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Elizabeth A. Heideman
Marquette University

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AN EXAMINATION OF THE COMBINED INFLUENCES OF MATERNAL COGNITIONS, AFFECT, AND BEHAVIOR ON CHILD OUTCOMES: A MODEL COMPARISON APPROACH

By

Elizabeth A. Heideman

A Dissertation submitted to the Faculty of the Graduate School,
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Partial Fulfillment of the Requirements for
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Milwaukee, Wisconsin

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ABSTRACT
AN EXAMINATION OF THE COMBINED INFLUENCES OF MATERNAL COGNITIONS, AFFECT, AND BEHAVIOR ON CHILD OUTCOMES: A MODEL COMPARISON APPROACH

Elizabeth A. Heideman

Marquette University, 2011

The primary goal of this study was to better understand the combined influence of maternal affect, cognitions and behavior on child internalizing and externalizing behavior. Specifically, mothers and children completed a series of measures designed to assess parenting stress, parenting efficacy, parenting behavior, and child internalizing and externalizing behavior. Participants were 115 mothers and their school-aged children who participated in an outpatient neuropsychological evaluation. Results suggest that child reported maternal warmth and control were important in influencing the development of internalizing behavior in children. Additionally, maternal parenting stress, warmth and control were found to be important influences in the development of externalizing behavior in children. The findings from this study demonstrate that the affective component of parenting (i.e., parenting stress) is the most powerful indicator of child external outcomes. Specifically, how stressed parents feel about being a parent significantly impacts not only how they behave toward their children but also directly affects how their children behave. Finally, an important finding of this research is the unique perspective parents and children have over internalizing and externalizing behaviors and their perceptions of maternal parenting behavior. More specifically, this study suggests that when examining internalizing behavior in children, child perceptions of parenting are the most important consideration; however, when examining externalizing behavior, both maternal and child perceptions of parenting are important to consider. This highlights the importance of understanding both mothers' and children's perceptions of parenting behavior in order to best understand the influence this has over the development of internalizing and externalizing outcomes in children.

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An Examination of the Combined Influences of Maternal Cognitions, Affect, and Behavior on Child Outcomes: A Model Comparison Approach

Decades of research have demonstrated that parents play an important role in a child's psychological development. A number of researchers have shown that repeated negative parenting behavior (e.g., low warmth and excessive parental control) is associated with child internalizing and externalizing behaviors (e.g., Caron, Weiss, Harris, & Catron, 2006; Cummings, Keller & Davies, 2005; Dallaire et al., 2006). Researchers also have come to understand that although parenting behavior is an important part of any model examining child outcomes, other parenting factors, such as parenting efficacy and parenting stress, also play an important part in influencing child outcomes, as well as parenting behavior (e.g., Ashford et al., 2008; Bondy & Mash, 1999; Calzada, Eyberg, Rich & Querido, 2004; Crnic, Gaze, & Hoffman, 2005; Hill & Bush, 2001; Johnston, 1996; Mash & Johnston, 1983; Webster-Stratton, 1990). Unfortunately, to date, little work has examined the combined influences of these parenting variables (i.e., parenting behavior, parenting efficacy, and parenting stress) on internalizing and externalizing behaviors in children. The research that has examined these constructs individually has been mixed. Some research suggests that these factors have a direct influence on child outcomes while Dix's (1991) theory of parenting suggests that parental cognitions and affect influence parenting behavior which influences child outcomes. This makes it difficult to understand how the combination of these parental factors relate

to child outcomes. Thus, the goal of the current study was to test a more comprehensive and cohesive model of maternal influences on child outcomes.

Parenting Behavior

For several decades, researchers have examined the role parenting behavior plays in predicting child outcomes. Not surprisingly, it has been demonstrated that negative parenting behaviors are associated with negative outcomes in children (e.g., Rapee, 1997), whereas positive parenting behaviors may protect children from developing psychopathology (e.g., Rutter, 1990). When examining the role that parents play in influencing child outcomes, researchers commonly examine dimensions of parenting behavior (e.g., parental warmth and control) rather than examining individual, isolated parenting behaviors (Gadeyne, Ghesquiere, & Onghena, 2004). It has been suggested that dimensions of parenting behavior provide researchers with more valid and reliable information than examining single isolated behaviors alone (Darling & Steinberg, 1993).

The two most commonly examined dimensions of parenting behavior are Baumrind's (1967) constructs of parental warmth and parental control (Gadeyne, Ghesquiere, & Onghena, 2004). Parental warmth has been defined in the literature as how involved parents are in their children's lives, how interested they are in their children's activities, how often they praise and reinforce their children, and how often they express love and affection toward their children (Amato, 1990). Baumrind's

construct of control is defined in the literature as how well parents supervise their children, how strict parents are with their children's activities, and how parents implement rules for their children (Amato, 1990). This construct has since been defined as behavioral control. In order to understand the combined effects of these two parenting behavior dimensions on child outcomes the constructs of parental warmth and behavioral control often are examined simultaneously. However, it also is important for researchers to understand the unique influences parental warmth and behavioral control have in influencing child outcomes (Roelofs, Meesters, ter Huurne, Bamelis, & Muris, 2006).

Parental Warmth

Research examining parental warmth has found that it plays a role in predicting children's psychological functioning (e.g., Fine, Voyandoff, & Donnelly, 1993; Suchman, Rounsaville, DeCoste, & Luthar, 2007). Using both parent and teacher reports, it has been suggested that low parental warmth is strongly associated with high rates of externalizing problems in children (e.g., Carlson, Jacobvitz & Sroufe, 1995; Fauber, Forehand, Thomas, & Wierson, 1990; Johnston, Murray, Hinshaw, Pelham, & Hoza, 2002). It also has been demonstrated that children of parents who are low in warmth develop internalizing outcomes more often than children of parents who are high in warmth (i.e., they are more depressed, more anxious, and more stressed). Some have even suggested that the lack of parental warmth is associated with both the elicitation and maintenance of anxiety disorders in children (Vasey & Dadds, 2001).

Interestingly, research also demonstrates that parental warmth may protect against the development of psychological problems, such as behavior problems, anxiety, and depression, even in the presence of a host of risk factors (e.g., Baumrind, 1991, Brennen et al., 2003; Glantz, 1992; Rutter, 1990; Suchman et al., 2007). For example, parental warmth is associated with more resilient outcomes in children who are at a higher risk for developing psychopathology (e.g., Baumrind, 1991; Brennan et al., 2003; Fine, Voyandoff, & Donnelly, 1993). Specifically, high levels of warmth promote optimal social, emotional, and behavioral development in children (e.g., Coie, Watt, West, & Hawkins, 1993; Earls, 1980). Therefore, it seems that children fare best when there is a high level of warmth expressed by their parents.

Parental Control

Parental behavioral control also has been associated with both internalizing and externalizing outcomes in children (e.g., Baumrind, 1991; Caron, Weiss, Harris, & Catron, 2006; Wang, Pomerantz, & Chen, 2007). Researchers have found that parental behavioral control is strongly and negatively associated with childhood behavioral problems (e.g., Suchman et al., 2007). Specifically, children of parents who are over-controlling (i.e., excessively restricting and highly power-assertive) often develop externalizing behavior problems, such as oppositional behavior and conduct disorder (e.g., Hasebe, Nucci, & Nucci, 2004; Rubin, Stewart, & Chen, 1995). This may be because over-controlling parents may prevent the development of self-regulation skills,

which inhibits children from learning how to behave in a socially appropriate manner (Dishion & McMahon, 1998). Additionally, several studies have demonstrated that a lack of parental behavioral control is a strong predictor of male delinquency (Loeber & Dishion, 1983). It may be that children who are faced with a lack of boundaries do not understand where to draw the line between appropriate and inappropriate behavior and thus continue to push the bounds of social norms.

Researchers also have suggested that excessively high and low levels of parental behavioral control are associated with internalizing outcomes in children. Specifically, high levels of behavioral control have been demonstrated to be related to anxious outcomes in children (Wood et al., 2003). It may be that parents who are excessively controlling send the message to their children that they are unable to handle challenges that come their way, thus reinforcing feelings of insecurity and anxiety (Hudson & Rapee, 2001).

Not surprisingly, children whose parents engage in positive supervision and have strict boundaries for their children have fewer externalizing symptoms and generally function more positively than children whose parents do not exert such control (e.g., Wang, Pomerantz, & Chen, 2007). These children often develop healthy attachments to others and understand the importance of appropriate boundaries (e.g., Caron et al., 2006; Wang, Pomerantz, & Chen, 2007). Thus, it appears that too much or too little behavioral control leads to the most negative outcomes in children; however, this may vary

depending on the setting in which the child grows up (Baldwin, Baldwin, & Cole, 1990). Specifically, much of the work examining the role of parental control in influencing child externalizing outcomes has focused on white middle class families. While the research holds true for these samples, other studies have demonstrated that children who grow up in more dangerous neighborhoods require stricter boundaries and more forceful behavioral control than children living in safer areas (Deater-Deckard & Dodge, 1997).

In sum, research to date highlights a problem in much of the literature on parental influences on child outcomes - a lack of specificity. Research suggests that both parental warmth and parental control are related to both internalizing and externalizing behaviors, thus making it difficult to know why some children internalize while other children externalize. Therefore, more work is needed looking at both the unique and combined roles each of these parenting behavior variables has in influencing specific child outcomes.

Parenting Styles: Simultaneous Examination of Parental Warmth and Control

When examined separately, parental warmth and behavioral control have been found to predict both adaptive and maladaptive child outcomes; however, most researchers discuss the importance of examining dimensions of parenting behavior together to obtain the most accurate predictions of child outcomes. It has been demonstrated that the combination of different dimensions of parenting behavior (e.g., both warmth and behavioral control) shows more predictive power than each dimension

alone (Rothbaum & Weisz, 1994). Although combining multiple dimensions of parenting does not require researchers to examine specific categorical variables, often researchers use Baumrind's (1967) parenting styles (i.e., authoritative, permissive, authoritarian, and neglectful) to examine both parental warmth and control together.

Authoritative parenting is characterized by high levels of both warmth and behavioral control. Authoritative parents guide their children's activities firmly and consistently; however, they encourage verbal give and take and demonstrate love and sensitivity toward their children. These parents respect their children's individuality but also stress social values. The children of authoritative parents tend to be the most well adjusted (e.g., Baumrind, 1968). Typically, children of authoritative parents have been found to demonstrate optimal development; they are more competent in several domains, are more self-reliant, self-controlled, self-assertive, they tend to explore their environments more, have higher self-esteem, are generally more content, and demonstrate lower levels of both internalizing and externalizing problems than children of parents with other parenting styles (Baumrind, 1991a; Baumrind, 1991b; Baumrind, 1968; Papalia, Olds, & Feldman, 1999).

Permissive parenting also is characterized by high levels of warmth but low levels of behavioral control. Permissive parents make few behavioral demands on their children, behave in a non-punitive, accepting, and affirmative manner, and often consult with their children about family rules rather than developing a set of standard rules.

Children of permissive parents tend to be immature, have little self-control and also have been shown to demonstrate more internalizing and externalizing problems than children from authoritative homes (Baumrind, 1991a; Baumrind, 1989; Papalia, Olds, & Feldman, 1999; Suchman et al., 2007).

Authoritarian parenting, on the other hand, is characterized by low levels of warmth and high levels of behavioral control. Baumrind (1968) defined authoritarian parenting as attempting to shape child behavior in accordance with set standards of conduct, often set forth by religious or political traditions. Additionally, authoritarian parenting does not encourage verbal give and take between parents and children; children are expected to accept their parent's word without question. Children of authoritarian parents have been found to be more discontented, withdrawn, and distrustful of others (Baumrind, 1968). Additionally, children of authoritarian parents have been found to exhibit higher levels of both externalizing and internalizing problems than children of authoritative parents (Baumrind, 1991a; Baumrind, 1968; Papalia, Olds, & Feldman, 1999; Suchman et al., 2007).

Neglectful parenting is characterized by low levels of both warmth and control. Neglectful parents make few behavioral demands on their children and fail to provide an environment characterized by love and affirmation. Additionally, some parents who are neglectful also fail to encourage independence and individuality and are often rejecting of their children. Although, these families are not as well researched in the literature, they

have been found to have the worst outcomes and children from neglectful homes tend to be the least well adjusted. They demonstrate incompetence in most areas and are at a high risk for the development of mental health problems (Baumrind, 1991a; Baumrind, 1991b; Baumrind, 1989, Baumrind, 1971).

These findings highlight the importance of examining both parental warmth and control. It is clear that there are optimal levels of both that are necessary for a child's healthy psychological development. However, the levels necessary may differ based on the contextual factors such as SES, ethnicity, and neighborhood peers (Deater-Deckard & Dodge, 1997). Although Baumrind's parenting styles have given the field of psychology important insights, parenting behavior is only one piece of a larger framework that best describes parental influence on child outcomes. Other factors such as parenting efficacy and parenting stress also are important to examine and may shed light on why some children with poor parenting develop internalizing problems, whereas others develop externalizing problems.

Parenting Efficacy

Given that parents of children with pathological outcomes are under more stress (Mash & Johnston, 1983), it also is important to understand how these parents view their ability to effectively parent their children. Research on parenting efficacy, although limited, has suggested that there is a relationship between this parenting factor and child outcomes (Beck, Young, & Tarnowski, 1990; Coleman & Karraker, 2000; Lovejoy,

Verda & Hays, 1997; Mash & Johnston, 1983).

Parenting Efficacy and Child Outcomes

Parenting efficacy and child externalizing outcomes. Johnston and Mash (1989) define parenting efficacy as the degree to which parents feel competent in their ability to effectively parent their children. Studies examining relationships between parenting efficacy and child behavior problems in children with both ADHD and ODD have found that parents of children with ADHD and ODD have lower parenting efficacy than children without behavior problems (e.g., Cunningham & Boyle, 2002; Johnston, 1996). Specifically, they perceive themselves as less skillful and knowledgeable than parents of control children (Mash & Johnston, 1983). Similarly, other studies have found that the more severe a child's behavior is (i.e., the more behavior problems a child exhibits) the lower parents' reports of parenting efficacy may be. It may be that the more behavior problems a child is exhibiting diminish a parent's confidence in their ability to parent effectively.

Parenting efficacy and child internalizing problems. Though research examining the relationship between parenting efficacy and child internalizing problems is limited, there has been some evidence to suggest that parents who report lower parenting efficacy have children who exhibit more internalizing problems than parents who report higher parenting efficacy (Hill & Bush, 2001). More work is necessary in order to determine how parenting efficacy and child internalizing problems are related.

Parenting Efficacy and Parenting Behavior

Many researchers suggest that parents who do not feel competent in their ability to effectively parent their children are less able to engage in positive parenting behaviors (e.g., Kuhn & Carter, 2006; Johnston, 1996; McLaughlin & Harrison, 2006). Specifically, it has been suggested that if parents feel they are succeeding at parenting, they are more likely to persist in positive parenting behaviors (Kuhn & Carter, 2006). It has been suggested that higher parenting efficacy is related to more parental responsiveness, involvement, and monitoring (i.e., warmth and behavioral control; Bondy & Mash, 1999; Gondoli & Silverberg, 1997; Hoza et al., 2000; Katsurada & Sugawara, 2000; Shumow & Lomax, 2002), whereas lower parenting efficacy is associated with more coercive parenting (Bondy & Mash, 1999). As discussed earlier, researchers also have demonstrated that high levels of parental warmth and control generally are associated with lower levels of behavior problems, anxiety, and depression in children (e.g., Eccles et al., 1997; Gray & Steinberg, 1999). Additionally, as has been discussed, low levels of warmth and control are associated with high rates of both internalizing and externalizing problems in children (Baumrind, 1991a; Baumrind, 1991b; Baumrind, 1989). Thus, low parenting efficacy may lead to negative child outcomes while high parenting efficacy may protect children from both internalizing and externalizing problems through their influence on parenting behavior.

Parenting Stress

Although it is clear that parenting behavior plays a crucial role in predicting child outcomes, research suggests that other parental factors also may be important (e.g., Johnston & Mash, 1989; Abidin, 1992). For the past several decades, researchers have examined the role that contextual factors, such as parenting stress, play in predicting both parenting behavior and child outcomes (Anastopoulos, Guevremont, Shelton, & DuPaul, 1992; Baker, & Heller, 1996; Blader, 2006; Bondy & Mash, 1999; Costa et al., 2006; Mash & Johnston, 1983; Mesman & Koot, 2000; Webster-Stratton, 1990). The definition of parenting stress and the way parenting stress has been measured has varied widely depending on the study (Crnic, Gaze, & Hoffman, 2005; Webster-Stratton, 1990; Crnic & Greenberg, 1990; Crnic, et al., 1983; Rodd, 1993). In most studies, including the current one, parenting stress generally has been defined as how one perceives the availability of resources to cope with the demands of parenting (Abidin, 1992).

Parenting Stress and Child Outcomes

Parenting stress and externalizing outcomes. Many studies have examined the role of parenting stress in influencing externalizing outcomes in children (e.g., ADHD, ODD, and CD; Anastopoulos et al., 1992; Campbell, 1997; Costa et al., 2006; Harrison & Sofronoff, 2002; Mash & Johnston, 1983; Mash & Johnston, 1990; Mesman & Koot, 2000; Patterson & Yoerger, 1997). Not surprisingly, many researchers suggest that among children living in families with high levels of parenting stress, externalizing

behaviors show a high degree of stability and tend to worsen over time (Calzada, Eyberg, Rich & Querido, 2004; Campbell, 1995; Campbell & Ewing, 1990). Furthermore, as child psychopathology worsens, reports of parenting stress increase (Anastopoulos et al., 1992). Other researchers also have demonstrated that parents of children with comorbid diagnoses such as Oppositional Defiant Disorder and Conduct Disorder report higher levels of parenting stress than parents of children without Oppositional Defiant Disorder and Conduct Disorder (e.g., Baker & Heller, 1996; Calzada, Eyberg, Rich & Querido, 2004; Dodge & Pettit, 2003; Eyberg, Boggs, & Rodriguez, 1992).

Parenting stress and internalizing outcomes. Although little research exists examining parenting stress and its relationship to child internalizing outcomes, the research that does exist suggests that parenting stress also is related to child internalizing outcomes (Ashford et al., 2008; Costa, Weems, Pellerin, & Dalton, 2006; Mesman & Koot, 2000). Specifically, studies have demonstrated that parenting stress, in particular, parenting stress arising from dysfunctional parent-child interactions (i.e., negative interactions between parents and children), is related to children's reports of dysphoric symptoms (Greaven, Santor, Thompson, & Zuroff, 2000). Other studies have demonstrated that parents of children with depression report higher levels of parenting stress than parents of children without depression (Tan & Rey, 2005). It appears that parenting stress is an important factor that may work to elicit and/or maintain internalizing problems in children.

In summary, the research examining the direct influences of parenting stress on child outcomes has demonstrated a significant positive relationship between parenting stress and higher levels of both internalizing and externalizing outcomes (e.g., Johnston, 1996; Costa et al., 2006). However, there is other research that supports an indirect relationship between parenting stress and child outcomes that is mediated by parenting behavior (e.g., Deater-Deckard & Scarr, 1996; Emery & Tuer, 1993; Webster-Stratton, 1990).

Parenting Stress and Parenting Behavior

It has been suggested that parenting stress disrupts a parent's ability to engage in effective parenting practices (Abidin, 1992; Anthony et al., 2005; Crnic, Gaze, & Hoffman, 2005; Harwood & Eyberg, 2006; Mash, Johnston & Kovitz, 1983, Webster-Stratton, 1990). This research suggests that parenting stress is positively correlated with poorer parenting behavior in general (Mash, Johnston & Kovitz, 1983; Webster-Stratton, 1990). Specifically, it has been demonstrated that parents who report more parenting stress are more irritable and critical toward their children and often enforce harsher punishments than parents who report less parenting stress (McLoyd, Jayaratne, Ceballo, & Borquez, 1994; Webster-Stratton, 1990). Additionally, parents who report more stress tend to exhibit more authoritarian parenting styles, enforce stricter boundaries with their children, are less involved, less responsive, and are less nurturing with their children than parents who report low levels of parenting stress (Abidin, 1992; Anthony et al., 2005;

Crnic, Gaze, & Hoffman, 2005; Harwood & Eyberg, 2006; Mash, Johnston & Kovitz, 1983, Webster-Stratton, 1990). Although it has been demonstrated that parenting stress is related to both parenting behavior and child outcomes, little research has actually examined whether parenting behavior mediates the relationship between parenting stress and child outcomes. It is important to understand if parenting behavior is a mediator to determine factors clinicians can target in treatment interventions. Although reducing levels of stress may be important, if parenting behavior mediates this relationship, it may be more important to address maladaptive parenting behaviors first.

In conclusion, the research clearly suggests that parenting stress is an important factor to consider in any model examining parental influences on child outcomes. Although the research is still unclear as to whether this relationship between parenting stress and child outcomes is direct or mediated by parenting behavior, it is clear that how stressed a parent feels influences the level of psychopathology in their children.

Theoretical Framework and Proposed Models

In sum, much research has examined how parents influence child outcomes. It has been established that poor parenting behavior leads to more internalizing and externalizing outcomes in children. It also has been established that parental cognitions and affect (i.e., parenting efficacy and parenting stress) influence parenting behavior, as well as child adjustment. However, in the past, researchers have examined each of these constructs independently.

Although there is no empirical literature simultaneously examining parental cognitions, affect, and behavior, Beck's (1967) theory of depression suggests that one's thoughts and feelings directly influence their behavior. In this model, Beck describes our automatic thoughts about a situation cause our emotional reactions, which then lead to a specific expression of behavior (Beck, 1976). Specifically, our emotions and cognitions drive our response to situations: How we perceive and subsequently feel about a situation influences how we will respond. However, Beck posits that affect, cognitions, behavior, and consequences are directly associated with one another, and with depression, suggesting a partially mediating model of depression (Beck, 1996). Dix (1991) has applied a similar theory to parenting. Specifically, Dix's theory suggests that parental cognitions and affect influence parenting behavior. However, in this model, Dix suggests that emotion is the more salient factor in understanding the relationship between parenting and child outcomes. Specifically, he posits that parenting is an emotional experience and the consequences these emotions have on child outcomes is evidenced in how parents behave. This theory suggests that when parents experience positive emotions, they engage in warmer parenting, which is predictive of more positive outcomes for children. In contrast, if a parent experiences negative emotions they have less emotional resources available to engage in positive parenting behavior, which may lead to more power assertive parenting and more negative outcomes in children (Dix, 1991).

Thus, the current study proposed to identify the model that best represents the combination of maternal influences on child outcomes. Specifically, maternal efficacy, stress, and behavior were proposed as predictors of child internalizing and externalizing behaviors. Given previous literature which has clearly indicated that maternal efficacy, stress, and behavior are associated with both internalizing and externalizing outcomes in children, this study proposed to examine the direct influence of these factors on child internalizing and externalizing behaviors (see Figure 1). Based on Dix's (1991) theory of parenting, this study also proposed to examine the indirect influence of maternal parenting efficacy and stress on child internalizing and externalizing behaviors, mediated by maternal warmth and control (see Figure 2). Finally, given Baumrind's theory of parenting styles as described by the interaction of warmth and control, the current study also sought to examine the indirect influence of maternal parenting efficacy and stress on child internalizing and externalizing behaviors, mediated by the interaction of maternal warmth and control (see Figure 3).

Figure 1: Direct influences of maternal parenting efficacy, stress, and behavior on child internalizing and externalizing behaviors

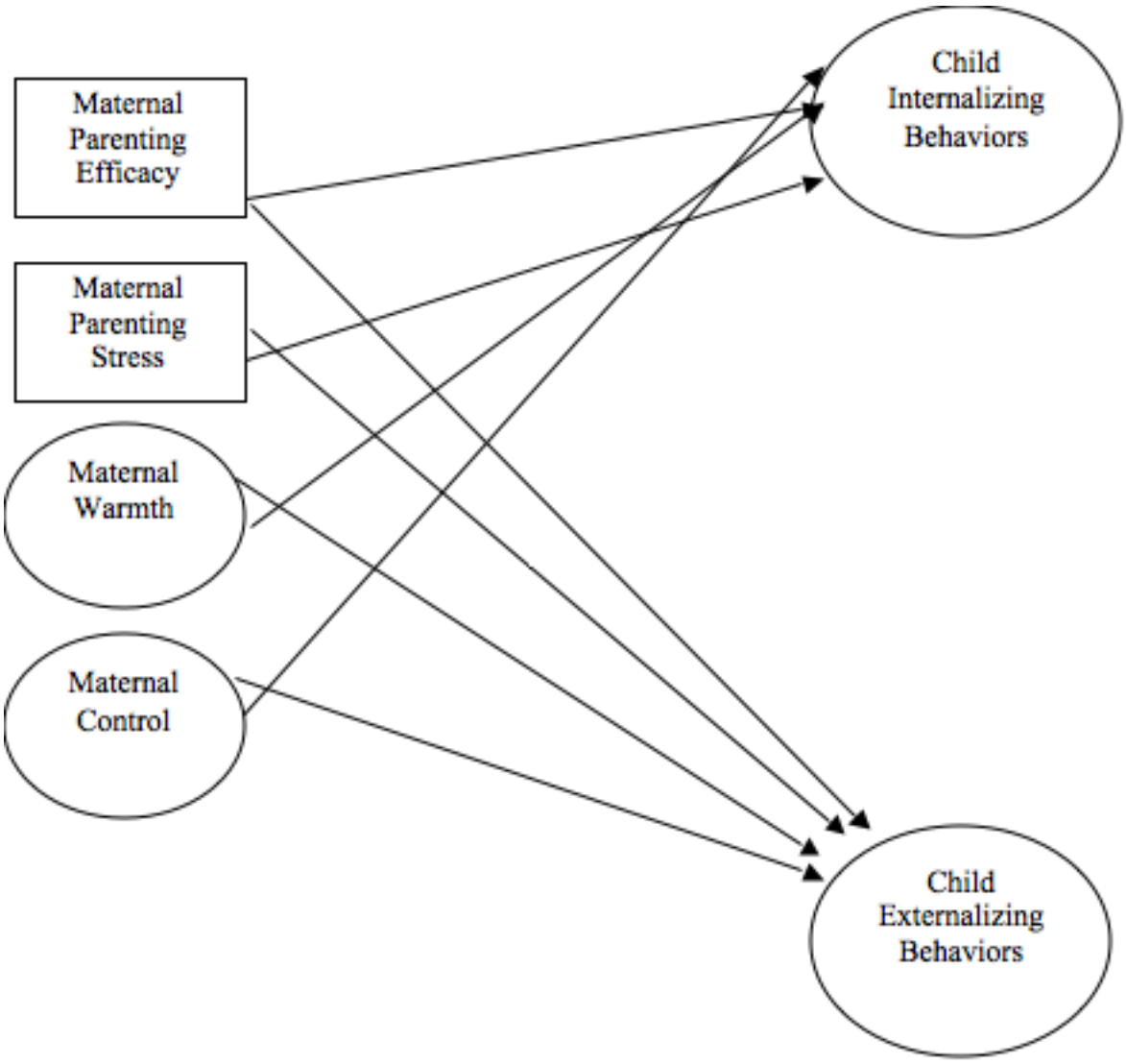


Figure 2: Indirect influences of maternal parenting efficacy and stress on child internalizing and externalizing behavior mediated by maternal warmth and control

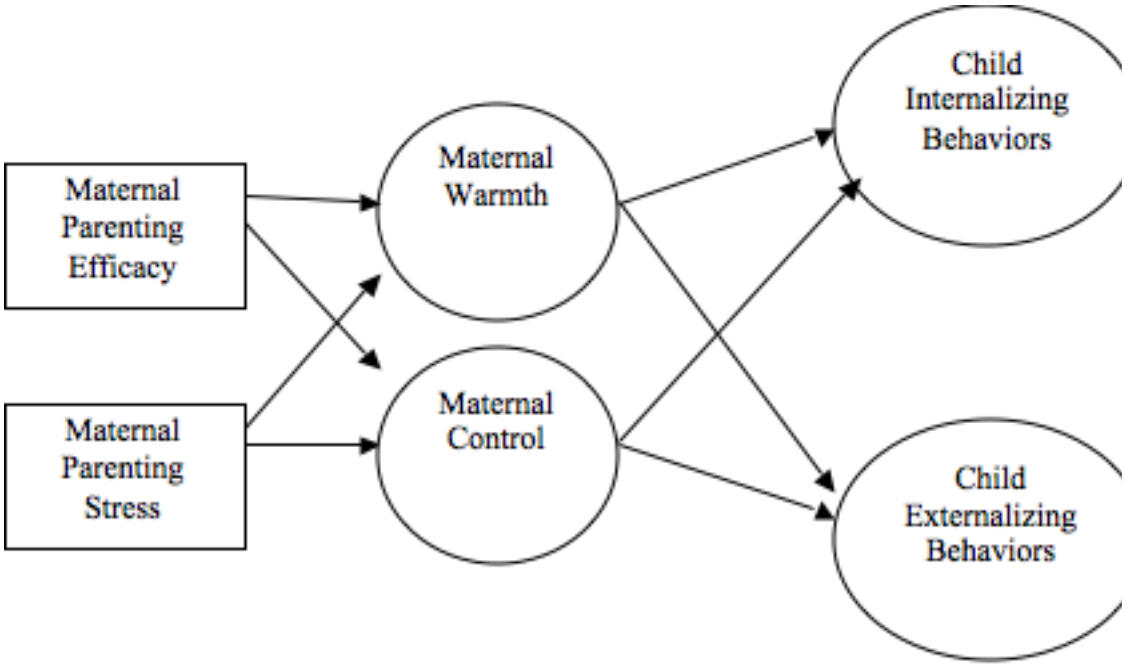
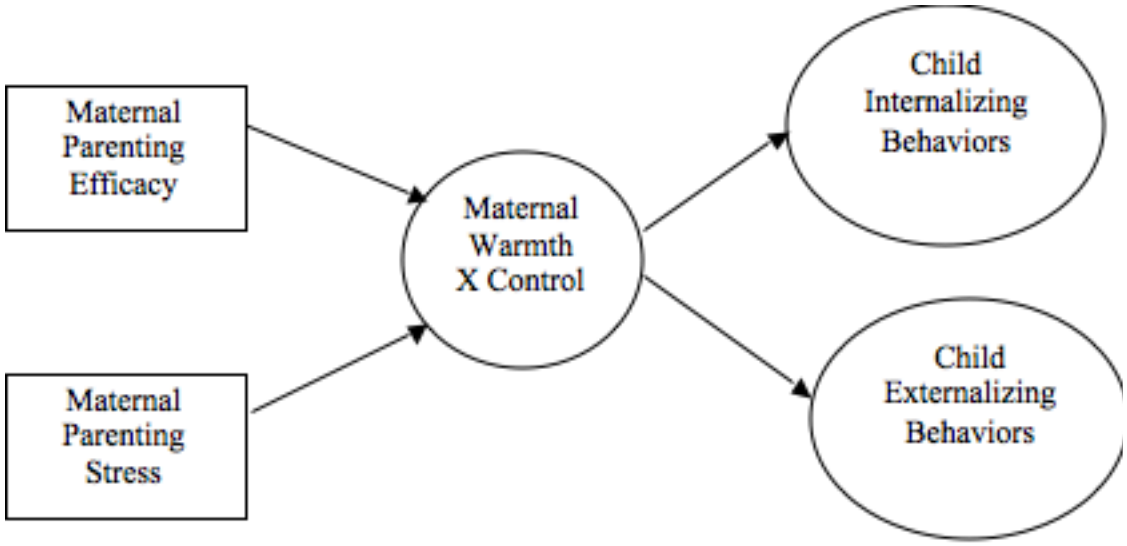


Figure 3: Indirect influences of maternal parenting efficacy and stress on child internalizing and externalizing behaviors mediated by the interaction of maternal warmth and control



Method

Participants

Participants included 115 mothers and their school-aged children (see Table 1 for demographic information). Families were recruited from an outpatient neuropsychology clinic in a large Midwestern hospital. Children with a wide range of internalizing, externalizing, medical, and neurological conditions were recruited in an attempt to gain a sample representative of a wide range of child outcomes. Families were excluded from the study if the child was not between the ages of 6 and 12 years, if there were acute stressors as a result of a medical condition, or if the child and/or mother did not have the cognitive capacity or language ability to complete the measures.

Table 1.

Demographic Variables

Variable	M	SD	N	%
Child				
Age	8.85	1.82		
Gender				
Male			84	65
Female			45	35
Ethnicity				
Caucasian			82	64
Ethnic Minority			30	23
Unknown			17	13
Diagnosis				
ADHD			51	40
ODD/CD			2	2
LD			18	14
PDD			7	5
Cognitive Disability			5	4
Anxiety/Depression			42	33
Medical Condition			74	57
Mother/Family				
Socioeconomic Status	45.59	12.45		
Age	38.25	6.93		
Ethnicity				
Caucasian			93	81
Ethnic Minority			21	18
Unknown			1	1
Marital Status				
Married/Cohabitating			86	75
Single/Divorced/Separated			22	19
Unknown			7	6

Note. N= 115 mothers and children

Procedure

Mothers, fathers, and children were recruited for participation when they arrived at the clinic for their neuropsychological evaluation. Providers informed the families of the ongoing study. If the family was interested, a research assistant explained the study to the family and obtained consent and assent. Prior to the evaluation, mothers

and teachers completed the Child Behavior Checklist for ages 6-18 (CBCL/6-18; Achenbach, 2001) and Teacher Report Form for ages 6-18 (TRF/6-18: Achenbach, 2001), respectively. While their child was being evaluated, mothers completed a packet of parent-report measures, including a demographic form, the Parenting Sense of Competence Scale (PSOC; Johnston & Mash, 1989), the Parenting Stress Index-Short Form (PSI-SF; Abidin, 1990), and the Parent Behavior Inventory (PBI; Lovejoy, Weis, O'Hare, & Rubin, 1999). Following the evaluation, children completed the Children's Depression Inventory (CDI; Kovacs, 1982) and the Revised Children's Manifest Anxiety Scale-2 (RCMAS-2; Reynolds & Richmond, 2008) if they were not completed as part of the evaluation. Completion of the parent-report measures took approximately a ½ hour. Completion of the child-report measures took approximately a ½ hour.

Measures

Demographic Information

Demographic information was obtained from the child's chart, as well as a brief demographic form. Information regarding mother and child age and ethnicity, as well as the child's diagnosis was obtained from the chart. Information regarding mothers' education level, marital status, occupation, and income was obtained from a brief demographic form that each family completed.

Parenting Efficacy

Parenting Sense of Competence Scale (PSOC; Johnston & Mash, 1989). The

parenting efficacy subscale from the PSOC was used in the current study. This is a 7-item self-report measure designed to assess how efficacious a parent believes he/she is. Items are scored on a 6-point Likert scale ranging from 1 (strongly agree) to 6 (strongly disagree). After reverse scoring, higher scores indicate higher parenting efficacy. The internal consistency of the parenting efficacy subscale has been found to be .76 (Johnston & Mash, 1989); it also has been shown to have acceptable validity (Ohan, Leung, & Johnston, 2000).

Parenting Stress

Parenting Stress Index-Short Form (PSI-SF; Abidin, 1990). The PSI-SF is a 36-item self-report measure derived from the Parenting Stress Index (PSI; Abidin, 1983), which examines a parent's level of distress. Items are rated on a 5 point Likert scale indicating the degree to which parents agree with each statement. Three subscales can be derived from the PSI-SF including Difficult Child, Parent Distress, and Parent-Child Dysfunctional Interaction. Higher scores indicate higher levels of distress. Correlations between the PSI-SF and the PSI have been demonstrated to be high (.87 in some studies; Haskett, Ahern, Ward, & Allaire, 2006). Internal consistency has been demonstrated to range from a= .80 to .87 (Putnick et al., 2008); it has also been shown to have acceptable validity (Haskett et al., 2006).

Parenting Behavior

Parenting Behavior Inventory (PBI; Lovejoy, Weis, O'Hare, & Rubin, 1999). The PBI is a 20-item self-report measure that assesses supportive/engaged and hostile/coercive parenting behaviors. Items are rated on a 6 point Likert scale ranging from 0 (not at all true/I do not do this) to 6 (very true/I do this often). Two subscales have been identified, one that assesses hostile/coercive parenting behaviors and one that assesses supportive and engaged positive parenting behaviors. Each subscale was examined separately to tap into warm and controlling parenting behaviors. Adequate internal consistencies for both factors have been found (a=.83 for supportive/engaged parenting behavior and a=.81 for hostile/coercive parenting behavior; Lovejoy et al., 1999). This measure has been demonstrated to be appropriate for use with both parents and children as reporters (Lovejoy et al. 1999). Both parent and child reports of parenting behaviors were employed in the present study.

Child Psychopathology

Child Behavior Checklist for ages 6-18 (CBCL/6-18; Achenbach, 2001). The CBCL is a 118 item parent-report measure designed to assess both externalizing and internalizing problems in children. Parents report on child symptoms using a 3-point frequency scale ranging from 0 (not true) to 2 (very/often true). Scores from the internalizing and externalizing subscales were used. Adequate reliability has been found for both the internalizing (a=.85) and externalizing (a=.92) subscales (Fite et al., 2006).

Teacher Report Form for ages 6-18 (TRF/6-18; Achenbach, 2001). The TRF is a 118 item teacher-report measure designed to assess both externalizing and internalizing problems in children. Teachers report on child symptoms using a 3-point frequency scale ranging from 0 (not true) to 2 (very/often true). Scores from the internalizing and externalizing subscales were used. Adequate reliability has been found for all subscales (a=.72-.95; Achenbach, 1991).

Children's Depression Inventory (CDI; Kovacs, 1982). The CDI is a 27-item self-report questionnaire designed to assess depressive symptoms in children. Children report on their own symptoms using a 3-point Likert scale ranging from 0 (no symptom) to 2 (distinct symptom). CDI scores can range from 0–54 with clinically significant psychopathology suggested with scores of 13 or higher (Kovacs, 1996**).** Adequate internal consistency has been demonstrated **(**a=.71-.89; Smucker, Craighead, Craighead, & Green, 1986**).** The CDI has been validated for use with children between the ages of 7-17 or with at least a first grade reading level (Kovacs, 2003).

Revised Children's Manifest Anxiety Scale-II (RCMAS-2; Reynolds & Richmond, 2008). The RCMAS-2 is a 49-item measure that examines the frequency and severity of anxiety symptoms including worry, social anxiety, and physiological anxiety. The measure also contains a defensiveness scale and an inconsistent response index. The instrument has been demonstrated to be reliable among children as young as 6-years old (a=.75-.92; Reynolds & Richmond, 2008). It has also demonstrated to have adequate

construct validity and internal consistency (Reynolds & Richmond, 2008).

Results

Models of Maternal Influences on Child Outcomes

Preliminary Analyses. Prior to examining the proposed models, descriptive data and preliminary analyses were examined. See Table 2 for descriptive data. To determine which variables to enter into the models, preliminary correlations were conducted to examine the nature of the relations among the variables of interest: maternal parenting stress, efficacy, warmth, and control, as well as child internalizing and externalizing behavior (see Table 3). Examination of the correlations suggested that child reported depression and anxiety were not significantly associated with teacher reported internalizing behavior, and only small associations between these variables and mother reported child internalizing behavior emerged. Given that this is consistent with previous research suggesting discrepant reports of child internalizing behavior among different reporters (e.g., Stanger & Lewis, 1993) and previous research suggesting that children are better reporters of their own internal processes (e.g., Kolko, Kazdin, & Day, 1996), child reported perceptions of child internalizing behavior were chosen to be entered into the model. Further, although child reported depression and anxiety were significantly correlated, only child reported depression was significantly associated with the independent variables. Thus, only child reported depression was entered in the model. A similar method was used when deciding what variables to use when examining child

externalizing behavior. Mother reported externalizing behavior and teacher reported externalizing behavior were not significantly correlated, and only mother reported externalizing behavior was associated with the independent variables of interest. Thus, only mother reported child externalizing behavior was included in the model.

Table 2.

Means and standard deviations of independent and dependent variables for mother data only.

Variable	M (SD)	Range
Independent Variables		
Maternal Parenting Efficacy	4.27 (.70)	2.29-6.00
Maternal Parenting Stress	79.34 (19.28)	44.0-124.0
Maternal Warmth (Mother Report)	4.34 (.57)	2.30-5.00
Maternal Warmth (Child Report)	3.76 (.91)	1.50-5.00
Maternal Control (Mother Report)	1.48 (.58)	.50-3.40
Maternal Control (Child Report)	1.76 (.98)	.00-4.50
Dependent Variables		
Maternal Reported Child Internalizing Behaviors	61.22 (11.96)	33.0-89.0
Teacher Reported Child Internalizing Behaviors	55.62(10.07)	37.0-77.0
Child Reported Depression	10.81 (7.82)	0.0-37.0
Child Reported Anxiety	18.69 (11.02)	0.0-40.0
Maternal Reported Child Externalizing Behaviors	57.55 (11.81)	33.0-89.0
Teacher Reported Child Externalizing Behaviors	53.73 (9.37)	41.0-77.0

Note. N= 86 mothers and children

Before proceeding with further analyses, three Box's Tests also were conducted to assess whether the covariance matrices for the set of variables was different for boys and girls, for minority and non-minority families, and for children who presented with medical concerns versus children who presented with non-medical concerns. No gender differences (Box's M = 2.58, F = .834, p = .48), ethnicity differences (Box's M = 1.67, F = .524, p = .67), or differences based on medical versus nonmedical conditions (Box's M = 26.54, F = .858, p = .68) were found. Therefore, analyses proceeded using the whole sample. Similarly, correlations between other key demographic variables (i.e., child age and family socioeconomic status) and dependent variables of interest also were examined to determine if any covariates needed to be entered into the models. No significant correlations between these demographic variables and the variables of interest emerged; thus, covariates were not entered into the models.

Primary Analyses. Structural Equation modeling using AMOS software (Version 18; Arbuckle, 2009) and employing a nested model approach was used (Kline, 2002). Each variable was entered into the overall models and the models were evaluated for overall fit using the Chi Square Statistic ($\chi 2$), Goodness of Fit (GFI), Root Mean Square Error of Approximation (RMSEA), and the Comparative Fit Index (CFI). The $\chi 2$ statistic represents a badness of fit index, such that higher values reflected poorer fitting models (Kline, 2002). The GFI reflects the degree to which a model reflects good fit with the data and are considered analogous to an R^2 value (Kline, 2002). Values can range

from 0 to 1.0, with a value of 1.0 indicating perfect fit (Kline, 2002). The RMSEA also provides an index of fit for testing models. However, unlike the GFI, higher values represented a worse fitting model. RMSEA also examines the parsimony of the model (Kline, 2002). If two models account for an equal amount of variance among variables, the RMSEA computation favors the simpler model. The CFI is the final fit index that was considered. Similar to the GFI, values range from 0 to 1.0, with higher values representing better fit with the data. This index provides information about how the tested model compared to a null model in which the observed variables were unrelated (Kline, 2002). Convention suggests that acceptable values for CFI are those greater than .90. Based on the correlations among variables and the power limitations of the present study, models were computed using a manifest structural model. .

Internalizing Model. Based on preliminary correlations (see Table 3), the first model examined child reported maternal warmth and control as independent predictors of child reported depression. As shown in Figure 4, this model provided a good fit with the data ($\chi 2(1) = .194$, $p = .66$; $\chi 2/df = 0.194$; GFI = .98, AGFI = .94; CFI = 1.00; RMSEA = .000; AIC = 16.194). Examination of the independent effects of different child reported parenting behaviors revealed that child reported maternal warmth ($b = -.23$, $p < .05$) was associated with less child reported depression and child reported maternal control ($b = .24$, $p < .05$) was associated with more child reported depression.

Table 3

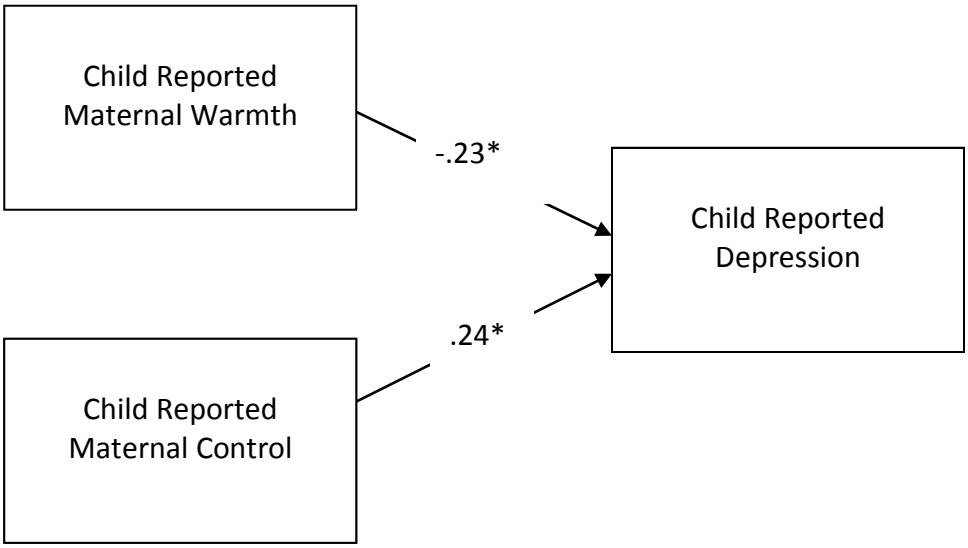
Intercorrelations among Maternal Variables and Child Outcome Variables for Mother Data Only

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Parenting Efficacy-M	-											
2. Parenting Stress-M	-.37**	-										
3. Maternal Warmth-M	.39**	-.38**	-									
4. Maternal Warmth-C	.02	-.22*	.02	-								
5. Maternal Control-M	-.24*	.27**	-.19+	.09	-							
6. Maternal Control-C	-.12	.03	-.03	-.05	.14	-						
7. Child Internalizing-M	.15	.50**	-.15	-.33**	.00	-.01	-					
8. Child Depression-C	.12	.07	.13	-.24*	-.06	.25*	.25*	-				
9. Child Anxiety-C	.03	.06	.09	-.11	.13	.13	-.23*	.64**	-			
10. Child Internalizing-T	.02	.27**	-.06	-.16	.06	-.16	.51**	.08	.11	-		
11. Child Externalizing-M	-.15	.55**	-.32**	-.27**	.36**	.18	.51**	.25*	.15	.08	-	
12. Child Externalizing-T	-.02	.06	-.13	.10	.49**	.11	-.07	.06	.12	.27**	.25*	-

Note. n=86; M denotes measures completed by mothers, C denotes measures completed by children, and T denotes measures completed by teachers.

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

Figure 4: Model Examining Child Reported Maternal Warmth and Control Directly Influencing Child Reported Depression



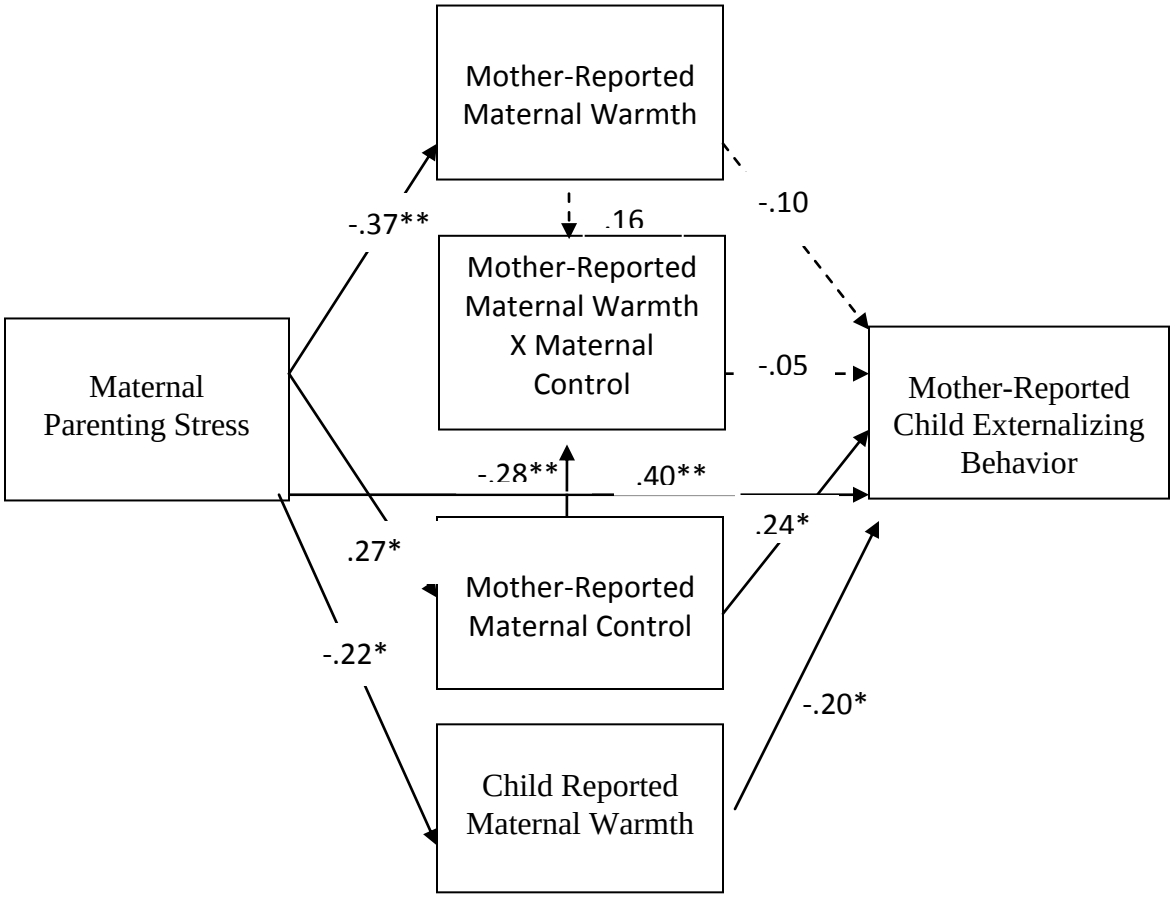
Note. $\chi 2(1) = .194$, $p = .66$; $\chi 2/df = 0.194$; GFI = .98; CFI = 1.00; RMSEA = .000; AIC = 16.194
*$p<.05$

Externalizing Model. Using a nested modeling approach, the externalizing model examined all three possible proposed pathways in one overall model. By using only one model to examine all possible pathways rather than individually comparing several models, we were able to maintain the structure of the model and reduce error variance. If the overall model did not fit the data, individual pathways were set to zero based on initial hypotheses until a good fitting model emerged. Based on preliminary correlations (see Table 3), parenting efficacy was dropped as it was not associated with any of the outcome variables. Therefore, the first model examined both direct and indirect relationships among maternal parenting stress, mother-reported maternal warmth, child-reported maternal warmth, mother-reported maternal control, and mother reported child externalizing problems. As shown in Figure 5, this model provided a good fit with the data ($\chi 2(2)$ .672, p = .72; $\chi 2/df$ = .34; GFI = .99; CFI = 1.00; RMSEA = .00; AIC = 50.672).

Examination of the independent effects of each of these variables revealed that maternal parenting stress was directly related to lower levels of mother reported maternal warmth (β = -.37, p<.01), higher levels of mother reported maternal control (β = .27, p<.05), lower levels of child reported maternal warmth (β = -.22, p<.05), and higher levels of mother reported child externalizing behaviors (β = .40, p<.01). Mother reported maternal control was associated with higher levels of mother reported child externalizing behavior (β = .24, p<.05), whereas child reported maternal warmth was associated with

lower levels of mother reported child externalizing behavior (β = -.20, p<.05).

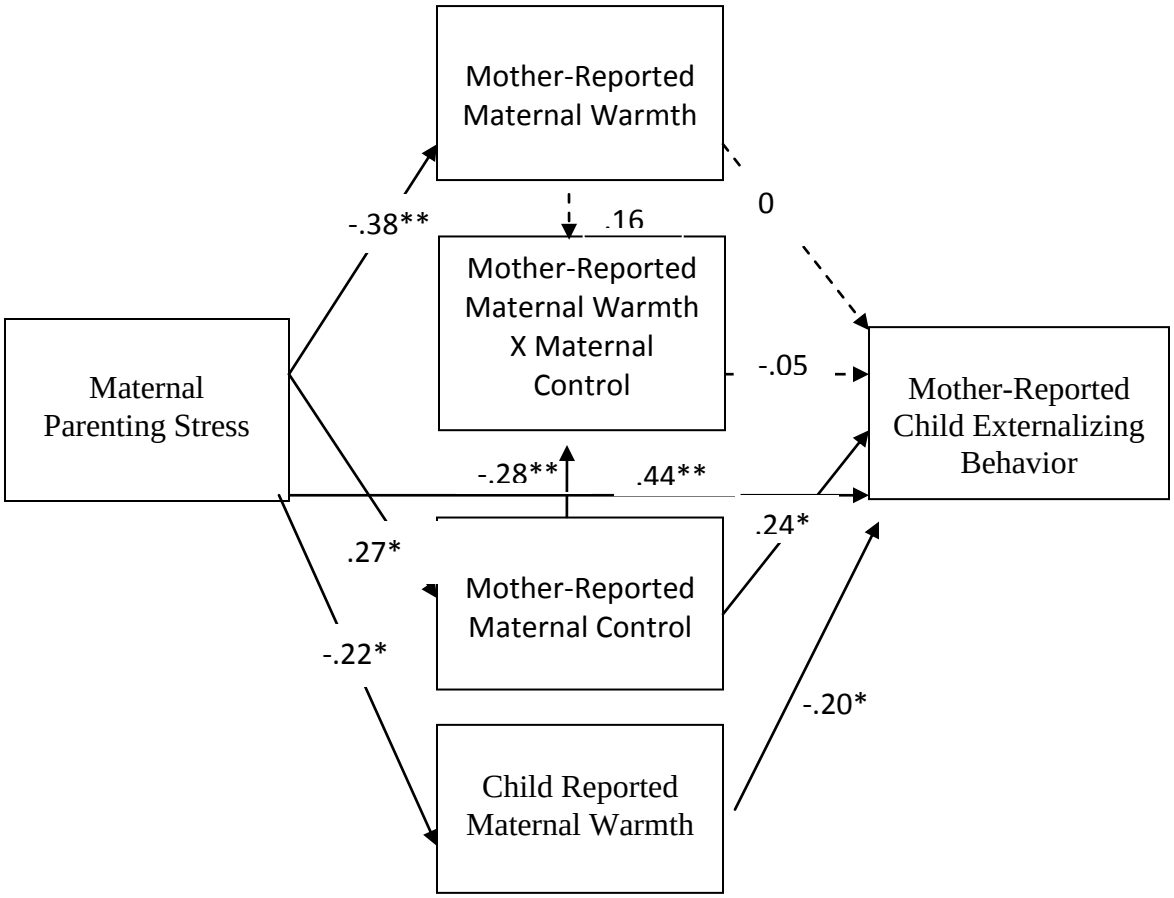
Figure 5: Model Examining Mother Reported Warmth and Control, Child Reported Maternal Warmth, and the Interaction of Mother Reported Warmth and Control Partially Mediating the Relationship between Maternal Parenting Stress and Maternal Reported Child Externalizing Behavior



Note. χ2(2) .672, p = .72; χ2/df = .34; GFI = .99; CFI = 1.00; RMSEA = .00; AIC = 50.672
*p<.05 **p<.01

Although the model proved to be a good fit with the data, given that almost every pathway was accounted for, it may not be the most parsimonious model and subject to error. Therefore, the model was tested to determine if fit improved after setting specific nonsignificant paths to zero. Therefore, to start, the pathway between mother reported maternal warmth and mother reported child externalizing behavior was set to zero. As shown in Figure 6, this model provided an improved fit with the data ($\chi 2(3)$ 1.951, p = .58; $\chi 2/df$ = .65; GFI = .98; CFI = 1.00; RMSEA = .00; AIC = 49.951). Examination of individual pathways again suggested similar associations among variables (see Figure 6).

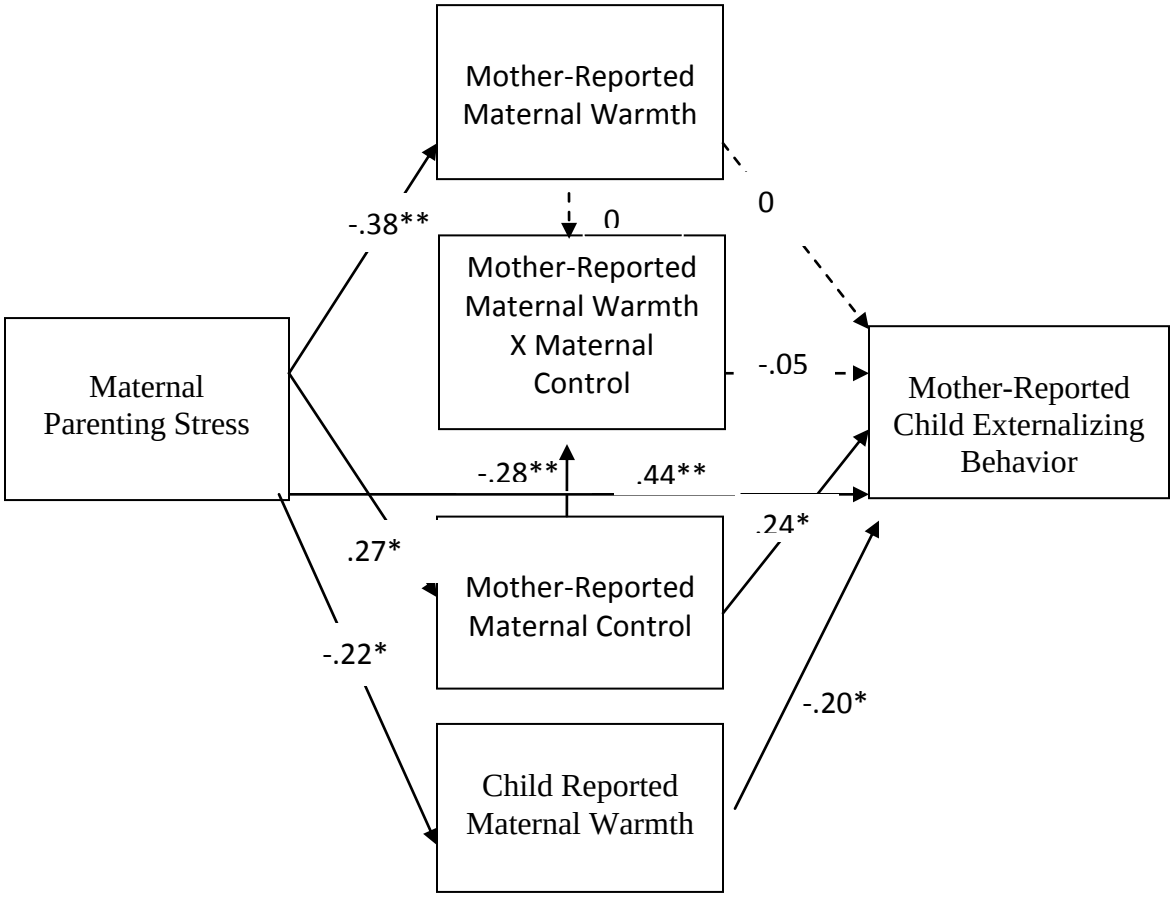
Figure 6: Model Examining Mother Reported Control, Child Reported Maternal Warmth, and the Interaction of Mother Reported Warmth and Control Partially Mediating the Relationship between Maternal Parenting Stress and Maternal Reported Child Externalizing Behavior



Note. $\chi 2(3)$ 1.951, p = .58; $\chi 2/df$ = .65; GFI = .98; CFI = 1.00; RMSEA = .00; AIC = 49.951
*p<.05 **p<.01

Next, to further define the model, the pathway from mother reported maternal warmth to the interaction term was set to zero. As can be seen in Figure 7, removing this pathway degraded the fit of the model ($\chi 2(4)$ 4.445, p = .35; $\chi 2$/df = 1.11; GFI = .95; CFI = .99; RMSEA = .04; AIC = 50.45). Examination of individual pathways indicated that similar associations remained (see Figure 7).

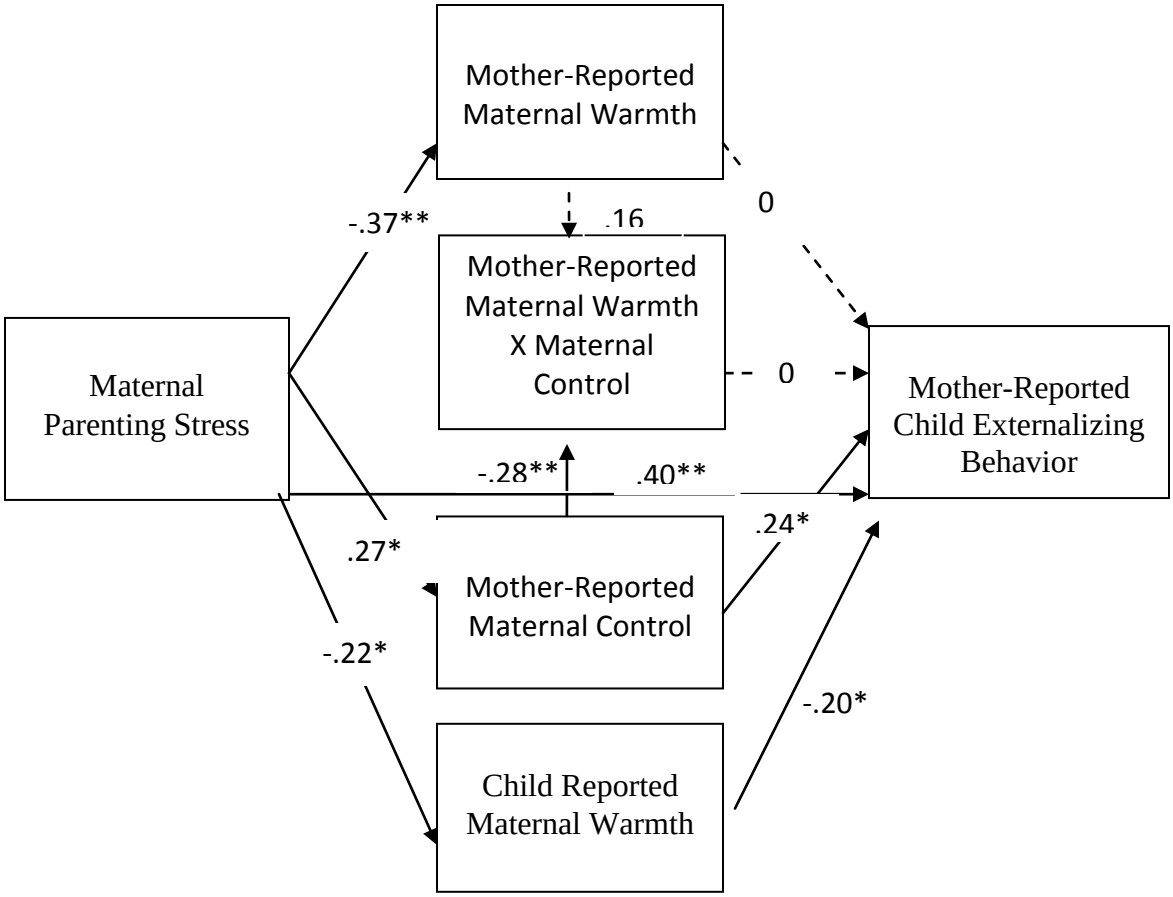
Figure 7: Model Examining Mother Reported Control, Child Reported Maternal Warmth, and the Interaction of Mother Reported Warmth and Control Partially Mediating the Relationship between Maternal Parenting Stress and Maternal Reported Child Externalizing Behavior



Note. $\chi 2(4)$ 4.445, p = .35; $\chi 2/df$ = 1.11; GFI = .95; CFI = .99; RMSEA = .04; AIC = 50.45
*p<.05 **p<.01

Because the fit of the model degraded by removing the pathway from mother reported maternal warmth to the interaction term, this pathway was put back in the model. Then, to further define the model, the nonsignificant pathway between the interaction term and child externalizing behaviors was set to zero. As can be seen in Figure 8, this model improved the fit of the data ($\chi 2(4)$ 2.576, p = .63; $\chi 2$/df = .64; GFI = .97; CFI = 1.00; RMSEA = .00; AIC = 48.576). Examination of individual pathways again found similar associations among the variables (see Figure 8).

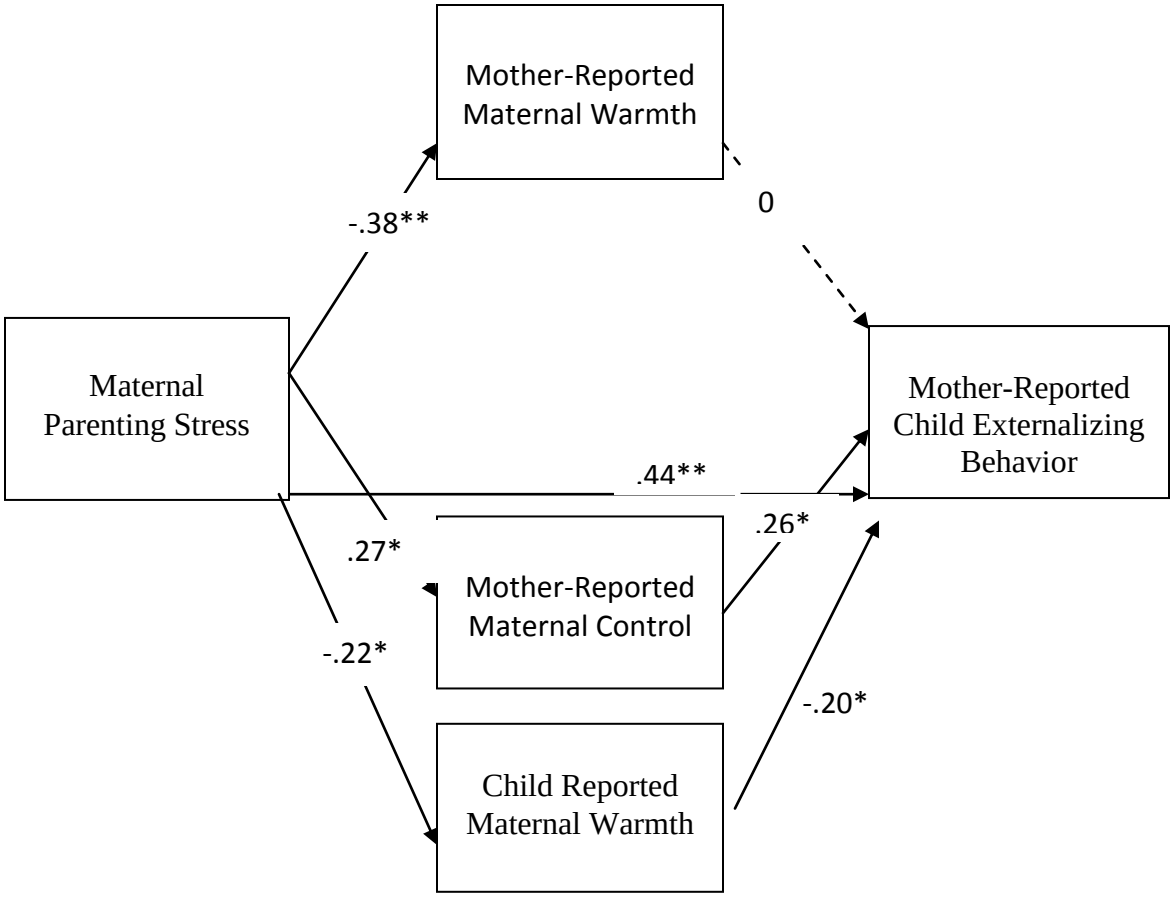
Figure 8: Model Examining Mother Reported Control and Child Reported Maternal Warmth Partially Mediating the Relationship between Maternal Parenting Stress and Maternal Reported Child Externalizing Behavior



Note. $\chi 2(4)$ 2.576, p = .63; $\chi 2/df$ = .64; GFI = .97; CFI = 1.00; RMSEA = .00; AIC = 48.576
*p<.05 **p<.01

Finally, because the interaction term was not correlated with many of the other variables in the model, this variable was removed completely from the model to determine if the fit of the model would degrade without the variable. As is seen in Figure 9, removal of the interaction term further improved the fit of the model ($\chi 2(1)$ 1.574, p = .21; $\chi 2/df$ = 1.574; GFI = .98; CFI = .99; RMSEA = .08; AIC = 39.574) suggesting that this variable is not important to the overall model. Associations among individual pathways remained the same suggesting that the relationship between maternal parenting stress and mother reported child externalizing behavior is partially mediated by mother reported maternal control and child reported maternal warmth.

Figure 9: Model Examining Mother Reported Control and Child Reported Maternal Warmth Partially Mediating the Relationship between Maternal Parenting Stress and Maternal Reported Child Externalizing Behavior



Note $\chi 2(1)$ 1.574, p = .21; $\chi 2/df$ = 1.574; GFI = .98; CFI = .99; RMSEA = .08; AIC = 39.574
*p<.05 **p<.01

Discussion

The primary goal of this study was to better understand the combined influence of maternal affect, cognitions, and behavior on child internalizing and externalizing behavior. Guided by Beck's theory of depression (Beck, 1967) and Dix's theory of parenting (Dix, 1991), maternal parenting stress, efficacy, and behavior were identified as particularly meaningful in the development of internalizing and externalizing behavior in children. Consistent with many of our predictions, results suggest that child reported maternal warmth and control were significantly associated with internalizing behavior in children. Additionally, maternal parenting stress, child reported maternal warmth, and mother reported maternal control were found to be significantly associated with externalizing behavior in children.

Model Comparisons

In order to examine the combined influence of maternal parenting variables on child outcomes, one model examining child reported maternal parenting behavior in predicting child internalizing behavior and a nested model examining maternal parenting stress and behavior in predicting child externalizing behavior were tested. Surprisingly, initial correlations indicated that maternal parenting efficacy was not associated with either child internalizing or externalizing behavior and was not included in the models as originally planned. This is inconsistent with the limited previous research suggesting that parenting efficacy is related to both internalizing and externalizing outcomes in children

(Cunningham & Boyle, 2002; Hill & Bush, 2001; Johnston, 1996). One possible explanation for this is that much of the research examining parenting efficacy and child outcomes has focused on other parental cognitions, such as attributions for child behavior (e.g., Mash & Johnston, 1983). It may be that parental attributions of child behavior are more important to examine than other parental cognitions, such as parenting efficacy, when examining child outcomes.

Internalizing Behavior. The internalizing model examined child reported maternal warmth and control as they directly relate to child reported depression. This model proved to be a good fit with the data, indicating that how children perceive their mother's behavior is important in their experience of depression. Specifically, high child reported maternal warmth and low child reported maternal control were associated with lower levels of child reported depression. This is consistent with previous literature suggesting that high maternal warmth and low maternal control are associated with low levels of child internalizing behaviors (e.g., Eccles et al., 1997; Gray & Steinberg, 1999) and suggests that children who perceive their mothers as being warm but not overly controlling report fewer internalizing behaviors regardless of how parents feel about their own parenting behavior. It is important to note that the mean for child reported maternal control in the present study was a 1.76 on a 6 point scale with the range not exceeding 4.5 suggesting that only moderate amounts of child reported maternal control were being examined. Interestingly, although previous research suggests that moderate amounts of

control are associated with the most positive outcomes in children, the current study suggests that any child perceived maternal control is associated with higher reports of child depression symptoms. This further highlights the importance of children's perceptions of parenting variables when reporting on their own internal processes. This is consistent with previous research that suggests children's interpretations of situations are associated with their experience of internalizing problems (e.g., Epkins, 1996; Magnusdottir & Smari, 1999; Shortt et al., 2001; Wichmann et al., 2004) and may serve as a mechanism by which parental behaviors are related to child outcomes (Barrett et al., 1996; Choripita & Barlow, 1998).

Given that the current study precludes the understanding of directionality, it also may be that children who are experiencing depression symptoms perceive their parents as engaging in more negative behavior. In fact, Beck's (1967) theory of depression states that depression affects one's cognitions in that individuals who are depressed have more negative cognitions about themselves, others, and the world. Research examining depressive cognitions in children is consistent with this theoretical literature. Much research demonstrates that children who are depressed have more negative perceptions of themselves and others and report that their relationships with others are more negative than children who are not depressed (e.g., Blunt-Bugental & Johnston, 2000, Fincham, Beach, Arias, & Brody, 1998; Gladstone & Kaslow, 1995). Future work is needed to tease apart the directionality of the current findings.

Externalizing Behavior. One overall model examining the combined influence of maternal factors on child externalizing behavior also was tested. This model examined both direct and indirect pathways between maternal parenting stress and mother reported child externalizing behavior. Given that previous research suggests that the relationship among these variables may be both direct and indirect, several pathways were examined to determine which best explains the data. Then, to best define the model, individual pathways were set to zero in a stepwise fashion to determine the most parsimonious, best fitting model. Although some pathways remained nonsignificant, the model with mother and child reported maternal warmth and mother reported maternal control mediating the relationship between maternal parenting stress and child externalizing behaviors proved to be the best fitting, most parsimonious model. This suggests that partial mediation best describes the relationship among these variables. Specifically, mother reported maternal control and child reported maternal warmth partially mediated the relationship between maternal parenting stress and mother reported child externalizing behavior.

Interestingly, the interaction between mother reported warmth and control did not appear to be an important indicator in the model. This is consistent with critiques of Baurmind's research suggesting that combining the two parenting variables removes the unique variance that each warmth and control have in predicting children's externalizing outcomes (Roelofs et al., 2006). The findings from the present study further support the notion that maternal warmth and control each uniquely contribute to children's

externalizing outcomes and both should be examined to determine the best possible outcomes for children. In support of this idea, although mother reported maternal warmth was not significantly associated with mother reported child externalizing behaviors, it did hold significance in the overall model suggesting that how mother's perceive their own warmth likely is related to how the other variables manifest which, in turn, is associated with child externalizing behavior.

These findings also highlight the importance of *both* parent and child perceptions in understanding how this set of variables influences child externalizing outcomes. Specifically, both maternal perceptions of control and child perceptions of warmth partially mediated the relationship between maternal parenting stress and child externalizing outcomes. This is consistent with previous research suggesting that attributions of other's behavior influences how one behaves toward others (Bugental & Johnston, 2000; Johnston & Ohan, 2005). Therefore a parent who perceives their child to be engaging in more externalizing behavior would likely feel more stressed and behave differently. Further, a child who perceives their parent to be warm and low in stress likely would engage in less externalizing behavior. However, it is important to understand that the cross sectional nature of this study does not allow for understanding of directionality. Therefore, it could be that parents who engage in more controlling behavior have children who externalize. Further, children who do not engage in externalizing behavior likely would perceive their parent to be warmer. Despite not

understanding the direction of these relationships, these findings highlight the importance of understanding perceptions of parenting to best understand child outcomes.

The findings from the current study also are important given that previous research examining the pathways by which parenting stress influences the development of child externalizing behavior has been mixed. The findings from the current study further support the notion that parenting stress remains an important factor in the development of externalizing behavior in children, and may influence negative child behavior both directly, as well as indirectly through its effect on parenting behavior (Crnic, Gaze, & Hoffman, 2005; Deater-Deckard & Scarr, 1996; Harwood & Eyberg, 2006).

The finding that maternal affective components are highly associated with how children behave is consistent with previous research that suggests parenting stress and parenting behavior are important in the elicitation and maintenance of child externalizing outcomes (Anthony et al., 2005; Crnic, Gaze, & Hoffman, 2005; Deater-Deckard & Scarr, 1996; Harwood & Eyberg, 2006). This also fits with Dix's (1991) model of parenting where he places affect at the center of parenting practices. Dix posits that emotion drives all other components of parenting, such as parental cognitions and parenting behavior. Therefore, it is not surprising that parenting stress appears to be such a central process in the development of externalizing behavior in children.

Clearly, parenting stress is highly associated with child externalizing outcomes;

however, the cross sectional nature of this study precludes us from understanding the direction of this association. There is some research to suggest that parents who are highly stressed engage in more controlling parenting behavior, which in turn, leads to higher reports of child externalizing behavior (Anthony et al., 2005; Crnic, Gaze, & Hoffman, 2005). However, parenting a child with severe behavior problems is likely very challenging for most parents, which would increase their levels of stress. Thus, it is difficult to understand the nature of the relationship between maternal parenting stress and child externalizing behavior.

Interestingly, to examine this possible bidirectional relationship, a model examining mother reported child externalizing behavior as influencing maternal parenting behavior which, in turn, influences maternal parenting stress was examined (see figure 6). This model also proved to be a good fit with the data ($\chi2(3) = 4.72$, $p = .19$; $\chi2/df = 1.57$; GFI = .93; CFI =.97; RMSEA = .082; AIC = 38.72), suggesting that this relationship may, in fact, be bidirectional. Regardless of the directionality of these findings, the results highlight the importance of addressing affective components in traditional parent training modules.

Clinical Implications

These findings have important implications especially with regard to treatment interventions for children with internalizing and externalizing behaviors. Clearly, parenting stress and parenting behavior are highly associated with child internalizing and

externalizing behavior in children; however, few interventions for children with internalizing behaviors directly target these constructs in treatment, especially parenting stress. Further, although interventions for children with externalizing behavior often target parenting behavior because they are malleable constructs that have much room for change, parenting behavior is only one part of a larger framework by which to understand the development of negative child outcomes.

Given the strong association between parenting stress and child externalizing outcomes, it seems possible that interventions aimed at improving parenting stress would produce even more positive outcomes for children than parent training alone. Typically, however, few sessions are spent with the parent working to improve his/her feelings of stress, ineffectiveness, and/or mood. In fact, much of the time these topics are limited to one session at the very end of treatment (Pelham et al., 1988). Parenting is a stressful job and one that most parents take a lot of pride from (McBride & Mills, 1993). Many parents have difficulty getting support for their levels of stress as they are often focused on helping their children. However, a parent who is stressed likely does not have as many emotional resources to provide their children in order to effectively implement treatment strategies at home. Clinicians generally spend an hour a week with a child whereas their parents are with them all the time. Therefore, it may be that helping parents improve their levels of stress will give them more resources to implement and reinforce treatment interventions at home. Working to improve parenting stress at the

outset of treatment may produce longer lasting and more positive outcomes for children with internalizing and externalizing disorders. Therefore, this study highlights the importance of targeting both affective and behavioral components of parenting in interventions for child internalizing and externalizing behaviors.

Further, this study demonstrates the importance of the unique contributions of parent and child perceptions of parenting behavior. Clearly, outcomes vary as a result of who is reporting on parenting behavior. Therefore, it is important to understand both parental perceptions, as well as child perceptions when examining these constructs. Both researchers and clinicians should take particular care to understand not only how parents view their own affective and behavioral components of parenting but also how children view parenting behavior. This will help to obtain the most complete picture of how parents influence the development of internalizing and externalizing behavior in their children and will give clinicians insights into how best to help children.

Limitations and Future Directions

As with any study examining parental influences on child outcomes, several limitations of the present study should be improved upon in future research. A substantial limiting factor in the present study is that it is cross-sectional in nature and does not capture the full nature of causality. Although this research supports findings that parenting stress and behavior are linked to child internalizing and externalizing behavior, they do not imply a causal link between parenting stress, parenting behavior,

and child internalizing and externalizing problems. It may be that children who are more challenging to parent are perceived as being a hassle, and therefore parents engage in less positive parenting behavior; however, longitudinal work is necessary to determine causal pathways between parental influences and child outcomes. Specifically, the lack of longitudinal research prevents researchers not only from understanding whether these parenting variables are causal factors in child psychopathology, but also whether these variables work to elicit or maintain child psychopathology (e.g., Steinberg & Avenevoli, 2000). A clearer understanding of these relationships will help clinicians develop more effective treatment interventions for children with both internalizing and externalizing disorders.

Relatedly, the cross sectional nature of this study does not account for factors that precede current parent and child factors. More specifically, this study did not attempt to examine factors such as child temperament in relation to parenting variables and child outcomes. Previous research has shown that factors such as temperament have an important influence in how children react to certain situations and how parents react to children (e.g., Papalia, Olds, & Feldman, 1999). Therefore, future research should take these factors into account in the model to determine what, if any, influence this has on child internalizing and externalizing behavior.

Another important limitation is the small sample size used to examine paternal influences in the current study. Specifically, the small sample of fathers precluded a

thorough look at paternal influences on child outcomes. Research aimed more specifically at gathering information on mother-father dyads in order to better understand maternal and paternal influences on child internalizing and externalizing outcomes is warranted. Further, although the current sample was considered adequate to employ structural equation modeling, using a larger sample would help to capitalize on the advantages of using a structural model such as being able to employ latent variables for various constructs. Studies examining similar models in the future would benefit from larger sample sizes to more thoroughly examine these parental constructs and child outcomes.

Finally, it is important to address the measurement of parenting efficacy. The present study utilized the PSOC (Johnston & Mash, 1989), which has been widely used in the parenting efficacy literature; however, this measure is predisposed to social desirability. Perhaps a concurrent measure as rated by a life partner or significant confidant could be helpful in ascertaining parents true perceptions of their own parenting competence. Understanding how parents think about themselves as parents is an important factor to consider when understanding the role of parental influences on child outcomes.

Conclusions

The findings from this study highlight the unique role of parental influences on child outcomes. First, the results examining different outcomes in children suggests that

child perceptions of parenting may be the most important predictor of *internalizing behavior;* however, when examining *externalizing behavior*, both parent *and* child perceptions of parenting may be important to consider. In addition, results suggest that partial mediation best explains the relation between parenting stress and child externalizing outcomes. Specifically, level of parenting stress was both directly and indirectly associated with child externalizing behavior through parenting behavior. Clearly, the affective component of parenting is one that is necessary to target in treatment interventions for children with behavioral disorders.

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