

CHILD CHARACTERISTICS AND PARENTING
HOSTILITY: EXPLORING THE MEDIATING EFFECTS
OF PARENTAL STRESS

By

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CHAPTER I

INTRODUCTION

Effective parenting is critical for numerous child outcomes. It is the largest factor predicting childhood illness, abuse, and accidents; risky and criminal behaviors in adolescence; educational and occupational achievement; and physical and mental health (Bornstein, 2008). Parenting is also critical for understanding behavioral and emotional problems in children (Morris, Silk, Steinberg, Sessa, Avenevoli. et. al., 2002). It is less understood, however, what prompts parents to use certain parenting behaviors, and how much of the parent's style is influenced by child developmental or temperamental characteristics.

Prior research has concluded that children who experience the effects of positive parenting, such as emotional support (warmth, sensitivity, positivity, consistent discipline) throughout their lives are less likely to exhibit externalizing behavior problems in the future (Stright, Gallagher & Kelly, 2008). Alternatively, children who are reared under poorer quality parenting, which may include hostility and inconsistent harsh discipline, are more likely to develop externalizing behavior problems (Stright et al., 2008). There is evidence that parents who experience a significant amount of stress may

be more likely to use harsher parenting practices, which may then enforce future maladjustment (Sanders, Markie-Dadds, Rinaldis, Firman & Baig, 2007).

A growing body of evidence suggests that when examining the quality of parenting that children receive, it is important to consider the individual characteristics that children bring to the parent-child relationship (Ostberg & Hagehull, 2000). For example, parents may fail to engage in positive parenting practices because of the stress that accompanies rearing a child with developmental delay (Sanders et. al., 2007). Additional research indicates that the parent-child relationship is less warm when children exhibit negative emotionality (Kochanska, Friesenborg, Lange, & Martel, 2004). Yet prior studies have tended to investigate either temperament or developmental delay; none could be found that examined the effects of both child developmental delay and child temperament. Many parents have reported that certain child characteristics have influenced parental stress. Parental stress can have a negative impact on parent-child relationships. When a parent experiences stress they may be more likely to exhibit hostility in parent-child interactions.

In this thesis, I will examine how child characteristics (e.g., temperament and developmental delay) affect reports of parenting stress and parenting hostility. I will also test a mediation pathway by examining whether parenting stress mediates the relationship between child characteristics and parenting hostility. When examining the relationship between variables, it is often helpful to examine if a mediator links the variables together. Mediators explain why variables are related (Baron & Kenny, 1986). Establishing a mediator helps researchers to further understand why a predictor variable is associated with an outcome variable (1986). The purpose of the current study is to examine the

relationship between child characteristics and parental hostility. The research goals of the present study will help guide the thesis. The first research goal is to establish a link between child characteristics, parenting stress and parenting behavior (e.g., hostility). The second research goal is to determine if parental stress mediates the relationship between child characteristics and parenting behavior.

CHAPTER II

LITERATURE REVIEW

Introduction

This literature review highlights prior conceptual and empirical studies that guide the focus of this thesis. In particular, I consider how child developmental characteristics, including child normative developmental status and temperament, influence parenting behaviors through parental stress. Bronfenbrenner's bioecological model (Bronfenbrenner & Morris, 1998) and Mash and Johnston's (1990) parent-child stress model provide the conceptual framework for this thesis. This review will address parenting as an outcome variable, with a particular focus on parental hostility. I also discuss the relevance of child characteristics, particularly temperament and the role of developmental delays, for parenting. A significant proportion of the review will focus on parenting stress and its relation to parenting behaviors. The current literature review will attempt to address current gaps in the literature as well. Furthermore, both research goals and hypotheses will be stated.

Bioecological Theory

Bronfenbrenner's bioecological systems theory provides a theoretical basis for understanding how child characteristics influence parenting outcomes. Bronfenbrenner and Morris (1998) elaborated on how a child contributes to his/her own environment through biologically based characteristics, such as developmental disability or temperament. The principal components of the bioecological theory are Process-Person-Context-Time (PPCT). The interactive relationship between the four components centers on Process, and focuses on the interactions between organism and environment. Proximal processes are essential for human development to take place, but must be interactions between the human organism and the persons' objects and symbols in the immediate environment that occur on a regular basis over time, such as a parent-child relationship (Bronfenbrenner & Morris, 1998; Tudge, Mokrova, Hatfield, Karnik, 2009). The ability of proximal processes to influence outcomes varies and depends on the individual characteristics of the developing person, the immediate and remote environmental context of the processes, as well as changes happening over time, and the historical period the person lives in (Bronfenbrenner & Morris, 1998; Tudge et al., 2009).

The theory focuses on the importance of the developing person having the power to directly and indirectly influence his or her own environment. Personal characteristics determine how a person will be perceived in social situations and events (Tudge et al., 2009). Bronfenbrenner divided personal characteristics into three types: demand, resource, and force characteristics, and I incorporate each of these types of characteristics into my thesis. Demand characteristics act as an initial stimulus to another person and include an individual's age, gender, physical appearance and any other characteristic that

influences primary reactions and expectations. Resource characteristics are mental, emotional, social and material resources that may evoke or limit social reactions from others. Mental characteristics include an individual's developmental level. Lastly, force characteristics involve differences of temperaments or active behavioral dispositions. Characteristics alter environments by influencing how others respond to individuals; infants high in irritability and frustration may alter their environment by using force characteristics and evoking negative emotional expression from parents (Stright et al., 2008).

The third component of the bioecological theory is context. The context or environment is any environment where the developing person spends a considerable amount of time interacting or engaging in activity. In particular, a great deal of a child's life is spent at home with a caregiver, which is why the bioecological theory is an ideal model in analyzing the relationship between parent and child. Following Bronfenbrenner's division, I examine how child "personal" characteristics of age, gender, developmental delay, and temperament affect parenting outcomes.

Parent-Child Interactive Stress Model

Bronfenbrenner and Morris (1998) highlighted the broad ways in which individuals and their environments can interact to influence outcomes, but they did not specify circumstances in which negative outcomes can occur. Mash and Johnston (1990) proposed the Parent-Child Interactive Stress Model as a theory for understanding the determinants of stress in parent-child relationships. Mash and Johnston describe stressful parent-child interactions as interchanges that are control-oriented and negative between parent and child. They developed this model in an effort to explain the influences of

parenting stress in families of hyperactive children. In hyperactive children -- who tend to exhibit temperamental traits including inattention, impulsivity, over-activity, and defiant behaviors -- stress levels are elevated and parent-child interactions are more negative and control oriented (Mash & Johnston, 1990). This theory describes the relationship between child characteristics, parental characteristics, and environmental characteristics, with a particular focus on parent-child interactive stress. In Mash and Johnston's model, child characteristics include temperament, as well as cognitive and physical attributes, which could include developmental delay status. The Parent-Child Interactive Stress model holds that in families with "difficult" children, child characteristics play the primary role in parent-child interactive stress and that parent and environmental roles, though important, are secondary. This theory also suggests that environmental characteristics, such as poverty, have the ability to influence parent-child interactions.

The Importance of Parenting for Child Well-being

Research on parenting styles and behaviors has found parenting to have the potential to act as both a protective and a risk factor for child outcomes. Furthermore, the importance of parent behaviors is emphasized because they often set the tone for the parent-child environment and influence child development (Darling & Steinberg, 1993). The type of parenting that a child receives throughout his or her life can substantially influence an individual's adult years. Parenting practices are the specific behaviors used by parents in order to socialize the child, such as ways of disciplining, assisting with homework or trips to the museum (Darling & Steinberg, 1993). Darling and Steinberg (1993) suggest a model that defines parenting styles as the parents' attitudes towards the child that are communicated to the child while creating an emotional environment where

the parent's behaviors are expressed. Parenting styles, therefore, include both level of responsiveness and demandingness portrayed by the parent (Baumrind, 1971). Baumrind (1971) developed a popular framework for examining differences in parenting styles based on levels of responsiveness and demandingness: Authoritative, Permissive, and Authoritarian. The parenting style that is perceived to produce the least optimum results in children and is a major research focus is the Authoritarian parenting style. Baumrind (1971) suggests that Authoritarian parenting style includes behaviors consistent with power assertion among parents and low levels of warmth, nurturance, and two-way communication. This parenting style can be a risk to child outcomes because it involves a negative parenting behavior: hostility. Hostile parents are more likely to use coercive control, disciplinary strategies, verbal hostility and non-reasoning with interactions with children (Chan, 2010).

Parental hostility includes harsh discipline, punitiveness, overt verbal and physical aggression (Morris et. al., 2002). Parents may use hostility with their children to communicate anger, irritation or dominance by yelling or criticizing the child (Buehler, 2006) Hostile interactions between parent and child may define the child's style of interacting with other adults and peers (Patterson, Reid, & Dishion, 1992). The Bioecological theory says that characteristics create environments for parent-child interactions. Hostile environments can be especially harmful to children. Hostile parenting is an important component of parenting because it has been linked to high levels of externalizing behavior in children (Messer & Beidel, 1994). Parental hostility is correlated with child negative coping styles, which in turn are related to aggressive behaviors at school (Lengua & Kovacs, 2005). In examining coping styles, Garner and

Estep (2001), found hostile maternal anger towards the child to be related to the child's use of non-constructive coping skills, including venting as well as physical and verbal retaliation. A prior study examined negative parenting and concluded that higher level of hostility in parent-child interactions promotes child aggression (Bates, Dodge, & Pettit, 1996).

In summary, the literature suggests that the way that a parent chooses to parent is very important in future outcomes for children. Proper levels of warmth, responsiveness, structure, and demandingness are crucial in establishing and maintaining a positive parent-child relationship, while high levels of hostility in parenting often promote an unhealthy parent-child relationship (Baurmind, 1971). Still, it is important to understand why specific parenting behaviors are used and how child characteristics influence these behaviors.

The Influence of Child Characteristics on Parenting

Positive parenting behaviors show beneficial effects for children, yet the possibility is often overlooked that parents may only be able to be responsive, supportive and structured because the child is competent and cooperative. A parent's ability to be responsive and positive in interactions with an easy-going, compliant and cooperative child further implies that a child's characteristics can influence the type of parenting that he/she receives.

Research on differential parenting styles supports the hypothesis that parent behaviors can be influenced by child characteristics (Jenkins, Rasbash & O'Connor, 2003). Previous research has found that in families with multiple children, differential parenting, or different parenting practices on separate children, is often used by parents

(Morris et. al., 2002). Parents do not parent children the same—even within the same families—because children are not all the same. Research has supported the Bioecological Systems theory as there is evidence that children experience different parenting environments due to their own distinct characteristics. Children may have very different characteristics, developmental levels, attributes and behaviors, prompting parents to interact differently with their children (Deater-Deckard, Smith, Ivy, & Petril, 2005).

While the act of parenting can be demanding for all parents, it may be particularly challenging when a child has an intellectual or physical developmental delay (DD) (Glidden & Natcher, 2009; Woolfson & Grant, 2007). A developmental delay is identified when a child fails to meet his or her developmental milestone at the expected age. Children with DD often require more and on-going attention than typically developing (TD) children due to a greater need for medications, symptom severity, and other health problems (Konstantareas & Papageorgiou, 2006). Furthermore, children with DD may have difficulty communicating his or her mental state with a caregiver, making it difficult for positive parent-child interactions (Howe, 2006). A developmental delay is a characteristic that may alter a parent's response to a child. Child development status is a personal characteristic that Bronfenbrenner's Bioecological Theory (1998) refers to as a resource characteristic. Again, resource characteristics include an individual's mental capacity, which may evoke or inhibit parental responses. A child's stage of development has an influence on the parent-child relationship. The Parent-Child Interactive Stress model (1990) maintains that a child with DD may also influence stressful parent-child interactions due to the demands that accompany caring for the child.

Baker and colleagues (2003) examined 205 preschool children with and without intellectual delays and found higher levels of stress in the parents among children with the delays than the children without intellectual delays. Keogh, Garnier, Bernheimer, and Gallimore (2000) examined families of children with disabilities over a span of eight years and found that higher levels of cognitive impairment and lower levels of social competence in the children affected family adaptation. Because caring for a child with DD may be stressful and demanding, many children with delays are more vulnerable to harsh parenting and maltreatment (Spencer et. al., 2005). In addition, when examining parenting outcomes, it is important to not only consider the child's development, but also to include additional child characteristics such as temperament, which are often underestimated (Baker et. al., 2003).

Children are born with biologically rooted behavior traits that appear early and are stable over time known as temperament (Bates et. al, 1998). Goldsmith and colleagues (2007) define temperament as “the physiological basis for the arousal, expression, and regulation components of personality”. The need to examine and understand temperament has become clearer as different temperament types and dimensions have predicted various outcomes for children (Bradley & Corwyn, 2008). Difficult temperamental traits have been of major concern to researchers due to difficult temperament characteristics being linked to both internalizing and externalizing behavior issues (Lahey et al., 2008; Owens & Shaw, 2003). Traits associated with difficult temperament include negative affect, impulsivity, frustration and unmanageability and are often associated with externalizing behavior such as aggression (Bates et al., 1998). Difficult temperamental traits are characteristics that the Parent-Child Interactive Stress

model focuses on, as these traits may cause high levels of stress in parents (Mash & Johnston, 1993).

As earlier noted, the bioecological systems theory proposes that parent-child interactions are shaped by the features of the child's characteristics, and the theory's personal force characteristic includes different temperamental traits and how people respond to the traits. The theory maintains that an individual's temperament directly influences responses and interactions (Bronfenbrenner & Morris, 1998; Stright et al., 2008). Frustration is a negative temperamental trait that many behavioral scientists focus on because of its link to childhood aggression (Bates et al., 1998). Numerous studies have found a link between difficult temperament and negative parenting behaviors, suggesting that a difficult temperament can encourage negative parent-child interactions (Reid & Patterson, 1989). A difficult temperament can set and keep a coercive cycle with the parent in motion; when a toddler behaves in a coercive/aggressive manner towards the parent, the parent may react irritably and ineffectively towards the child (Reid & Patterson, 1989). When a mother is more irritable and aggressive during parent-child interactions, she is less effective in correcting the child's difficult behavior (Reid & Patterson, 1989). Miner and Clark-Stewart's (2008) study of harsher parenting inflicted on difficult temperamental children indicated that the association between infant temperament and externalizing behavior was stronger for children whose mothers used harsher discipline as opposed to mothers who chose a more mild disciplinary action. In addition, a longitudinal study developed by Vitro, Barker, Boivin, Brendgen and Tremblay (2006) examined the interplay between child affect and parenting and found that child negative affect was positively related to harsh parenting and in turn the hostile

parent-child relationships contributed to the development and maintenance of future aggressive behaviors by the child. However, Mash and Johnston's (1990) model concludes that negative control-oriented interactions between parent and child are seen to decrease when the undesirable characteristics decrease. Seemingly, the temperament and normative development of a child has a strong influence on the parenting that the child receives. Because so many children live in home environments that are filled with negative parenting, it is important to understand the pathways that lead from child characteristics to negative parenting practices. One explanation for this relationship is increased parental stress.

Parenting Stress

Parenting stress is the difficulty that arises from the demands of parenting (Anthony et al., 2005) such as difficulty in accomplishing daily parenting tasks, the extent of child behavior problems experienced, and parental perceptions of role strain (Quittner, Glueckauf & Jackson, 1990). It is often experienced as a negative feeling that parents have towards themselves and towards the child (Deater-Deckard, 1998).

Parenting stress has been viewed as a determinant of dysfunctional parenting behavior (Abidin, 1992). Deater-Deckard (1998) suggests that parenting stress has the ability to intensify physical and psychological vulnerabilities, with stress affecting parents' mental health and functioning. Thus, parenting stress has important implications for parenting behaviors, but not all parents experience parenting stress to the same degree.

Though all parents encounter hassles related to parenting such as the everyday caretaking routines (feeding, school preparation, etc.), it is important to shed light on the daily

parenting hassles related to negative child characteristics and the stress levels associated with these hassles (Coplan, Bowker, & Cooper, 2003). The Parent-Child Interactive Stress model clearly states that child characteristics play a primary role in stressful interactions between parent and child. A number of researchers believe parental stress to be a consequence of difficult child temperament. When controlling for caretaking hassles and life events, Ostberg and Hagekull (2000) found a positive association between child difficult temperament and parenting stress. As such, it seems likely that parents will experience higher levels of stress when their child has a more difficult temperament. When parents viewed their children as moody, fussy, demanding or having other difficult traits, the parents reported higher levels of parenting stress (Ostberg & Hagehull, 2000). The relationship between child temperament and parental stress was also measured by Sanders and colleagues (2007) who surveyed 4,010 parents of children under 12 years of age and found that parents who perceived their children as difficult were more likely to report parenting to be demanding, stressful, and depressing, and they were also more likely to feel less confidence in their parenting ability. These parents were also more likely to use hostility when correcting ill-favored child behaviors.

Thus, early emerging child characteristics are thought to contribute to the use of negative parenting practices directly and indirectly through family stressors (Goldstein, Harvey & Friedman, 2007). Rutter (1987) proposed that when a child has a more difficult temperament, he/she is more likely to elicit negative responses from parents, especially when parents are stressed. Parents are more likely to use harsher parenting practices when they experience heightened levels of parental stress (Martorell & BURGENTAL, 2006). Research shows that when parents are stressed, they are more likely to shout or become

angry with the child and or use physical discipline (Sanders et. al., 2007). A study examining parental stress in parents of preschool aged children found that parents who reported higher levels of parenting stress used stricter discipline methods and were less nurturing in their parenting behaviors, and in turn, because of these parenting behaviors, the children then experienced greater behavior problems (Anthony et. al., 2005).

Furthermore, as previously stated in the Parent-Child Interactive Stress model, stress due to child characteristics has a significant influence on the parent's behavior and the type of parenting environment where the child grows. Seemingly, it is likely that parents will experience elevated levels of parental stress if their children have individual characteristics of a difficult temperament or a developmental delay.

Mediation Effects

While previous research has shown child development and temperament to be linked to parenting behaviors, parental stress is a potential mediator, as it has been linked to both child characteristics including temperament and developmental delay, as well as a predictor of parenting behaviors. Please refer to Figure 1 for this conceptual mediation model. Mediating variables explain why there is a link between the independent variable and the dependent variable (Baron & Kenny, 1986). In order to test for mediation, one must first establish a link between the independent variable and the dependent variable (1986). Next, a link between the independent variable and the mediator needs to be established. Finally, the mediator and the dependent variable must be significantly related to one another (1986). After links have been established for the independent, dependent, and mediating variables, one can test for full or partial mediation. Full mediation is supported if the relationship between the independent variable and the dependent variable

is no longer significant after controlling for the mediating variable. If the mediator significantly decreases the link between the independent and dependent variables then partial mediation is supported (1986).

The present study explores the mediation effects of parental stress between child characteristics and parental hostility, a key component of negative parenting. Parental stress has been defined as the difficulty that parents experience while trying to rear children (Anthony, et. al., 2005). Previous research states that parents who are stressed are more likely to have hostile interaction with their children than parents who are not stressed (Sanders et. al., 2007). Furthermore, empirical evidence has shown associations between child normative development and temperament and parenting stress (Ostberg & Hagekull 2000). While various studies have explored mediating effects of parental stress, fewer studies have examined the association of both child normative development and temperament as influencing factors.

Summary, Research Goals, and Hypotheses

Previous aforementioned literature has found a substantial amount of research concurring that positive parenting produces the best outcomes for children and that hostile parenting produces adverse outcomes for children. Prior research has found significant relationships between child temperament and normative development, parenting stress and parenting behaviors. It has been well established that the parent's perception of a child's characteristics can influence negative parenting behaviors (Martorell & BURGENTAL, 2006). While temperament and developmental status have both received substantial research attention separately, more research is needed of the two

domains collectively. Drawing from the conclusions of prior research on child characteristics and parenting, in the current thesis, the association between development (TD vs. DD) and parental reports of child temperament (e.g., child difficult temperament) is assessed. Furthermore, empirical evidence has shown that children who are born with difficult temperamental traits, such as frustration, are more likely to impose stress in their parents' lives and that this stress determines how the parents will interact with the child (Coplan et. al., 2003). Previous research, however, has not examined the mediating effects of parental stress on the relationship between child characteristics and parenting behaviors when both temperament and development are included. Therefore, the potential mediating effect of parental stress on the relationship between child characteristics and parenting behaviors is also examined.

The first research goal of the current study is to determine the impact of child characteristics of developmental delay and temperament on parenting stress and parenting hostility. Developmental delay and temperament are hypothesized to be independently associated with parenting stress and hostility. It is expected that child difficult temperament and developmental delay will be positively related to parental stress. It is also expected that child difficult temperament and developmental delay will be positively related to parenting hostility. In addition, it is hypothesized that parenting stress will be positively related to parenting hostility, to indicate that when parents are stressed, they exhibit hostility.

The second research goal of the current study is to determine if parental stress mediates the relationship between child temperament, developmental delay, and parenting hostility. Parental stress is hypothesized to mediate the relationship between

temperament and developmental delay, and parental hostility. The mediation hypothesis suggests that parents experience stress when a child has a difficult temperament or a developmental delay, and in turn, the parent will exhibit negative parenting behaviors, such as hostility. It is therefore hypothesized that both child difficult temperament and child development status will be positively correlated with parental hostility and parental stress. In addition, parental stress is hypothesized to be positively related to parental hostility.

CHAPTER III

METHODS

Participants and Procedure

Data from the present study comes from a university laboratory school in the Midwest region of the U.S. The school houses an ongoing research project consisting of current and former students of the early learning program, which educates children with and without developmental delays. The research project was created to assess developmental and family outcomes of children with and without developmental delays. Participants include typically developing children and children with developmentally delays ranging in age from 1 to 6 years and their parents. Approximately 23.4% of the children have a developmental delay. The majority of participants (69.1%) are White, and most families (63.9%) reported a yearly income of over \$50,000. The majority (77.7%) of families who participated in the study were two-parent households. Families with children who attended the university laboratory school program were invited to participant in the research project. Parent packets were sent to all of the families in the program. The parent packets contained extensive questions related to family status, child rearing, child development, etc. Child development was reported by the parents. A list of disability types were presented in the parent packet, as parents were prompted to identify if the child had a

disability and the type of disability. There were a total of 94 parent participants. Families who agreed to participate completed a consent form for confidentiality purposes.

Measures:

Child characteristics. *Child temperament* was measured using a short version of the Parenting Stress Index (PSI), (Abidin, 1986). This version of the PSI uses the Difficult Child subscale. This Difficult Child subscale assesses how difficult the parent perceives the child to be, using statements such as “My child gets upset easily over the smallest thing”, and “My child seems to cry or fuss more often than most children”. Parents responded to each item on the PSI using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal consistency was satisfactory for the current study revealing a Cronbach’s alpha of .89.

Developmental Delay is included as a dichotomous variable where the child either had a developmental delay (=1) or did not have a developmental delay (=0). If a child was diagnosed with a developmental delay, parents were prompted to identify the type of disability. Disability types included a range (12) of mild to severe intellectual delays.

Parenting hostility. Parenting hostility was measured using a shortened version of the Preschool Parenting Measure (PPM), (Sessa, Avenevoli, Steinberg, & Morris, 2001). Five items were used to assess parenting behaviors, including Hostility. The Hostility scale measures negative affect and hostile interactions. The PPM consists of a 4-point Likert-type scale that ranges from 1 (*strongly disagree*) to 4 (*strongly agree*), where parents responded to each item. The measure consists of statements, such as, “I yell at my child at least once a day” and “When my child does something wrong I sometimes threaten him/her”. The Hostility scale’s Cronbach’s alpha is .68.

Parenting stress. In order to measure *parental stress* a short version of the Parenting Stress Index (PSI), (Abidin, 1986) was utilized. The PSI uses 12 items to identify possible sources of stress in parent-child subsystems. The Parental Distress index consists of 12 items with statements such as “I feel trapped by my responsibilities as a parent” and “I am not as interested in people as I used to be.” Parents rated stressful feelings that they may experience due to parenting. Parents responded to each item on the PSI using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A reliability analysis revealed a Cronbach’s alpha of .88.

Demographic and control variables. Parents reported on a variety of additional measures that are included in this study, such as *child gender*, *family income*, *child age*, and *parental union status*. In this study, child gender is coded so that male = 1. Family income is assessed in categories. Child age is a continuous variable representing the child’s age at the time of the study. Parents’ union status is coded as a dichotomous variable where 1 = living together in a union.

CHAPTER IV

FINDINGS

Analytic Strategy

Descriptive statistics and bivariate correlations were computed in this thesis. To examine Research Goal #1, two ordinary least squares (OLS) regression analyses were performed to examine the link between child developmental delay and child temperament with parenting outcomes of parenting stress and hostility, while controlling for demographic variables. To examine research goal #2, a series of OLS regression analyses were conducted to test for mediation effects. To test for mediation, Baron and Kenny's criteria for mediation were tested (1986). Analyses examine the link between child development and temperament and parental stress, then child development and temperament and parent hostility, and finally between parental stress and parent hostility, statistically controlling for age and sex of child, and family income.

Descriptive Statistics

Descriptive statistics are provided in Table 1. Statistics included in the table display *N* (number in sample), *M* (mean), and *SD* (standard deviation) for the variables in the multivariate analyses. Analyses indicate that in this sample, approximately 23.4% of

the children had a developmental delay. The mean score for child difficult temperament is at below the mid-point of the range, from 12-50, indicating that on average, children were reported to exhibit less than moderate difficult temperament traits. Parent hostility has a range of 10-21; the mean score indicates that on average, parents reported to exhibit low hostility. The mean score for parental stress falls in the lower range, of 12-42; therefore, on average, parents reported to have low parental stress.

Multivariate Analyses

Bivariate correlations included in the table were partially consistent with expectations. Results indicated that while child difficult temperament was positively associated with parental stress, child developmental delay was not significantly related to parental stress. Therefore, high levels of difficult temperament are related to high levels of parental stress. In addition, bivariate correlations indicated that difficult child temperament is positively related to parenting hostility, and child development status is negatively related to parenting hostility. These results indicate that high levels of difficult temperament is related to high levels of parenting hostility and child disability is related to low levels of parent hostility. Bivariate correlations found a significant relationship between parental stress and parenting hostility, but the link does not exist when controlling for demographic variables.

Research Goal #1:

The first research goal was to determine the relationship among normative development (TD vs. DD), difficult child temperament, and parenting stress and hostility. This goal was addressed using several OLS regression analyses, which are presented in

Table 3. Demographic factors (child age, sex, family income, and parental marital status) were entered as covariates. Separate Linear regressions were performed with child development and difficult temperament entered as the predictor variable and parental stress entered as the outcome variable. Next separate regressions were performed entering child development and difficult temperament as the predictor variables and parenting hostility as the outcome variable. Finally, a regression was performed to examine the relationship among parental stress and parenting hostility. Results, as indicated in table 3, are partially consistent with the hypotheses. Child difficult temperament is positively related to parental stress when controlling for demographic variables. Results indicate that high levels of difficult temperament were linked to high levels of parental stress. Child development status was not significantly linked to parental stress. Child difficult temperament was significantly linked to parenting hostility, as high levels of difficult temperament were related to high levels of parenting hostility; indicating a positive correlation. Child development was negatively related to parenting hostility, indicating that a parent of a child with a developmental delay would display low levels of parental hostility. Furthermore, regressions revealed that parental stress was not significantly linked to parenting hostility when controlling for demographic variables. In sum, the findings indicated that high levels of difficult temperament was significantly related to both parental stress and parenting hostility, while development status was significantly related to parental hostility but not parental stress. Furthermore, parental stress was not significantly linked to parental hostility.

Research Goal #2:

The second research goal was to determine if parental stress mediated the link between child development, temperament, and parent hostility. To examine this link, a series of OLS regressions were computed to investigate possible mediation pathways. Mediators explain why effects occur, as mediating variables intervene between a predictor variable and an outcome variable (Baron & Kenny, 1986). The criteria for mediation demands that there is a significant pathway between the independent variable and the dependent variable, a statistically significant relationship between the independent variable and the mediating variable, and a significant link between the mediating variable and the dependent variable (Baron & Kenny, 1986).

In this study, a possible mediation pathway between difficult temperament, parental stress, and parenting was examined. The first regression analysis revealed a positive association between child difficult temperament and parental hostility. The positive association between child temperament and hostile parenting behavior indicates that high levels of difficult temperament in children are significantly related to high levels of hostile parenting behavior. The second regression analysis indicated a positive association, between temperament and parental stress. The final regression included parental stress and hostile parenting behavior. Although the bivariate correlations suggested possible mediation, results indicated that when controlling for demographic variables, parental stress was not significantly related to hostile parenting behavior. Therefore, the test for mediation ceases as final results indicated that parental stress does not serve as a mediator for the relationship between difficult child temperament and hostile parenting. The mediation criteria were not used to examine parental stress as a mediator between child development status and hostile parenting behavior because there

was no previous link between parental stress and hostile parenting when controlling for demographic variables. In sum, results do not support the hypothesis, as parental stress does not mediate the relationship between child characteristics (difficult temperament, development status) and hostile parenting.

CHAPTER V

DISCUSSION

The purpose of the current study was to explore the associations among child characteristics and parenting, with a specific focus on the mediating effects of parental stress. Two research goals were examined in the present study. The first goal of the study was to examine the associations among developmental delays, temperament, and parenting stress and hostility. The second research goal was to examine parental stress as a mediator between child developmental delay, temperament, and parenting hostility. Findings indicate that child developmental delay and difficult temperament are associated with parenting hostility. High levels of difficult temperament were related to high levels of parental hostility, while child developmental delay was significantly related to low levels of parental hostility. Difficult temperament was also positively related to parental stress; however, developmental delay was not related to parental stress. Though the test for mediation was met in the case of child difficult temperament, when tested in the multivariate model, parental stress did not mediate the relationship between child characteristics and parental hostility. In conclusion, while evidence suggests that child characteristics are influential in the parent-child relationship, there is no evidence of a mediation pathway through parental stress.

Research Goal #1:

The goal of the present study was to examine the relationship among child characteristics, parental stress, and parenting behavior. The findings indicate that there is a significant link between child difficult temperament and parental stress, as well as a positive association between difficult temperament and parenting hostility. This link is consistent with the hypothesis and previous research concluding that child temperament influences parenting outcomes. High levels of difficult temperament are related to high levels of parental stress and high levels of difficult temperament are related to high levels of parenting hostility. These results concur with the theoretical models used to frame the present study. Evidence from the present study suggests that a child can influence his or her environment by influencing parenting outcomes; children with difficult temperaments are more likely to elicit hostile parenting and influence parental stress. When examining child developmental delay, results differed as developmental delay was negatively related to parenting hostility, and there was no relationship between developmental delay and parental stress. Results indicated that when a child has a developmental delay, parents are less likely to exhibit hostile parenting behaviors. It is possible that this relationship was found because parents of children with DD often display parental sensitivity as a means of improving the child's development of communication skills (Siller & Sigman, 2002). Parent-child interactions are an important focus for early interventions. Parents of children with DD are often educated in beneficial ways of communicating and interacting with their child to enhance child development. When parents are more knowledgeable of the benefits of positive parenting interactions of children with DD, they may be more likely to initiate and maintain positive interactions.

As previously mentioned, child developmental delay was not significantly related to parental stress. Parents of children with DD did not experience higher levels of stress compared to parents of typically developing children as hypothesized. However, previous literature suggests that having a child with a developmental delay will influence parental stress. Previous studies found that caring for a child with a disability imposes high emotional, physical and financial demands on parents (Oelofsen & Richardson, 2006). However, these demands may not lead to stress if a parent is prepared for the demands of raising a child with a developmental delay. While previous studies found parental stress to be higher among families of children with delays, the association was related to the extent of the child's behavioral problem rather than to the child's developmental delay (Baker et al., 2003). Pediatricians understand the importance of early identification and evaluation of children with DD. Development is assessed at all routine health care visits so that parents can be informed of development level and interventions can be provided if needed (Levy & Hyman, 1993). When parents are informed of the possibility of their child having a developmental delay, they are often educated early on what to expect as well as how to care for the child. Parents of children with DD are better able to cope with the child's disability when they are knowledgeable and have greater access to health and supportive resources (Pinelli, 2000).

After examining the relationship between parental stress and parenting hostility, no link was found. It was hypothesized that parental stress would be positively linked to parental hostility, but when controlling for child age, gender, SES, and marital union, the two variables were not related.

Research Goal #2:

The second goal of the present study was to identify if parental stress mediated the relationship between child characteristics and parenting behaviors. It was hypothesized that children with DD or difficult temperaments would have parents who participated in more negative parenting behaviors due to higher levels of stress. Although child development status was found to be significantly related to parenting behaviors, parental stress does not serve as a mediator for the link. Child developmental delay was negatively related to parenting hostility, indicating that having a child with DD is related to low levels of parenting hostility. However, child development status was not significantly linked to parental stress. In addition, while results indicated that difficult child temperament is positively related to parenting hostility, parental stress does not mediate the relationship. While child difficult temperament was positively related to both parental stress and parenting hostility, parental stress is not related to parenting hostility when controlling for child age, sex, family SES, and marital union. Seemingly, results are not consistent with previous research that shows parental stress to be related to parental behavior. In the present study parental stress may not be related to parenting hostility due to parents' coping style. Studies show that the way that parents cope with stress may influence a parent's interactions with the child. The use of emotion-focused coping styles is related to higher levels of distress, whereas problem-focused coping styles are associated with lower levels of parenting stress (Hasting & Johnson, 2001). Even though, all of the hypotheses are not supported, theoretical links are established between the findings and the models used to frame the present study. Results are consistent with the focus of the bioecological theory, whereas a child's characteristics influence the

parenting environment. A difficult temperament and a developmental delay among children may determine the types of interactions that they will have with parents. In addition, the Parent-Child Interactive Stress model is represented in the findings as a child's temperament was shown to have influence on parental stress. In sum, children may be born with characteristics that may influence how they are perceived by those around them and how others interact with them.

Implications for Service Providers and Interventionists

The current investigation provides evidence that will be of great assistance to service providers and interventionists. Findings suggest that child temperament and developmental delay play a crucial role in the type of parenting that a child receives. In addition, child difficult temperament can increase both parenting stress, and hostility. Service providers and Interventionists need to make a special effort to address the different dimensions of child temperament and how certain traits can influence parenting behaviors. Parents should be educated on temperamental traits and how to provide a safe parenting environment for children. Children have different and unique temperaments and parents should learn different ways to communicate and relate to the child based on the temperament traits. Thomas and Chess (1977) proposed a "Goodness of Fit" model that suggests that optimum outcomes can be seen in different temperaments depending on the type of parenting that the child receives. Since a child cannot change his or her temperament, the parent should adapt to the child to provide a positive parenting environment. The importance of parental stress should also be addressed in great detail. Coping strategies can be taught to parents when difficult temperamental traits are present in a child, in an effort to reduce parenting stress and hostility. It can be very beneficial

when parents are able to cope with different child characteristics in a positive way. The importance of stress-management should be emphasized to parents who have children with difficult temperaments so that they don't get overwhelmed with the demands of raising a child with a difficult temperament.

Results showed that parents of children with DD display lower levels of parenting hostility. It would benefit interventionists to take a closer look at these findings to further assist families of children with DD. A thorough examination of parents of children with DD who display lower levels of parenting hostility may be able to provide insight as to why such results are seen. There may be a number of reasons such as coping styles, parent characteristics, and support systems. When a parent is prepared for certain child characteristics, they may be better able to handle unforeseen circumstances. Parents with more supportive resources may be better able to care for a child with DD, and therefore display less hostility when parenting. Service workers should emphasize the importance of families of children with DD having a support system as well as the importance of medical resources.

Limitations and Future Directions

The results from the present study suggest that child characteristics play a significant role in parenting outcomes. However there are several issues that need to be addressed by future researchers. For example, it would be helpful to directly assess the resources that parents have access to. Access to resources may alleviate some stress that is related to child characteristics. When families do not have the resources to cope with certain characteristics they become stressed (McCubbin & Patterson, 1983). When a mother feels that she is able to provide both physically and emotionally for her child then

she is less likely to experience high levels of parenting stress (Walker & Montgomery, 1994). Parental psychological resources such as coping style, self-efficacy, and beliefs should also be addressed when examining influences of parent behaviors. Future studies in this area should make an effort to explore families' coping strategies when examining how child characteristics and parenting stress affects the parent-child relationship. In particular, the study consisted of a small sample size, and the sample was fairly homogenous, in terms of family income (moderately high) and race/ethnicity (mostly white). It is possible that findings might be more pronounced in a sample with less financial or human capital resources. It is also possible that findings may differ among families who are not white. It is unclear, for example, whether the dimensions and styles of parenting proposed by Baumrind (1971) are ecologically valid for ethnic groups other than White, middle-class, two-parent families. Samples represented in past research are limited in ethnic diversity. Unfortunately, the present study cannot distinguish differences due to a similar sample to that of Baumrind's. Research would benefit from studies that examined differences in cultures as well as family dynamics.

In addition, other possible variables predicting parental stress and parenting hostility should be examined. While most of the families in the study were in a union, it may be wise to consider examining relationship quality within families. Relationship quality has been found to influence parenting stress and parenting behaviors (Abidin, 1990).

Conclusions

In conclusion, the present study established links between child characteristics and parenting outcomes but failed to establish parental stress as a mediator. Findings

support the hypothesis that children with difficult temperaments are more likely to influence parental stress and hostile parenting behaviors. Findings partially support the hypothesis that developmental delay is related to parenting stress and hostility. While developmental delay did influence hostile parenting the influence was not in the hypothesized direction. A developmental delay status was negatively related to hostile parenting, as parents of children with DD were less likely to exhibit hostile parenting behaviors. Additional research should pursue this interesting finding. Findings support the Bronfenbrenner's theory stating that children influence their own environment through biologically based characteristics. The Parent-Child Interactive Stress Model is also supported as child temperament played a significant role in parental stress. Clearly, we need to consider factors other than child temperament, developmental status and stress as predictors of parent behaviors. Other factors such as individual psychological well-being, parental values, outside stressors such as work, and couple relationships may also play significant roles in influencing parent-child relationships. Coping strategies and other resources need to be addressed when analyzing parenting behaviors in future research as well.

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APPENDICES

Appendix A: Items used to create each factor

Hostile parenting:

1. I yell at my child at least once a day.
2. When my child does something wrong, I sometimes threaten him/her.
3. When he/she really upsets me, I lose my patience and punish him/her more severely than I really mean to.
4. I snap at my child when he/she gets on my nerves.
5. I sometimes make fun of my child.

Difficult temperament:

1. My child seems to cry or fuss more often than most children.
2. My child generally wakes up in a bad mood.
3. I feel that my child is very moody and easily upset.
4. My child does a few things which bother me a great deal.
5. My child reacts very strongly when something happens that my child doesn't like.
6. My child gets upset easily over the smallest thing.
7. My child's sleeping or eating schedule was much harder to establish than I expected.
8. I have found that getting my child to do something or stop doing something is:
9. Think carefully and count the number of things which your child does that bothers you. For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.:
10. There are some things my child does that really bothers me a lot.
11. My child turned out to be more of a problem than I had expected.
12. My child makes more demands on me than most children.

Parenting Stress:

1. I often have the feeling that I cannot handle things very well.

2. I find myself giving up more of my life to meet my children's needs than I ever expected.
3. I feel trapped by my responsibilities as a parent.
4. Since having this child, I have been unable to do new and different things.
5. Since having a child, I feel that I am almost never able to do things that I like to do.
6. I am unhappy with the last purchase of clothing I made for myself.
7. There are quite a few things that bother me about my life.
8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).
9. I feel alone and without friends.
10. When I go to a party, I usually expect not to enjoy myself.
11. I am not as interested in people as I used to be.
12. I don't enjoy things as I used to.

Table 1. *Descriptive statistics of study variables.*

<i>Variables</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
Child Characteristics					
Developmental Delay	94	0	1	23.40%	0.43
Child Frustration	84	1	6.58	3.03	1.04
Parenting Variables					
Parental Stress	90	37	119	65.8	18.91
Hostile Parenting	84	9	20	16.74	2.88
Demographic Variables					
Male	94	0	1	48.90%	0.5
Child Age	83	1	6	3.49	1.32
Family Income	81	1	12	7.32	2.85
Two-Parent Home	94	0	1	79.80%	0.4

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

Table 2. *Bivariate correlations of study variables.*

<i>Variables</i>	2	3	4	5	6	7	8
1 Developmental delay	.32 **	.05	-.3 **	.29 **	.16	-.2	.03
2 Difficult temperament	1	.51 **	.35 **	.19	.15	-.1	-.1
3 Parenting stress		1	.22 *	.15	.08	-.1	-.1
4 Parenting hostility			1	.08	.1	.24 *	-.1
5 Child age				1	.03	-.2	-.3 *
6 Child gender					1	.02	-.1
7 Family income						1	.36 **
8 Parental union							1

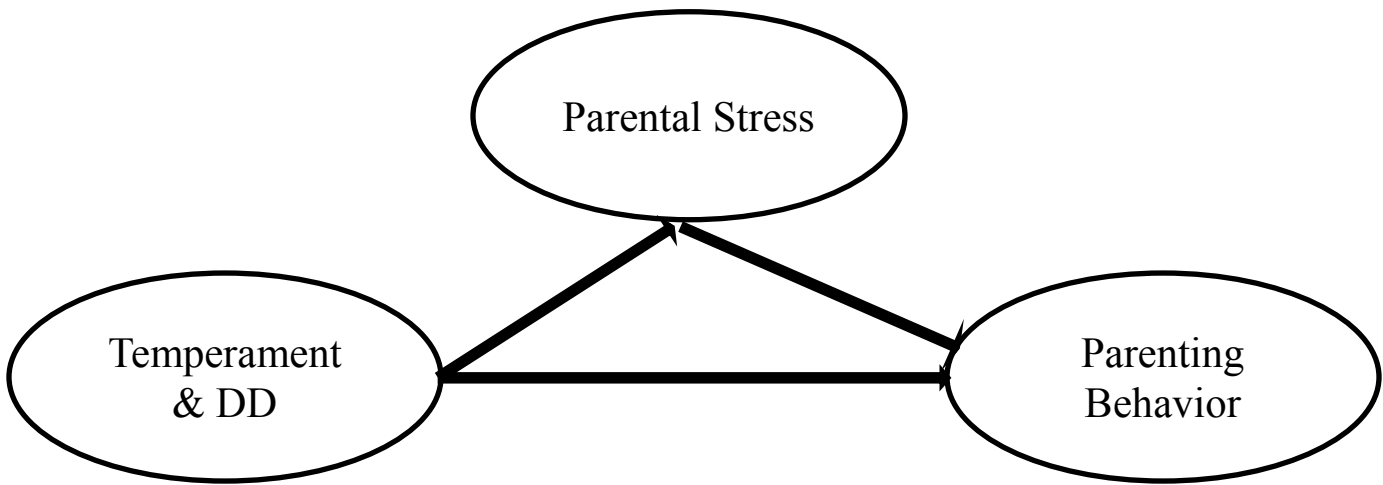
*** $p < .001$, ** $p < .01$, * $p < .05$

Table 3. *Ordinary Least Squares (OLS) regression*

Predictor	DV= Parental Stress		DV= Parental Hostility		DV= Parental Hostility	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
	Developmental delay	-2.56	1.9	-2.99	.73***	-2.97
Child temperament	.42	.09***	.15	.33***	.14	.04***
Child age	.46	.62	.35	.27	.35	.28
Child gender	.1	1.56	.6	.07	.42	.6
Family income	-.28	.3	.23	.11*	.23	.11*
Parental union	.44	2.89	-.27	1.04	-.27	1.05
Parental stress					.01	.04

$p^{***} < .001, p^{**} < .01, p^* < .05$

Model 1: *Theoretical model for mediation*



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Scope and Method of Study: Child characteristics play an important role in influencing parenting behaviors. Biological theory and the Parent-Child Interactive Stress model were used as frameworks to examine how child characteristics', parental stress, and parenting behaviors interact. Parental Stress was examined as a mediating variable between child characteristics and parenting.

Findings and Conclusions: Child difficult temperament was significantly related to parental stress and parenting hostility. There was no significant link found between child development status and parental stress, while child development status was negatively related to parenting hostility. Parental stress did not mediate the link between child characteristics and parenting hostility. Results suggest that difficult child temperament yields high levels of both parenting stress and parenting hostility. In addition, child developmental delay yields lower levels of parenting hostility.

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