age, the mothers completed the activity, adaptability, approach, mood, and intensity subscales of the Infant Temperament Questionnaire- Revised (Carey & McDevitt, 1978). This is a 56-item measure in which mothers rate their children on a 6-point scale as to how frequently their

children's behavior was similar to example behaviors. A sample item is "My baby's initial reaction to a new babysitter is rejection (crying, clinging to the mother, etc.)" The scores of the nonmissing items for all subscales were combined into a single variable, perception of temperament, by averaging across the items. Higher scores represent a more "difficult" temperament. The measure has been found to have good test-retest reliability (Carey & McDevitt, 1978). Cronbach's alpha for this sample was .81, indicating good internal consistency.

Behavior Problems. The Child Behavior Checklist (CBCL; Achenbach, 1991; 1992) was used as an index of behavioral and psychological problems of the children in this study. The CBCL is the most commonly used measure of psychological functioning in childhood and has strong psychometric properties over a wide range of studies (e.g., Kasius, Ferdinand, van den Berg, & Verhulst, 1997; McConaughy, Stanger, & Achenbach, 1992). The Child Behavior Checklist for Ages 2-3 (CBCL 2/3; Achenbach, 1992) was administered at 36 months. The Child Behavior Checklist for Ages 4-18 (CBCL 4/18; Achenbach, 1991) was administered when the children were in first grade. Each of the measures contains 118 items and was completed by parents or primary caregivers. Although some items are different across the two measures to reflect age-relevant responses, the measures are conceptually similar. A sample statement is "feels worthless or inferior." The participants then circled a 0 (Not true), 1 (Somewhat or Sometimes True), or a 2 (Very True or Often True). At 36 months, it was completed by the mothers in their homes. During the first grade assessment, mothers and a smaller sample of fathers/other adult caregivers filled out the measure. The mothers completed

the measure in the laboratory during the first grade assessment while the fathers completed it in their homes.

Children were scored on 6 subscales at 36 months (Withdrawn, Sleep Problems, Somatic Problems, Anxious/Depressed, Destructive Behavior, and Aggressive Behavior) and on 8 at first grade (Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior). For both assessments, the individual scales were combined into two broadband factors, termed Internalizing and Externalizing, each consisting of subscales that reflect whether psychological distress is exhibited in social encounters or other aspects of the environment (externalizing) or whether it is reflected inwards (internalizing). For the CBCL 2/3, The Externalizing factor is comprised of the Destructive and Aggressive behavior subscales while the internalizing factor is comprised of the Withdrawn and Anxious/Depressed scales. The CBCL 4/18 uses the same scales but replaces the destructive with delinquent behavior in the Externalizing Scale and adds Somatic Complaints in the composite Internalizing Scale. The scores were converted to T scores (i.e., distributions with a mean of 50 and a standard deviation of 10).

Attachment Status. When the children were 15 months old, the mother-child attachment status was rated by trained research assistants using the Strange Situation (Ainsworth & Wittig, 1969). This is a 25 minute procedure in which the reactions of the infants were videotaped at separation and reunion with the mother. The tapes were coded by two-person teams and inconsistencies were resolved by discussion. The children were scored according to four primary categories that include secure, avoidant, resistant and disorganized attachment (Main & Solomon, 1990). Avoidant infants (A) are not

distressed on separation and show little interest in returning to the mother. Secure (B) infants seek out their mothers for comfort after distress at separation. Resistant (C) infants are stressed but are not comforted by the mother's return. Disorganized attachment (D) is used for children who switch rapidly between approach and avoidance or fear the mother's return. Children who are not classified as (B), securely attached, are classified as insecurely attached (Main & Solomon, 1990). For this study, all of the insecurely attached variables were collapsed into a single measure of insecure attachment. The coder agreement for the secure-insecure grouping, prior to discussion, was 86% ($\kappa = .70$).

At 24 months, attachment status was measured using the Attachment Behavior Q-Set (Waters & Deane, 1985). Children were observed in their homes for two hours by trained observers both in the presence of their mother and alone and were rated on a 9-point scale as to how accurately statements reflected their behaviors. A sample question is "cries to prevent separation." This score is then correlated with the Security Criterion Sort, or a template that represents ideal attachment. Higher, more positive correlations represent more securely attached relationships. The measure has good psychometric properties, including good construct validity; it is predicted from maternal sensitivity and predicts positive social interactions between a child and their mother (Teti, Nakagawa, Das, & Wirth, 1991). Further, it is associated with classifications on the strange situation, where participants classified as secure have higher scores on this measure than do avoidant or resistant infants (Vaughn & Waters, 1990). The inter-rater reliability for the entire NICHD sample was .92.

At 36 months, the children's attachment status was rated using a modified strange situation (MAC; Cassidy & Marvin and the MacArthur Working Group on Attachment, 1992). It is very similar to the 15-month strange situation except that is slightly modified to induce more stress in the child to induce attachment-related behaviors. The following sequence of events was structured and observed for this observation: (1) the mother and the children would be in playroom for three minutes. (2) The mother would leave for three minutes following a knock on the door. (3) Mother returns for three minutes, (4) Mother leaves for five minutes after a knock on the door, (5) Mother returns for three minutes. Two-person teams who were trained extensively in attachment theory and on the specifics of this procedure rated the encounters. Based on the observed reactions of the child to the separations and reunions from their mother, they assigned the children to one of the classification categories (Avoidant, Secure, Ambivalent, or Disorganized). As in the original Strange Situation, children are classified as Insecure-avoidant (Type A) if they display little emotion with respect to either separations or reunions with their mothers. Secure children (Type B) may experience mild stress at separation from the mother but they are comforted by the mother when she returns. Insecure-ambivalent children (Type C) display overly whiny or resistant behaviors and Disorganized children (Type D) either show a wide range of responses or highly unusual responses, such as fear. The coders then discussed their results and resolved any disagreements by consensus. For this study, the scores were dichotomized into secure/insecure, with all three insecure classification statuses being collapsed into the insecure classification. The percent agreement for this measure, prior to discussion, for the secure/insecure classification was 80.1% (κ=.63).

Felt Security and the Mother-Child Relationship in Early Childhood. The mother-child relationship during early childhood was assessed with two measures that were administered at both 36 months of age and during the first grade assessment. The children were observed in a laboratory setting in which the mothers and the children played with a variety of age-appropriate toys. It was during the course of this interaction that sensitivity was also assessed. The aspect of the interaction that was used to assess the mother-child relationship was the affective mutuality/ felt security measure that was assessed during the same procedure in which the sensitivity measure was obtained. Lower scores were given to dyads that displayed closed communication, showed lack of shared emotion, very negative emotions, or only limited instances of positive emotionality. Higher scores on the measure indicate greater observed intimacy within the dyad and in the form of proximity-seeking behaviors and reciprocal positive emotion. To assess inter-rater reliability, 225 (19.37%) of the tapes were coded by a reliability coder for the 36-month assessment and 192 (19.12%) tapes for the first grade assessment were coded by a second coder. The obtained reliability coefficients were .69 and .80 for the ratings of the two coders at 36 months and in first grade, respectively.

The Parent-Child Relationship Scale (derived from Pianta, 1994) was also used to assess the quality of the relationship of the children with their mothers in first grade. This is a self-report measure with questions derived from attachment literature which had originally been used to assess the emotional security of teacher-child relationships. Respondents were asked to indicate their agreement as to how much a number of statements apply to the relationship between themselves and their child, using a Likert

scale. The measure contains 15 items. A sample item from the scale is "I share an affectionate, warm relationship with my child." Cronbach's α was .81.

Results

Data Analysis Plan

In order to isolate the unique and directional influence of parental corporal punishment on developmental outcomes in infancy and early childhood, a series of hierarchical multiple regression models were specified. For each model, the outcome variables of interest (the mother-child relationship and externalizing and internalizing behaviors) were regressed onto the corporal punishment variables from a previous time point. Two sets of analyses were performed: one that explored the role of corporal punishment in infancy and toddlerhood by predicting 24- and 36-month outcomes from the 15-month corporal punishment variable and another that predicted developmental outcomes in first grade from 36-month corporal punishment. Through these lagged analyses, the temporal precedence of the corporal punishment variable can be established and will consequently strengthen a causal argument for the influence of corporal punishment on developmental outcomes.

For each model, developmentally appropriate assessments of externalizing and internalizing behavior, as well as the mother-child relationship were examined as outcome variables. Sex, temperament, ethnicity, family income, maternal depression, and maternal parenting style were included as control variables. The wide array of control variables included in these analyses should decrease the likelihood of omitted variables bias. Sex is a dichotomous variable in which male = 1 and female = 2. Ethnicity is a

dummy-coded variable coded 1 for African American and 0 for non-African American. The maternal mental health (depression), family SES, and maternal sensitivity variables were obtained at all assessments and collapsed into a single measure for each analysis. Specifically, these variables were constructed by averaging across all previous and current assessments of these measures for each individual up to the last assessment in the analysis. For example, in the analyses predicting 36-month outcomes, the depression control variable was an average of the depression measures for each individual mother from 6, 15, 24, and 36 months. The internal consistency for each of these composite measures was high (Cronbach's $\alpha > .70$ for every aggregate variable).

All analyses presented were performed with SPSS, Version 11.5. For all regression analyses, scatterplots were constructed in which the predicted values of the dependent variables were plotted against the residuals to examine the assumptions of normality, nonlinearity, independence of errors, and heteroscedasticity (Tabachnik & Fidell, 2001). There did not appear to be any serious violations of the assumptions in any of the analyses. In addition, collinearity diagnostics were performed for each of the variables in the analyses.

Descriptive Statistics and Intercorrelations

The descriptive statistics for the variables included in this study are observed in Table 2. Examination of the variables indicated that several, including the income, corporal punishment measure, depression, and maternal sensitivity variable were noticeably skewed, as would be expected by the nature of the variables. However, despite

the skewness, the fundamental assumptions of regression were not violated, based on the examinations of the residual scatterplots.

Table 3 displays the correlation matrix for all variables used in these analyses. The corporal punishment variables were modestly associated with the predicted outcome variables (*r's* ranging from .09 - .22). The matrix also indicated substantial covariation between the corporal punishment variables, control variables, and the outcome variables. Maternal depression had the strongest association with the variables of interest and likely reflected the fact that many of the child variables of interest were reported by the mothers. Thus, controlling for this variable would be important for all analyses, not only because of the likely influence of maternal mental health on children's development but also because mothers' perceptions of children's behavior and subsequent ratings were likely impacted by their own mental health (e.g., Mebert, 1991).

Corporal Punishment as a Predictor of Attachment during Infancy and Toddlerhood.

In order to test the hypothesis that corporal punishment predicts the quality of the mother-child relationship, a hierarchical multiple regression model was specified in which the Q-sort measure at 24 months was predicted from corporal punishment at 15 months. In the first step, the control variables (sex, ethnicity, and the average income, depression, and sensitivity measures prior to and including 24 months) were entered. In the second step, the corporal punishment variable was entered. The results of this analysis are in Table 4. This table contains the bivariate correlations (*r*'s), the unstandardized regression coefficients (*B*'s), the standard errors (*SE*'s), the standardized regression coefficients (β's), and the semipartial correlations (*sr*'s). The first step of the model was

significant, $F(7, 1114) = 16.72, p < .001$. In this model, child sex and ethnicity predicted quality of attachment. That is, girls were more attached than boys and African-American children were rated as less attached than the other ethnic groups. In addition, difficult temperament and maternal depression were associated with decreased attachment quality. The maternal sensitivity variable was associated with better attachment. In the second step, the corporal punishment variable was entered; this significantly increased the proportion of variance accounted for in the attachment variable, $F(1, 1113) = 6.82, p < .01$. The overall model remained significant, $F(8, 1113) = 15.55, p < .001$, Adjusted $R^2 = .09$. All of the variables that had predicted attachment in the first model continued to uniquely predict attachment in the second model. Beyond the variance accounted for by the control variables, the corporal punishment variable uniquely predicted decreased attachment.

Corporal Punishment as a Predictor of Mental Health in Infancy and Toddlerhood.

Separate hierarchical multiple regression models were specified such that internalizing and externalizing behaviors at 36 months of age were regressed onto the corporal punishment variable from the 15-month assessment. For each model, the control variables (gender, ethnicity, temperament, and mean maternal sensitivity, maternal depression, and income-to-needs up to 36 months) were entered in the first step. In the second step, the corporal punishment variable from the 15-month assessment was entered. Analyses predicting the 36-month externalizing variable are in Table 5. This table contains the bivariate correlations of the predictor variables with the externalizing variable, the standardized and unstandardized regression coefficients, standard errors, and

the semipartial correlations. For the first step, the model was significant, $F(7, 1094) = 33.51, p < .001$. Both maternal depression and difficult child temperament predicted increased externalizing behaviors at 36 months. In the second step, the corporal punishment variable was entered, significantly increased the proportion of variance accounted for in the externalizing variable, $F(1, 1093) = 12.37, p < .001$. The overall model was significant, $F(8, 1093) = 31.17, p < .001$, Adjusted $R^2 = .19$. The maternal depression measures and the temperament variables remained significant in the second step while corporal punishment at 15 months uniquely predicted increased externalizing behaviors at 36 months.

A similar hierarchical regression analysis was specified to predict internalizing behaviors at 36 months. The results of this analysis can be seen in Table 6. All control variables that had been entered to predict externalizing at 36 months were again entered in the first step. The model was significant, $F(7, 1094) = 40.57, p < .001$. As with the previous analysis, maternal depression and difficult temperament emerged as unique predictors. In addition, maternal sensitivity was found to predict decreased internalizing behaviors. Entering corporal punishment into the model increased the proportion of variance accounted for in the internalizing variable, $F(1, 1093) = 4.17, p < .05$. The overall model, with corporal punishment included, was significant, $F(8, 1093) = 36.13, p < .001$, Adjusted $R^2 = .18$. All variables that had been associated with internalizing in the first step remained significant in the second step, while corporal punishment uniquely predicted increased internalizing behavior.

Corporal Punishment as a Predictor of Mental Health during Early Childhood

A series of hierarchical multiple regression models was analyzed in which corporal punishment was examined as a predictor of change in mental health outcomes across early childhood. That is, in separate analyses, mother ratings of externalizing and internalizing behaviors in first grade were regressed on the corporal punishment variable at 36 months. For these analyses, the models employed residualized change analysis in which the outcome variable of interest was statistically controlled at the initial time point (36 months). Although this analysis is correlational and constrained by limitations in causal interpretation, this type of longitudinal model allows for the strongest claim to be made about the direction of effects with nonexperimental research (Collins et al., 2000). In the model predicting internalizing in first grade, the internalizing variable from the 36-month assessment was included as a control variable. The corporal punishment variable used in these analyses was an average of the 36-month and 54-month corporal punishment variables. As can be seen in Table 7, corporal punishment was not uniquely associated with an increase in internalizing behaviors from 36 months to first grade. That is, the corporal punishment variable did not contribute any variance in the first grade internalizing variable beyond the variance accounted for in the control variables.

Corporal punishment was associated, however, with an increase in externalizing behaviors from 36 months to first grade. These results are presented in Table 8. In the first step, the 36-month externalizing behavior scale was entered, along with sex, temperament, ethnicity, and the aggregate sensitivity, depression, and income-to-needs measures (averaged across all assessments up to first grade). The initial model was significant, $F(8, 943) = 67.00$, $p < .001$. Not surprisingly, externalizing behavior at 36

months was strongly associated with externalizing behavior in first grade. Child sex predicted change in externalizing behavior, as did maternal depression and family income. In the second step, the corporal punishment variable was entered into the model and contributed significantly to the variance accounted for, $F(1, 942) = 6.17, p < .05$. The overall model remained significant, $F(9, 942) = 60.57, p < .001$, Adjusted $R^2 = .36$. With the exception of the income-to-needs ratio, the variables that had been significant in the first step remained significant with the inclusion of corporal punishment.

An additional analysis was performed to predict externalizing behavior in first grade. In this analysis, the same procedure was followed as in the analyses predicting mother ratings of externalizing behavior except that father ratings were substituted as the outcome variable. Replication with the father measures was valuable because the mothers had been the informants for most of the child assessments. Additionally, the correlation between mother and father ratings was strong, but not perfect ($r = .46$). This analysis is presented in Table 9. The final model was significant, $F(9, 717) = 13.36, p < .001$, Adjusted $R^2 = .13$. Beyond the 36-month mother report of externalizing behavior, the only other control variable to predict father-report of externalizing behavior was family income. Corporal punishment by mother at 36 months was associated with increased father-reported externalizing behavior in first grade, beyond the variance accounted for by the control variables. Interestingly, maternal depression was not associated with externalizing in first grade, suggesting that its contribution in previous analyses may be largely reporter bias.

Corporal Punishment as a Predictor of Mother-Child Relationship in Early Childhood

In order to examine the influence of corporal punishment on the parent-child relationship during the preschool period, two hierarchical multiple regression models were specified to predict indicators of the mother-child relationship in first grade. The first analysis predicted the observational felt security measure in first grade from corporal punishment at 36 months. Again, this model employed residualized change analysis, in which felt security from 36 months was statistically controlled. Maternal sensitivity was not used as a control because it was assessed during the same procedure in which the felt security measure was obtained and problems with shared method variance would likely have arisen. Therefore, the harsh parenting scale was substituted as the control for overall parenting style in this analysis. See Table 10 for the results of this analysis. In the first step of the model, the 36-month felt security measure was entered, along with sex, ethnicity, temperament, as well as the aggregate maternal depression, sensitivity, income-to-needs variables (that had been averaged up to the first grade assessment). The first model was significant, $F(7, 922) = 27.104$, $p < .001$. Not surprisingly, felt security at 36 months was uniquely associated with felt security in first grade. Additionally, both gender and ethnicity were uniquely associated with change in the felt security measure. The harsh control measure was associated with a decrease in the felt security measure. In the second step, the 36-month corporal punishment variable was entered. This measure significantly increased the explained variance in the model, $F(1, 921) = 4.62$, $p < .05$. Corporal punishment at 36 months predicted negative change in observed felt security from 36 months to first grade. The overall final model was significant, $F(8, 921) = 24.39$, $p < .001$, Adjusted $R^2 = .17$.

A second model was specified to predict mother-reported relationship quality in first grade from the 36-month corporal punishment measure. Although the positive relationship variable was not also assessed at 36 months, there were two other measures from the 36-month variable that are indicative of the mother-child relationship (the modified strange situation attachment variable and the felt security measure) that were entered as control variables. The results of this analysis can be seen in Table 11. The first step of the model was significant, $F(8, 921) = 15.14, p < .001$. Corporal punishment increased the proportion of variance accounted for, $F(1, 920) = 4.12, p < .05$. The full model was significant, $F(9, 920) = 13.97, p < .001$, Adjusted $R^2 = .11$. It should be noted that the 36-month indices reflecting the mother-child relationship are actually probably not measuring the same construct as the positive relationship scale, as the bivariate correlations are small ($r = .08$ & $r = .12$), and the measures did not significantly predict the first-grade relationship scale when entered into the regression model. So, this analysis did not have the same strengths regarding the argument for the direction of effects that the previous analysis predicting change in felt security did.

Moderating Role of Temperament and Ethnicity

In order to test the moderating role of ethnicity and temperament on corporal punishment, standard multiple regression models were specified in which the interaction term of corporal punishment and the potential moderating variable was entered as a predictor variable. In separate analyses, these variables were then examined as predictors of the outcomes identified previously as being predicted by corporal punishment. The temperament variable was examined as a moderator of the effects of corporal punishment

for the infancy and toddlerhood analyses. In order to test this, a product variable was created by multiplying the two variables. The corporal punishment and temperament variables were first standardized to avoid problems with multicollinearity. This interaction variable was then entered in the analyses that had previously found associations between corporal punishment 24- and 36-month outcomes. The interaction did not significantly add to the explained variance in the models predicting the 24-month attachment measure or predicting the 36-month internalizing variable. However, there was a significant corporal punishment by temperament interaction in the model predicting 36-month externalizing. The results of this analysis are observed in Table 12. The overall model was significant, $F(9, 1092) = 28.21, p < .001$. Maternal depression, child temperament, and corporal punishment were significant predictors. The interaction term significantly predicted externalizing behaviors at 36 months, beyond the control variables and the main effects. Thus, there is a moderating effect of child temperament on corporal punishment in infancy. As can be observed in Figure 1, the nature of the moderating impact is that children with more difficult temperaments are impacted more by corporal punishment than are children with easier temperaments.

In a second set of analyses, the moderating role of African-American status on preschool corporal punishment was tested. This interaction term was constructed by multiplying the African-American status variable by the 36- to 54- month aggregate corporal punishment variable. In the four previous analyses that had identified corporal punishment as a predictor of externalizing behaviors and the mother-child relationship in first grade, additional models were specified in which the product interaction variable was entered. This interaction variable did not contribute unique variance to any of the

models, indicating that there was no observed moderating effect of African-American status on the effects of corporal punishment during the preschool years.

Discussion

Overview of Findings

One primary goal of this study was to address the concerns of researchers (e.g., Baumrind, 1996, Baumrind, Larzelere, & Cowan, 2002) who have argued that legally permissible corporal punishment does not have detrimental effects on children's development. The results of this study extend and complement the growing body of literature that reveals a negative impact of normative parental corporal punishment on children's developmental outcomes. Corporal punishment was associated with increased externalizing problem behaviors and with decreased quality of the mother-child relationship during both infancy and early childhood. It was also associated with internalizing behavior in infancy.

Although this research was not experimental and definitive causal claims can not be made regarding the influence of corporal punishment on children's behavior, there are a number of elements of these analyses that would strengthen a causal argument. First, across all of these analyses, the presumed causal variable (i.e., corporal punishment) was assessed temporally prior to the outcome variable. Temporal precedence is necessary, though not sufficient, for establishing a causal relationship (e.g., Baumrind, Larzelere, & Cowan, 2002; Huston & Robins, 1982). Even stronger designs were employed to test behavior problems and the mother-child relationship in first grade, wherein the outcome variables were assessed both at 36 months and in first grade. The outcome variable was

statistically controlled at 36 months in these analyses, thereby minimizing the likelihood that the associations are completely child-driven. The substantial number of control variables, including maternal, child, and contextual characteristics, included in the study decrease the likelihood of omitted variables bias. Additionally, although there were no indices of physical abuse included in these analyses, it is unlikely that the associations reported in this study are due to covariation with physical abuse. These families were studied extensively by developmental researchers, who were mandatory reporters of physical abuse. However, the possibility of other forms of parent violence can not be accounted for as well. That is, corporal punishment often confounded with other violent parenting behaviors (Higgins & McCabe, 2003), including neglect, physical abuse, sexual abuse, and interparental violence, all of which may have a negative impact on children (e.g., Henning & Leitenberg, 1997; Mannon & Leitschuh, 2002). These forms of behaviors would be less likely to be detected by the researchers and may have been driving the association. However, despite this weakness it is extremely unlikely that the results of this study are indicating spurious associations due to some unmeasured variable or that corporal punishment is merely a consequence of children's behaviors. These results strongly support the argument that there is a unique, directional impact of corporal punishment on negative developmental outcomes.

Practical Significance of Corporal Punishment Influence

One potential criticism of these results concerns the practical significance of the findings; it could be argued that the effects are so small as to have no meaningful practical significance. Indeed, the standardized coefficients of corporal punishment on the

outcome variables of interest in this research would certainly be considered small (β's ranging from .06-.11). Although there is no established criterion for determining effect size from multiple regression (e.g., Cohen, 1988; Kelley & Maxwell, 2003), researchers generally use either the bivariate correlation or the semipartial correlation as the index of effect size. However, these measures are not ideal; the bivariate correlations are likely undercontrolled and the semipartial correlations likely overcontrolled (NICHD Early Child Care Research Network, 1999b). In this study, the bivariate correlations, which are more liberal measures of effect size since they do not account for the shared associations between the various predictor variables, indicate small associations between corporal punishment and the outcome variables (all r's $\leq .22$). So, by conventional or even liberal statistical standards, the effects of corporal punishment on the studied developmental outcomes would be considered small, using the standard conventions of effect size. However, this interpretation must be qualified by a more in-depth perspective on the influence of this behavior.

There are a number of reasons to believe that the results of this study are both theoretically and practically meaningful. The parametric magnitude of the associations between corporal punishment and the outcome variables are probably larger than the reported associations within this sample. It is extremely likely that accumulated error across the different assessments diminished the association indices (McCartney & Rosenthal, 2000; Muchinsky, 1996). While many of the measures in this study have strong psychometric properties and are among the most validated measures of adult and child mental health and the mother-child relationship, there is inevitable measurement error associated with them. The corporal punishment variable in particular likely suffers

from substantial measurement error. It is aggregated from only two items and therefore likely suffers from somewhat low reliability. Further, the measure only assesses the behavior during a single week, which is assumed to be representative of the overall pattern of corporal punishment. Such single-item or dual-item measures are frequently used in corporal punishment research and were unavoidable in this study. Although these assessments were able to detect relations among corporal punishment and developmental outcomes in spite of the measurement error, measurement via this technique makes the effects of this parenting behavior appear unduly small. It is likely that the effects would be substantially larger if a more comprehensive, reliable measure of corporal punishment had been employed or if corrections due to attenuation had been employed.

In light of such error, one method for ascertaining the practical significance of these associations is to compare the reported associations to those found for well-established determinants of children's behavior (e.g., NICHD Early Child Care Research Network, 1999b). The magnitude of the associations in this study are as large or larger than the other known influences on children's development, including temperament, attachment, maternal sensitivity, and family income. For instance, in the analyses predicting 36-month externalizing behavior, the semipartial correlation between corporal punishment and externalizing behavior is .10, which is generally considered a small association. However, many of the established constructs thought to contribute to externalizing behavior, including income, attachment, and sensitivity (e.g., Moss, Bureau, Cyr, Mongeau, & St-Laurent, 2004; Solantaus, Leinonen, & Punamaki, 2004) did not uniquely predict externalizing behavior at 36 months. Additionally, the semipartial correlation of corporal punishment was two thirds of the size of the semipartial

correlation of difficult temperament, another well-known determinant of externalizing behavior (Sanson, Hemphill, & Smart, 2004). Calling the effect small does not adequately describe the magnitude of the effect.

Even if the reported effect sizes of corporal punishment within this study are indeed representative indexes of the size of the effects within the population, they would still have considerable practical significance. The near-universal prevalence of this behavior (it occurs in more than 90% of all children; Straus, 2001) indicates that the small effects for individuals are actually much larger when considering the effect of this behavior across the United States population. Furthermore, the negative effects of corporal punishment were consistent across a number of behavioral domains. That is, while the size of the association between corporal punishment and each variable suggests small influence, when one considers the cumulative effect on a child's overall well-being, including increased aggression, decreased mental health, and poorer quality mother-child relationships, there is further reason to interpret the practical significance of the effects of corporal punishment as meaningful. Indeed, considering the other realms in which corporal punishment is thought to impact development (e.g., cognitive skills; Smith & Brooks-Gunn, 1997), the overall effect on human functioning may be quite substantial.

Additionally, the effects of corporal punishment may be transactional in that they are further exacerbated via the mediated pathways of other context-specific variables. For instance, children with poorer mental health and who are more aggressive are more at risk for peer rejection and peer victimization (Johnson et al., 2002; Wood, Cowan, & Baker, 2002), which in turn should negatively impact children's mental health. This study only examined the effects of corporal punishment up to first grade but found that there

were cumulative effects across infancy and early childhood. The effects across childhood for a child who receives persistent corporal punishment may be even greater. Children who receive corporal punishment regularly through childhood (and 22% of 11 year old children report being spanked in the previous week; Day, Peterson, & McCracken, 1998), would likely be impacted to a greater degree. So, considering that this parenting behavior is employed with so many children, has the potential for affecting so many different developmental domains, and may have cumulative and transactional effects across childhood, there is reason to consider these findings as having substantial important policy implications.

Corporal Punishment and Temperament

While the effect sizes reported are average effects across all sampled children, the impact of this parenting behavior may be even greater on particular children and in particular contexts. The results of this study indicate that temperament plays a role in determining the influence of corporal punishment, supporting the results of other studies (e.g., Morris et al., 2002). Corporal punishment is more strongly related to externalizing problems in children with difficult temperaments than it is in children with easier temperaments. While there is a direct effect of both corporal punishment and temperament on externalizing behaviors, the interaction between corporal punishment and temperament also accounts for variation in externalizing behavior. Thus, corporal punishment may be an especially notable risk factor for children with difficult temperaments. Especially considering that more difficult children are likely to elicit more physical discipline (e.g., Bugental & Shennum, 1984), corporal punishment may play a

significant role in activating and maintaining children's predisposition towards problem behaviors. Temperamental characteristics may also contribute to children's management of potentially stressing environments (e.g, Gunnar & Cheatham, 2003) thereby having an effect on the impact of corporal punishment. While this study aggregated a number of temperamental characteristics into a single variable, more specific dimensions of temperament, such as anxiety or fearfulness, would perhaps show instances in which corporal punishment had a greater impact on development. Further research examining the role of corporal punishment and the interaction between various dimensions of temperament would be valuable.

Differences in Corporal Punishment Influence across Ethnic Groups

The results of this study corroborate the results of other studies (e.g., Barnett, Kidwell, & Leung, 1998; McLoyd & Smith, 2002) that suggest that corporal punishment is detrimental to the development of African American children in a manner similar to the effects on Caucasian children. This is contrary to prominent theories that argue that African-American families provide a context in which corporal punishment does not have a negative effect (e.g., Deater-Deckard & Dodge, 1997; Gunnoe & Mariner, 1997). Deater-Deckard & Dodge (1997) specifically argue that "historical factors of slavery (and the normativeness of physical punishment) and the current threat of oppression and societal punishment may lead African-American families to view physically harsh discipline as an acceptable part of a positive parent-child relationship." (p. 170). This statement likely overstated the role of ethnicity in determining the impact of corporal punishment. While there is some research indicating that corporal punishment is more

accepted among African American families, this is not well-established. Indeed, Deater-Deckard & Dodge (1997) initially proposed this notion from the observed mean differences between 10 African American women and 10 Caucasian women. They have since used larger samples and found additional supporting evidence for ethnic differences in attitudes towards corporal punishment (Deater-Deckard et al., 2002). Though some research indicates that white parents actually use more corporal punishment than do African-American parents (Straus, 2001), it does appear as though corporal punishment may be practiced more in African American families and that there is somewhat more acceptance within these communities. However, the issue of whether African-American ethnicity, per se, influences attitudes in corporal punishment and subsequent outcomes deriving from those attitudes is far from resolved.

There is reason to suspect that if there are cultural group differences in attitudes towards corporal punishment, that most of the variation may not be specific to ethnicity. Research shows that perceptions about general parenting practices between African-American families and Caucasian families overall are quite small and that the variation is much greater within each ethnic group than is the variation between different ethnic groups (e.g., Julian, McKenry, & McKelvey, 1994). Ethnicity and SES covary such that there is increased use of corporal punishment within poorer families (e.g., Straus & Stewart, 1999), so it may be more appropriate to conceptualize differences in attitudes regarding corporal punishment effectiveness as being linked primarily to family income or other demographics variables as opposed to ethnicity. The unique, specific influence of African American ethnicity and culture on attitudes towards corporal punishment is likely quite small. It is the main effects of corporal punishment and not the contextual variation

between ethnic subgroups that best describes the influence of corporal punishment within and between these groups.

CHAPTER III

STUDY II: STRESS AND APPRAISAL OF CORPORAL PUNISHMENT BY ADOLESCENTS

Method

Participants

Given the covariation between SES, attitudes towards corporal punishment, and the outcome variables considered in this project (Straus & Mathur, 1996), it was especially important to include an economically diverse population. For this study, 230 students from a religious liberal arts college in rural southwestern Pennsylvania completed a variety of mental health and corporal punishment experience measures in a classroom setting. The sample from this college provides more diversity with respect to social class and religious background than comparable university samples. It is a Christian college with a population representative of social classes within the US.

Because the focus of this study is late adolescence and homogeneity of ages in the sample was desired, only those participants who were aged 18-21 were retained. Additionally, 23 participants were removed because of perceived problems with responding. This included the failure to complete the measures, a response bias in which they answered the extremes of a scale without considering the reverse-scoring of the measure (e.g., answered all 4's for the self-esteem measure, not accounting for the reverse scores), answers that were clearly false (indicating that the last time they had

been spanked was when they were 26 yet reporting that they were only 21 years of age), or other indications of obvious reporting error. The final sample contained 80 males (46%) and 94 females (54%). The mean age of the participants was 19.52 (*SD* = 1.08). The breakdown of religious affiliation was as follows: 55 (31.6%) Catholic, 101 (58.0%) Protestant, 2 (1.1%) Jewish, 5 (2.9%) agnostic or atheist, and 7 (4%) other.[3]

Measures

Corporal Punishment and Physical Abuse. The adult-recall form of the revised Conflict Tactics Scales (Straus, Hamby, Finkelhor, Moore, & Runyon, 1995) was used to assess the frequency of parental corporal punishment and corporal abuse experienced during childhood. Participants were asked to recall a typical week during their childhood and to indicate the frequency with which their mother and father engaged in various behaviors. They were also asked to indicate whether the parenting behavior ever occurred during their development, but less frequently than during a typical week. A sample item from the corporal punishment subscale is "Mother spanked me on the bottom with her hand." Respondents are asked to indicate the frequency with which they experienced the parental behaviors on the following scale: 1- once that week, 2- twice that week, 3 – 3-5 times that week, 4- 6-10 times that week, 5 – 11-20 times that week, 6 – More than 20 times that week. If it didn't happen during a typical week, they then indicated whether it ever happened during their childhood. A composite scale was constructed by assigning a 0 if the respondent reported that it never happened or a 1 if it happened at least once during childhood. If participants indicated that the specific behavior happened during a

[3] In fact, it is likely that the other group also contained non-Catholic Christians. Many participants reported other, yet indicated that they were actually a member of a Protestant faith (e.g., Baptist, Methodist, Presbyterian, etc.). These responses were entered as Protestants for analytic purposes.

typical week, they were assigned the number that they indicated and 1 was added to it. Therefore, a person who indicated that they were spanked once during a typical week would receive a higher score (2) than someone who had just indicated that it happened at least once during childhood (1). This measure has previously been shown to have good construct validity (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The 6 items from the corporal punishment and the 7 items from the physical abuse subscales for both mothers and fathers were aggregated for use in this study. In this study, Cronbach's alpha's for the mother and father corporal punishment subscales were acceptable (.70 and .71, respectively). For the abuse scales, Cronbach's alphas were high (.90 for both mothers and fathers). Higher scores indicate more corporal punishment or physical abuse administered by the parent.

Corporal Punishment Specific Stress Scales. Participants were asked about the degree to which their parents' use of corporal punishment was stress inducing with a substantial modification of the Stress Appraisal Measure (SAM; Peacock & Wong, 1990). The original measure was developed as a multidimensional measure of stress that assesses both primary and secondary appraisals of stress as related to a specific stressor. The measure was modified for this study to examine the stress experienced specific to corporal punishment. The participants were provided with a number of statements about their parents' discipline practices and asked to rate on a 1-7 scale (from strongly disagree to strongly agree) how much they agree with the statement. Specifically, this measure asked about a number of components of the overall stress reaction, including the participants' perceptions of the threat posed by their parents' behavior, the amount of control that they felt they had over their parents' discipline, and the centrality of these

parenting practices to their lives. An example statement, from the threat subscale, is "My mother's spanking me made me feel anxious." Cronbach's α for each subscale was greater than .80.

Attitudes towards Corporal Punishment. A series of previously published measures was aggregated in order to assess attitudes towards corporal punishment. Selected items from the Parent Punitiveness Quiz (Hyman, 1997) were used to assess participants' attitudes towards corporal punishment. For this measure, participants were asked to rate on a five-point scale (Ranging from 1= Strongly Agree to 5= Strongly Disagree) the degree to which they agree with a variety of statements about parental discipline. This measure, although used in clinical practice, had not been used previously in empirical research. The items that refer to attitudes regarding corporal punishment were included, for example "Physical punishment of children should not be allowed," and "If you spare the rod you will spoil the child." They were also asked "Do you *strongly agree, agree, disagree, or strongly disagree* that it is sometimes necessary to discipline a child with a good, hard spanking?" This question is taken directly from Straus & Mathur (1996), who used it to evaluate parental attitudes towards spanking in a national sample. The Commitment to Physical Discipline Scale (Simons, Whitbeck, Conger, & Chyi-In, 1991) was also included as an additional measure of the attitudes towards corporal discipline. For this scale, the participants were asked to assess their agreement with corporal punishment on 1-5 point scale, ranging from *strongly agree* to *strongly disagree.* Previous studies have indicated that this measure has acceptable internal reliability (Cronbach's $\alpha = .60$).

Religious Fundamentalism. The Religious Fundamentalism scale (Altmeyer & Hunsberger, 1992) was administered to assess fundamentalism. This is a 20-item measure that asks respondents to indicate their agreement on a Likert scale to a series of questions regarding the strength of their religious beliefs. A sample item is "God has given mankind a complete, unfailing guide to happiness and salvation, which must be totally followed." Support for the validity of this measure comes from associations between this measure and religious behaviors, such as church attendance and bible reading. This measure had good internal consistency for this sample (Cronbach's $\alpha = .80$).

Parenting Style. In order to assess global parenting style, the Parental Authority Questionnaire was used (Buri, 1991). This is a self-report measure that yields three different scores that correspond to Baumrind's (1973) description of parenting styles. Participants are asked to rate on a Likert scale how applicable the items are to their parent's behavior. It is then an interval variable representing the degree to which their parents were permissive, authoritative, and authoritarian. "Whenever my parents told me to do something as I was growing up, they expected me to do it immediately without asking any questions," is a sample item from the authoritarian scale. Buri (1991) found acceptable two-week test-retest reliability coefficients that ranged from .78 - .92 for the subscales. It was also found to be associated with comparable measures (i.e., parental nurturance) and is not associated with socially desirable responding. In this sample, Cronbach's α for the Authoritarian, Authoritative, and Permissive subscales were found to be acceptable: .76, .77, and .69, respectively. Higher scores on each measure indicated parenting that was reflective of these three parenting styles.

Parental Neglect. Parental neglect was assessed with the adult-recall form of the 20-item Multidimensional Neglect Scale (Straus, Kinard, & Williams, 1995). The participants reported on the extent to which parents failed to provide for the following basic needs: physical, emotional, supervisory, and cognitive. The response scale ranged from 1(SD) – 4(SA), ranging from strongly disagree to strongly agree. A sample item, from the cognitive needs subscale is "My parent(s) did not help me with my homework." All items were aggregated into a single variable. The interitem consistency was very high for this measure (Cronbach's $\alpha = .95$). Higher scores indicate greater neglect by the participants' parents.

Attachment to Parents. In order to assess the participants' relationship with their parents, the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was administered. This is a 75-question measure for which participants rate statements concerning a parent or a peer, with respect to how often the statement is true. For example, to the item "I feel angry with my mother," the participants have the option of responding never or almost never true, not true very often, sometimes true, often true, or almost or always true. The measure yields a score reflecting the participant's current relationship with their father, mother, and friends. Each attachment classification may also be broken down into three subscales, including Trust, Alienation, and Communication. For this study, only the 50 items assessing the participants' relationship with their mothers and fathers was used. This scale has been found to have good test-retest reliability (.93 for the parent measures) and construct validity, including being related to self-esteem, depression, family cohesiveness, and college success (Lopez & Gover, 1993). For this sample, there was high internal consistency for both the mother

measure (Cronbach's α = .91) and for the father measure (Cronbach's α = .93). Higher scores on each measure indicate a more positive relationship between the participants and their parents.

Depression. The depressive status of the participants was again assessed with the Centers for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Cronbach's α for this sample was .84.

Self-Esteem. In order to assess self-esteem of the participants, the Rosenberg Self-Esteem Scale (1965) was administered. This scale consists of ten items for which the respondents indicated their level of agreement on a four-point scale. A sample item is "I feel that I have a number of good qualities." This measure is a frequently used measure and has good psychometric properties with respect to reliability and validity (Blascovich & Tomaka, 1991). Cronbach's α was .85 for this sample. Higher scores reflect higher self-esteem.

Results

Data Analysis Plan

As an initial step, the corporal punishment stress and attitudinal measures in this dataset were factor analyzed in order to derive the latent structure. In order to test the hypothesis that perceived stress of corporal punishment predicted mental health and relationship outcomes, the mental health outcomes (i.e., depression and self esteem) and relationships with parent variables were regressed onto the identified factors. Models were run individually for mothers and fathers, each controlling for sex (coded 1 = male and 2 = female), physical abuse, neglect, corporal punishment and broader parenting

styles. The controls were entered in the first step. In the second step, the stress measures were entered to determine whether these subjective appraisals significantly predicted mental health and the parent-child relationship, beyond the variance accounted for by the control variables. Regression models were also specified to examine predictors of perceived stress of corporal punishment and attitudes towards corporal punishment. The last set of analyses were specified to test the hypothesis that positive attitudes towards corporal punishment would reduce the magnitude of the influence of corporal punishment by testing the moderating role of the attitudinal variable derived from factor analysis. More complex models were tested to explore the mediating role of perceived threat in the causal pathway between corporal punishment and developmental outcomes via path analysis.

As in the first study, SPSS, Version 11.5 was used for all statistical analysis and the predicted values of the dependent variables were plotted against the residuals in all regression models to ensure that the assumptions for regression analyses were met. Examination of the scatterplots indicated that the assumptions were tenable for all of the models.

Data Reduction

As a first step in data analysis, exploratory factor analysis was performed on the corporal punishment stress measures for fathers and mothers. The factors were extracted using principal components extraction and factors with an eigenvalue greater than 1 were retained. Following extraction, oblimin rotation was performed on the factors. Oblimin rotation was selected because it was thought that the factors would likely be correlated.

Following extraction, the pattern matrix was then interpreted. All items that loaded above .45 and that did not load on multiple factors were retained. .45 was selected as the cutoff magnitude because it represents a "fair" size loading, according to the conventions of Comrey and Lee (1992), as reported by Tabachnick & Fidell (2001). The items that loaded on each the factors were then averaged to create individual scales.

The 21 items composing the maternal corporal punishment stress scale were factor analyzed. 6 factors with an eigenvalue greater than one were extracted. See Table 13 for the pattern matrix of the loadings for this analysis. This table contains the loadings of the items on the 6 factors, as well as the eigenvalues and percent variance accounted for by the factors. These tables also indicate the internal reliability (Cronbach's α) for the items that comprise each factor. All of the factors were internally consistent. The 6 factors were labeled Positive Challenge (Factor I), Threat (Factor II), Controllable by others (Factor III), Uncontrollability (Factor IV), Centrality (Factor V), and Controllable-by-Self (Factor VI). Cumulatively, these 6 factors accounted for 71% of the variance. Bivariate correlations between the corporal punishment measures and the outcome measures were computed and are in Table 14. The correlations between the factors ranged from slight to modest ($.07 \leq r's \leq .43$). The threat scale was found to be modestly associated with all of the outcome variables in the expected direction. In addition, the higher scores on the positive challenge scale were associated with better maternal attachment while the increased centrality scale was associated with decreased self-esteem.

The 21 items from the father stress measure were also subjected to factor analysis. Factor analysis revealed a different pattern of loadings than with the mother variable. See

Table 15 for the results of this analysis. Specifically, 5 factors with an eigenvalue greater than one were extracted. They accounted for 70.46% of the overall variance. These 5 factors were labeled Enduring Threat (Factor I), Central Challenge (Factor II), Controllable-by-Others (Factor III), Uncontrollability (Factor IV), and Controllable-by-Self (Factor V). The number of factors extracted, as well as the loadings on the factors, were noticeably different from the factor analysis with comparable items for the mother. Note that items dealing with the centrality of corporal punishment loaded with the perceived threat and challenge items, contrary to the loadings in the mother data. Additionally, the threat scale loaded as the first factor, whereas it had been the second factor extracted for the mothers. The inter-item consistency was high for each of the factors. A correlation matrix was constructed to examine the interrelationship between the factors and the associations between the factors and the outcome variables of interest. These correlations can be seen in Table 16. The correlations between the factors ranged from slight to modest ($.06 \leq r\text{'s} \leq .48$).

Factor analysis was also performed on the 13 original items from the compiled corporal punishment attitudinal measures. Again, principal component extraction and oblimin rotation were employed. 2 factors were extracted with eigenvalues greater than 1 and for which more than one item loaded. The pattern matrix of loadings can be seen in Table 17. The first factor, Belief in Corporal Punishment as Instrumental and Necessary, accounted for 40% of the variance while the second factor, Effectiveness/Justness, only accounted for 9.02% of the variance. Because the first factor accounted for such a disproportionate share of the variance, it was the only factor used in subsequent analyses as the primary indicator of participants' attitudes towards and acceptance of corporal

punishment. It had high inter-item reliability (Cronbach's $\alpha = .85$). The items were aggregated such that higher scores indicate stronger individual beliefs about the usefulness and necessity of using corporal punishment.

Intercorrelations and Descriptive Statistics

Table 18 contains the descriptive statistics for the variables used in the analyses for study 2. The decreased number of participants who completed the corporal punishment stress variables reflects those participants who were not spanked. If they were not spanked, they could not report on the stressfulness of the experience. Again, some of the variables included in these analyses, including the corporal punishment, physical abuse, depression, self-esteem, and parent-child relationship measures were skewed. However, subsequent examination of the residual scatterplots suggested that this did not lead to serious problems with the fundamental assumptions of regression for any of the analyses.

As a first step in examining the associations between the variables of interest, a correlation matrix was constructed with the predictor, control, and outcome variables, as well as the potential intervening variables (See Table 19). Increasing maternal corporal punishment was associated with decreased maternal attachment and increased depression. The bivariate associations between the father corporal punishment variable did not indicate that there were any significant associations with any of the outcome variables. However, as indicated previously, the threat subscales were associated with all of the expected outcome variables. Additionally, the corporal punishment measures covaried with the parenting styles measures, which in turn were associated with the outcome

measures of interest. The attitudinal and stress measures were associated with frequency of corporal punishment by fathers and mothers and the overall parenting styles.

Perceived Threat and the Parent-Child Relationship in Late Adolescence

To examine whether perceived stress of corporal punishment predicts the quality of the parent-child relationship in late adolescence, the threat scales that had been derived through factor analysis were tested as predictors of the attachment measure. Two regression models were specified separately to predict the quality of the participants' relationships with their mothers and with their fathers. For those adolescents who reported ever being spanked, hierarchical multiple regression models were modeled with the attachment measures as the outcome variables. In the first step of the model, sex, parenting styles (authoritative, authoritarian, and permissive), parental corporal punishment and physical abuse, and parental neglect, were entered. In the second step, the threat scale particular to the parent for whom the attachment variable being modeled was entered. While there are considerable limitations to these analyses, including the reliance on retrospective self-report measures, these models should account for this to some degree. That it, to the same degree that the participants were influenced by errors in recall and biased reporting on the perceived threat measure, this should also extend to their perceptions of overall parenting. Thus, the inclusion of these variables, and especially the self-reported corporal punishment variable, should strengthen the argument that these analyses are, in fact, assessing the unique perceptions of the corporal punishment experience.

The model predicting maternal attachment can be seen in Table 20. It contains the bivariate correlations, the standardized and unstandardized coefficients, and the standard errors for the variables predicting maternal attachment. In the first step, the control variables were entered. The overall model of the control variables was significant, $F(7, 130) = 7.59, p < .001$. More authoritative parents used less corporal punishment In the next step, the maternal threat subscale was entered and accounted for unique variance in the maternal attachment measure, $F(1, 129) = 5.63, p < .05$. The overall model was significant, $F(8, 129) = 7.58, p < .001$, Adjusted $R^2 = 28$. With the inclusion of the threat subscale, the corporal punishment measure dropped to a nonsignificant level while authoritative parenting was still highly associated with maternal attachment. So, the perceived threat that the participants experienced from their mother's corporal punishment accounted for variance in the quality of their relationship beyond perceived frequency of corporal punishment and physical abuse, as well as perceptions of overall parenting.

Path analysis (Straus, 2002) was then performed to test the intervening role of perceived threat on the association between corporal punishment on maternal attachment. The standardized coefficients of this analysis is presented in Figure 4. Since the association between corporal punishment and perceived stress was not significant, perceived threat does not mediate the relationship between corporal punishment and maternal attachment. Frequency of corporal punishment does not impact the perceived threat.

A second model was tested to examine the impact of perceived threat on the father-child relationship. A similar model was specified as in the previous model

predicting maternal attachment. In the first step, sex, parenting styles, parental neglect, and the father corporal punishment and physical abuse variables were entered. See Table 21 for the results of this analysis. This model was significant, $F(7, 105) = 7.15, p < .001$. The only variable that uniquely predicted father attachment was authoritative parenting. In the second step, the enduring threat scale was entered. This variable increased the proportion of variance accounted for by the model, $F(1, 104) = 7.56, p < .01$. The overall model, with the paternal enduring stress variable entered, was significant, $F(8, 104) = 7.60, p < .001$, Adjusted $R^2 = .32$. In this model, the perceived threat variable was the only variable other than authoritative parenting that predicted attachment to father. The overall frequency of corporal punishment did not reliably predict the quality of the participants' relationship with their fathers but the amount of threat that the participants experienced did reliably predict relationship quality. Participants who report feeling more threatened by the corporal punishment that they received from their fathers had poorer relationships with their fathers. Path analysis was also performed to test the intervening role of perceived threat of father corporal punishment. The results are observed in Figure 5. As with the mother analysis, the mediating hypothesis was not supported by path analysis since the path between corporal punishment and perceived threat was not significant.

Perceived Threat of Corporal Punishment by Mothers and Mental Health

In order to test the hypothesis that the perceived threat of maternal corporal punishment predicts the mental health of late adolescents, individual regression models were specified in which the depression and self-esteem measures were regressed onto the

maternal perceived threat scale. For each model, sex, parenting styles, neglect, and maternal corporal punishment and physical abuse were entered. In the second step, the perceived threat by mother corporal punishment scale was entered.

To test whether perceived stress impacted depression, a hierarchical multiple regression model was specified. See Table 22 for the results of this analysis. In the first step, the control variables (sex, parenting styles, neglect, and physical abuse) were entered along with corporal punishment. This model was significant, $F(7, 130) = 2.17, p < .05$. In this model, authoritarian parenting and corporal punishment predicted depressive status. In the next step, the perceived threat measure was entered. It accounted for additional variance in the depression measure, beyond the control variables, $F(1, 129) = 4.63, p < .05$. The overall model, with the threat measure entered, was significant, $F(8, 129) = 2.53, p < .05$, Adjusted $R^2 = .08$. Beyond permissive parenting, it was the only variable to predict depression. Path analysis was again specified with perceived threat as the intervening variable between corporal punishment and the depression outcome measure. See Figure 6 for the results of this analysis. Corporal punishment was not significantly associated with the perceived threat measure and a mediational model was therefore not supported.

To examine whether self-esteem was also determined by perceived threat of maternal corporal punishment, the self-esteem measure was regressed hierarchically first onto the control variables and then the perceived threat measure. The results are presented in Table 23. The model with the control variables was significant, $F(7, 130) = 3.11, p < .01$. Sex was a significant predictor of self-esteem; females had lower self-esteem than males. More permissive parenting was associated with decreased self-esteem

and authoritative parenting was associated with increased self-esteem. Entering the perceived threat variable increased the proportion of variance accounted for in self-esteem by the model, $F(1, 129) = 8.01, p < .01$. This overall model was significant, $F(8, 129) = 3.87, p < .01$, Adjusted $R^2 = .14$. After entering the perceived threat measure, sex and permissive parenting were no longer significant, although authoritative parenting remained a significant predictor. Additionally, path analysis was conducted to test the mediating relationship. The results are seen in Figure 7. Again, corporal punishment was not significantly associated with the perceived threat measure so the mediation model was not supported. So, as in the analyses predicting depression, perceived threat accounted for variation in self-esteem, beyond the influence of gender, perceived parenting styles, neglect, and frequency of corporal punishment. Adolescents who report having been stressed by their mothers' use of corporal punishment had lower self-esteem and higher depression.

Perceived Enduring Threat of Corporal Punishment by Fathers and Mental Health

A model was also tested to examine the role of perceived enduring threat by paternal corporal punishment on depression and self-esteem in adolescence. Hierarchical models were specified to examine the unique role of perceived threat on these mental health outcomes. Sex, parenting styles, neglect, and father's use of corporal punishment and physical abuse were statistically controlled and entered in the first step. In the second step, the enduring threat subscale that had been derived through factor analysis was entered.

The results for the model predicting depression from fathers' perceived threat can be seen in Table 24. The control variables accounted for significant variance in depression, $F(7, 108) = 2.18, p < .05$. In this model, both permissive and authoritarian parenting were associated with depression. The enduring threat scale was entered in the second step and accounted for unique variance, $F(1, 107) = 4.74, p < .05$. The overall model was significant, $F(8, 107) = 2.56, p < .05$, Adjusted $R^2 = .10$. Only permissive parenting and the enduring threat scale uniquely predicted depression. Path analysis models comparable to the mother analyses were specified. The results are seen in Figure 8. As with the mother models, corporal punishment was not significantly associated with the perceived threat measure and so the hypothesis that perceived threat mediates the association between father's use of corporal punishment and depression was not supported.

The results for the analysis predicting self esteem can be seen in Table 25. The control variables that were entered in step 1 were significant, $F(7, 108) = 3.25, p < .01$. Authoritative parenting predicted increased self esteem and permissive parenting predicted decreased self esteem. Entering the enduring threat scale increased the proportion of variance accounted for in self esteem, $F(1, 107) = 9.38, p < .01$. The overall model was significant, $F(8, 107) = 4.24, p < .001$, Adjusted $R^2 = .18$. The perceived enduring threat was associated with self esteem, as well as permissive and authoritative parenting. In both of these analyses, a primary component of stress, the perception of the event as threatening, did predict mental health for adolescents, even after controlling for perceived parenting, gender, physical abuse, neglect, and frequency of corporal punishment. As can be seen in Figure 9, perceived threat was not a significant mediator

of corporal punishment because corporal punishment did not significantly predict perceived threat in the path analysis.

Determinants of Corporal Punishment Attitudes

A standard OLS multiple regression was modeled in which sex, corporal punishment, physical abuse, parenting styles, and religious fundamentalism were examined as predictors of the "Belief in Corporal Punishment as Instrumental and Necessary" attitudinal variable. For this analysis, the corporal punishment and physical abuse measures were aggregated across parents by averaging the mother and the father scores. In the initial model, the slopes of the permissive and authoritative variables were not significant, p's > .25 and were removed from the model. The model presented in Table 26 is the reduced model that includes the sex, total corporal punishment, total physical abuse, religious fundamentalism, and authoritarian parenting predictors. The overall model was significant, $F(5, 166) = 7.08, p < .001$, Adjusted $R^2 = .18$. Sex, religious fundamentalism, and authoritarian parenting all uniquely predicted the attitudinal variable. That is, females were less approving, and participants who were more fundamentalist and who had more authoritarian parents were more approving of corporal punishment as a disciplinary technique. There was a trend indicating that normative corporal punishment predicted approval of corporal punishment while the trend for physical abuse was to be associated with decreased approval of corporal punishment, although they were not significant. These analyses also indicated a potential suppression effect, in which the slope of physical abuse was .03 when examined as a bivariate correlation yet it increased to .14 with the inclusion of the control variables.

Determinants of Corporal Punishment Stress Measure

An analysis was specified to examine the role of various individual, familial, and contextual factors on the stress experience of corporal punishment, with particular emphasis on the attitudinal measure. An initial model was run, in which the maternal perceived threat measure was regressed onto parenting styles (authoritarian, permissive, and authoritative styles), the neglect measure, maternal corporal punishment and physical abuse, and the attitudinal and religious fundamentalism variables. In this model, the neglect scale, the authoritative parenting, the physical abuse, and the religious fundamentalism measures were all nonsignificant at $p > .25$. Therefore, they were removed from the model. The final model presented in Table 27 contains the bivariate correlations, the standardized and unstandardized coefficients, and the standard errors of sex, permissive and authoritarian parenting, the corporal punishment variable, and maternal corporal punishment. The overall model was significant, $F(5, 133) = 4.46$, $p < .001$, Adjusted $R^2 = .11$. In this model, the corporal punishment variable was associated with more perceived threat. The attitudinal variable predicted reduced perceived threat. Participants who had a more positive attitude towards corporal punishment perceived less threat from their mothers' use of it. An identical model was specified to predict perceived stress from fathers' use of corporal punishment. In this model, no variables significantly predicted perceived threat, even after removing those variables with probabilities > .25.

Corporal Punishment Attitudes as a Moderator of Corporal Punishment.

To test the hypothesis that the effects of corporal punishment are moderated by attitudes of the individuals who are experiencing them, a series of regression analyses was generated. Again, a product variable was computed by multiplying the standardized corporal punishment mother and father variables by the favorable attitudinal variable. A series of regression analyses, identical to the analyses specified to predict the mental health and relationship outcomes were run, except that the attitudinal variable and the interaction term were entered with all of the controls, and the stress measure was not entered. The interaction term did not contribute unique variance in any of the models, except for model predicting the maternal attachment measure. See Table 28 for the results of this analysis. The overall model was significant, $F(9, 160) = 8.25$, $p < .001$, Adjusted $R^2 = .28$. Again, authoritative parenting showed a relatively strong association with the quality of maternal attachment. As in the previous analysis predicting maternal attachment, no other control variables were significant. The attitudinal variable was not associated with maternal attachment. The main effect of corporal punishment was significant while the interaction term also significantly predicted the outcome measure. Thus, there is evidence that the attitudes towards corporal punishment moderate the effects of corporal punishment on maternal attachment in late adolescence.

Discussion

This study represents an important first step for the development of theoretical models of the process through which corporal punishment impacts development. Consistent with Gershoff's (2002a) theoretical model of corporal punishment and its

influence on development, there appear to be important intervening variables within individuals that determine the impact of parental corporal punishment. While corporal punishment is a risk factor for all children with respect to development, there are likely important cognitive and emotional responses to this behavior that determine its impact. Both perceived stress and attitudes towards corporal punishment play a role in determining the nature and the magnitude of the influence of corporal punishment on mental health and the parent-child relationship.

Perceived Stress of Corporal Punishment as a Determinant of Developmental Outcomes

This study tested the hypothesis that individual appraisals of corporal punishment are more important determinants of corporal punishment than is the actual incidence of these behaviors. The results of this study indicate that the appraised stress of corporal punishment plays an important role in determining the impact that this parenting behavior will have on adolescents. That it, while total frequency of corporal punishment did not reliably predict mental health or relationship outcomes, participants who appraised their parents' use of corporal punishment as more threatening were more depressed, had lower self-esteem, and had poorer relationships with their parents.

In order to be able to assess the appraised stress specific to parents' use of corporal punishment, a measure was developed for this study and specific scales developed through factor analysis. This analysis indicated that the dimensions of the appraisal of corporal punishment stress are similar to the dimensions of stress appraisal for other events (e.g., Peacock & Wong, 1990). That is, the factor structure was relatively equivalent to the factor structure that had emerged with the original development of the

measure, even though it had been assessing stress as it pertained to a different potential stressor. Elements of threat, primary and secondary control, centrality, and challenge are components of the overall appraisal of the stress of parental corporal punishment. Of the derived factors, the perceived threat dimension appears to be a critical element of the appraisal process for determining the impact of corporal punishment. No other elements of corporal punishment stress appraisal were associated with the outcome variables.

Although the factor structure was largely equivalent, slightly different factor structures for the measures of stress pertaining to mothers and fathers were extracted. Specifically, the threat factor accounted for more variance in overall stress appraisal for stress by fathers than it did for mothers. Additionally, items assessing threat and centrality accounted loaded on the same factor for the father measure but they did not for the mother measure. These results could be simply due to sampling but they may also point to differences in the appraisal of stress specific to each parent. That is, threat accounts for a greater proportion of adolescents' total perceptions of stress that they experienced from their fathers. These differences may have been due to differences in the application and intensity of such discipline by mothers and fathers. Likely there was greater variation in the felt pain from fathers' spanking and consequently greater variation in perceived threat. The fact that centrality and threat loaded together may have to do with the fact that discipline responses make up a greater proportion of all interactions that fathers have with their children (Siegal, 1987) as compared to mothers. Thus, in their overall perceptions of their fathers' behavior, participants' total threat and totality of impact may be more closely linked.

For those participants who reported ever having been spanked, their perceived threat from corporal punishment was evaluated as a predictor of depression, self-esteem, and the parent-child relationship. Adolescents who reported feeling threatened by their parents' use of corporal punishment in childhood had poorer relationships with them and had poorer mental health. These relations emerged even after accounting for reported frequency of corporal punishment and perception of overall parenting style. The results were consistent for perceived threat from both mothers and fathers, despite the somewhat different threat subscales employed. Both had a negative impact on developmental outcomes. In fact, the threat scales were highly correlated and may have been largely tapping the same construct, a general tendency to feel threatened by corporal punishment. Perhaps, in future work, it may prove more effective to assess participants' overall stress experiences from corporal punishment, without considering differences between parents.

The results of this study show some support for the construct validity of the threat subscale of the measure. That is, it was predicted from frequency of corporal punishment and it reliably predicted mental health and relationship outcome measures. There was also high internal consistency for the factors. Thus, it may serve as a useful tool for future research investigating the impact of perceived threat from corporal punishment and contextual determinants of that appraisal.

Attitudes towards Corporal Punishment

In this sample, males, children whose parents were more authoritarian, and who were more fundamentalist were more approving of the use of corporal punishment as a disciplinary technique. That is, they viewed it as both appropriate and necessary for

controlling children's behavior. Though these variables had never been examined simultaneously as predictors of corporal punishment attitudes, these results replicated previous findings reporting gender and religiosity effects (e.g. Deater-Deckard et al., 2003; Gershoff, Miller, & Holden, 1999). These results also indicate that the broader parenting style may have a unique impact on corporal punishment attitudes, in that children who perceived their parents to be more authoritarian approved more of corporal punishment. While corporal punishment did not reliably predict corporal punishment attitudes, authoritarian parenting did. Although the failure of corporal punishment to predict the outcome variables is likely due to the power of the analyses, it also points to differential effects of parenting style and behaviors. That is, authoritarian parenting, the broader parenting style, played a more important role in determining attitudes than did the specific behavior of corporal punishment.

Understanding what contributes to attitudes about corporal punishment is important not only because of the role that the attitudes play in determining whether adolescents will engage in the behavior with their children but because the results of this study suggest that attitudes can play a role in determining the effects of corporal punishment. Attitudes towards corporal punishment can partially buffer some of the negative effects of corporal punishment on relationship outcomes. When adolescents had more favorable attitudes towards corporal punishment, the impact of childhood corporal punishment on maternal attachment in adolescence was decreased. For adolescents who have a negative view of the parenting that they receive, corporal punishment has a greater impact. This is likely due to the fact that a key determinant of adolescents' relationships with their parents during adolescence is in the meaning that they attribute to their parents'

behavior and their representations of the caregiving that they received (Grossman, Fremmer-Bombik, Rudolph, & Grossman, 1988). This complements other work that suggests that conflict arises in parent-child relationships in which there is disagreement about the legitimacy of parental authority (e.g., Smetana, 1995). For adolescents who perceive their mothers' behavior to have been outside of the boundaries of parental authority, they may experience relationship problems.

A similar pattern of results was not observed for fathers, however. It is unclear as to what accounted for the discrepancy. While there was slightly less power in the analysis for the fathers than there was for the mothers, it is more likely that there was an undetected gender of parent effect in the attitudes towards physical disciplinary techniques. While the attitudes measure simply asked broadly about attitudes towards corporal punishment without specifying a parent, it is possible that adolescents have differing views of the appropriateness of corporal punishment for mothers and fathers. Children are spanked more by their mothers (Day, Peterson, & McCracken, 1998). However, children, especially boys, evaluate fathers' use of physical discipline more favorably than they evaluate mothers (Siegal & Barclay, 1987). So, if children experience this behavior more by their mothers and yet hold less favorable attitudes towards her use of it, the attitudinal component would play a greater role in the relationships that the children have with them than it would in the relationships with their fathers.

This study points to different pathways of influence from corporal punishment to developmental outcomes. Although the subjective experience of the individuals of the corporal punishment is an important determinant across developmental outcomes, the specific components of that subjective experience differentially determine that impact.

Mental health outcomes are primarily determined by subjective stress (threat) while attitudes towards the behavior play a role in determining the impact on the mother-child relationship.

Determinants of Stress Appraisal

However, there may be more complex pathways through which the attitudinal variable impacts mental health outcomes. It may be the case that attitudes have the impact of buffering the threat appraisal response of children. Children who have more favorable attitudes towards corporal punishment are less likely to have appraised the event as threatening. The influence is very likely bidirectional though. Children who are stressed more by their parents' corporal punishment will also have less favorable attitudes towards it as a disciplinary technique. Longitudinal studies would be useful for examining the relationship between attitudes and stress and disentangling the directional influence of individuals' subjective experience of the behavior.

This study also reported that children who reported being spanked more by their mothers also reported feeling more stressed, though the relationship is far from perfect. This study only examined variations among children who had been spanked. Therefore, the overall nature of the impact of frequency of corporal punishment on perceived threat is inevitably much larger. Children would not be stressed by this behavior if they were never spanked. Spanking children thus introduces an additional risk factor to healthy development. However, for those children who are spanked, very little of the variance in perceived threat is explained by actual spanking and it would be interesting to determine

other factors that contribute to threat appraisals to further understand what could be done to buffer the negative effects of this parenting behavior.

Limitations of the Current Study

Though this study provides a potentially useful explanatory model for understanding individual differences in corporal punishment effects, it has substantial limitations. Namely, this study relied entirely on the participants for the assessments of interest in this study, the measures were assessed concurrently, and the parenting behaviors were based on retrospective recall.

Retrospectively accounts have a number of problems, especially with respect to parent disciplinary behaviors (Halverson, 1988). It may be the case that these results are actually indicating that individuals with poorer mental health and parental relationships recall specific parenting behaviors to be more threatening that they actually were. For instance, depression has an impact on recall of memories, in that it biases individuals to recall more negative content (e.g., Lloyd & Lishman, 1975; Snyder & White, 1982). However, it is likely that this was accounted for to some degree by statistically controlling adolescents' sex, reported actual corporal punishment, abuse, neglect, and parenting styles. If there is a general pattern of recall in which more depressed participants are biased to recall and report negative experiences, this should emerge with respect to their recall of overall parenting, and specifically with respect to recall of total instances of corporal punishment and the authoritarian nature of the parenting that they received. Since these variables were statistically controlled, this criticism is likely diminished. Additionally, the specificity and clarity of recall is affected by gender (Davis,

1999) and inclusion of this variable should reduce some error. Thus, it is likely that, despite the error and unreliability, the latent construct of perceived stress is, in fact, impacting the mental health and relationship outcomes.

Perhaps it really is the case that all retrospective reports are inadequate for assessing experiences in childhood and any associations are reflecting the individual's construction of those events (Halverson 1988). Then the findings of this study are still important with respect to the influence of corporal punishment on development and point to a different mechanism through which this parenting behavior impacts children. Autobiographical memories play an important role in determining people's conceptions of themselves (Wang, 2004) and early memories play an especially important role in determining children's and adults' self-concept. Thus, stressful memories from early childhood will be integrated into one's sense of self and consequently impact development. Especially considering the fact that corporal punishment is at its peak just slightly before the emergence of the autobiographical memory system, this behavior could play an especially important role in children's representations of themselves and of their relationships with other people. The salience of such episodes likely increased the impact that this variable has on memory. If these findings are interpreted such that adolescents who constructed their parents' discipline to be threatening had poorer psychological functioning and relationships with their parents than adolescents who did not, this still points to the important impact of corporal punishment.

Lastly, there are substantial limitations regarding the generalizability of these findings. Almost all of the participants were Caucasian. As noted, ethnic groups may

differ with respect to their evaluations of parenting. Further research should be undertaken to confirm these findings with ethnically diverse groups.

CHAPTER IV

GENERAL DISCUSSION

There were two primary goals of these studies. The first was to establish the negative impact of parental corporal punishment on children's developmental outcomes. The second was to understand how individuals differentially experience this behavior and to understand how that contributes to a differential impact of this behavior. The results of this study are consistent. Parental corporal punishment is associated with increased externalizing and internalizing behaviors and poorer quality parent-child relationships in childhood and in adolescence. Further, individualistic experience of corporal punishment influences the effects of that parenting behavior.

Future Directions

Specific examination of the cumulative effects on corporal punishment would be worthwhile. As development unfolds, continuous stress at different stages of development will likely have continuous effects. In this study, corporal punishment reliably predicted externalizing behaviors at 36 months and then increased externalizing behaviors over the preschool years. Similarly, the mother-child relationship was impacted by corporal punishment up to 36 months and then showed an additional impact during early childhood. It would therefore be advantageous to examine the cumulative effects of corporal punishment. The NICHD Study of Early Child Care and Youth Development

continues to follow this sample with periodic assessments of corporal punishment, behavior problems and the mother-child relationship. It will therefore be possible to continue to examine the cumulative impact of corporal punishment as these children develop. Further research will be aimed at examining the cumulative process of corporal punishment as well as examining indirect pathways of influence proposed by others (e.g., Repetti, Taylor, & Seeman, 2002) such as risky behaviors (drug use and risky sexual behavior) and peer relationships. By examining the multiple pathways through which corporal punishment affects development and the totality of the effects of this behavior across development, future research may illustrate the considerable impact that this parenting behavior has on development.

To further study the role of ongoing stress as it pertains to corporal punishment, development and the use of other assessments is critical. Further analysis of these scales, or comparable scales, with a more diverse population, is needed to validate the measures and to better understand the general stress appraisal process. More importantly, steps should be taken to directly assess the mediating role of perceived stress during childhood. A necessary first step would be to develop measures that allow for measurement of children's perceived stress in childhood. Researchers (e.g., Grant et al., 2003) are noting the need for measures of stress appraisal in childhood. Specific care needs to be taken to tap actual appraisal and to go beyond measures of frequency of the parenting behavior. The use of physiological measures of stress, such as salivary cortisol assays (e.g., Kirschbauer & Hellhammer, 1989), would be especially advantageous for understanding the complex relationship between corporal punishment, contextual factors, perceived stress, and mental health.

Further research is needed to explore the nature of ethnic group differences in the effects of corporal punishment. This study did not indicate that there was a moderating effect of African-American status on the association between corporal punishment and problem behaviors or the mother-child relationship. There is little reason to believe that corporal punishment would differentially affect different ethnic groups, beyond the variety of other factors that covary with corporal punishment and ethnicity, such as socioeconomic status, differences in neighborhood contexts, etc. The small differences observed in attitudes specific to African American culture are likely not determinative of differences in the effects of corporal punishment. Further studies need to directly test the moderation hypothesis, as no studies as of yet have found support for such a notion. In fact, Rowe (1997) notes that in Deater-Deckard's (1997) original analysis, they did not test the statistical significance in the differences in correlation coefficients for African-Americans and Caucasians but merely noted that the correlations were different.

Intervention Efforts

Future work by psychologists should include intervention efforts aimed at reducing corporal punishment. Such studies would provide an even stronger and more definitive test of the causal link between corporal punishment and psychological outcomes (Rutter, Pickles, Murray, & Eaves, 2001). Therefore, research should be aimed at the development, implementation, and evaluation of programmatic efforts to decrease corporal punishment.

There would likely be practical benefits derived from the successful development of intervention efforts aimed at reducing the negative impacts of corporal punishment.

Such programs have the potential for reducing the incidence of mental health problems and destructive and aggressive behavior. Several studies have pointed to the malleability of parental discipline strategies and demonstrated that targeted intervention can have a beneficial impact on parenting in that parents will use less harsh discipline (Baydar, Reid & Webster-Stratton, 2003; Martinez & Forgatch, 2001; Webster-Stratton, 1998), despite the fact that this parenting behavior is embedded within the cultural context of American society and there are structural barriers to the reduction of such behavior (Straus, 2001). Intervention efforts should especially be aimed at families who may be more at risk for engaging in this parenting behavior, such as low-income and religious families, and in situations in which there is an increased likelihood of this behavior impacting children, such as with temperamentally anxious children.

While sensitivity to the concerns of a minority group are necessary for the implementation of intervention efforts, not the least of which because such cultural sensitivity is likely to enhance the their effectiveness (e.g., Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2002), it is critical that interventions aimed at reducing corporal punishment be targeted simultaneously and with the same effort at all ethnic groups. Conceptualizing African-American family contexts as fundamentally different contexts for development than Caucasian families may mischaracterize the nature of developmental processes within ethic subgroups, especially with respect to the influence of corporal punishment (e.g., Rowe, 1997; Rowe, Vazsonyi, & Flannery, 1994). This, in turn, may have important policy implications. Some researchers have suggested that attempts to decrease corporal punishment in African-American communities along with Caucasian communities is an unnecessary imposition of white, middle-class values upon

a minority group (Whaley, 2000). If policy efforts aimed at decreasing corporal punishment are implemented in order to reduce population mental health problems and behavior problems, the erroneous view that corporal punishment does not have an impact in African American families may contribute to reduced intervention efforts aimed at those communities. All ethnic and SES groups would benefit from decreases in this parenting behavior.

Even small changes in parenting behavior achieved through intervention would likely be beneficial to society and therefore worthy of support. McCartney & Rosenthal (2000) report unpublished cost:benefit analyses performed by K. Dodge suggesting that programmatic interventions costing 40,000 dollars per child would be recouped if a 3% decrease in the incidence of criminality was achieved, because of the financial cost of such behavior to society. The results of this study suggest that decreasing corporal punishment would have that much of an effect, and likely without such a high financial cost. Reductions could likely be achieved without large financial investment required by programmatic efforts, although these types of programs would also be useful. Considering that there is no financial obligation for individual parents to bring about these reductions, limiting the use of corporal punishment may represent a relatively straightforward and economically feasible method for bringing about reductions in aggressive behavior and mental health problems within society.

Indeed, dissemination of this and related research may be a useful intervention in and of itself. Parents who know that there are negative effects of physical discipline will be less likely to use them with children. Parental knowledge about the potential risks and benefits of various parenting practices increases the likelihood that they will engage in

parenting that contributes to optimal child development. Mothers who know more about the benefits of breastfeeding are more likely to exclusively breastfeed their babies (Shirima, Gebre-Medhin, & Greiner, 2001), parents who know that prone sleeping positions are a risk factor for SIDS are more likely to place their children in the supine position (Moon & Omron, 2002), and parents who know about the negative effects of secondhand smoke take efforts to reduce the exposure of secondhand smoke to their children (King, Vidourek, Creighton, & Vogel, 2003). Consequently, if parents knew that corporal punishment puts their children at risk for behavior problems and poor parent-child relationships, they would likely decrease their use of such behavior. Media outlets and physicians could be a useful means for dissemination of the growing body of literature pertaining to the effects of this parenting behavior (Walsh, 2002).

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FIGURES

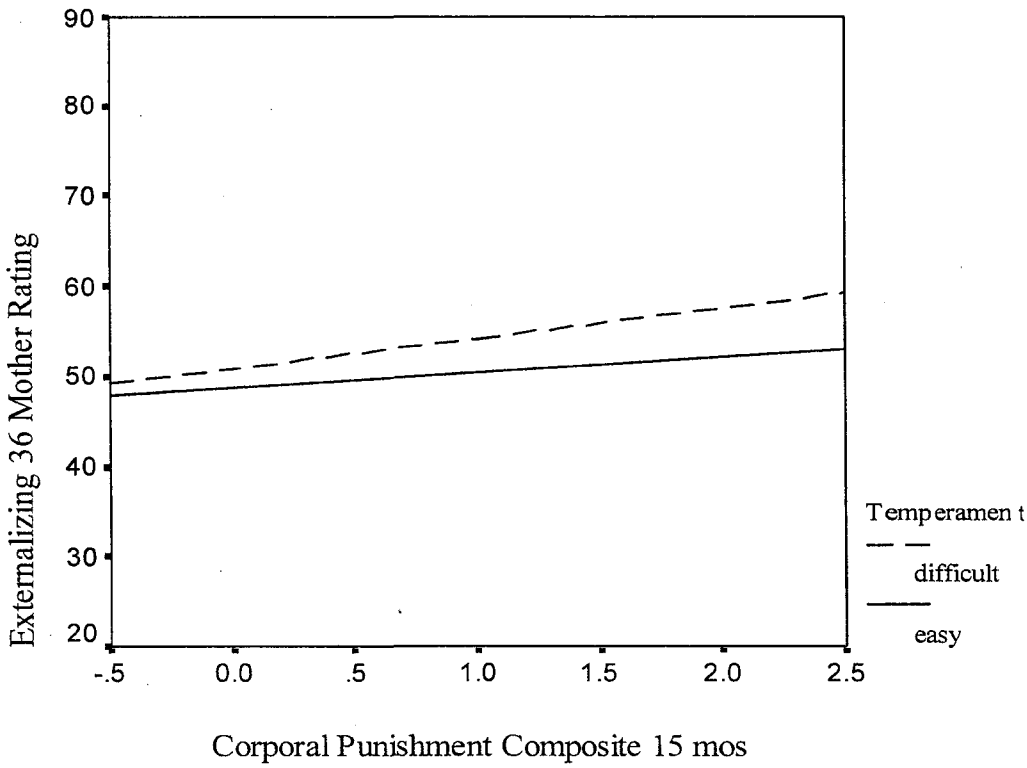
Figure 1

Total and Percentages of Values of the Corporal Punishment Variable at 15, 36, and 54 monti

	Levels of Corporal Punishment Variable		
Age	0	1	2
15 Months	690 (50.6%)	466 (34.2%)	78 (5.7%)
36 Months	784 (57.5%)	336 (24.2%)	59 (4.3%)
54 Months	852 (62.5%)	179 (13.1%)	16 (1.2%)

Figure 2

Interaction of Difficult Temperament with Corporal Punishment on 36 Month Externalizing



Note.
Easy and difficult temperaments represent the results of a median split of the temperament variable.

Figure 3

Interaction of Corporal Punishment Attitudes with Corporal Punishment on Maternal Attachment

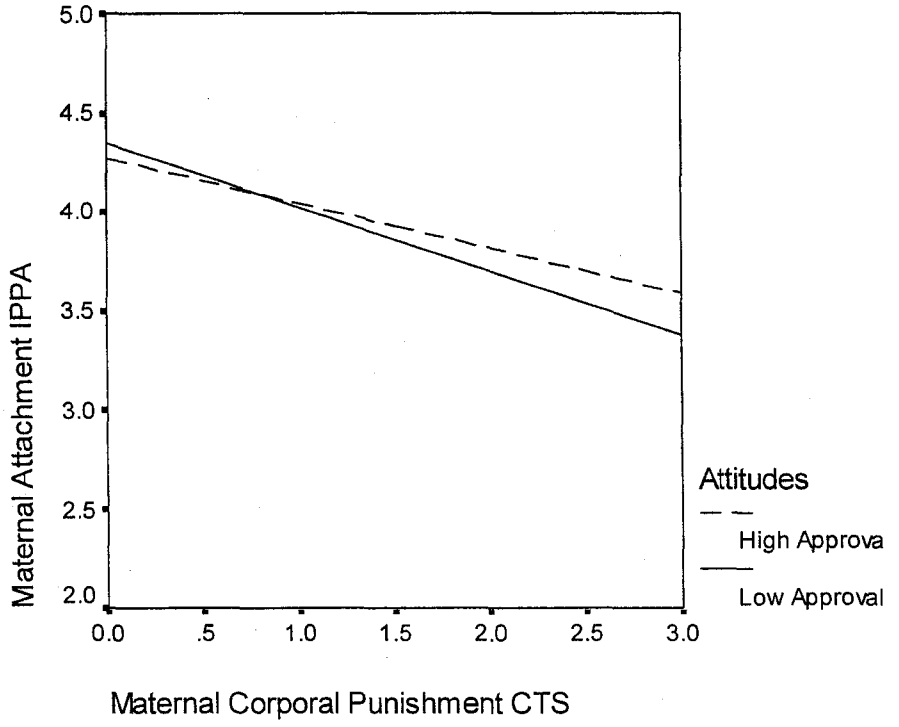


Figure 4

Path Analysis Testing Indirect Effect of Corporal Punishment on Maternal Attachment via Perceived Threat

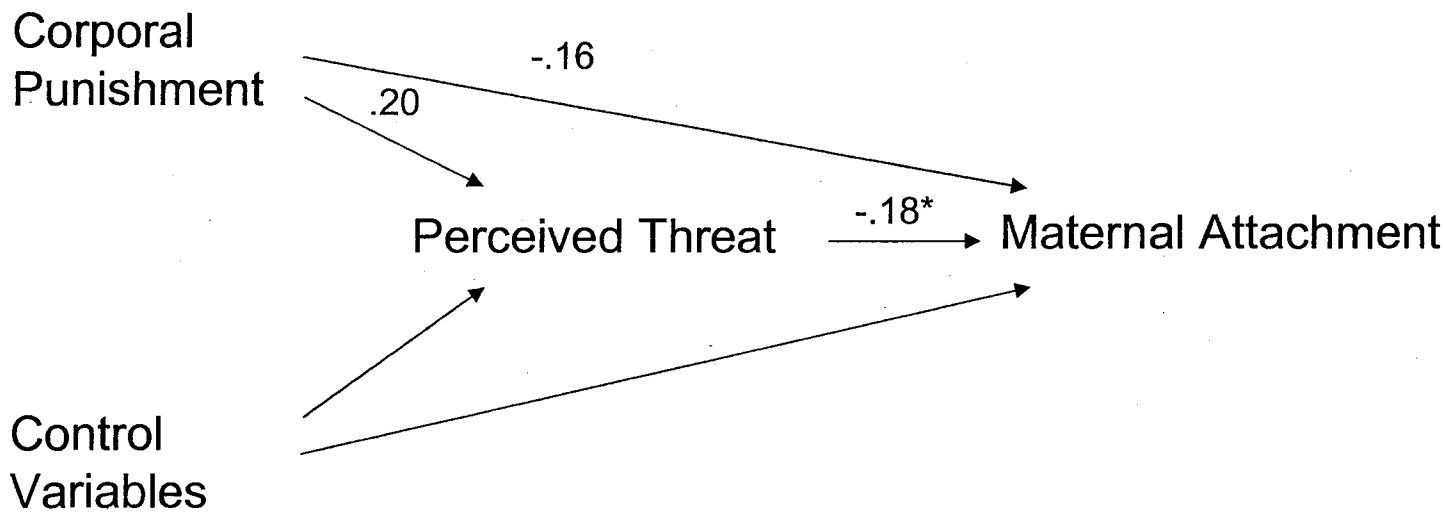


Figure 5

Path Analysis Testing Indirect Effect of Corporal Punishment on Attachment to Father via Perceived Threat

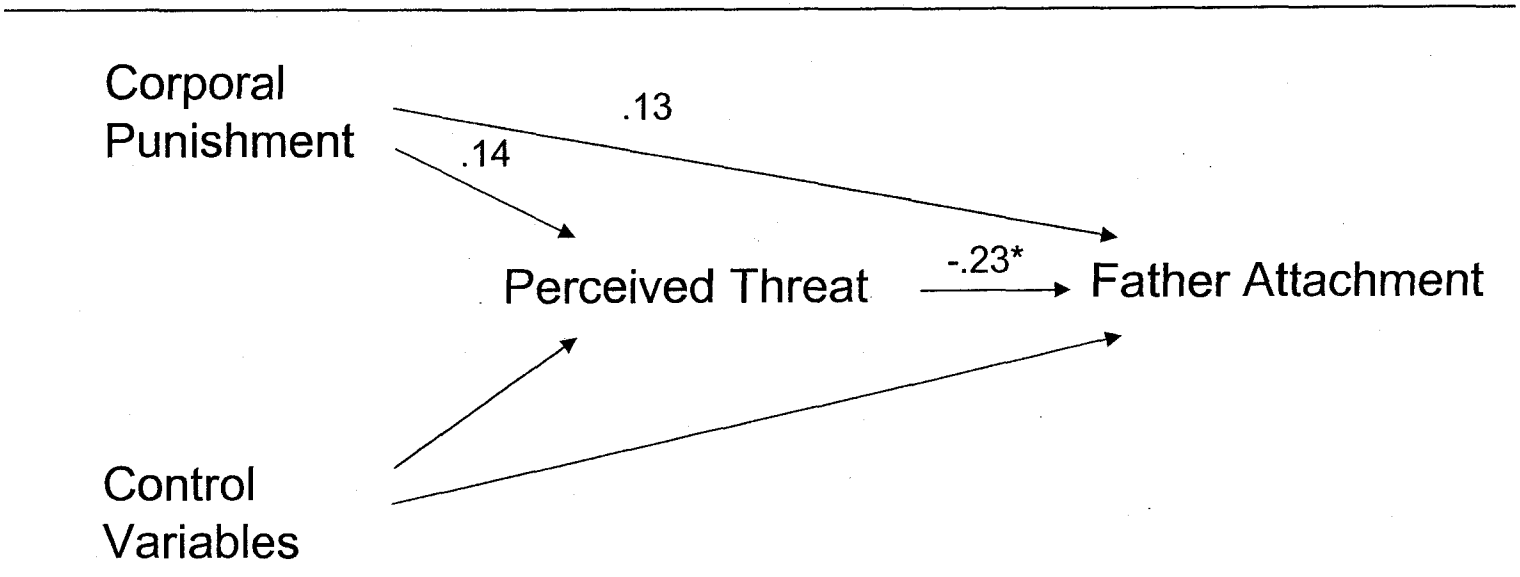


Figure 6

Path Analysis Testing Indirect Effect of Corporal Punishment on Depression via Perceived Threat

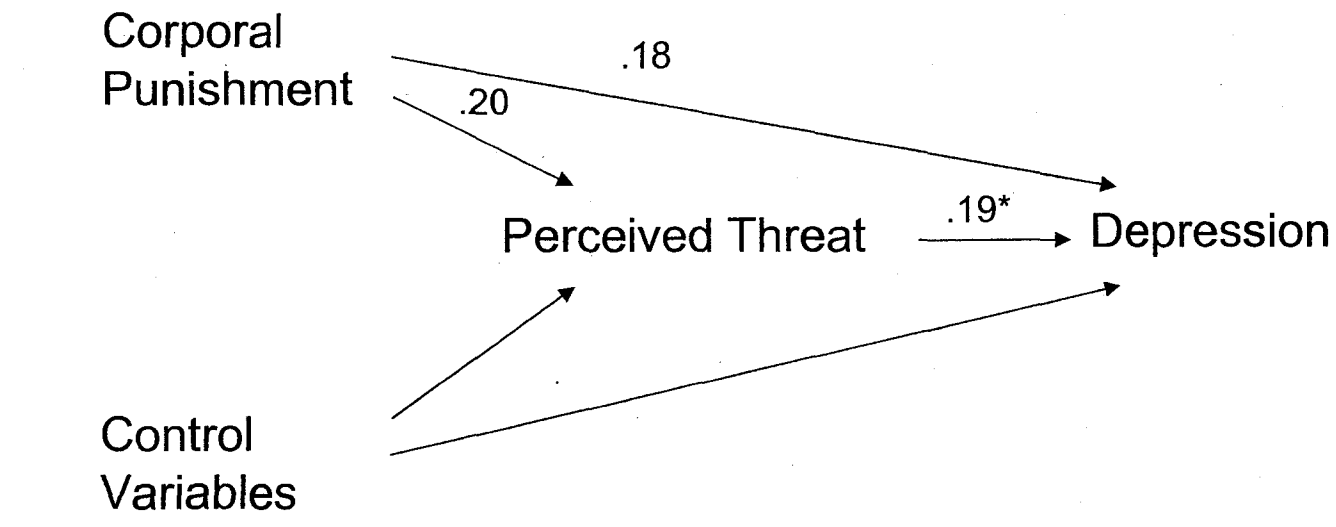


Figure 7

Path Analysis Testing Indirect Effect of Corporal Punishment on Self-Esteem via Perceived Threat

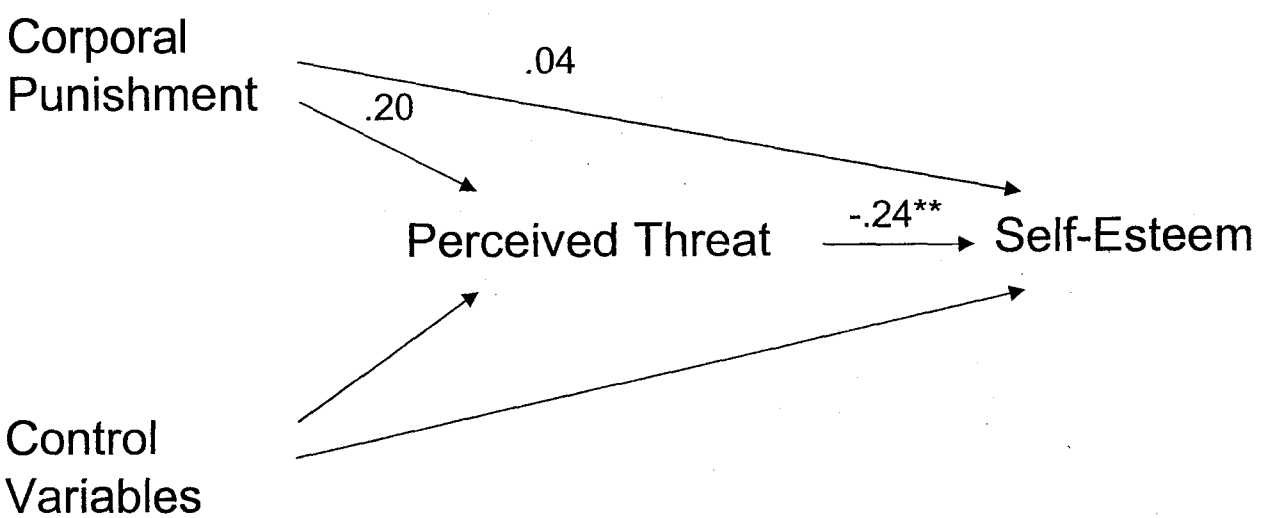


Figure 8

Path Analysis Testing Indirect Effect of Corporal Punishment on Depression via Perceived Threat (Father Analysis)

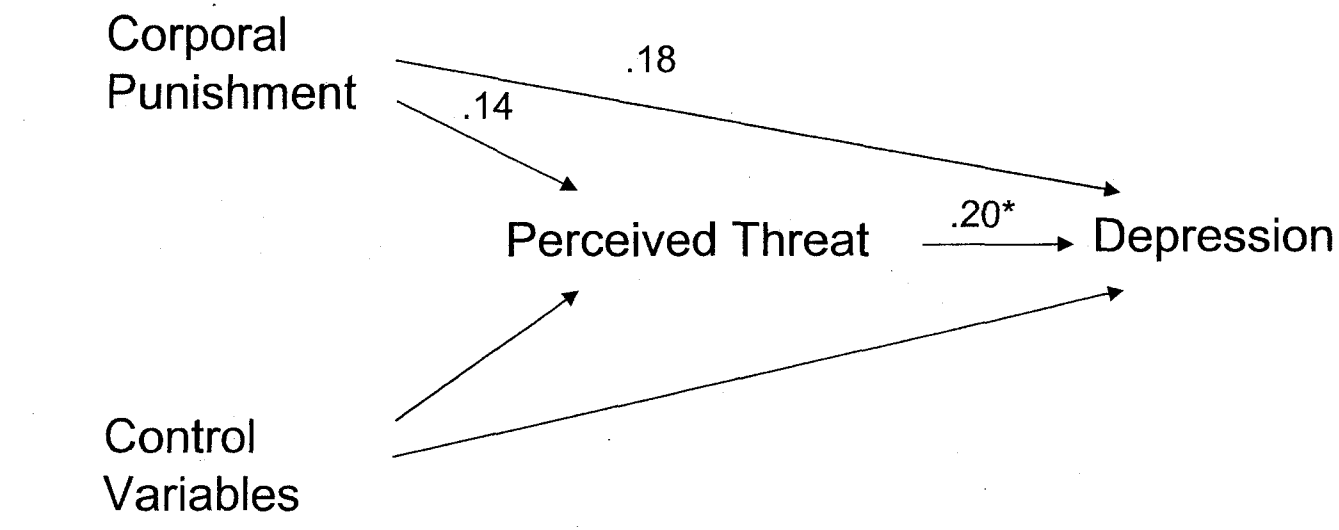
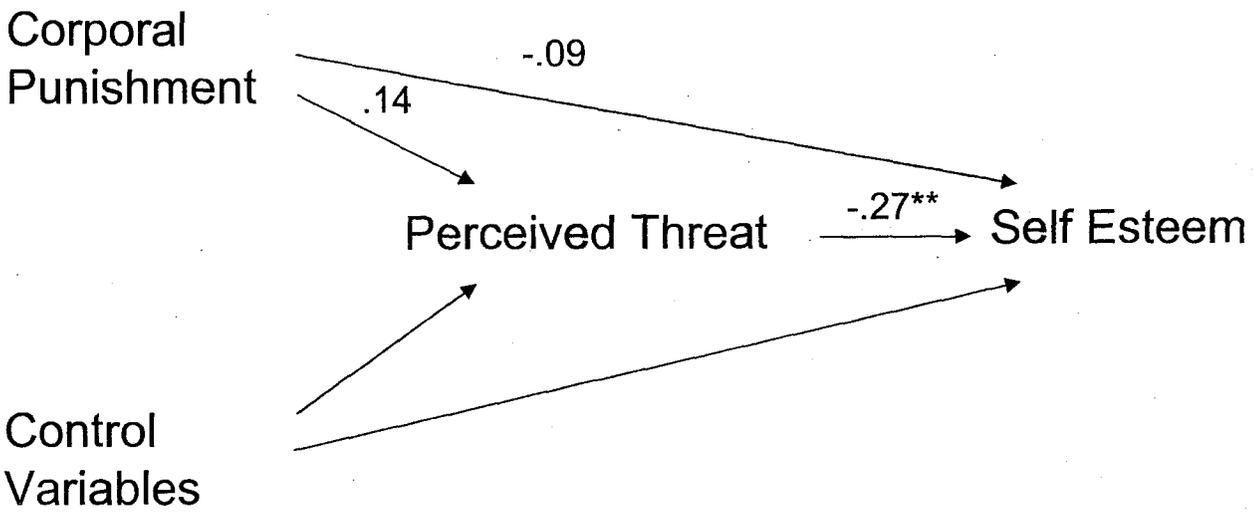


Figure 9

Path Analysis Testing Indirect Effect of Corporal Punishment on Self Esteem via Perceived Threat (Father Analysis)



TABLES

Table 1

Overview of the Timing of the Assessments of Interest by Childrens' Age

Infancy and Toddlerhood				Early Childhood		
1 month	*6 Months*	*15 Months*	*24 Months*	*36 Months*	*54 Months*	*1st Grade*
Maternal Depression	Maternal Depression	Maternal Depression	Maternal Depression	Maternal Depression	Maternal Depression	Maternal Depression
Income-to-Needs	Income-to-Needs	Income-to-Needs	Income-to-Needs	Income-to-Needs	Income-to-Needs	Income-to-Needs
Maternal Sensitivity	Maternal Sensitivity	Maternal Sensitivity	Maternal Sensitivity	Maternal Sensitivity	Maternal Sensitivity	Maternal Sensitivity
						Maternal Control
		Corporal Punishment		Corporal Punishment	Corporal Punishment	
	Child Temperament			Behavior Problems		Behavior Problems
		Attachment	Attachment	Attachment		
				Felt Security		Felt Security
						Mother-Child Relationship

Table 2

Descriptive Statistics for Variables Used for the NICHD SECCYD Analyses

Variable	*Child Age*	*N*	*M*	*SD*	*Range* Minimum	*Range* Maximum
Corporal Punishment Variables						
Corporal Punishment	15 Months	1234	.50	.61	.00	2.00
Corporal Punishment	36 Months	1179	.39	.58	.00	2.00
Corporal Punishment	54 Months	1047	.20	.44	.00	2.00
Outcome Variables						
Attachment (Q Sort)	24 Months	1197	.29	.21	-.49	.75
Internalizing Behavior	36 Months	1175	51.21	9.50	30.00	91.00
Externalizing Behavio	36 Months	1175	51.13	8.50	30.00	80.00
Felt Security	36 Months	1161	5.25	1.34	1.00	7.00
Internalizing Behavior	First Grade	1028	48.27	8.94	33.00	79.00
Externalizing Behavio	First Grade	1028	48.64	9.79	30.00	83.00
Felt Security	First Grade	1004	5.31	1.29	1.00	7.00
Positive Relationship	First Grade	1016	33	7.16	33.00	75.00
Control Variables						
Child Temperament	6 Months	1279	3.19	.40	1.54	4.72
Depression	1 Month	1363	11.37	9.02	.00	53.00
Depression	6 Months	1278	8.97	8.34	.00	52.00
Depression	15 Months	1241	9.05	8.17	.00	54.00
Depression	24 Months	1119	9.40	8.63	.00	51.00
Depression	36 Months	1202	9.23	8.63	.00	57.00
Depression	54 Months	1075	9.83	8.70	.00	55.00
Depression	First Grade	1009	8.39	8.47	.00	50.00

Table 2 Continued

Descriptive Statistics for Variables Used for the NICHD SECCYD Analyses

Variable	*Child Age*	*N*	*M*	*SD*	*Range*	
					Minimum	*Maximum*
Control Variables						
Income-to-Needs	1 Month	1274	2.76	2.66	.00	25.08
Income-to-Needs	6 Months	1271	3.53	3.19	.00	27.89
Income-to-Needs	15 Months	1234	3.60	3.29	.00	35.64
Income-to-Needs	24 Months	1190	3.62	3.11	.00	27.30
Income-to-Needs	36 Months	1208	3.52	3.12	.00	28.50
Income-to-Needs	54 Months	1073	3.59	3.17	.10	56.96
Income-to-Needs	First Grade	982	3.95	3.03	.07	21.29
Maternal Sensitivity	6 Months	1272	9.21	1.78	3	12
Maternal Sensitivity	15 Months	1240	9.40	1.64	3	12
Maternal Sensitivity	24 Months	1172	9.35	1.76	3	12
Maternal Sensitivity	36 Months	1161	17.19	2.78	4	21
Maternal Sensitivity	54 Months	1004	16.88	3.03	5	21
Maternal Sensitivity	First Grade	1040	16.95	2.91	4	21
Harsh Control	First Grade	1003	21.42	3.26	9.00	31.00

Table 3

Correlation Matrix of Variables Used in the NICHD SECCYD Analyses

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Corporal Punishment Variables																				
1. Corporal Punishment 15 Months	--	.32	-.18	.16	.20	.09	.19	.14	-.13	-.11	-.12	.11	.09	-.02	-.01	-.22	-.34	.20	-.26	.33
2. Corporal Punishment 36 Months		--	-.17	.18	.22	.09	.22	.20	-.20	-.17	-.09	.11	.06	-.02	-.10	-.23	-.32	.26	-.24	.31
Outcome Variables																				
3. Attachment 24 Months			--	-.18	-.21	-.05	-.13	-.11	.18	.10	.13	-.16	-.12	.04	.13	.24	.29	-.18	.15	.16
4. Internalizing 36 Months				--	.70	.44	.42	.20	-.14	-.40	.04	.10	.27	.00	-.13	-.18	-.25	.42	-.19	.21
5. Externalizing 36 Months					--	.38	.56	.32	-.15	-.46	-.04	.08	.24	-.01	-.11	-.21	-.22	.39	-.19	.20
6. Internalizing First Grade						--	.58	.24	-.05	-.47	.00	.02	.11	-.03	-.05	-.08	-.07	.32	-.07	.09
7. Externalizing First Grade							--	.46	-.15	-.64	.03	.07	.13	-.03	-.04	-.16	-.19	.33	-.19	.21
8. Externalizing First Grade (F)								--	-.12	-.31	-.01	.04	.07	.00	-.04	-.12	-.17	.19	-.17	.13
9. Felt Security First Grade									--	.14	-.06	-.28	-.10	.06	.14	.36	.60	-.16	.23	.25
10. Positive Relationship Scale										--	.02	-.04	-.13	.07	.08	.12	.13	-.32	.05	-.09
Control Variables																				
11. Sex											--	.00	.05	.03	-.06	.10	.06	.00	.03	-.04
12. Ethnicity (African-American)												--	.18	-.06	-.09	-.22	-.40	.17	-.30	.36
13. Temperament													--	.01	-.06	-.12	-.20	.24	-.16	.10
14. Attachment 15 Months														--	.06	.08	.10	.00	.05	-.06
15. Attachment 36 Months															--	.20	.20	-.09	.08	.27
16. Felt Security 36 Months																--	.66	-.24	.30	.27
17. Average Maternal Sensitivity																	--	-.34	.44	.42
18. Average Depression																		--	-.33	.18
19. Average Income																			--	-.36
20. Harsh Control																				--

Note. The ethnicity, sex, and attachment variables at 15 and 36 months are dichotomous so correlations with these variables are point-biserial. All correlations > .06 or < -.06 are significant at the .05 level.

Table 4

Summary of Hierarchical Regression Analysis of Variables Predicting 24 Month Q-Sort

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Sex	.13***	.05	.01	.12***	.05	.01	.11***	.11
Child Temperament	-.12***	-.03	.02	-.07*	-.03	.02	-.06*	-.06
African-American	-.15***	-.04	.02	-.06*	-.04	.02	-.07*	-.06
Mean Income-to-Needs	.14***	.00	.00	.01	.00	.00	.00	.00
Mean Depression	-.19***	.00	.00	-.11**	.00	.00	-.10**	-.09
Mean Sensitivity	.25***	.04	.01	.16***	.04	.01	.14***	.12
Strange Situation	.04	.00	.01	.01	.01	.01	.02	.02
Corporal Punishment								
Corporal Punishment	-.17***				-.03	.01	-.08**	-.07

Note. Adjusted R^2 for the final model = .09.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 5

Summary of Hierarchical Regression Analysis of Variables Predicting 36 Month Externalizing Behaviors

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Sex	-.05	-.91	.47	-.05	-.76	.47	-.05	-.04
Child Temperament	.24***	3.42	.61	.16***	3.40	.61	.16***	.15
African-American	.07*	-1.09	.82	-.04	-.96	.81	-.04	-.03
Mean Income-to-Needs	-.17***	-.13	.10	-.04	-.09	.10	-.03	-.03
Mean Depression	.38***	.42	.04	.32***	.41	.04	.31***	.28
Mean Sensitivity	-.20***	-.64	.39	-.06	-.31	.40	-.03	-.02
Strange Situation	-.02	-.17	.48	-.01	-.20	.48	-.01	-.01
Corporal Punishment								
Corporal Punishment	.20***				1.45	.41	.10***	.10

Note. Adjusted R^2 for the final model = .19.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 6

Summary of Hierarchical Regression Analysis of Variables Predicting 36 Month Internalizing Behaviors

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Sex	.04	.64	.52	.03	.74	.52	.04	.04
Child Temperament	.25***	3.71	.67	.16***	3.71	.67	.16***	.15
African-American	.09**	-.81	.90	-.03	-.73	.90	-.02	-.02
Mean Income-to-Needs	-.17***	-.06	.11	-.02	-.04	.11	-.01	-.01
Mean Depression	.42***	.52	.04	.35***	.52	.04	.35***	.31
Mean Sensitivity	-.22***	-1.11	.43	-.09*	-.90	.44	-.07*	-.06
Strange Situation	.00	.22	.53	.01	.20	.53	.01	.01
Corporal Punishment								
Corporal Punishment	.16***				.93	.45	.06*	.06

Note. Adjusted R^2 for the final model = .18.

*$p < .05$, **$p < .01$, ***$p < .001$.

Table 7

Summary of Hierarchical Regression Analysis of Variables Predicting Internalizing Behaviors in First Grade

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Internalizing (36 Months)	.44***	.36	.03	.38***	.36	.03	.38***	.34
Sex	-.01	-.39	.51	-.02	-.39	.51	-.02	-.02
African-American	.01	-1.11	.93	-.04	-1.10	.93	-.04	-.03
Child Temperament	.11***	-.46	.67	-.02	-.46	.67	-.02	-.02
Mean Income-to-Needs	-.08*	.05	.11	.02	.05	.11	.02	.01
Mean Depression	.33***	.33	.05	.22***	.33	.05	.22***	.19
Mean Sensitivity	-.08*	.93	.46	.07*	.93	.47	.07*	.06
Strange Situation	-.05	-.25	.54	-.01	-.25	.54	-.01	-.01
Corporal Punishment								
Corporal Punishment	.09				.02	.67	.00	0

Note. Adjusted R^2 for the final model = .09.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 8

Summary of Hierarchical Regression Analysis of Variables Predicting Externalizing Behaviors in First Grade

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Externalizing (36 months)	.58***	.61	.03	.53***	.60	.03	.52***	.48
Sex	.02	1.09	.51	.06*	1.15	.51	.06*	.06
African-American	.07*	-.40	.93	-.01	-.37	.93	-.01	-.01
Child Temperament	.13***	-1.15	.67	-.05	-1.10	.67	-.05	-.05
Mean Income-to-Needs	-.19***	-.21	.11	-.06*	-.18	.11	-.05	-.05
Mean Depression	.35***	.22	.05	.14***	.22	.05	.13***	.12
Mean Sensitivity	-.20***	-.43	.46	-.03	-.21	.47	-.02	-.02
Strange Situation	-.04	.60	.54	.03	.62	.54	.03	.03
Corporal Punishment								
Corporal Punishment	.22***				1.68	.68	.07*	.06

Note. Adjusted R^2 for the final model = .36.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 9

Summary of Hierarchical Regression Analysis of Variables Predicting Father Ratings of Externalizing Behaviors in First Grade

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Externalizing (36 Months)	.33***	.32	.04	.29***	.30	.04	.27***	.26
Sex	.00	.43	.66	.02	.46	.65	.02	.02
African-American	.04	-.97	1.44	-.03	-.82	1.43	-.02	-.02
Child Temperament	.09*	-.28	.87	-.01	-.11	.86	.00	-.01
Mean Income-to-Needs	-.17***	-.31	.13	-.09*	-.26	.13	-.08*	-.08
Mean Depression	.21***	.11	.06	.07	.10	.06	.06	.06
Mean Sensitivity	-.17***	-.99	.62	-.07	-.62	.63	-.04	-.06
Strange Situation	-.04	.01	.70	.00	.02	.69	.00	.00
Corporal Punishment								
Corporal Punishment	.20***				2.48	.90	.10**	.10

Note. Adjusted R^2 for the final model = .13.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 10

Summary of Hierarchical Regression Analysis of Variables Predicting Felt Security in First Grade

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Felt Security	.34***	.27	.03	.27***	.27	.03	.27***	.25
Child Sex	-.07*	-.26	.08	-.10**	-.27	.08	-.11***	-.11
African- American	-.25***	-.53	.14	-.13***	-.54	.14	-.13***	-.12
Child Temperament	-.10**	-.08	.10	-.02	-.08	.10	-.03	-.02
Mean Depression	-.14***	.00	.01	.00	.00	.01	.01	.01
Mean Income	.21***	.03	.02	.05	.02	.02	.05	.04
Harsh Control	-.25***	-.04	.01	-.11**	-.04	.01	-.09**	-.08
Corporal Punishment								
Corporal Punishment	-.17***				-.22	.10	-.07*	-.06

Note. Adjusted R^2 for the final model = .17

*$p < .05$, **$p < .01$, ***$p < .001$.

Table 11

Summary of Hierarchical Regression Analysis of Variables Predicting Positive Relationship Scale in First Grade

		Model 1			Model 2			
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*	*sr*
Control Variables								
Strange Situation	.08*	.69	.47	.05	.65	.47	.04	.05
Felt Security Rating Scale	.12***	.17	.22	.03	.18	.22	.03	.02
Child Sex	.04	.70	.45	.05	.67	.45	.05	.05
African- American	-.06	.20	.82	.01	.14	.82	.01	.01
Child Temperament	-.13***	-1.07	.58	-.06	-1.05	.58	-.06	-.06
Mean Sensitivity	.14***	.17	.48	.02	.02	.48	.00	.00
Mean Depression	-.32***	-.37	.04	-.31***	-.37	.04	-.31***	-.28
Mean Income	.06	-.18	.09	-.07*	-.20	.09	-.08*	-.07
Corporal Punishment								
Corporal Punishment	-.13***				-.84	.41	-.07*	-.06

*$p < .05$, **$p < .01$, ***$p < .001$.

Table 12

Temperament as a Moderator of Corporal Punishment in Infancy

Variable	*r*	*B*	*SE*	*β*	*sr*
Sex	-.05	-.77	.47	-.05	-.04
Child Temperament	.24***	1.41	.25	.16***	.16
African-American	.07*	-.98	.81	-.04	-.03
Mean Income-to-Needs	-.17***	-.10	.10	-.03	-.03
Mean Depression	.38***	.40	.04	.30***	.28
Mean Sensitivity	-.20***	-.24	.40	-.02	-.02
Strange Situation	-.02	-.23	.48	-.01	-.01
Corporal Punishment	.20***	.91	.25	.11***	.10
Corporal Punishment X Temperament	.08*	.47	.24	.05*	.05

Note. Corporal punishment and temperament are standardized in this analysis.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 13

Pattern Matrix of Exploratory Factor Analysis of Corporal Punishment Stress Measure- Mother Version

Items	Factors					
	I	II	III	IV	V	VI
The spankings I received from my mother made me stronger	**.88**	.01	.01	-.01	.07	.04
The spankings I received from my mother had a positive impact on me	**.87**	-.15	.06	.03	.05	.05
The spankings that I received made me into a better person	**.87**	-.11	.00	.08	-.03	-.03
My mother's spanking me had important consequences for me	**.71**	.09	.00	.03	-.05	-.14
I was affected by my mother's spankings	**.60**	.26	-.13	-.12	-.20	-.14
My mother's spankings played a central role in my development	**.46**	-.18	-.09	.12	-.40	-.09
My mother's spanking me had a negative outcome on me	**-.14**	**.87**	-.08	.04	.01	-.11
My mother's spanking me negatively impacted me	-.15	**.82**	-.14	.10	.04	-.12
My mother's spanking me made me feel threatened	.08	**.76**	.10	.01	-.02	.04
My mother's spanking me made me feel anxious	.11	**.66**	.17	.06	-.06	.15
I could turn to others to help control my mother's spankings	-.07	.02	**.86**	-.01	.03	-.06
Others were able to influence the frequency and severity of my mothers' spankings	-.05	.05	**.85**	.01	-.08	.03
There was someone I could turn to who could influence my mother's spankings	.08	-.04	**.68**	.05	.06	-.17
It was beyond anyone's power to influence my mother's use of spankings	-.02	.15	.00	**.86**	-.02	.10
It was totally hopeless to try to influence my mother's use of spankings	.03	.03	.20	**.83**	-.04	.16
Once my mother decided to spank me, there was nothing that could be done to control that	.04	-.01	-.10	**.81**	.01	-.19
My mother's spanking me had long-term consequences for me	-.09	-.05	-.08	.11	**-.88**	-.06
There were serious implications for me from my mother's spankings	.00	.09	.09	-.07	**-.85**	.03
I had what it took to determine the spankings I received from my mother	.11	.07	.04	-.05	.08	**-.85**
I had the skills necessary to control the types of spankings that my mother would administer to me	-.06	-.04	.02	.08	-.10	**-.85**
I had the ability to influence the spankings that I received from my mother	.07	-.01	.17	-.07	-.03	**-.82**
Eigenvalue	4.71	3.66	2.20	2.00	1.29	1.07
Percent Variance Explained	22.40	17.44	10.48	9.52	6.14	5.12
Cronbach's α	.86	.80	.78	.82	.72	.85

Table 14

Correlation Matrix of Maternal Corporal Punishment Stress Factors and Outcome Variables

Variables	1	2	3	4	5	6	7	8	9
Stress Factors									
1. Factor I (Positive Challenge)	--	-.09	.11	.09	.24**	.43***	.13	.00	.19*
2. Factor II (Threat)		--	.14	.37***	.21*	.07	-.26**	.27**	-.21*
3. Factor III (Controllable by Others)			--	.13	.01	.27**	-.01	.04	-.10
4. Factor IV (Uncontrollability)				--	.20*	-.01	-.08	.01	-.08
5. Factor V (Centrality)					--	.23**	-.20*	.12	.03
6. Factor VI (Controllable-by-Self)						--	.01	.09	-.10
Outcome Variables									
7. Self Esteem							--	.48***	.39***
8. Depression								--	-.29***
9. Maternal Attachment									--

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

Table 15

Pattern Matrix of Exploratory Factor Analysis of Corporal Punishment Stress Measure- Father Version

Items	Factors				
	I	II	III	IV	V
My father's spanking me had long-term consequences for me	**.77**	.06	.03	.11	-.18
My father's spanking me had a negative outcome on me	**.73**	-.33	-.06	-.23	-.04
My father's spanking me negatively impacted me	**.69**	-.42	-.01	-.23	-.02
There were serious implications for me from my father's spankings	**.71**	.21	.01	.19	-.19
My father's spanking me made me feel anxious	**.60**	.13	-.16	-.11	.21
My father's spanking me made me feel threatened	**.57**	-.11	-.16	-.19	.06
The spankings I received from my father had a positive impact on me	-.21	**.86**	.02	.00	-.17
The spankings that I received made me into a better person	-.11	**.86**	-.05	-.02	-.08
The spankings I received from my father made me stronger	-.12	**.84**	-.07	-.11	-.04
My father's spanking me had important consequences for me	.13	**.67**	-.09	-.05	.01
I was affected by my father's spankings	.40	**.52**	.15	-.13	.16
My father's spankings played a central role in my development	.38	**.51**	.12	-.01	-.03
I could turn to others to help control my father's spankings	.02	.05	**-.92**	.02	-.07
Others were able to influence the frequency and severity of my fathers' spankings	.08	.02	**-.89**	.09	-.08
There was someone I could turn to who could influence my father's spankings	-.05	.01	**-.81**	-.13	-.05
It was beyond anyone's power to influence my father's use of spankings	.01	.11	-.09	**-.89**	.07
Once my father decided to spank me, there was nothing that could be done to control that	-.04	.03	.18	**-.86**	-.26
It was totally hopeless to try to influence my father's use of spankings	.02	.08	-.20	**-.81**	.04
I had what it took to determine the spankings I received from my father	.02	.04	-.10	-.02	**-.89**
I had the ability to influence the spankings that I received from my father	.10	.03	-.09	-.10	**-.85**
I had the skills necessary to control the types of spankings that my father would administer to me	.04	.03	-.06	-.05	**-.85**
Eigenvalue	5.44	3.63	2.64	1.76	1.32
Percent Variance Explained	25.92	17.28	12.58	8.39	6.29
Cronbach's α	.82	.82	.89	.87	.92

Table 16

Correlation Matrix of Father Corporal Punishment Factors and Outcome Variables

Variables	1	2	3	4	5	6	7	8
Stress Factors								
1. Factor I (Enduring Threat)	–	.14	.21*	.38***	.15	-.29**	.28**	-.25**
2. Factor II (Central Challenge)		–	.06	.18*	.26**	.02	.02	.13
3. Factor III (Controllable by Others)			–	.25**	.48***	-.17	.15	-.13
4. Factor IV (Uncontrollability)				–	.16+	-.25**	.20*	-.28**
5. Factor V (Controllable-by-Self)					–	.01	.11	.10
Outcome Variables								
6. Self Esteem						–	-.48***	.35***
7. Depression							–	-.20*
8. Father Attachment								–

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

Table 17

Pattern Matrix of Exploratory Factor Analysis of Corporal Punishment Attitudes Measure

Items	Factors	
	I	II
It is sometimes necessary to discipline a child with a good, hard spanking.	**-.74**	.17
Since paddling and spanking children may have negative consequences, they should be banned	**.71**	-.09
Scaring a child, now and then, by the promise of a whipping is likely to have negative emotional consequences.	**.68**	.19
Physical punishment of children should not be allowed.	**.66**	-.12
Corporal punishment by parents is never justified.	**.64**	.11
Corporal punishment is not necessary as a means of discipline	**.62**	-.09
Parents have the responsibility to punish children by spanking	**-.55**	.32
Corporal punishment should be used frequently as a method of discipline	.10	**.89**
Corporal punishment is just and necessary.	.02	**.68**
Physical punishment is an effective way to control children's behavior.	-.42	**.55**
If you spare the rod you will spoil the child	-.35	**.53**
Eigenvalue	5.20	1.20
Percent Variance Explained	40.02	9.23
Cronbach's α	.85	.75

Table 18

Descriptive Statistics for Variables Used for Analyses in Study 2

Variable	*N*	*M*	*SD*	*Range*	
				Minimum	*Maximum*
Mother Corporal Punishment	172	.81	.64	.00	2.83
Father Corporal Punishment	162	.68	.60	.00	2.83
Mother Physical Abuse	172	.07	.25	.00	2.14
Father Physical Abuse	162	.07	.24	.00	2.00
Neglect	172	1.31	.51	1.00	4.00
Authoritative Parenting	174	3.61	.54	2.20	5.00
Permissive Parenting	174	2.42	.53	1.20	3.90
Authoritarian Parenting	174	3.17	.57	1.70	5.00
Mother Attachment	173	4.09	.56	2.24	4.92
Father Attachment	160	3.79	.71	1.72	4.96
Self Esteem	174	3.12	.43	1.90	4.00
Depression	174	.77	.41	.05	2.40
Religious Fundamentalism	174	3.04	.60	1.21	4.37
Corporal Punishment Stress Factor 1 (M)	140	3.37	.95	1.00	5.00
Corporal Punishment Stress Factor 2 (M)	141	1.63	.75	1.00	4.25
Corporal Punishment Stress Factor 3 (M)	135	2.24	.95	1.00	5.00
Corporal Punishment Stress Factor 4 (M)	139	2.22	1.00	1.00	5.00
Corporal Punishment Stress Factor 5 (M)	140	1.81	.102	1.00	5.00
Corporal Punishment Stress Factor 6 (M)	138	2.95	1.08	1.00	5.00
Corporal Punishment Stress Factor 1 (F)	121	1.96	.86	1.00	4.50
Corporal Punishment Stress Factor 2 (F)	121	3.19	.90	1.00	5.00
Corporal Punishment Stress Factor 3 (F)	115	2.44	1.05	1.00	5.00

Table 18 Continued

Descriptive Statistics for Variables Used for Analyses in Study 2

Variable	*N*	*M*	*SD*	*Range*	
				Minimum	*Maximum*
Corporal Punishment Stress Factor 4 (F)	119	2.51	1.12	1.00	5.00
Corporal Punishment Stress Factor 5 (F)	117	2.65	1.12	1.00	5.00
Corporal Punishment Attitudes	174	3.33	.86	1.00	5.00

Table 19

Correlation Matrix of Variables Used in Study 2

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Corporal Punishment Variables																	
1. Maternal Corporal Punishment	--	.82***	.37***	.37***	-.11	.28***	-.30***	-.11	.42***	-.32***	-.19*	-.11	.18*	.07	-.24**	.20*	.21**
2. Father Corporal Punishment		--	.41***	.34***	-.12	.19*	-.29***	-.20*	.39***	-.20**	-.14	-.12	.12	.07	.22*	.23*	.19*
Control Variables																	
3. Father Physical Abuse			--	.94***	-.04	.21**	-.17*	-.03	.16*	-.13	-.15	.04	-.02	.00	.18*	.09	-.09
4. Maternal Physical Abuse				--	-.06	.17*	-.11	.03	.13	-.14	-.09	.06	.00	.04	.16	.06	-.04
5. Sex					--	-.25**	.04	-.24**	-.11	-.05	-.09	-.11	.04	.00	.08	-.01	-.22**
6. Neglect						--	-.31***	.02	.12	-.22**	-.18*	-.14	-.01	-.11	.07	.12	.07
7. Authoritative Parenting							--	.07	-.18*	.47***	.48***	.29***	-.15	-.04	-.07	-.18	-.02
8. Permissive Parenting								--	-.38***	.14	.15	-.02	.06	-.26**	.08	.03	-.16*
9. Authoritarian Parenting									--	-.17*	-.18*	-.14	.15*	.16*	.13	.17	.30***
Outcome Variables																	
10. Maternal Attachment										--	.42***	.39***	-.29***	-.04	-.21*	-.11	-.04
11. Father Attachment											--	.35***	-.20*	.04	-.19*	-.25**	.02
12. Self Esteem												--	-.48***	-.12	-.26**	-.29**	-.03
13. Depression													--	-.01	.27**	.28**	.01
Intervening Variables																	
14. Religious Fundamentalism														--	-.11	-.09	.22**
15. Maternal Threat Subscale															--	.67***	-.25**
16. Father Enduring Threat Subscale																--	-.13
17. Corporal Punishment Attitude																	--

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

Table 20

Summary of Hierarchical Regression Analysis of Variables Predicting Attachment to Mother

		Model 1			Model 2		
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*
Control Variables							
Sex	-.08	-.14	.10	-.12	-.10	.10	-.08
Authoritative Parenting	.48***	.42	.09	.40***	.43	.08	.40***
Permissive Parenting	.14	.07	.09	.07	.11	.09	.11
Authoritarian Parenting	-.12	.05	.09	.05	.08	.09	.08
Neglect	-.22*	-.09	.09	-.09	-.08	.08	-.08
Maternal Physical Abuse	-.14	-.06	.17	-.03	-.03	.17	-.01
Maternal Corporal Punishment	-.34***	-.17	.08	-.20*	-.14	.08	-.16
Corporal Punishment Stress							
Threat Subscale	-.23**				-.14	.06	-.18*

Note. Adjusted R^2 = .28.
*p < .05, **p < .01, ***p < .001.

Table 21

Summary of Hierarchical Regression Analysis of Variables Predicting Attachment to Father

		Model 1			Model 2		
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*
Control Variables							
Sex	-.07	-.13	.13	-.09	-.11	.12	-.08
Authoritative Parenting	.54***	.68	.12	.52***	.65	.11	.50***
Permissive Parenting	.12	.03	.12	.03	.07	.11	.06
Authoritarian Parenting	-.16	-.13	.11	-.11	-.07	.11	-.06
Neglect	-.22*	-.12	.11	-.10	-.10	.11	-.08
Father Physical Abuse	-.16	-.17	.23	-.06	-.19	.23	-.07
Father Corporal Punishment	-.17	.12	.12	.10	.15	.12	.13
Corporal Punishment Stress							
Threat Subscale	-.31**				-.20	.07	-.23**

Note. Adjusted R^2 = .32.
*p < .05, **p < .01, ***p < .001.

Table 22

Summary of Hierarchical Regression Analysis of Variables Predicting Depression

		Model 1			Model 2		
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*
Control Variables							
Sex	.09	.14	.07	.18+	.11	.07	.14
Authoritative Parenting	-.06	-.01	.07	-.01	-.01	.07	-.02
Permissive Parenting	.08	.16	.07	.23*	.14	.07	.19*
Authoritarian Parenting	.13	.12	.07	.17	.10	.07	.14
Neglect	-.03	-.03	.07	-.04	-.03	.07	-.04
Maternal Physical Abuse	-.04	-.18	.13	-.12	-.20	.13	-.14
Maternal Corporal Punishment	.19*	.14	.06	.22*	.11	.06	.18
Corporal Punishment Stress							
Threat Subscale	.25**				.10	.05	.19*

Note. Adjusted R^2 = .08.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 23

Summary of Hierarchical Regression Analysis of Variables Predicting Self Esteem

		Model 1			Model 2		
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*
Control Variables							
Sex	-.10	-.17	.08	-.20*	-.14	.08	-.16
Authoritative Parenting	.28**	.21	.07	.26**	.22	.07	.27**
Permissive Parenting	-.06	-.15	.07	-.19*	-.11	.07	-.14
Authoritarian Parenting	-.09	-.10	.07	-.14	-.07	.07	-.10
Neglect	-.13	-.09	.07	-.11	-.08	.07	-.10
Maternal Physical Abuse	.09	.24	.14	.15	.26	.14	.16
Maternal Corporal Punishment	-.08	-.01	.07	-.01	.02	.07	.04
Corporal Punishment Stress							
Threat Subscale	-.25**				-.14	.05	-.24**

Note. Adjusted R^2 = .14.
*p < .05, **p < .01, ***p < .001.

Table 24

Summary of Hierarchical Regression Analysis of Variables Predicting Depression

		Model 1			Model 2		
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*
Control Variables							
Sex	.09	.14	.08	.18	.13	.08	.16
Authoritative Parenting	-.06	-.01	.07	-.02	.00	.07	.00
Permissive Parenting	.10	.19	.08	.27*	.17	.07	.24*
Authoritarian Parenting	.15	.15	.07	.22*	.12	.07	.18
Neglect	-.05	-.01	.07	-.02	-.02	.07	-.03
Father Physical Abuse	-.08	-.26	.15	-.17	-.26	.15	-.17
Father Corporal Punishment	.16	.14	.08	.20	.12	.07	.18
Corporal Punishment Stress							
Threat Subscale	.26**				.10	.05	.20*

Note. Adjusted R^2 = .10.
*p < .05, **p < .01, ***p < .001.

Table 25

Summary of Hierarchical Regression Analysis of Variables Predicting Self Esteem

		Model 1			Model 2		
Variable	*r*	*B*	*SE*	*β*	*B*	*SE*	*β*
Control Variables							
Sex	-.05	-.13	.08	-.16	-.11	.08	-.13
Authoritative Parenting	.30**	.19	.07	.25*	.17	.07	.23*
Permissive Parenting	-.12	-.18	.08	-.24*	-.15	.07	-.20*
Authoritarian Parenting	-.06	-.08	.07	-.11	-.04	.07	-.06
Neglect	-.15	-.10	.07	-.13	-.08	.07	-.11
Father Physical Abuse	.07	.30	.15	.19	.29	.15	.18
Father Corporal Punishment	-.16	-.09	.08	-.13	-.06	.07	-.09
Corporal Punishment Stress							
Threat Subscale	-.35***				-.14	.05	-.27**

Note. Adjusted R^2 = .18.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 26

Standard Multiple Regression Predicting Physical Punishment Attitudes.

Variable	*r*	*B*	*SE*	*β*
Sex	-.21**	-.31	.12	-.18*
Religious Fundamentalism	.22**	.25	.10	.18*
Parent Corporal Punishment	.21**	.20	.12	.14
Parent Physical Abuse	-.03	-.49	.27	-.14
Authoritarian Parenting	.30	.32	.12	.21**

Note. Adjusted $R^2 = .15$.
$^{*}p < .05$, $^{**}p < .01$.

Table 27

Standard Multiple Regression Predicting Felt Threat from Maternal Corporal Punishment

Variable	*r*	*B*	*SE*	*β*
Sex	.07	.20	.13	.14
Permissive Parenting	.07	.21	.13	.16
Authoritarian Parenting	.14	.23	.12	.18
Maternal Corporal Punishment	.24**	.23	.10	.20*
Corporal Punishment Attitudes	-.23**	-.24	.09	-.22*

Note. Adjusted R^2 = .11
*p < .05, **p < .01.

Table 28

Summary of Moderating Analysis of Attitudes on Corporal Punishment Predicting Maternal Attachment

Variable	*r*	*B*	*SE*	*β*
Sex	-.04	-.09	.08	-.08
Authoritative Parenting	.48***	.45	.07	.43***
Permissive Parenting	.14	.10	.08	.09
Authoritarian Parenting	-.16*	.02	.08	.02
Neglect	-.22**	-.06	.08	-.06
Maternal Physical Abuse	-.14	.00	.16	.00
Corporal Punishment Attitude	-.05	.03	.04	.05
Maternal Corporal Punishment	-.33***	-.10	.05	-.18*
Attitude X Corporal Punishment	.15*	.10	.04	.18*

Note. The corporal punishment and attitudinal measures are standardized in this analysis.
Adjusted $R^2 = .28$.
*$p < .05$, **$p < .01$, ***$p < .001$.

APPENDIX

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