

PARENT PSYCHOPATHOLOGY, MARITAL ADJUSTMENT, AND CHILD
PSYCHOLOGICAL DYSFUNCTION: THE MEDIATING ROLE OF
ATTACHMENT AND SIBLING RELATIONSHIP

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This study is part of a larger research project examining family attachment processes. The current study tests a family process model that postulates the mediating role of parent-child attachment and sibling relationship quality in the associations of parent psychopathology or marital adjustment to children's psychological dysfunction. A community sample of 86 families with at least one school-aged (8-12 years) child was recruited from area schools and organizations. Families came to the UNT Family Attachment Lab, where they participated in research tasks, including interviews, self-report instruments, and videotaped interaction tasks. Specific questionnaires used in this study included the Sibling Relationship Questionnaire, the Security Scale, the Behavior Assessment System for Children, the Symptom Assessment-45 Questionnaire, and the Dyadic Adjustment Scale. Using a single indicator for each variable, path analyses tested three paternal models, three maternal models, and three systemic models using different informants' (i.e., father, mother, child) reports of child functioning as the outcome variable. Results of this study highlight the positive relationship between parent marital adjustment and parent-child attachment security, as well as the inverse relationship between maternal psychopathology and mother-child attachment security. In addition, the inverse relationship between parent-child attachment security and child psychological dysfunction was significant across nearly all paternal and maternal models. Particularly noteworthy was the consistent mediating influence of attachment security in the association between marital adjustment and child psychological dysfunction across paternal and maternal models.

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CHAPTER 1

LITERATURE REVIEW

Introduction

Researchers have devoted considerable effort to examining the associations of parent psychological distress and marital discord to child outcomes. Parent mental health and marital functioning have been found to powerfully influence children and are now considered to be important points of intervention for at-risk youth. Such research findings are consistent with a family systems approach where individuals are assessed and treated in a complex and dynamic interpersonal context. Conceptualized by Minuchin (1974), family systems theory asserts that the family is an organized whole made up of numerous dynamic subsystems that are interdependent. Within this theory, parents and the interparental relationship make up the executive subsystem, which acts as a regulator of the family environment and typically has a unique managing role in family interactions and child outcomes. In fact, Bonds and Gondoli (2007) argue that “the executive subsystem could be interpreted as a distal predictor of all aspects of family and individual functioning” (p. 288).

Although previous research demonstrating the impact of both parent psychological distress and marital discord on child adjustment has been consistent with systemic ideas and has laid a foundation for research that considers family influence, many of these designs lack the complexity and multidimensionality that truly reflects systemic theory. At this time, investigators have done a better job of examining direct paths of influence than of modeling interactions among multiple variables of parent functioning and child outcomes (Tamis-LeMonda & Cabrera, 2002). Regarding the influence of marital conflict, Cummings and Davies (2002) argued that continuing to document simple associations between marital conflict and

child adjustment has “reached a point of diminishing returns” (p. 31), such that researchers now need to examine the processes and pathways through which marital conflict influences child adjustment. A second generation of sophisticated research is needed to assess the mediating processes in the relationship between parent functioning and child adaptability. This study contributes to this second generation by examining the mediating influence of attachment security and sibling relationship quality in the associations of parent psychological distress and marital discord with children’s psychological functioning.

Despite the fact that the sibling relationship is often the longest lasting relationship that many individuals will have, very little research has considered the influence of sibling relationship quality in a systemic context, leaving a considerable gap in family process models. Although sibling relationships have traditionally been viewed as a source of social interaction and parent-child relationships have been seen as a source of support and comfort, research now suggests that sibling relationships also play a supportive and emotional role in the lives of children (Gass, Jenkins, & Dunn, 2007). Further, research is needed to determine the relative contributions of parent-child relationships and sibling-child relationships as they influence child outcomes.

Although the body of research documenting the powerful influence of attachment security in children’s psychological functioning continues to grow, relatively little research has considered this variable in more complex family process models. Consideration of attachment as a mediating or moderating variable has often focused on the influence of parenting behaviors or the family environment on child development. The proposed research seeks to examine attachment processes in a systemic model that is neither too narrowly defined nor too globally inclusive. It is expected that insecure parent-child attachment will partially mediate the

relationship of parent psychological distress and marital discord with children's psychological functioning.

The current research is intended also to fill another void in this body of literature by examining outcomes in school-aged children. The vast majority of related research has examined infants, toddlers, and adolescents with a conspicuous lack of research examining outcomes in middle childhood. In addition, few researchers have considered the influence of paternal psychological distress on child outcomes. With the majority of parent psychological distress studies exclusively considering maternal risk factors on child development, investigators have limited their ability to uncover the differential influences of mothers and fathers on the development of at-risk children. Phares, Duhig, and Watkins, (2002) call for researchers to analyze the influence of maternal and paternal psychological distress separately so as to determine the relative contribution of each of these variables on child adjustment.

In summary, this study tests a family process model proposing that both parent-child attachment and sibling relationship quality mediate the associations of parent psychological distress and marital discord to child outcomes. The public health implications of this research are extensive. In addition to continued theory development, this research provides mental health care providers with information regarding the variance in child adjustment that is accounted for by several key variables in family systems. By providing an expanded understanding of the contribution of multiple family subsystems in children's mental health, findings inform treatment planning and improve therapeutic intervention efforts.

Literature Review

Family systems are nested in the larger cultural, political, and economic context that is often referred to as the suprasystem, but they also consist of subsystems that are unique

components of the organization. This section reviews contributions of several of these subsystems, including the marital, parental, and sibling subsystems, as well as the parent-child attachment dyad. Specific child outcomes related to these subsystems are addressed with particular focus on those variables that are measured by the Behavioral Assessment System for Children (BASC2), the primary measure of child psychological functioning in this study. These outcomes variables include child internalizing behavior, externalizing behavior, and child social functioning. The literature on more complex pathways to these child outcomes is also explored, particularly focusing on mediators between family subsystems and child psychological functioning. Such complexity is especially important to consider as many of these subsystems interact with each other in multiple feedback loops that promote homeostasis and equifinality in the family system and ultimately reinforce interaction patterns. A thorough understanding of this body of research enhances clinical interventions and future family research efforts.

Marital Subsystem and Child Adaptability

The impact of marital dysfunction on child adaptability and psychological adjustment has been thoroughly examined (Davies & Cummings, 1994; Harold & Conger, 1997). Research generally indicates that children exposed to marital dysfunction and conflict are at an increased risk of social, emotional and behavioral problems (Grych & Fincham, 1990). Interparental discord has been shown to cause distress, fear, and anger in the child subsystem, leading to child maladjustment in a number of respects, including increased negative emotionality, aggression, conduct disorders, and anxiety (Davies & Cummings, 2006).

Some of the earliest research done in this area by Emery (1982) suggested four main reasons why marital dysfunction is associated with childhood problems: (a) children often model the hostile interactions they observe between their parents, (b) poor and inconsistent parenting

practices results from the stress that marital discord creates, (c) the parent-child relationship is disrupted, and (d) the stress of living in the midst of parental hostility threatens the child's sense of security. More recent research has found overwhelming support for each of these proposed associations.

The first of these, modeling, is one of the most significant mechanisms through which interparental conflict affects children (Amato, Loomis & Booth, 1995) and is consistent with the family projection process that is articulated by many family systems theorists (Papero, 1995). Children who observe hostile interactions between their parents learn to imitate their parents and react aggressively toward others when facing comparable stressors (Katz & Gottman, 1993).

Marital dysfunction also affects child outcomes via its impact on the parenting subsystem. A strained marital relationship often undermines healthy communications between parents, which contributes to inconsistency in disciplining practices (Emery, 1988). In fact, Fauber and Long (1991) suggested that interparental hostilities have the greatest impact on adolescent adjustment through inconsistent parenting practices that are rooted in marital conflict. Clearly, great disturbances in healthy family processes are caused by interparental hostility, and these disturbances contribute to child and adolescent maladjustment.

Marital discord has also been shown to influence child outcomes by decreasing the quality of the parent-child relationship and increasing negativity in parent-child interactions (Kerig, Cowan, & Cowan, 1993). The breakdown of the parent-child relationship in the context of interparental dysfunction is associated with both internalizing and externalizing problems in children (Cummings, Davies, & Simpson, 1994). Marital conflict contributes to behavior problems in children, because as the parent-parent relationship breaks down, there is also often a parallel deterioration of the parent-child attachment relationship (Amato, 1993). Also, as parents

in conflict become preoccupied with their own difficulties, they often become withdrawn, preoccupied and limited in their capacity to devote energy toward their children (Stocker & Youngblade, 1999).

Children regularly exposed to interparental hostility are vulnerable to a number of negative outcomes and often feel threatened or emotionally insecure (Davies & Cummings, 1994). Davies and Cummings (1994) explained that problems in the marital relationship pose a threat to a child's emotional security, and that a child's negative behavior when exposed to parental conflict can be conceptualized as efforts to alter the family system and to preserve or promote emotional security (Davies & Cummings, 1998).

Marital Adjustment and Child Social Functioning

Extensive research has been devoted to investigating the relationship between marital adjustment and child social functioning. It is well-established in the literature that the quality of the marital relationship influences the quality of children's peer relationships (Parke et al., 2001). As a child's poor social relationships with his or her peers can be a direct indicator of later psychiatric risk (Parker & Asher, 1987), the effects of marital adjustment on child social functioning merits considerable attention.

Researchers have debated whether the relationship between marital adjustment and child social functioning is direct or indirect. Proponents of the direct model say that a child's exposure to marital discord has a direct impact on a child's ability to function socially in other contexts (Cummings & O'Reilly, 1997). Those in support of the more systemic indirect explanation believe that parent marital conflict alters other aspects of the child's life, which in turn influence the child's social functioning. For example, the parent-child relationship has been found to be affected by marital disharmony, and the negative parent-child relationship then impacts a child's

outcome in numerous respects, including social behaviors (Fauber & Long, 1991). Further supporting the indirect model, Cowan, Cowan, Schulz and Hemming (1994) studied the effect of the marital relationship on child adaptation to kindergarten, and found evidence that marital quality affects parenting quality, which in turn, affects the degree of child social adjustment.

Regardless of whether the relationship is direct or indirect, the presence of marital conflict in the home is a clear predictor of problematic social behavior outside of the home (Zahn-Waxler, Denham, Iannotti, & Cummings, 1992). Children raised in homes with extensive marital conflict have more problematic peer relationships (Stocker & Youngblade, 1999) marked by negativity and aggression, which is highly correlated with peer rejection outside of the family system (Gottman & Katz, 1989).

Kim, Hetherington, and Reiss (1999) found that both the frequency and the content of marital conflict are highly correlated with children's social competence. Children from homes exhibiting more parental conflict showed particular problems with verbal and physical aggression, but also demonstrated bashfulness and dysphoria. These behaviors, in turn, were associated with poor social ratings by peers.

Other researchers demonstrated that marital dysfunction is also associated with poor social functioning in older children. A study of sixth grade children and their parents found that dysfunctional parental problem-solving within the marital relationship was associated with children being rated by their peers as highly avoidant (Parke et al, 1999). In addition, teacher ratings also indicated that these children tended to be perceived by peers as less accepted than controls and were less socially engaged than other children. Conversely, sixth graders coming from families with better marital problem-solving skills were rated as less avoidant, and were therefore more accepted by their peers. It appears that dysfunctional interpersonal relationships

within the family system are associated with negative social interactions at more peripheral levels of one's social convoy.

Harold and Conger (1997) conducted a study of the impact of marital conflict upon adolescent social adjustment. They found that an adolescent's perception of hostility between their parents increases the risk of adolescent maladjustment, especially when that hostility spills over to the parenting subsystem and is perceived to be directed at the adolescent rather than contained within the confines of the marital subsystem. Such direct child involvement in marital problems is an example of the systemic construct of triangulation, where one dyad pulls another individual in as a stabilizing force. Adolescents who perceive extensive marital hostility between their parents tend to have disrupted social interactions in their own lives. Harold and Conger (1997) also found gender differences in how boys and girls were impacted by parent marital conflict. Specifically, boys were more reactive in their display of antisocial behaviors, possibly as a result of being less shielded from their parents' conflict than girls. In a similar study, MacKinnon-Lewis and Lofquist (1996) determined that increased marital conflict was associated with depression in boys; in turn, depressed boys were more disliked by their peers and often evaluated as shy and withdrawn.

Marital Adjustment and Child Externalizing Behavior

Marital maladjustment is also closely associated with child aggression. It is widely recognized within the literature that exposure to interparental conflict has a negative impact on child adjustment, often revealed by the presence of problematic externalizing behaviors (Cummings & Davies, 1994; Lindahl, 1998; Lindahl & Malik, 1999). In fact, aggression and conduct problems are some of the most common symptoms in children subjected to conflict in the marital subsystem (Grych & Fincham, 1990). Cummings and Davies (2002) remarked that

“research using a variety of methodologies has clearly demonstrated that children react to interparental and interadult conflict with elevated levels of fear, distress, and anger across multiple domains” (pp. 41-42).

Child externalizing behaviors such as aggression are more closely linked with marital conflict than with any other aspect of marital functioning (Jenkins & Smith, 1991). The association between marital conflict and child aggression is particularly strong when children witness hostile marital interactions in the home. Research also indicates that child aggression is more prevalent in children whose parents engage in overtly hostile interactions, than when there is simply marital dissatisfaction, disengagement or subtle apathy in the marriage (Fincham, Grych, & Osborne, 1994).

Some studies have sought to understand the causal connection between conflict in the marital subsystem and child aggression. Davies and Cummings (1994) suggested an affective or emotional regulation model whereby children who consistently observe parent marital disputes become anxious and emotionally reactive. In turn, the tendency toward increased reactivity in response to emotional events has been tied to both internalizing and externalizing problems in children (Davies, Harold, Goeke-Morey, & Cummings, 2002).

Others have suggested that cognitive distortions caused by repeated exposure to interparental conflict explain the resulting child aggression (Marcus, Lindahl & Malik, 2001). In other words, the presence of marital conflict contributes to childhood aggression by affecting the way in which children perceive aggressive behavior. Marcus, et al. studied the role of “aggressogenic” cognitions, or beliefs that aggressive responses are normal and justifiable, in contributing to aggression in second- through sixth-grade children who routinely witnessed interparental conflict. By studying only those aggressive responses displayed at school, in a

presumably less conflictual environment, researchers hoped to isolate those behaviors attributable to aggressogenic cognitions, in order to get a more accurate understanding of each child's true beliefs about the acceptability of aggressive responses. Marcus et al. found that there was a direct correlation between the exposure to marital conflict at home and child aggression at school. They suggested that "children exposed to interparental conflict may acquire a repertoire of highly accessible aggressive responses to interpersonal problems and develop a set of beliefs that support aggression as a normative and legitimate response to provocation" (p. 236). This emphasis on repetitive exposure to marital discord is consistent with family systems theory, which recognizes that interaction patterns are cyclical and tend to reoccur predictably.

Dysfunction occurring within the marital relationship has been shown to have a significant impact on aggression exhibited by older children as well. In studying the effect of exposure to interparental conflict on adolescent romantic relationships, Kinsfogel and Grych (2004) found that the children from homes in which aggressive interparental behaviors were commonplace were more likely to be aggressive and abusive in their own romantic relationships. Those adolescents coming from highly conflictual homes reported experiencing and displaying higher levels of anger. In males, higher levels of anger were predictive of an inability to deal with interpersonal conflict in a constructive manner and abusive conduct toward romantic partners.

Studies evaluating the adolescent population have also found support for the "aggressogenic" cognitions theory discussed above. Riggs and O'Leary (1996) determined that adolescents exposed to interparental aggression often hold distorted beliefs regarding the acceptability of aggressive conduct, which in turn is predictive of those adolescents displaying more aggression toward their peers. Kinsfogel and Grych (2004) also found that males who had

been exposed to high levels of interparental aggressive conflict were particularly prone to believe that aggression is normative and justified within their dating relationships, and were therefore more likely to act aggressively. On the other hand, female's beliefs about aggression were not found to correlate with their exposure to interparental conflict (Kinsfogel & Grych, 2004).

Research has consistently shown that there are gender differences in child behavioral responses to marital discord. One of those differences is that males are more likely to respond to parental conflict with anger and physical aggression (Grych & Fincham, 1990). Girls, on the other hand, tend to show aggression verbally when exposed to marital conflict (El-Sheikh & Reiter, 1996). A study of the effect of various dimensions of marital conflict on 9- to 12-year-old children found that as marital conflict increases, so does aggressiveness and anger in boys (Cummings, Davies & Simpson, 1994). These findings were consistent with studies that have found that boys are more likely than girls to develop externalizing problems in reaction to marital conflict (Block, Block & Gjerde, 1986; Emery, 1982). Cummings et al. suggested a cyclical progression to explain this gender difference. As parental conflict increases, boys' externalizing problems increase which subjects them to increased discipline from parents, which has the effect of making them more attentive to marital conflict. This explanation is particularly consistent with the repeating nature of family systems. Whatever the explanation, a clear difference has been found in how boys and girls react to marital conflict. Namely, perceptions of parental hostility are directly associated with increased levels of externalizing behavior in boys, where no such connection seems to be found in girls (Harold & Conger, 1997).

Marital Adjustment and Child Internalizing Behavior

Less research has focused directly on the relationship between marital conflict and childhood affective disorders. Whereas a significant body of literature documents the

association between marital conflict and externalizing behaviors in children, much less research has focused on the effects of marital discord on child internalizing problems. Researchers have only more recently turned their attention to this connection, possibly because child internalizing behaviors are more difficult to observe and measure than externalizing behaviors (Jekielek, 1998).

The research that has been done so far in this area suggests that the link between exposure to marital conflict and child internalizing behaviors may be even more pervasive than its association to externalizing association (Davies & Cummings, 1998; Harold & Conger, 1997). Depression is one of the internalized emotional responses that has been found to be highly correlated to exposure to marital dysfunction (Jekielek, 1998).

Marital instability, divorce, and even the threat of divorce have been found to contribute to child depression, particularly in cases where children are exposed to overt demonstrations of parent hostility (Aro & Palosaari, 1992). In a study using longitudinal data gathered by the National Longitudinal Survey of Youth between 1988 and 1992, Jekielek (1998) evaluated the impact of the level of parental conflict existing in intact families on children's depression over a four-year period. This study found that although living within an intact family is associated with lower levels of child depression, the benefit decreases as conflict increases in the marital subsystem (Jekielek, 1998).

MacKinnon-Lewis and Lofquist (1996) found that male children who observe increases in parent marital conflict are more prone to bouts of depression than other boys who experience stability or reductions in marital conflict. They further found that male children who were depressed and reporting an increase in marital conflict were particularly likely to be disliked by

their peers, and were often perceived by their peers as being shy and withdrawn, which can then worsen the child's depression.

Wang and Crane (2001) studied the relationship between marital satisfaction, stability, systemic triangulation and childhood depression. They found that children whose fathers rated their marriages as being unstable were particularly likely to be depressed. They also found a direct association between low father marital satisfaction scores and child depression, even when fathers considered their marriages to be stable. On the other hand, mothers' marital satisfaction reports did not show a significant correlation to depression in their children. This is likely explained by the different ways in which men and women respond to marital instability or dissatisfaction. Gottman (1994) suggested that in the context of dysfunctional marital subsystems, fathers are more likely than mothers to withdraw from their families and focus their attention elsewhere, negatively affecting their children. Such distancing responses are referred to as emotional cutoffs in the family systems literature. Wang and Crane proposed that this male-female difference can be explained by the fact that mothers, who are more likely to serve as the primary caregivers to their children, are less likely to alter their interactions with their children in the midst of their own marital problems. Their findings also indicated that the child depression was most extensive when the child's father was dissatisfied with his marriage and when children were routinely triangulated into the marital subsystem. Wang and Crane attribute this result to the extensive tension and anxiety experienced by those children who are directly involved in their parents' conflicts. This research suggests that child involvement in parent marital conflict is particularly associated with affective disturbances in children.

In conclusion, research has consistently shown a relationship between exposure to conflict in the marital subsystem and depressive or emotional disorders in children. As marital

conflict increases, there is a related increase in children's emotional difficulties, and when interparental conflict is reduced or managed more adaptively, children tend to experience fewer emotional difficulties (Cummings, Goeke-Morey, & Dukewich, 2001).

Parent Subsystem and Child Adaptability

Researchers have devoted considerable attention to examining the many ways that the parent subsystem influences the well-being of children. In the classic debate over the relative contributions of nature and nurture in psychological development, parental influence has taken center stage as the standard for environmental influence. Although many researchers broadly examine the parent subsystem, it is important to consider that fathers and mothers each bring a unique contribution to the development of their children due to important gender differences (Coltrane, 2006). The current study accounts for such distinctiveness by considering mother and father psychological distress independently.

Research has routinely demonstrated that mothers are overwhelmingly more involved than fathers in childcare (Lamb, Pleck, Charnov, & Levine, 1987). In addition, mothers tend to be more warm and supportive than fathers and generally have closer relationships with their children and adolescents compared to fathers (Phares, 1999). As a result, the mother is often defined as a child's primary attachment figure.

Research examining the role of the father has historically been underrepresented relative to research examining maternal influence. In fact, just over thirty years ago, Lamb (1975) referred to fathers as the "forgotten contributors to child development" (p. 245). In the past 15-20 years, however, researchers have devoted more attention to paternal contributions to child development, as well as the unique role that fathers have in family systems. Lamb (2004) reported that fathers are more likely than mothers to be involved in social activities, play, and

physical interactions with their young children. Such interactions continue into adolescence where father-child exchanges often involve recreation and goal-oriented tasks, as opposed to social or emotional communication (Lamb, 2004). In addition to these distinct paternal and maternal effects, family systems theory suggests that fathers and mothers impact their children indirectly by influencing each other's behavior (Cummings & O'Reilly, 1997). With parents having such an undeniable and profound impact on the outcomes of their children, it is important to consider how this influence is modified when one or both parents experience psychological distress.

Empirical research has shown that parent psychological distress relates to child adaptability through a number of pathways. Goodman and Gotlib (1999) presented a model that outlines four mechanisms of transmission between maternal depression and subsequent child psychopathology. They highlight that this connection is driven by heritability (Caspi, Sugden, Moffitt, Taylor, Craig, & Harrington, 2003); innate dysfunctional neuroregulatory mechanisms (Ashman & Dawson, 2002); exposure to maladaptive cognitions, behaviors, and effects (Goodman, Adamson, Riniti, & Cole, 1994); and exposure to stressful family environments (Brennan, Hammen, Katz, & Le Brocque, 2002). Given the complexity of such transmission, it is important that researchers and practitioners account for the multiple interacting domains of family systems. Rather than limiting family systems research to the consideration of a few broad variables, it is important for investigators to account for such complexity.

Parent Psychological Distress and Child Social Functioning

Healthy social development involves an increasing capacity to attain personal goals and to establish positive relationships over time and across contexts (Rose-Krasnor, 1997). As developmental outcomes, these social aptitudes influence related constructs such as self-concept,

self-esteem, and autonomy (Houck & Spegman, 1999). Remarkably, parent psychological distress has been found to negatively influence child interpersonal functioning as early as infancy. Pickens, Field, Nawrocki, Martinez, and Soutullo (1994) examined the auditory-visual matching skills of four-month-old children by encouraging them to gaze at a video clip displaying a speaking face. They found that infants of depressed mothers performed significantly worse than controls on this early assessment of social competence. Social referencing, another marker of early social development, has also been found to be underdeveloped in children being raised by mentally ill parents (Pelaez-Nogueras, Field, Hossain, & Pickens, 1996). This construct refers to an infant's ability to recognize and employ facial, vocal, and gestural information that they receive from caregivers as they attempt to adaptively manage ambiguous situations. This finding indicates that mentally ill mothers may be less facially and vocally expressive with infants than mentally healthy mothers.

Social maladjustment has also been documented in the offspring of mentally ill parents during toddlerhood and middle childhood. Cummings, Keller, and Davies (2005) employed a community sample of depressed parents and their kindergarteners to consider the link between parent functioning and child social adjustment. Using teacher assessments of child interpersonal competence, Cummings et al. demonstrated that parental depressive symptoms were related to social exclusion of offspring. Similarly, after assessing free play in the classroom with a sample of 5-year-olds of depressed mothers, Murray, Sinclair, Cooper, Ducournau, and Turner (1999) reported that these children were more likely to respond negatively to friendly approaches by other children relative to other children whose mothers were not depressed.

Luoma et al. (2001) used a longitudinal design to examine the relationship between maternal depression and teacher reports of child interpersonal functioning during middle

childhood. With a sample of 147 mother-child pairs, these researchers found that the children whose mothers had been depressed around the time of their birth had significantly poorer psychosocial functioning relative to children whose mothers had not been depressed. Related work by Hans, Marcus, Henson, and Auerbach (1992) examined the impact of parental mental illness on child social functioning during middle childhood. Using a longitudinal design, these researchers assessed the interpersonal functioning of Israeli children who were being raised by a schizophrenic parent. Compared to children whose parents had no history of mental illness, children raised by a schizophrenic parent were found to have greater interpersonal problems and to be more socially withdrawn at several points throughout middle childhood.

Similar results have been seen in the adolescent offspring of mentally ill parents. Anderson and Hammen (1993) examined differences in the social functioning of adolescents of bipolar, unipolar, medically ill, and normal mothers. They evaluated the social adaptability of adolescents at 6-month intervals over a two-year period and found that the offspring of unipolar mothers had significant interpersonal deficits relative to children from each of the other three groups, including the children of bipolar mothers. They also noted that children in the unipolar group were likely to have chronic, clinically significant impairments in social functioning.

It is also important to consider the features of family systems that are related to poor social functioning. Considerable research has indicated that mentally ill parents treat children differently than healthy parents (Campbell, Cohn, & Meyers, 1995; Kochanska, Kuczynski, & Macquire, 1989) and that children respond differently to mentally ill parents than to parents that are functioning adaptively (Teti, Gelfand, Messinger, & Isabella, 1995). Child social competence is undermined as depressed mothers create fewer positive exchanges with their children and are less responsive to their children relative to healthy controls (Campbell, Cohn, Flanagan, &

Popper, 1992). Other research has found that when depressed mothers do initiate positive exchanges with their toddlers, these mothers are less able to focus on and sustain the interactions relative to nondepressed parents (Jameson, Gelfand, Kulcsar, & Teti, 1997). Such parenting behaviors limit the child's ability to develop social competence through interactions in the secure base of a health family system.

The significant association between dysfunctional parent subsystems and child social deficiency at all stages of development suggests that social inadequacy is difficult to overcome. Poor social development at one stage leads to challenges at the next, a pattern that makes the child vulnerable to a number of negative mental health outcomes. In fact, one study found that inadequate social development is stable throughout childhood and is associated with subsequent depression, anxiety, aggression, delinquency, and adolescent substance abuse (Sroufe, Duggal, Weinfield, & Carlson, 2000).

Parent Psychological Distress and Child Externalizing Behavior

Research has thoroughly examined the relationship between distress in the parent subsystem and child aggression. In fact, research by Schonfeld, Shaffer, O'Conner, and Portnoy (1988) indicated that parent psychological distress, along with cognitive functioning and early aggression, were the three variables that best accounted for hostile behavior in children. Another study by Scherer, Melloh, and Buyck (1996) examined the impact of a child's subjective observations of their mother's mental health and found that *children who perceive symptoms of mental illness* in their mothers are rated as having more conduct problems relative to children who do not notice such problems.

Hirshfeld-Becker, Biederman, and Henin (2006) found that the two- to six-year-old offspring of bipolar parents are more susceptible to behavioral disinhibition than the children of

parents without this disorder. Furthermore, this distinction was not better explained by parental panic disorder, depression, conduct disorder, substance abuse disorders, antisocial personality, or a parental history of attention deficit hyperactivity disorder. These results indicate that the children of bipolar parents are less able to restrain their impulses to conform to socially acceptable standards, leaving them vulnerable to many negative outcomes.

Researchers have also considered gender differences in the way that parent psychological distress is associated with child aggression. Sinclair and Murray (1998), for example, found that boys who had been exposed to parent psychological distress are particularly likely to have conduct problems in the classroom setting relative to girls. Other research by Hipwell, Murray, Ducournau, and Stein (2005) indicated that although child gender did not seem to significantly affect the degree or intensity of disruptive behaviors of 5-year-old children of depressed mothers, female children were more likely to convey aggression verbally using disparagement and condescension while male children were more likely to be physically aggressive.

Riggins-Caspers, Cadoret, Knutson, and Langbehn (2003) considered the biological and environmental processes that contribute to the relationship between parent psychological distress and child aggression. Using 150 adopted adult participants, these researchers considered how parenting practices of adoptive parents and the psychological distress of birth parents influenced the retrospective reports of adolescent externalizing behavior. A complex interaction was observed whereby the adoptive environment served to moderate the risk that is associated with having a mentally ill biological parent. Riggins-Caspers et al. suggested that “the manifestation of problem behaviors was greatest when the parent-child interactions of interest reinforced the biological tendency for problem behavior” (p. 218).

Other research has focused on the thoughts, attitudes, and behaviors that mentally ill parent's model. For example, distressed parents who are angry, irritable, and impatient with their children or around their children, are demonstrating relational behaviors that these children may internalize as acceptable and apply to their own social relationships as they mature (Rutter, 2000). Ineffective social practices are often modeled in marital relationships and the link between parent psychological distress and children's antisocial behavior may be indirectly mediated by exposure to marital discord (Davies & Cummings 1994; Osborne & Fincham 1996). Hipwell et al. examined the association between parent psychological distress and child aggression as well as the mediating effect of marital conflict. Using a longitudinal design, these researchers examined the individual and marital functioning of depressed and healthy women and videotaped their 5-year-old children interacting with other children during play. Although they found that maternal depression was related to physical aggression among male children, parent marital conflict mediated the effect of this relationship.

Researchers have also considered the achievements of adults who were raised by mentally ill parents. In qualitative research, Mowbray , Oyserman , Bybee , and MacFarlane (2002) interviewed 379 mothers that suffered with serious mental illnesses, 157 of whom had at least one adult child between the ages of 18 and 30. Based on the reports of these mothers, 80 percent of adult children were employed, in school, or in training. Despite these findings, roughly one-third of these adult children had not earned high school degrees, and 54 percent were said to have major psychological problems, substance abuse problems, or legal problems. These results suggest that children of mentally ill parents often struggle to manage the demands of life relative to individuals that were raised by well parents.

Parent Psychological Distress and Child Internalizing Disorders

Extensive research has considered the relationship between impaired parent subsystems and affective disturbances in the children of these parents. Investigators have demonstrated that the children of mentally ill parents have a significantly greater risk of being diagnosed with an affective disorder than individuals in the general population (Malcarne, Hamilton, Ingram, & Taylor, 2000). Furthermore, depression in the offspring of mentally ill parents tends to have an earlier age of onset, a longer duration, greater functional impairments, and a higher probability of recurrence relative to the depressive disorders in the children of healthy parents (Lieb, Isensee, Hofler, Pfister, & Wittchen, 2002). Such findings are consistent with the multigenerational transmission processes that have been described by family systems theorists. It is also important to consider that the association between parent psychological distress and child affective functioning is likely to be related to the significant relationships already discussed between parent psychological distress and both child social functioning and child externalizing behavior. Dysfunction in these areas is apt to trigger a response of emotional instability and turmoil in children.

A vast amount of research has considered the relationship between the parenting subsystem and the emotional functioning of infants, particularly focusing on the effects of maternal depression. Field (1994) reported that the infants of depressed mothers routinely imitate the negative affect of their parents. For example, during exchanges with their depressed mothers, infants exhibit more negative emotions and less positive emotions, vocalize less, and are generally less active than the infants of well mothers (Dawson et al., 1999). Indications of such infant emotional instability are not surprising in light of parenting behaviors that are often characteristic of depressed parents. For instance, depressed mothers have been found to

communicate positive affect less frequently and to convey negative affect more frequently relative to nondepressed controls (Field, 1995). Likewise, these mothers tend to talk to their infants less and to be more distracted during exchanges with their infants (Field, 1995).

Tronick and Gianino (1986) explain such findings with a “mutual regulation model,” which posits that a parent’s failure to respond contingently to an infant’s attachment behaviors results in affective distress in the child. After continual, ineffective attempts to engage the unresponsive parent, the child abandons these signals and becomes dependent on less mature coping behaviors such as thumb-sucking, rocking, and gaze aversion to manage their negative feelings. According to Tronick and Gianino, the infant discontinues approach behaviors, such as signaling the mother, and replaces them with withdrawal strategies that are likely to result in affective turmoil throughout childhood and into adulthood.

The relationship between impaired parent subsystems and child affective disturbance is not confined to infancy, but continues throughout childhood, adolescence, and into adulthood. In addition, this association is not limited to maternal psychological distress but is also seen when fathers suffer with mental illness. In fact, children of depressed fathers have a 45% greater likelihood of being depressed compared to children being raised by nondepressed fathers (Hammen, 2000). Although fewer studies have considered the effects of paternal psychological distress, the emotional risk of having a mentally ill father has been found to be comparable to the risk associated with having a depressed mother (Phares & Compas, 1992).

Kane and Garber (2004) used a meta-analysis of relevant studies to examine the affective outcomes of children being raised by depressed fathers. Incorporating research studying children between toddlerhood and adolescence, they found that paternal depression was significantly associated with both internalizing and externalizing psychopathology in children, as well as

conflict in the father-child dyad. Other research by Phares (1996) indicates that while paternal depression is associated with affective distress in children, paternal alcoholism, substance abuse, and antisocial behaviors are linked to conduct problems in children.

Paternal psychological distress is linked to child affective distress through a number of pathways. Many theorists, including Narita et al. (2002), implicate substandard parenting practices as being a critical connection between parent psychological distress and children's emotional distress. Examining the recollections of depressed adults, Duggan et al. (1998) used a correlational design and found a significant positive relationship between reports of poor parental care in childhood and later depression in adulthood. Other researchers have found that patterns of communication are different in families with parent psychological distress. Jacob and Johnson (2001) demonstrated changes in both tone and content, reporting that positive remarks in families with mentally ill fathers are often invalidated or even rejected. Such "positivity suppression" fosters an unpleasant and hostile family environment. Jacob and Johnson observed this phenomenon regardless of which family member made a positive remark and suggested that a depressed father skews the family toward negativity. They propose that "positivity suppression" is a learned response, a marker of mounting stress in the home, and a manifestation of despondent mood.

The Parent-Child Dyad

Attachment theorists assert that mental health depends, in large part, on whether one is able to meet his/her need for secure emotional connection. John Bowlby (1980), the originator of attachment theory, proposed that the need for nurturance is a healthy aspect of human life. Attachment theory is based on the premise that healthy children will ensure that their needs are met by maintaining close proximity to caregivers and by behaving in ways that elicit responsive

care from others (Bowlby, 1980). Any threat perceived by the child will trigger anxiety and will increase attachment behaviors, such as crying, clinging, and following. Bowlby proposed that early in life, individuals develop internal working models of others and self, which become enduring beliefs about the responsiveness and goodness of others, and beliefs about their own significance and value.

In 1978, Ainsworth, Blehar, Waters, and Wall formally identified three distinct infant attachment classifications using an assessment procedure called the Strange Situation. *Secure* infants explored freely but stopped and cried when their mother left the room, then warmly greeted her upon her return. *Anxious-ambivalent* infants, on the other hand, showed limited exploration and became distressed and cried excessively when separated from their mother. When the mother returned, these infants were difficult to comfort. Ainsworth et al. identified a third group of infants termed *avoidant* because these children appeared to be unaffected by either the departure or return of their mother. Later, a fourth “*disorganized*” category of infants was identified (Main & Hesse, 1990). These infants displayed contradictory approach-avoidance behaviors. Ainsworth et al. noted that mothers of secure infants tended to be very responsive, while mothers of anxious and avoidant infants were either inconsistent or rejecting, respectively, toward their children. Later studies demonstrated a link between disorganized infant attachment and maltreatment (Baer & Martinez, 2006), maternal unresolved trauma (DeOliveira, Bailey, Moran, & Pederson, 2004), and frightened/frightening care-giving (Abrams, 2001).

The attachment system is closely associated with the caregiving system and affects offspring through intergenerational transmission. Research has shown that a mother’s attachment organization is predictive of her child’s attachment strategies (see van IJzendoorn & Bakermans-Kranenburg, 1996 for meta-analytic review). Furthermore, an individual’s attachment style is

generally stable across the lifespan. Researchers have reported continuity of attachment patterns during the infant years (van IJzendoorn & Bakermans-Kranenburg, 1996), from infancy to childhood (Barnett, Ganiban, & Cicchetti, 1999), and throughout adolescence and adulthood (Hamilton, 2000). However, changes in children's attachment models in response to various environmental circumstances or traumatic events are possible (Weinfield, Sroufe, & Egeland, 2000). For example, in a study by Hamilton (2000), individuals who remained insecurely attached or changed from a secure to an insecure attachment were consistently found to have experienced negative life events such as the death of a loved one, parental divorce or mental illness, a *life*-threatening illness impacting themselves or a parent, or physical or sexual abuse.

Marital Adjustment and Child Attachment

Marital discord has been linked with insecure attachment in children and theorists have speculated about the mechanisms that drive this relationship. Davies and Cummings (1994) suggested that children who observe frequent and intense marital conflict between their parents may have less secure parent attachments because they perceive that some of this hostility is directed towards them. In addition, Davies and Cummings suggested that negative parenting behavior facilitates the relationship between marital hostility and insecure child attachment, with children regularly exposed to marital discord perceiving parent-child conflicts as being more threatening than children who are not regularly exposed to marital discord. Parents who are routinely engaged in marital disputes may be viewed as being emotionally unavailable, which undercuts the emotional stability of the child. Moreover, Davies and Cummings hypothesized that children who are exposed to regular and intense marital conflict are likely to have underdeveloped coping strategies with which to manage these and other sources of distress.

Owen and Cox (1997) studied the marital functioning of couples expecting their first child and then again when the child was 12-15 months old to determine if marital conflict significantly influences the security of parent-child attachment. They hypothesized that pervasive marital conflict would expose the infant to frightening situations and would undermine the parent's role as sources of relief from distress. After controlling for relevant parenting behaviors, their results indicated that disorganized attachment behavior with *both* mothers and fathers was associated with chronic marital conflict, suggesting that marital discord affects children's perception of parents as sources of support as early as infancy. These findings are unique in that they demonstrate the negative impact of parent discord that occurs both before and after a child's birth.

Similar findings were found for children in preschool. Frosch, Mangelsdorf, and McHale (2000) considered this relationship longitudinally by examining 53 families when the target child was six months old and again when the child was three years old. Marital functioning was assessed at Time 1 and Time 2 by observing both prompted couple discussions and interactions during family play. At time two, parents completed a measure of their attachment relationship with the target child and researchers observed their parenting behavior. Results indicated that dyadic hostility during family play when the child was six months old was associated with a less secure mother-child attachment relationship when the child was three years old relative to families without dyadic discord. Likewise, Frosch et al. found that increased marital turmoil between parents of three-year-old children was associated with less secure child attachments to both mothers and fathers as measured by an attachment Q-set, while healthy marital relationships were linked to secure child-father attachment. In addition to demonstrating the significant association between marital functioning and parent-child attachment relationships, Frosch et al.

found that maternal parenting partially mediated the relationship between marital functioning and mother-child attachment security. Significant parenting variables in this interaction included parent hostility, warmth, sensitivity, and support. This suggests that marital dysfunction is associated with parenting dysfunction, which in turn increases children's risk for an insecure parent-child attachment; conversely marital adaptability is associated with adaptive parenting which in turn leads to a secure parent-child attachment relationship.

Although much research has considered the effect of marital discord on child attachment classification during infancy and toddlerhood, remarkably little research has examined this association during middle childhood and adolescence. One notable exception is the work of Davies, Harold, Goeke-Morey, and Cummings (2002) who investigated this relationship in four separate studies using sixth grade children. In the first study, Davies et al. exposed children to simulated marital conflict behavior and found qualitative data suggesting that children routinely respond to such circumstances with fear, avoidance, or involvement. In the second study, Davies et al. demonstrated that children's emotional security acts as a pathway between marital conflict and child maladjustment. The results of the third study suggested that child insecurity persisted as a mediator between marital discord and child functioning even when parenting behavior was held constant. Finally, the last study indicated that family instability, parent-child attachment, and parenting difficulties mediated the relationship between marital discord and child functioning.

Rodrigues and Kitzman (2007) examined the relationship between parental conflict and adolescent romantic attachment. Eighteen and nineteen-year-old children from intact families reported on their parent's marital conflict, their own romantic attachment style, and the strategies that they use to cope with their parents' conflict. Rodrigues and Kitzman found that elevated

levels of parent discord were related to anxious romantic attachment style in adolescent children. In addition, these investigators found that of the many coping responses used by the adolescents to manage parent's marital distress, only involuntary disengagement coping mediated the relationship between marital discord and adolescent romantic attachment. This suggests that children who were regularly exposed to parent conflict often demonstrated patterns of withdrawal when faced with relational adversity and that this pattern is reflected in their anxious attachment classification.

Parent Psychological Distress and Child Attachment

The tendency for children of mentally ill parents to have insecure attachment classifications has been investigated extensively. Martins and Gaffan (2000) performed a meta-analysis of studies that have examined the relationship between maternal depression and infant attachment classification as measured by the Strange Situation. Using samples that were primarily middle-class and free of additional risk factors beyond maternal depression, Martins and Gaffan determined that the infants of depressed mothers were significantly more likely to have an avoidant or disorganized attachment classification and significantly less likely to have a secure classification relative to infants with high-functioning mothers. Campbell et al. (2004) found comparable results when they examined the attachment strategies of three-year-old children of depressed mothers. Specifically, this study indicated that the mothers who reported intermittent depressive symptoms across their child's life tended to have offspring with either preoccupied, fearful, or disorganized classifications, while the mothers with chronic symptoms were particularly likely to have offspring with a disorganized attachment style. Similar results were also found in studies that examined the relationship of parent alcohol alcoholism and child attachment (Eiden, Edwards, & Leonard, 2002). Finally, qualitative research by Wuhib (2007)

considered the perspectives of adults who had been reared by mentally ill mothers. These adult children reported limited awareness of their mother's psychological distress until they were directly affected by these conditions, but consistently described them as negative attachment figures after such pathology began to affect them. In addition, many participants indicated that the relationship patterns formed with their mothers as children continued into adulthood.

Parents with mental illnesses are more likely to have children with insecure attachments for a number of reasons. According to Campbell et al. (2004), the defining markers of depression, including unhappiness, anhedonia, detachment, listlessness, and irritability, are associated with lower maternal sensitivity, which ultimately predicts attachment insecurity in children. Campbell et al. went on to suggest that "the symptoms of maternal depression, whether or not they reach diagnosable levels, may be experienced by the young child as unresponsive, inconsistent, unavailable, or rejecting care" (p.232). In other work, Lyons-Ruth, Wolfe, Lyubchik and Steingard (2002) examined more than 700 fathers and mothers and found that parents with psychological distress, regardless of gender, tend to minimize the time and physical contact they have with their children relative to parents without psychological distress. Specifically, they found that mentally ill parents were less likely to be physically affectionate with their children and reported less parent-child reading times relative to healthy controls. In addition, fathers and mothers with mental disorders were prone to becoming frustrated with their children, particularly during toddlerhood. These parents seemed to have particular difficulty establishing guidelines or routines for their own lives and the lives of their children. Such parent-child interaction patterns are consistent with the development of an insecure attachment relationship.

The Sibling Dyad

Sibling relationships are another important component of many family systems. In some cases, an individual's relationships with their brothers and sisters can act as a source of support in times of distress, while in other cases sibling relationships are a primary source of distress. Dunn and Davies (2001) explained that sibling relationships range from those marked with consistent strife, to those defined by harmony, and to those that have a balance of both kindness and contempt.

Siblings are a child's first peer group and serve as a powerful socializing agent. It is in these relationships that children first learn many interpersonal skills including cooperation, leadership, and conflict resolution. In addition, the study of sibling relations has been extended to consider how these relationships might act as attachment relationships (Stewart & Marvin, 1990). Researchers have found that warmth in sibling interactions is tied to less loneliness, less behavioral problems, and greater self-worth (Stocker, 1994). Remarkably, Kosonen (1996) found that when children need help, they typically seek out their mothers first, but next ask older siblings for help, even ahead of going to their fathers. Kosonen also highlighted the importance of such sibling support for children raised in unhealthy family environments. In these situations, an older sibling can serve as a child's only source of support. A secure attachment to an older sibling can temper the effect of adversity such as parental psychological distress or loss (Sanders, 2004).

Researchers have considered the possible outcomes of negative and positive sibling relationships and have demonstrated direct relationships between sibling relationship functioning and many aspects of child adjustment. Specifically, maladaptive sibling relationships have been linked with heightened aggression (Bank, Patterson, & Reid, 1996), rejection by peers

(MacKinnon-Lewis, Starnes, Volling, & Johnson, 1997), and with both internalizing and externalizing problems (Dunn, Slomkowski, Beardsall, & Rende, 1994). Dysfunctional childhood sibling relationships are also related to offspring insecurity, perceived incompetence, and low self-esteem (Cicirelli, 1995; Dunn et al., 1994). Conversely, researchers have found that adaptive sibling relationships are associated with increased empathy (Tucker, Updegraff, McHale, & Crouter, 1999), diminished externalization (Branje, van Lieshout, van Aken, & Haselager, 2004), positive outcomes in interpersonal relationship (Tseung & Schott, 2004), and support during times of distress (Dunn, 1996).

Marital Subsystem and the Sibling Dyad

Consistent with the proposed model in the current study, marital turmoil has been linked with discordant sibling relationships across early and middle childhood (Erel, Margolin, & John, 1998) and during adolescence (Hetherington et al., 2002). Using a large sample of emergent adults, Milevsky (2004) demonstrated that individuals from non-divorced families were closer to their *siblings*, interacted more with their *siblings*, and were more supported by their *siblings* relative to individuals from divorced families. Moreover, in non-divorced family's *sibling* communication, closeness, and support were significantly predicted by the child's perception of their parent's marital satisfaction. The relationship between marital adjustment and sibling closeness has also been observed indirectly through the mediating effect of parenting (Brody, Stoneman, & McCoy, 1994).

In a study of correlations between marital conflict and social functioning as displayed in sibling relationships, a significant association was found linking marital discord with less warmth, more conflict, and rivalry between siblings (Stocker & Youngblade, 1999). In explaining this correlation, Stocker and Youngblade surmised that because the family is the first

setting where children learn about interpersonal relationships, the social content and processes that children observe within the family greatly influence the child's development of interpersonal skills and attitudes toward peer relationships. One might expect this to be especially true within sibling relationships, which occur in closer proximity and within the same family as the marital relationship, and are therefore likely to be more affected by the presence of marital discord (Stocker & Youngblade, 1999). The findings of this study were consistent with results from previous studies showing that in families where parents are dissatisfied with their marriages, there is more sibling conflict, rivalry, and lack of warmth, relative to families where the parents report greater marital satisfaction (Erel, Margolin, & John, 1998; Stocker, Ahmed, & Stall, 1997). These findings are particularly relevant to the proposed model, which suggests that the relationship between marital discord and poor child adaptability may be partially mediated by sibling conflict.

Parent Subsystem and the Sibling Dyad

Brody and Stoneman (1990) described the contextual nature of sibling relationships explaining that these interactions are rooted in larger family systems and seldom operate independently from the larger family context. According to their conceptualization, the emotional quality of the parent-child dyad profoundly influences the stability of the sibling relationship. The idea that supportive parent-child interactions are linked to healthy interactions in the sibling subsystem is grounded in attachment theory as well as social learning principles (Parke, MacDonald, Beitel, & Bhavnagri, 1988). Specifically, attachment theorists suggest that during early interactions with caregivers, children develop expectations and internal working models that are later applied to the formation and maintenance of other relationships including

sibling relationships. Similarly, social learning advocates argue that behavioral patterns that are modeled in parent-child dyads are later generalized and replicated in sibling interactions.

Consistent with this theory, as well as the hypothesized model in the current study, a number of researchers have demonstrated that features of the parent subsystem are significantly related to sibling relationship quality. For example, Brody, Stoneman, and McCoy (1994) tested a model that included several variables that were hypothesized to be essential to sibling relationship quality. They examined these constructs over a 4-year period spanning from middle childhood to early adolescence and used a sample of 71 families where younger siblings were between 4 and 9 years old and older siblings were between 6 and 11 years old. They specifically examined the stability of sibling relationship quality over time and found that negative sibling interactions tended to increase while positive sibling interactions tended to diminish. Empirical support was found for explanations involving the degree of positivity in parent-child relationships as well as differential treatment in parent-sibling relationships. Specifically, attachment differences in parent-child dyads have been associated with perceptions of inequity in siblings that often leads to rivalry and resentment that ultimately results in hostility within the sibling subsystem (Brody, Stoneman, McCoy, & Forehand, 1992).

Complex pathways to child outcomes: Mediation

Researchers have identified a number of variables that mediate the relationship between parent mental health or marital functioning and child functioning. Consideration of such complexity allows scientists to understand the pathways that drive this association and enables practitioners to intervene appropriately. Mediating pathways include parent factors, child factors, and environmental factors that influence both parents and children.

At this time, it is not entirely clear how marital distress and parent psychological distress interact to influence child outcomes. Some researchers have found that marital discord mediates the association between parent psychological distress and child functioning (McElwain & Volling, 1999). In fact, one study demonstrated that specific strategies employed during marital conflict mediate this relationship (Du Rocher Schudlich & Cummings, 2003). Specifically withdrawal, sadness, fear, and demonstrations of physical distress mediated the relationship between maternal depression and child affective turmoil. However, other research showing the reverse mediation effect suggests that the relationship between parent psychological distress, marital discord, and child adaptability is more complex. For example, several studies found support for maternal depression as a mediator of the association between marital distress and depression in adolescent offspring (Davies, Dumenci, and Windle, 1999; Lieberman, van Horn, & Ozer, 2005). It may be that parent mental illness and marital distress interact simultaneously such that the presence of each of these variables increases the likelihood that the other will be present. The current study will contribute to further delineating the nature of this relationship.

Parent-Child Attachment as a Mediator

In light of previous research that demonstrates a significant relationship between marital conflict and child maladjustment, it is important to understand the nature of this association including the mediating pathways that facilitate this relationship. Davies and Cummings (1994) have made substantial contributions in this line of research and are particularly known for their emotional security theory, which describes the parent processes that drive the relationship between marital hostility and child maladjustment. Anchored in attachment theory, this conceptualization suggests that marital discord spills over into the parent-child dyad resulting in diminished emotional security in the child that ultimately leads to child maladjustment. Many

parent attitudes and behaviors can result in such emotional instability. For example, El-Sheikh, Cummings, Kouros, Elmore-Staton, and Buckhalt (2008) reported that children's emotional insecurity mediated the association between physical and psychological marital aggression and children's internalizing, externalizing, and posttraumatic stress disorder symptoms.

While many researchers have considered individual's attachment classification as both an outcome and predictor, others have conceptualized attachment as a mediating variable. For example, using a sample of undergraduate college students, Mothersead, Kivlighan, and Wynkoop (1998) examined the relationship between family dysfunction and interpersonal distress to determine if retrospectively reported parent-child attachment influenced this relationship. Results indicated that parent-child attachment fully accounted for this relationship meaning that although no direct relationship between family dysfunction and the child's interpersonal distress was observed, the relationship became significant when parental attachment was considered. Specifically, this study demonstrated that students with greater family dysfunction were prone to insecure attachments to parents and that these individuals tended to experience more interpersonal distress, such as problems with intimacy and power in relationships. The current study also considers the mediating influence of parent-child attachment but is more narrowly focused by examining marital discord and both maternal and paternal psychological distress rather than family dysfunction. Additionally, rather than using retrospective reports of college students, the current study will examine 8- to 12-year-old children's current perceptions of security in relationships with both parents.

Constantine (2006) considered the mediating influence of attachment in the relationship between perceived family conflict and child depression using a large sample of African American adolescents. In addition to a significant direct relationship between perceived family

conflict and child depression, an indirect association was observed with attachment acting as a mediator in this relationship and accounting for 28% of the variance between perceived family conflict and depression. These findings demonstrate the mediating influence of attachment across cultures. The current research builds on the work of Constantine by examining both male and female children during middle childhood and by considering the influence of parent psychological distress and marital quality, constructs that are more narrowly defined than family conflict.

Madigan, Moran, Schuengel, Peterson, and Otten (2007) examined the association between disrupted maternal parenting behavior and toddler externalizing symptoms and found evidence indicating that children's disorganized attachment mediates this relationship. These findings suggest that unpredictable and chaotic parenting is linked to disorganized attachment frameworks in the young children of these parents. Such disrupted parenting practices are often seen in individuals that suffer with mental disorders and these findings provide an impetus for the current research that examines the mediating influence of attachment in the relationship between parent psychological distress and child adaptability.

Similar to the current study, Steinberg, Davila, and Fincham (2006) examined the influence of parent-child attachment as a mediator of the relationship between marital discord and child functioning. However, their design specifically examined the influence of adolescents' perceptions of interparental conflict on the teens' own marital expectations and current experiences in romantic relationships. Using a sample of 96 female children from intact families, these researchers demonstrated that insecure attachment mediated the association between perceived parent conflict and adolescents' negative marriage expectations, as well as negative experiences in current relationships. This research suggests that interpersonal conflict within the

parent/marital subsystem is associated with interpersonal dysfunction in children. The current study will extend this body of research by examining similar effects in 8- to 12-year-old children and by exploring whether the impact of marital distress goes beyond adolescents' romantic relationships and influences child adaptability in general. It should also be noted that the current research will examine parental reports of their marital functioning, rather than children's perceptions of their parent's relationship.

Related research by Lucas-Thompson and Clarke-Stewart (2007) used a longitudinal design to examine the mediating effect of attachment on the association between marital turmoil and child friendship outcomes. The association between marital quality and friendship quality during middle childhood was partially mediated by the child's *attachment* security during toddlerhood. This provides additional support for the hypothesis that marital discord impacts child functioning. The current research will build on the work of Lucas-Thompson and Clarke-Stewart by examining the more global outcome of child adaptability rather than child friendships.

El-Sheikh and Elmore-Staton (2004) also conceptualized parent-child attachment as a mediating and moderating pathway in the relationship between marital turmoil and child outcomes. Using a sample of children in middle childhood and early adolescence, these researchers found that a secure parent-child *attachment* was a moderating/protective factor that reduced the likelihood of child behavior problems in children regularly exposed to marital conflict. *Mediation* effects were also observed with insecure parent-child *attachments* serving as a partial mediator of the relationship between marital discord and both child internalizing and externalizing symptoms. El-Sheikh and Elmore-Staton recommended that future researchers consider multiple risk factors in the same model so as to determine the relative contribution of

variables that influence the relationship between marital turmoil and child functioning. Referring to this objective as a “second generation” of research in this area, they suggest that “discerning the amount of variance accounted for by various mediators and moderators should clarify which of the many potential intervening variables may play a more or a less central role in the marital conflict–child psychopathology connection” (p. 645). The proposed study is designed to contribute to this second generation of research by determining the relative influence of maternal psychology, paternal psychological distress, and marital quality on child adaptability.

Sibling Relationship as a Mediator

Considerably less research has conceptualized the sibling subsystem as a mediating or moderating variable. East and Khoo (2005), however, examined the mediating effect of sibling relationship on the association between several family variables and outcomes in adolescent children with an older sister. Using a longitudinal design spanning over five years with exclusively minority participants (67% Latino, 33% African American), they demonstrated that the quality of sibling relationship as perceived by the younger child partially mediated the relationship from single parenting, older sisters’ teen parenting, and family’s receipt of government aid to outcomes in the younger child, including substance use and high risk sexual activity. Interestingly, these results were stronger for sister-sister dyads than for sister-brother or brother-brother dyads. These results add complexity to this body of research by considering adolescent behavior in the context of a family system. The proposed research, however, will consider the mediating role of sibling relationship quality in other antecedent-consequent relationships that occur in family systems and will employ a sample of children in middle childhood rather than adolescence.

McCoy, Brody, and Stoneman (1994) examined whether individual and family variables

were associated with the quality of children's friendships over five years, specifically hypothesizing that sibling relationship quality mediated the effects that child temperament and other family dynamics have on friendship quality. With a sample of individuals in middle childhood, their results indicated that both temperament and the quality of relationships with parents were associated with friendship quality through the partial mediating effect of sibling relationship quality. Additionally, they demonstrated that the association between marital conflict and child friendship quality was fully mediated by parent-child relationship quality. This study was unique in that it considered the effects of endogenous variables and aspects of the family system on interpersonal relationships that occur outside of the family system.

Longitudinal research by Gass, Jenkins, and Dunn (2007) conceptualized sibling relationship quality as a moderating variable in the relationship between stressful life events and child adaptability. Participating mothers reported on the family's stress levels, as well as and the target child's adjustment, while older siblings were asked to assess the quality of the sibling relationship with the target child. Results revealed that sibling harmony acted as a moderator between stressful life events and internalizing symptoms in children; however, no such pathway was observed for externalizing behaviors. These findings highlight the protective nature of healthy and adaptive sibling relationships. In fact, this protective influence persisted even when the quality of the parent-child relationship was controlled. While this study illustrates the influential nature of sibling interactions in family systems, the current research considered the mediating impact of sibling relationship quality to demonstrate its role as a pathway from parent psychological distress and marital discord to child maladjustment.

Summary

This chapter reviewed the literature that has considered the way that dysfunction in the marital subsystem and parent subsystem is associated with child adaptability. Specific emphasis was placed on the way that these subsystems influence child social functioning, externalizing behavior, and internalizing behavior which are all part of the child adaptability scale that was used in the study. Attention was also given to the ways that both the marital subsystem and parenting subsystem influence the parent-child dyad as well as sibling relationship quality. Finally, because the proposed research examined more complex pathways, the links between the marital and parent subsystems and child outcomes were examined with specific consideration of attachment classification and sibling relationship quality as mediating variables in these relationships. Specifically, the study examined three separate path models testing these mediating effects. The first model focused on paternal contributions, the second on maternal contributions, and the third tested a broader systemic model by including composites between maternal and paternal variables.

CHAPTER 2

METHOD

Sample

This study was part of a larger research project examining family attachment networks in middle childhood. Participants were intact or blended families ($N = 86$) that had at least 1 child between 8 and 12 years of age. Families were recruited from schools, university campuses, churches, community groups, businesses, and nonprofit organizations in the North Texas area. These organizations were asked to assist researchers by allowing flyers to be posted at the location or by distributing flyers to individuals that were interested in participating in the research study. Volunteers contacted the Family Attachment Lab to schedule a data collection time that was convenient for them. After completing all of the questionnaires, families were compensated with \$30 and a family fun pack (e.g. donated restaurant coupons, tickets for recreational activities) for their time and effort. The sample was expected to represent the demographics of middle-class families in the north central Texas region.

Table 1 summarizes the demographic characteristics of the sample. The mean age for fathers was 38.48 years ($SD = 5.45$) while the mean age for mothers was 36.51 ($SD = 5.23$). Of the 86 target children, 48 were male and 38 were female. Although 86 families participated in the study, 7 of these families were single-child families (8%). Eight of the 86 participating families were blended families.

Sixty-seven fathers identified themselves as Caucasian (79.8%), 7 as African American (8.3%), 8 as Hispanic/Mexican American (9.5%), 1 as Asian (1.2%), and 1 as “Other” (1.2%). Sixty-five mothers identified themselves as Caucasian (77.4%), 6 as African American (7.1%), 8 as Hispanic/Mexican American (9.5%), 2 as Asian (2.4%), and 3 as “Other” (3.6%). Paternal

educational achievement included 10 fathers that completed a high school degree (11.9%), 20 fathers that accumulated some college credit (23.8%), 13 fathers that completed a 2-year or technical degree (15.5%), 24 fathers that obtained a bachelor's degree (28.6%), and 17 fathers that earned a graduate degree (20.2%). Maternal educational achievement included 10 mothers that completed a high school degree (11.8%), 13 mothers that accumulated some college credit (15.3%), 9 mothers that completed a 2-year or technical degree (10.6%), 38 mothers that obtained a bachelor's degree (44.7%), and 15 mothers that earned a graduate degree (17.6%).

Procedure

This study was part of a larger research project, the Family and Kid Connection (PI: Shelley A. Riggs), which was reviewed and approved by the University of North Texas Institutional Review Board. After volunteers initially contacted the researchers, arrangements were made for volunteers to come to the Family Attachment Lab on the University of North Texas campus for data collection. With all family members gathered in the central family room, the research assistant described the study as well as the risks and limits of confidentiality, and answered any questions before both adult participants signed consent forms (see Appendix A) for themselves and their children. Researchers also sought the assent of participating children.

Families first participated in 3-5 family interaction tasks (20 min.) that were videotaped for later coding. After completing these family interaction tasks, the parents were taken to separate rooms where trained graduate research assistants administered the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1986, 1996), a semi-structured clinical interview that assesses adults' current mental representations of their relationships with their parents during childhood. After completion of this interview, each parent was given the remaining time to begin a number of paper-pencil questionnaires. Meanwhile, the target child, who remained in the

family room, completed a number of questionnaires with the guidance of a research assistant. During this time, all siblings were in yet another room where they enjoyed toys, games, and snacks under the supervision of another research assistant. Any siblings that were older than the target child completed the Sibling Relationship Questionnaire (SRQ; Buhrmester & Furman, 1990; Furman & Buhrmester, 1985). After family members were reunited, the parents took home any incomplete instruments with a postage paid envelope that could be returned upon instrument completion. Families were compensated with \$30 and a family fun pack when instruments were returned.

Measures

The Background Information Questionnaire was developed to collect demographic data, e.g. age, ethnicity, gender, family income, relationship status (see Appendix B). Additionally, this instrument asked participants about family background variables (e.g. parent divorce, family psychopathology) and past psychotherapy experiences.

The Dyadic Adjustment Scale (DAS; Spanier, 1976, 1989) is a commonly used assessment of romantic relationship functioning. Though the 32-item questionnaire provides four subscales, only the overall scale of Dyadic Adjustment (Total DAS) was employed in the current study. On this scale, higher scores represent better dyadic adjustment. Research findings demonstrate that the overall scale has adequate concurrent and predictive validity, high internal consistency ($\alpha = .90$), as well as good test-retest reliability (.96). A meta-analysis of 91 studies (128 samples; $N = 25,035$) using the DAS found average reliabilities of .91 for the Total Scale, .90 for Consensus, .94 for Satisfaction, .86 for Cohesion, and .73 for Affective Expression (Graham, Liu, & Jeziorski, 2006). The current research examined the father's perspective of his marriage in the first model and considered the mother's perspective of her marriage in the second

model. Valid DAS data was collected from 85 participating fathers and 83 participating mothers. A third systemic model was also examined where a DAS composite term was created by summing the father and mother Total Scores. With the sample of participants that volunteered for this study, the DAS Total Adjustment scale proved to have high internal consistency ($\alpha = .88$ for fathers, $\alpha = .87$ for mothers).

The 60-item Children's Coping Strategies Questionnaire (CCSQ; Younger, Corby, & Perry, 2005) was used to assess children's attachment strategies with both parents. The most recent version of the CCSQ is a composite measure made up of 20-items from the original 36-item Preoccupied and Avoidant Coping Scales (PACS; Finnegan, Hodges, & Perry, 1996), 10 items from the original 15-item Security Scale (SS; Kerns, Aspelmeier, Gentzler, & Grabill, 2001), and 30 items added to assess three types of disorganized coping strategies (Cusimano, 2005). The items are presented in the Harter (1982) "Some kids...other kids..." format and children are asked to pick the group of kids they are more like and indicate the strength of endorsement ("really like" or "sorta like" me). With children between ages 8 and 13, the original preoccupied and avoidant coping scales demonstrated excellent internal consistency ($\alpha = .80$ or higher) and adequate test-retest reliability (Preoccupied = .83, Avoidant = .76) (Hodges, Finnegan, & Perry, 1999). Validity has been established with peer assessments of internalizing and externalizing behaviors (Hodges et al., 1999) and observed parenting (Cusimano, 2005). Cusimano also reported adequate reliability (Cronbach's alphas $> .70$) for the disorganized subscales.

Among 8-12 year-old US children, the original Security Scale has demonstrated adequate 2-week test-retest reliability, internal consistency ($\alpha = .80$ or higher), and construct validity with other measures of attachment security and children's reports of loneliness, self-esteem, social

and academic competence (Kerns, Clepac, & Cole, 1996; Kerns, Tomich, Aspelmeier, & Contreras, 2000). The current study used only the 10-item Security Subscale to examine the target child's attachment to father in the first model and attachment to mother in the second model. A third systemic model was also examined using an attachment composite term created by summing the child's reported security scores to both the father and mother. Higher scores on the CCSQ Security Subscale represent greater parent-child attachment security. With the sample of participants that volunteered for this study, the SS proved to have high internal consistency ($\alpha = .91$ for father-child attachment, $\alpha = .93$ for mother-child attachment, and $\alpha = .92$ for composite parent-child attachment).

The Sibling Relationship Questionnaire (SRQ; Buhrmester & Furman, 1990; Furman & Buhrmester, 1985) is a 48-item self-report instrument that measures the quality of sibling relationship with an identified sibling as perceived by the respondent. This measure consists of 17 three-item subscales, which load on four factors: Warmth/Closeness, Relative Power/Status, Conflict, and Rivalry. For the purposes of this study, the Warmth/Closeness factor will be used as a measure of sibling relationship quality. As defined by the test developers, this scale is formed by taking the average of the subscale scores for intimacy, pro-social behavior, companionship, similarity, admiration by sibling, admiration of sibling, and affection. Higher scores on this factor represent better (i.e., warmer, closer) sibling relationship quality. Buhrmester and Furman found that test-retest reliability for the subscales was quite high with an average of .71 (range = .58-.86) and nearly all internal consistency coefficients were greater than .70 in the first study and .60 in the second study. Research findings also suggest minimal correlation with social desirability. With the sample of participants that volunteered for the current study, the SRQ proved to have high internal consistency ($\alpha = .94$). Although the target

child as well as a specified older sibling completed the SRQ, the first two models exclusively used the target child's assessment of the sibling relationship so as to maximize the number of families in the study. Valid SRQ data was collected from 77 (89.5%) target children with seven families being single-child families and two respondents having missing SRQ data. In an effort to study the broader family system, older siblings closest in age to the target child also completed the SRQ. However, data was collected from only 37 older siblings because the target child was an only child, had just younger siblings, or had an older sibling not present at data collection. The third hypothesized model included a composite term created by summing the target child's SRQ score with the sibling's SRQ score. However, because of the limited number of older siblings available to complete the SRQ, there were only 36 of these composite values.

The Behavior Assessment System for Children, Second Edition (BASC2, Reynolds & Kamphaus, 2002), a collection of self-report measures designed for multiple respondents, was employed as a measure of children's total psychological dysfunction. Mothers and fathers completed the Parent Rating Scales (PRS) with reference to the target child. Target children completed the Self-Report of Personality (SRP). BASC2 standardization research offers T-scores based on norms for general and clinical samples, as well as sex-based norms. This instrument has demonstrated good internal consistency, with alpha reliability coefficients for PRS composite scores (internalizing, externalizing) in the .90's, as well as high test-retest reliabilities over a one month period of time. Concurrent validity has been demonstrated by moderate to high correlations with other frequently employed parent/child measures of child behavior including the Achenbach parent and adolescent instruments. Three separate analyses were conducted first using the self-report form for children, then again using reports of child behavior provided by either the target child's mother or father as the outcome variable. For the parent rating scales, the

T-score for the Behavioral Symptoms Index (BSI) was used as the measure of child psychological dysfunction. Valid data was collected from 82 fathers as well as mothers in this study. The child's self-rating of psychological dysfunction is represented in the Emotional Symptoms Index (ESI). Valid BASC self-report data was collected from 85 target children. These measures characterized the overall level of serious behavioral or emotional problems that the child is experiencing with higher scores representing greater psychological dysfunction. However, significant elevations on BASC-2 subscales are not required to achieve a significant elevation on these global composite scales. With the sample of participants that volunteered for this study, acceptable internal consistency was observed for both the BSI ($\alpha = .71$ for father report, $\alpha = .74$ for mother report) as well as the child's ESI ($\alpha = .79$).

The Symptom Assessment-45 Questionnaire (SA-45; Maruish, 1998) is an abbreviated version of the original Symptom Checklist-90 (Derogatis, Lipman, & Covi, 1973). It consists of two global scales as well as nine symptom subscales ($\alpha = .74$ to $.87$ for adult nonpatients). Test-retest reliability coefficients were between $.49$ to $.84$ (Median = $.79$, GSI = $.84$). In addition, the instrument's creator found high construct, content, and criterion-related validity. The current research employed the Global Severity Index (GSI) as a measure of psychological distress for each parent. Higher scores on this index represent greater psychological distress. Valid SA-45 data was collected from 82 fathers and mothers in the current study. With the sample of participants that volunteered for this study, the SA-45 GSI proved to have high internal consistency ($\alpha = .92$ for father report, $\alpha = .91$ for mother report).

Hypotheses and Data Analysis

After preliminary analyses were conducted to assess intercorrelations among scales and to test associations with demographic variables, planned analyses examined multiple hypotheses.

Consistent with the sample size of 86, a single indicator of each variable was used and path analyses was employed to examine the relationships between variables. Three sets of theoretical models were defined and are shown in Figures 1-9. The first two sets of models represent paternal and maternal contributions, respectively, where mother and father self-reports of marital satisfaction and psychological distress, as well as the child's perceived attachments to mother and father are considered independently. The third model is more systemic in nature and included paternal and maternal variables together. Specifically, the systemic model included mother SA-45, father SA-45, and the DAS composite term. Likewise, similar composite terms were defined for the target child and sibling report on the SRQ, as well as for attachment quality with both mother and father on the CCSQ. Using M-Plus Modeling Software, each of the models was run three times using different dependent variables: father PRS score, mother PRS score, and child SRP score.

Although the model specifies directionality of influence, such paths are merely hypotheses based on the literature reviewed and cannot be empirically supported within the current design. Path analysis makes several statistical assumptions that may have influenced the data analysis, including independence of observations, independence of exogenous variables and disturbances, multivariate normality, and correct specification of the model.

Each of the three models represents a collection of several specific hypotheses. The first model tested paternal contributions to child psychological dysfunction and predicted that paternal psychological distress was positively related to child psychological dysfunction and that paternal marital adjustment was inversely related to child psychological dysfunction. In addition, it was expected that: (1a) Paternal psychological distress would be negatively related to father-child attachment security, (1b) Paternal psychological distress would be negatively related to

sibling relationship quality, (1c) Paternal marital adjustment would be positively related to father-child attachment security, (1d) Paternal marital adjustment would be positively related to sibling relationship quality (1e) Father-child attachment would mediate the relationship between paternal psychological distress and child psychological dysfunction, (1f) Father-child attachment would mediate the relationship between paternal marital adjustment and child psychological dysfunction, (1g) Sibling relationship quality would mediate the relationship between paternal psychological distress and child psychological dysfunction, (1h) Sibling relationship quality would mediate the relationship between paternal marital adjustment and child psychological dysfunction.

The second model tested maternal contributions to child psychological dysfunction and predicted that maternal psychological distress would be positively related to child psychological dysfunction and that maternal marital adjustment would be inversely related to child psychological dysfunction. In addition, it was expected that: (2a) Maternal psychological distress would be negatively related to mother-child attachment security, (2b) Maternal psychological distress would be negatively related to sibling relationship quality, (2c) Maternal marital adjustment would be positively related to parent-child attachment security, (2d) Maternal marital adjustment would be positively related to sibling relationship quality (2e) Mother-child attachment would mediate the relationship between maternal psychological distress and child psychological dysfunction, (2f) Mother-child attachment would mediate the relationship between maternal marital adjustment and child psychological dysfunction, (2g) Sibling relationship quality would mediate the relationship between maternal psychological distress and child psychological dysfunction, (2h) Sibling relationship quality would mediate the relationship between maternal marital adjustment and child psychological dysfunction.

The third model tested systemic contributions to child psychological dysfunction and predicted that both paternal and maternal psychological distress would be positively related to child psychological dysfunction and that the composite of paternal and maternal marital adjustment would be inversely related to child psychological dysfunction. In addition, it was expected that: (3a) Paternal psychological distress would be negatively related to composite parent-child attachment security, (3b) Maternal psychological distress would be negatively related to composite parent-child attachment security, (3c) The marital adjustment composite term would be positively related to composite parent-child attachment security, (3d) Paternal psychological distress would be negatively related to the sibling relationship quality composite term, (3e) Maternal psychological distress would be negatively related to the sibling relationship quality composite term, (3f) The marital adjustment composite term would be positively related to the sibling relationship quality composite term, (3g) Composite parent-child attachment would mediate the relationship between paternal psychological distress and child psychological dysfunction, (3h) Composite parent-child attachment would mediate the relationship between maternal psychological distress and child psychological dysfunction, (3i) Composite parent-child attachment would mediate the relationship between the marital adjustment composite term and child psychological dysfunction, (3j) The sibling relationship quality composite term would mediate the relationship between paternal psychological distress and child psychological dysfunction, (3k) The sibling relationship quality composite term would mediate the relationship between maternal psychological distress and child psychological dysfunction, (3l) The sibling relationship quality composite term would mediate the relationship between the marital adjustment composite term and child psychological dysfunction.

CHAPTER 3

RESULTS

Preliminary Data Analysis

A total of 86 families participated in this research project. Valid Symptom Assessment-45 data was collected from 82 fathers and mothers, while valid Dyadic Adjustment Scale data was collected from 85 fathers and 83 mothers in the study. Valid Behavior Assessment System for Children data was collected from 82 fathers and mothers as well as 85 children. Although 77 target children produced valid data on the SRQ, only 36 siblings provided a valid Sibling Relationship Questionnaire. Valid Security Scale data was collected from all 86 target children for both the father and mother report. To account for missing data, full information maximum likelihood (FIML) parameter estimates were used in the M-Plus modeling program. This technique allows for all available data to be used in analyses. Enders (2001) discussed the superiority of this approach relative to alternative methods of dealing with missing data including listwise deletion, pairwise deletion, and mean imputation. Enders explained that “FIML parameter estimates generally had less bias and less sampling variability than other ad hoc methods” (p. 713).

Few fathers and mothers in the sample reported clinically significant (≥ 70) psychological distress. Less than 5% of participating fathers endorsed clinically significant levels of anxiety, depression, obsessive-compulsiveness, somatization, phobic anxiety, hostility, interpersonal sensitivity, paranoia, or psychoticism. A similar pattern was seen with participating mothers as only obsessive-compulsiveness was endorsed at clinically significant levels by more than 5% of mothers (5.88%). Despite this lack of clinically significant parent psychological

distress, a much greater percentage of parents reported psychological distress in the borderline range. Parent psychological distress data is presented in Table 2 and Table 3.

Preliminary analyses were conducted to assess intercorrelations among scales, to determine the distribution of variables, and to test associations with demographic and other potentially relevant variables. As shown in Table 4, significant positive correlations were seen between many of the primary variables, which was expected given that these variables were examining related constructs. Means and standard deviations of each scale are listed in Table 5.

Analyses were also conducted to examine the influence of demographic variables on exogenous and endogenous variables. Pearson correlations indicated that neither paternal psychological distress nor maternal psychological distress was significantly related to age of respective parent. Similarly father and mother age was not found to significantly correlate with the respective parent's score on marital adjustment or target child behavioral symptoms. However, father age was negatively correlated with the target child's ESI assessment of symptoms ($r = -.279, p = .011$). Father and mother age were not significantly correlated with the target child's ratings of attachment security, with the exception of a positive relationship between age of mother and child attachment security to father ($r = .241, p = .027$). The target child's rating of the sibling relationship quality did not significantly correlate with father or mother age. Child age was not examined due to the limited age range of target children in the sample.

When the relationship between sex and parent psychological distress was examined, t -tests showed no significant difference between the respective parent's psychological distress, their report of marital adjustment or ratings of child behavioral symptoms. Target child sex was not significantly associated with target child ratings of father-child attachment, mother-child attachment, or child psychological dysfunction. However, t -tests demonstrated that male and

female target children did evaluate sibling relationship quality differently, with females indicating that this relationship is significantly more warm/close, $t(73) = -2.472, p = .016$.

The association of key variables with parent history of counseling (coded “yes” or “no”) was also considered. Using t-tests, father counseling history was not significantly related to paternal and maternal psychological distress or marital adjustment. Although mother counseling history was not significantly associated with father psychological distress or marital adjustment, t-tests did indicate that compared to mothers with no counseling background, mothers with a history of counseling reported significantly greater levels of current psychological distress than mothers with no counseling background, $t(64) = 2.320, p = .021$ and significantly lower levels of current marital adjustment, $t(64) = -2.620, p = .011$. Neither father nor mother counseling history were significantly associated with father and mother ratings of child behavioral symptoms or target child reports of father-child and mother-child attachment. Finally, although maternal counseling history was not significantly related to the target child’s rating of sibling relationship quality, t-tests indicated that target children of fathers with a history of counseling reported significantly lower levels of sibling relationship quality relative to target child of fathers with no counseling history, $t(59) = -2.064, p = .043$.

Using analysis of variance (ANOVA) tests, paternal, maternal, and child ethnicity were examined to elucidate the relationship between ethnicity and variables included in the current study. Neither paternal nor maternal ethnicity was significantly associated with any of the parent or child variables included in the path models defined in this research. Likewise, child ethnicity was not significantly related to variables relevant to this study.

Using analysis of variance (ANOVA) tests, paternal and maternal education status was not significantly related to key study variables, with one exception. Although father education

was unrelated to mother ratings of child adjustment, paternal education achievement was found to be significantly associated with father ratings of child adjustment, $F = (4, 76) = 2.896, p = .027$. Specifically, post hoc analyses indicated that children of fathers with a two-year degree had significantly more symptoms than children of fathers with a high school diploma ($p = .044$), children of fathers who earned some college credit ($p = .015$), children of fathers with a bachelors degree ($p = .001$), and children of fathers with a graduate degree ($p = .014$). Using analysis of variance (ANOVA) tests, paternal and maternal reports of family income and divorce in their family of origin were not significantly related to any key study variables.

Eight of the eighty-six participating families were blended families. Because of the small number of blended families in the study, no direct statistical comparison between blended and non-blended families was generated for the variables in question. However, descriptive data was visually examined and there does not appear to be radical differences between these two groups on any of the relevant variables. Means and standard deviations for intact and blended families on each variable are provided in Table 6.

Path Analysis

Path analysis makes several statistical assumptions that may influence the data analysis including multivariate normality, linear relationship between variables, independence of exogenous variables, independence of observations, and correct specification of the model. Although distributions for each of the primary variables appeared to be generally consistent with the normal curve, several variables were found to violate the Shapiro Wilk's Test of Normality at the .05 level. Data transformations were considered as an approach to minimize the effect of abnormality, but path analysis with transformed endogenous variables tends to yield data interpretations that are different from the interpretations using unmodified variables. To address

deviation from normality on some of the variables, M-Plus modeling software was used because it accounts for deviations from normality by using a robust estimate of data normality (maximum likelihood estimate).

Second, path analysis assumes linear relationships among variables. An examination of scatter-plots of the variables in question revealed no large deviations from the linearity assumption. Third, exogenous variables were examined to determine if they were independent of one another. A correlation of 0.80 or greater between exogenous variables in path analyses is generally recognized as a rule of thumb for violating independence. Intercorrelations of all study variables are presented in Table 4. Paternal psychological distress was positively correlated with maternal psychological distress ($r = .237, p = .033$) and negatively correlated with paternal marital adjustment ($r = -.234, p = .034$). Maternal psychological distress was negatively correlated with both paternal marital adjustment ($r = -.371, p = .001$) and maternal marital adjustment ($r = -.425, p = .000$). Paternal and maternal marital adjustment were positively correlated to one another ($r = .551, p = .000$). Finally, no significant correlation was found between paternal psychological distress and maternal marital adjustment ($r = -.148, p = .188$) although this non-significant relationship and all significant correlations listed above are in the direction that was that anticipated. Though several of the correlations between exogenous variables were found to be significant, the relationship was not so strong as to violate the assumption of independence.

Although one cannot assume that individuals within family units are independent of one another, it is expected that observations between families will be generally independent of each other. While independence is an assumption of the statistical analyses, the method of ensuring such independence is not statistical. Instead, the independence assumption is a procedural matter

that requires thoughtful research design. In the current study, internal validity was assured by collecting data from participants who represent typical middle-class families in the general community. In spite of these efforts, however, it is likely that families will not be entirely independent as fathers, mothers, and children are likely to have many commonalities including cohort effects, age effects, and time of measurement effects.

Similarly, assuming that the path model has been correctly specified is a research design issue rather than a statistical concern. All direct effects of one variable on another must be accounted for in the path diagram and the conclusions from a path analysis are only valid if the causal assumptions are valid. A comprehensive path diagram will yield strong correlations between variables and will demonstrate a goodness of fit between the data and the hypothesized direction of relationships.

Examining Model Fit

Several path models were examined for adequate fit with the data compared to a specified model. Model fit was determined by examining several indices of fit including the chi-square test of model fit, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMSR) (Kline, 2005). An adequate fit as measured by the chi square test of model fit is represented by a p-value of greater than .05 (Barrett, 2007). The threshold for demonstrating model fit using the CFI is a value of .95 or greater (Hu & Bentler, 1999). However, previous research has supported values of .90 or greater as demonstrating acceptable model fit (Bentler, 1990). Demonstrating adequate fit using the RMSEA requires a value of .06 or less (Hu & Bentler, 1999), whereas adequate model fit using the SRMSR requires a value of .08 or less. Despite these generally accepted rules of thumb, Marsh, Hau, and Wen (2004) argued that the standardized cutoff values for evaluating model fit

may be too cautious and likely result in dismissal of models that fit data sufficiently. Marsh et al. caution against exclusively relying on such indices and urge researchers to examine the entire picture of model fit.

Paternal Models

Three paternal models were examined for adequate fit with the data compared to a specified model. The first model (1a) predicted a positive relationship between father psychological distress and paternal rating of target child psychological dysfunction, as well as an inverse relationship between paternal marital adjustment and paternal rating of target child psychological dysfunction. Target child attachment to father and target child rating of sibling relationship quality were included as paths in this model. Figure 1 shows the standardized path coefficients of Model 1a. Fit indices are presented in Table 4 and did not support an adequate fit between the data and the specified model. Although the chi square test of model fit supported the specified model ($\chi^2 (1) = 2.449, p > .12$) and the standardized root mean square residual (SRMR = 0.044) was less than .08, the comparative fit index (CFI = 0.882) was not above .90 and the root mean square error of approximation (RMSEA = 0.130) was greater than .08 indicating that the data is not a good fit with the model. Because the preponderance of the indices do not support a fit between the data and the just-identified model, specific parameter estimates within this model are not interpreted.

The second model (1b) predicted a positive relationship between paternal psychological distress and maternal rating of target child psychological dysfunction, as well as an inverse relationship between paternal marital adjustment and mother rating of target child psychological dysfunction. Target child attachment to father and target child rating of sibling relationship quality were included as paths in this model. Figure 2 shows the standardized path coefficients

for this model. Fit indices are presented in Table 4 and support an adequate fit between the data and the specified model. Consistent with the correlation analyses, the chi square test of model fit indicates similarity between the data and the specified model, $\chi^2 (1) = 2.539, p > .11$. Further supporting this finding, the comparative fit index (CFI = 0.950) was greater than .90 and the standardized root mean square residual (SRMSR = 0.049) was less than .08. Despite these results, however, the root mean square error of approximation (RMSEA = 0.130) was not less than .08, suggesting that the data does not fit with the just-identified model. Although the preponderance of the findings support a fit between the data and the specified model, this model should be interpreted with caution given inconsistent results on the indices of model fit.

Hypothesized parameters between paternal psychological distress and father-child attachment security, as well as between paternal psychological distress and sibling relationship quality were not significant in this second paternal model. Although the path between paternal marital adjustment and sibling relationship quality was not significant as hypothesized, the parameter estimate between paternal marital adjustment and father-child attachment security demonstrated a significant positive relationship as anticipated ($\beta = .240, p = .005$). A significant path between father-child attachment security and maternal rating of child psychological dysfunction was found in the negative direction anticipated ($\beta = -.485, p < .000$). No significant association between sibling relationship quality and maternal rating of child psychological dysfunction was observed. The analysis examining model fit and direct relationships among variables also tested indirect effects. When these indirect relationships were examined, data supported a relationship between father-child paternal marital adjustment and maternal rating of child psychological dysfunction through father-child attachment ($\beta = -.117, p = .010$). However, the effect of paternal marital adjustment on the maternal rating of child psychological

dysfunction was diminished in presence of the father-child attachment when compared to the direct effect between paternal marital adjustment and maternal rating of child psychological dysfunction referred to above. Results did not support the hypothesis that paternal attachment would mediate the relationship between paternal psychological distress and maternal rating of child psychological dysfunction or the relationship between paternal marital adjustment and maternal rating of child psychological dysfunction. The hypothesized relationship between paternal marital adjustment and maternal rating of target child psychological dysfunction through sibling relationship quality was also not supported although the direct relationship between these variables was significant in the direction predicted.

The third paternal model (1c) predicted a positive relationship between paternal psychological distress and target child rating of child psychological dysfunction as well as an inverse relationship between father marital adjustment and target child rating of child psychological dysfunction. Target child attachment to father and target child rating of sibling relationship quality were included as paths in this model. Figure 3 shows the standardized path coefficients for this model. Fit indices are presented in Table 4 and support an adequate fit between the data and the specified model. Consistent with the correlation analyses, the chi square test of model fit indicates similarity between the data and the specified model, $\chi^2 (1) = 2.236, p > .14$. Further supporting this finding, the comparative fit index (CFI = 0.915) was greater than .90 and the standardized root mean square residual (SRMSR = 0.046) was less than .08. Despite these results, however, the root mean square error of approximation (RMSEA = 0.120) was not less than .08 suggesting that the data does not fit with the specified model. Although the preponderance of the findings support a fit between the data and the specified model, this model should be interpreted with caution given inconsistent results on the indices of model fit.

Hypotheses testing of direct effects in model 1c using child self-reported psychological dysfunction as the outcome variable did not differ from model 1b where mother-reported child psychological dysfunction was used as the outcome variable. Hypothesized parameters between paternal psychological distress and father-child attachment security, as well as between paternal psychological distress and sibling relationship quality were not significant. Although the parameter estimate between paternal marital adjustment and sibling relationship quality was not significant as hypothesized, the parameter estimate between paternal marital adjustment and father-child attachment security demonstrated a significant positive relationship as anticipated ($\beta = .241, p = .006$). A significant path between paternal attachment security and child rating of child psychological dysfunction was found in the negative direction anticipated ($\beta = -.414, p = .003$). No significant relationship between sibling relationship quality and child rating of psychological dysfunction was observed. The analysis examining model fit and direct relationships among variables also tested indirect effects. When indirect effects were examined in this model, the data supported the hypothesis that father-child attachment security would mediate the relationship between paternal marital adjustment and target child rating of psychological dysfunction ($\beta = -.100, p = .050$). Without this intervening variable, however, the direct relationship between paternal marital adjustment and target child rating of psychological dysfunction was not significant. Results did not support the hypothesis that father-child attachment would mediate the relationship between paternal psychological distress and target child rating of psychological dysfunction or the relationship between paternal marital adjustment and target child rating of psychological functioning. The hypothesized relationship between paternal marital adjustment and target child rating of psychological dysfunction through sibling relationship quality was also not supported.

Maternal Models

Three maternal models were also examined for adequate fit with the data compared to a specified model. The first maternal model (2a) predicted a positive relationship between maternal psychological distress and maternal rating of target child psychological dysfunction, as well as an inverse relationship between maternal marital adjustment and maternal rating of target child psychological dysfunction. Target child attachment to mother and target child rating of sibling relationship quality were included as paths in this model. Figure 4 shows the standardized path coefficients of Model 2a. Fit indices are presented in Table 5 and support an adequate fit between the data and the specified model. Consistent with the correlation analyses, the chi square test of model fit indicates similarity between the data and the specified model, $\chi^2 (1) = 2.569, p < .11$. Further supporting this finding, The comparative fit index (CFI = 0.970) was greater than .90 and the standardized root mean square residual (SRMSR = 0.046) was less than .08. Despite these results, however, the root mean square error of approximation (RMSEA = 0.135) was not less than .08 suggesting that the data does not fit with the just-identified model. Though the preponderance of the findings support a fit between the data and the specified model, this model should be interpreted with caution given inconsistent results on the indices of model fit.

There was a significant path between maternal psychological distress and mother-child attachment security in the negative direction as anticipated ($\beta = -.234, p = .019$). However, the parameter estimate between maternal psychological distress and sibling relationship quality was not significant. Likewise, the hypothesized path between maternal marital adjustment and mother-child attachment security was significant ($\beta = .382, p = .000$) in the positive direction anticipated, but the path between maternal marital adjustment and sibling relationship quality was not significant. A significant path between mother-child attachment security and mother

rating of child psychological dysfunction was found in the negative direction anticipated ($\beta = -.404, p = .001$). No significant relationship between sibling relationship quality and mother rating of child psychological dysfunction was observed. The analysis examining model fit and direct relationships among variables also tested indirect effects. When these relationships were examined, the indirect association between maternal psychological distress and maternal rating of child psychological dysfunction through mother-child attachment security was not significant although there was a non-significant trend ($\beta = .095, p = .092$). When this intervening variable was removed, however, no significant relationship remained between maternal psychological distress and maternal rating of child psychological dysfunction. Results also supported the hypothesis that mother-child attachment would mediate the relationship between maternal marital adjustment and maternal rating of child psychological dysfunction ($\beta = -.154, p = .005$). The hypothesized relationship between maternal psychological distress and maternal rating of target child psychological dysfunction through sibling relationship quality was not significant nor was the hypothesized relationship between maternal marital adjustment and maternal rating of target child psychological dysfunction through sibling relationship quality.

The second maternal model (2b) predicted a positive relationship between maternal psychological distress and paternal rating of target child psychological dysfunction as well as an inverse relationship between maternal marital adjustment and paternal rating of target child psychological dysfunction. Target child mother-child attachment and target child rating of sibling relationship quality were included as paths in this model. Figure 5 shows the standardized path coefficients for this model. Fit indices are presented in Table 5 and support an adequate fit between the data and the specified model. Consistent with the correlation analyses, the chi square test of model fit indicates similarity between the data and the specified model, $\chi^2(1) = 2.563, p >$

.11. Further supporting this finding, The comparative fit index (CFI = 0.945) was greater than .90 and the standardized root mean square residual (SRMR = 0.044) was less than .08. Despite these results, however, the root mean square error of approximation (RMSEA = 0.135) was not less than .08 suggesting that the data does not fit with the just-identified model. Though the preponderance of the findings support a fit between the data and the specified model, this model should be interpreted with caution given inconsistent results on the indices of model fit.

With father report of child psychological dysfunction used as the outcome variable, there remained a significant path between maternal psychological distress and mother-child attachment security in the negative direction that was anticipated ($\beta = -.234, p = .019$). However, the parameter estimate between maternal psychological distress and sibling relationship quality was not significant. Likewise, the hypothesized path between maternal marital adjustment and mother-child attachment security was significant ($\beta = .382, p < .000$) in the positive direction anticipated, but the parameter estimate between maternal marital adjustment and sibling relationship quality was not significant. Although a significant path between mother-child attachment security and paternal rating of child psychological dysfunction was not found, there was a non-significant trend in the negative direction anticipated ($\beta = -.257, p = .063$). No significant relationship between sibling relationship quality and father rating of child psychological dysfunction was observed. The analysis examining model fit and direct relationships among variables also tested indirect effects. When these relationships were examined, mother-child attachment security did not mediate the relationship between maternal psychological distress and paternal report of target child psychological dysfunction. In addition, the indirect relationship between maternal marital adjustment and paternal report of target child psychological dysfunction through mother-child attachment security was not significant although

there was a non-significant trend supporting this hypothesis ($\beta = -.098, p = .091$). Sibling relationship quality did not mediate the relationship between maternal psychological distress and paternal report of child psychological dysfunction or the relationship between maternal marital adjustment and paternal report of child psychological dysfunction.

The third maternal model (2c) predicted a positive relationship between maternal psychological distress and target child rating of child psychological dysfunction, as well as an inverse relationship between maternal marital satisfaction and target child rating of child psychological dysfunction. Target child mother-child attachment and target child rating of sibling relationship quality were included as paths in this model. Figure 6 shows the standardized path coefficients for this model. Fit indices are presented in Table 5 and support an adequate fit between the data and the specified model. Consistent with the correlation analyses, the chi square test of model fit indicates similarity between the data and the specified model, $\chi^2(1) = 3.170, p < .08$. Further supporting this finding, the comparative fit index (CFI = 0.962) was greater than .90 and the standardized root mean square residual (SRMR = 0.051) was less than .08. Despite these results, however, the root mean square error of approximation (RMSEA = 0.159) was not less than .08 suggesting that the data does not fit with the just-identified model. Though the preponderance of the findings support a fit between the data and the specified model, this model should be interpreted with caution given inconsistent results on the indices of model fit.

There was a significant path between maternal psychological distress and mother-child attachment security in the negative direction that was anticipated ($\beta = -.204, p = .043$). However, the parameter estimate between maternal psychological distress and sibling relationship quality was not significant. Likewise, the hypothesized path between maternal marital adjustment and mother-child attachment security was significant ($\beta = .418, p = .000$) in the positive direction

anticipated, but the path between maternal marital adjustment and sibling relationship quality was not significant. A significant path between mother-child attachment security and target child rating of child psychological dysfunction was found in the negative direction anticipated ($\beta = -.560, p < .000$). No significant relationship between sibling relationship quality and target child rating of child psychological dysfunction was observed. The analysis examining model fit and direct relationships among variables also tested indirect effects. When examining these indirect associations, the relationship between maternal psychological distress and target child rating of psychological dysfunction through mother-child attachment security was not significant although there was a non-significant trend supporting this hypothesis ($\beta = .115, p = .074$). When this intervening variable was removed, however, no significant relationship remained between maternal psychological distress and target child rating of psychological dysfunction. Results also supported the hypothesis that mother-child attachment would mediate the relationship between maternal marital adjustment and target child rating of psychological dysfunction ($\beta = -.234, p = .005$). The hypothesized relationship between maternal psychological distress and target child rating of psychological dysfunction through sibling relationship quality was not significant nor was the hypothesized relationship between maternal marital adjustment and target child rating of child psychological adjustment through sibling relationship quality.

Systemic Models

Three systemic models were also examined for adequate fit with the data compared to just-identified models. The first model (3a) predicted a positive relationship between paternal psychological distress and paternal rating of child psychological dysfunction, a positive relationship between maternal psychological distress and paternal rating of child psychological dysfunction, and an inverse relationship between the composite parent marital adjustment score

and paternal rating of child psychological dysfunction. Target child composite score for attachment to parents and the combined target child and sibling ratings of sibling relationship quality were included as paths in this model. Although SRQ data was collected from 77 target children, valid SRQ data was collected from only 36 siblings. Therefore, the composite SRQ term created for use in the systemic models included only 36 values.

Figure 7 shows the standardized path coefficients of Model 3a. Fit indices are presented in Table 6 and did not support an adequate fit between the data and the specified model. Results of the chi square test of model fit did not support an adequate fit between the data and the specified model, ($\chi^2(1) = 5.130, p < .02$). In addition, the comparative fit index (CFI = 0.851) was not above .90 and the root mean square error of approximation (RMSEA = 0.219) was greater than .08 indicating that the data is not a good fit with the model. In contrast, the standardized root mean square residual (SRMR = 0.044) was less than .08 offering support of an adequate model fit. Because the preponderance of the indices do not support a fit between the data and the specified model, specific parameter estimates within this model will not be interpreted.

The second systemic model (3b) predicted a positive relationship between paternal psychological distress and maternal rating of child psychological dysfunction, a positive relationship between maternal psychological distress and maternal rating of child psychological dysfunction, and an inverse relationship between the composite marital adjustment score and maternal rating of child psychological dysfunction. The target child composite score for attachment to parents and the combined target child and sibling ratings of sibling relationship quality were included as paths in this model. Figure 8 shows the standardized path coefficients of Model 3b. Fit indices are presented in Table 6 and did not support an adequate fit between the

data and the specified model. Results of the chi square test of model fit did not support an adequate fit between the data and the specified model, ($\chi^2 (1) = 4.571, p < .03$). In addition, the root mean square error of approximation (RMSEA = 0.204) was greater than .08 indicating that the data is not a good fit with the model. In contrast, the comparative fit index (CFI = 0.934) was above .90 and the standardized root mean square residual (SRMR = 0.067) was less than .08 offering support of an adequate model fit. Because the preponderance of the indices do not support a fit between the data and the specified model, specific parameter estimates within this model will not be interpreted.

The third systemic model (3c) predicted a positive relationship between paternal psychological distress and target child rating of psychological dysfunction, a positive relationship between maternal psychological distress and target child rating of psychological dysfunction, and an inverse relationship between the composite parent marital adjustment score and target child rating of psychological dysfunction. The target child composite score for attachment to parents and the combined target child and sibling ratings of sibling relationship quality were included as paths in this model. Figure 9 shows the standardized path coefficients of Model 3c. Fit indices are presented in Table 6 and did not support an adequate fit between the data and the specified model. Results of the chi square test of model fit did not support an adequate fit between the data and the specified model, ($\chi^2 (1) = 10.223, p < .0014$). In addition, the comparative fit index (CFI = 0.832) was not above .90 and the root mean square error of approximation (RMSEA = 0.327) was greater than .08 indicating that the data is not a good fit with the model. In contrast, the standardized root mean square residual (SRMR = 0.079) was less than .08 offering support of an adequate model fit. Because the preponderance of the indices

do not support a fit between the data and the specified model, specific parameters within this model will not be interpreted.

Alternative Models

For exploratory purposes, additional models were examined to determine if alternative specifications of the model would yield a more parsimonious fit with the data. Because no parameter estimates associated with sibling relationship quality were significant, the possibility of removing this variable from the models was considered. However, there were not enough degrees of freedom available in any of the models to simply remove this variable without replacing it with another endogenous variable. Furthermore, although sibling relationship quality did not yield significant results in the current design, it is an important part of many family systems and even non-significant findings associated with this variable provide valuable information about its relationship to the other variables in the model. These implications will be discussed in the next chapter.

Alternative models also explored the influence of relevant covariates including family income, parent ethnicity, and parent history of psychotherapy. For paternal models, father report of family income was used, as well as father ethnicity and father history of psychotherapy. For maternal models, mother report of family income was used as well as mother ethnicity and mother history of psychotherapy. When these variables were included exogenous to parent psychological distress and parent marital adjustment, model fit with the data diminished and each paternal and maternal model was rejected. However, when these exogenous variables were also correlated with one another, model fit was established comparable to that of the original models that did not include covariates. This dynamic was seen across paternal and maternal models.

When covariates were included *with* parent psychological distress and parent marital adjustment as exogenous to parent-child attachment and sibling relationship quality, a similar dynamic was observed where fit indices were comparable to the original models that did not include covariates. In sum, the inclusion of family income, parent ethnicity, and parent history of psychotherapy as covariates did not enhance model fit across paternal or maternal models. This is consistent with preliminary analyses of demographic other relevant variables as well as the covariance matrix.

Systemic models were examined with father and mother report of family income, father and mother ethnicity, and father and mother history of psychotherapy as covariates. As with the original systemic models, these alternative models were rejected as not fitting adequately with the data. This is consistent with what was observed in the covariance matrix.

CHAPTER 4

DISCUSSION

Results of the current study supported some of the theoretically based hypotheses and failed to support others. Paternal path models 1b and 1c using as the outcome variable either mother report of target child psychological dysfunction or target child report of psychological dysfunction, respectively, were retained as fitting with the data. All three maternal models were retained. Despite retaining these models, the indices of fit were not unanimously in favor of the specified models and results should be interpreted with caution. The Root Mean Square Error of Approximation (RMSEA) was consistently not in the acceptable range for supporting model fit, however, the Chi Square Test of Model Fit, the Comparative Fit Index, and the Standardized Root Mean Square Residual did tend to fall within acceptable limits. Elevated RMSEA estimates may be due to the small sample size and low degrees of freedom (Chen, Curran, Bollen, Kirby, & Paxton, 2008).

All hypothesized systemic models were rejected as not fitting with the data. This may be a function of adding additional parameters to a model with an already small sample size. Additionally, lack of systemic model fit with the data may be due to regression toward the mean that occurred with the creation of composite terms. This dynamic is seen in the bivariate correlations between composite terms and other variables. The strength of these correlations using composite terms was diminished relative to the correlations using non-composite terms. The fit between the data and the systemic models may have also been undermined by the low number of siblings who completed the SRQ, which was necessary for the creation of the sibling relationship quality composite score. Although SRQ data was collected from 77 target children, only 36 of these target children had an older sibling present at data collection to complete the

SRQ. Therefore, this composite variable within the systemic models had a much smaller n relative to other variables in the models. Model misspecification may have also contributed to the lack of fit between the data and the systemic models hypothesized. Although research has supported more complex designs that reflect the multidimensional nature of family systems theory, this field of research is young. Additional models should be specified examining the variables used in the current study, as well as additional variables that are relevant to systems theory.

Simple bivariate correlations overwhelmingly validated theoretically derived hypotheses. However, when other variables were introduced in the path models, the magnitude of these relationships diminished although the directionality of predicted relationships typically remained true to what was anticipated. While some of these relationships maintained significance and supported hypotheses, some did not. Before describing these relationships in detail, it is important to note that although the models specify a directionality of influence, these paths are merely hypotheses based on the literature reviewed and causality cannot be empirically demonstrated within the current design.

Parent Psychological Distress and Child Psychological Dysfunction

Direct paths between parent psychological distress and child psychological dysfunction were not significant across all paternal and maternal models. Neither paternal nor maternal psychological distress was related to father report of child psychological dysfunction, mother report of child psychological dysfunction, or target child report of psychological dysfunction. This result is particularly striking given that these relationships have been documented in so many previous research studies (e.g., Malcarne, Hamilton, Ingram, & Taylor, 2000; Hirshfeld-Becker, Biederman, & Henin, 2006).

Several explanations could account for the absence of a significant relationship between parent psychological distress and child psychological dysfunction in the path models. First, it could be that the other variables in the model diminished the variance accounted for by parent psychological distress. Given that preliminary analyses resulted in significant correlations, this could apply particularly to a positive association between mother's personal distress and her ratings of her child's psychological dysfunction. With the presence of additional variables, especially parent-child attachment as a mediator, the relevance of parent psychological distress decreases. Second, although the population of parents used in the study was a community sample, they were not a particularly distressed group of parents. The T-score for mother's average SA-45 GSI rating was 46 while the T-score for father's average SA-45 GSI rating was 44, which is substantially below the SA-45 cut-off score of 70 for clinical significance. It may be that higher functioning parents were more motivated or willing to participate in the research study to either earn compensation or contribute to psychology research. With more variability in parent and family functioning, the relationship between parental psychological distress and child psychological dysfunction may have been significant.

Alternatively, the SA-45 may not be particularly sensitive to the type of psychological distress that exists in a normal to high functioning population of adults. Instruments including items that assess psychological distress at sub-clinical levels could uncover this relationship. The relationship between parent psychological distress and child psychological dysfunction may have proved significant if specific SA-45 subscales were used. For example, more precise measures such as the SA-45 depression scale and the anxiety scale may have greater variability and may have been more sensitive to the parent psychopathology that negatively impacts children. Future

research may benefit from using ratings of specific forms of parent psychological distress rather than global or all inclusive measures of pathology.

Finally, rater bias may have influenced the assessment of parent psychological distress and/or child psychological dysfunction. With parents rating themselves and their children and with children evaluating themselves, there may have been a tendency to evaluate self and family favorably, which would limit the variability in these outcomes. Ratings completed by impartial evaluators, particularly of child behavioral symptoms, may help clarify the relationship between parent psychological distress and child psychological dysfunction. Despite the absence of significant findings related to these variables, the correlations were all in the direction hypothesized, providing optimism for future examination of parent psychological distress as an important variable in family systems research.

Parent Marital Adjustment and Child Psychological Dysfunction

Direct paths between parent marital adjustment and child psychological dysfunction were not significant across the majority of paternal and maternal models, except for one significant relationship between paternal marital adjustment and mother rating of child psychological dysfunction. Despite the absence of significant parameters between these variables, the correlations were all in the direction hypothesized and many were significant. However, in the context of a path model, there was not enough power to demonstrate significance without the intervening variable of child attachment, which will be discussed in the next section. The simple bivariate correlation denotes the linear relationship between two variables without considering other variables. When other variables were introduced with the path model, the magnitude of the relationship between marital adjustment and child psychological dysfunction was diminished but the directionality primarily remained true to what was hypothesized. Still, a stronger association

between marital adjustment and child psychological dysfunction likely would have resulted in significant direct effects. This lack of significant findings may be due to limited power associated with the relatively small sample size, a lack of variability in marital adjustment and/or child psychological dysfunction, or rater bias.

The significant inverse relationship between paternal marital adjustment and mother rating of child psychological dysfunction is more in line with what was expected given the vast amount of previous research that has substantiated this relationship. Research has generally indicated that children exposed to marital dysfunction and hostility are at an increased risk of social, emotional and behavioral problems (Wang & Crane 2001; Marcum, Lindahl, & Malik, 2001). Interparental discord has been shown to cause distress, fear, and anger among children, leading to child maladjustment in a number of respects, including increased negative emotionality, aggression, conduct disorders, and anxiety (Davies & Cummings, 2006). The significant inverse relationship between paternal marital adjustment and mother rating of child psychological dysfunction found in the current study extends previous research. This finding may be due to the dynamics espoused by Emery (1982), who described four main reasons that marital dysfunction is associated with child problems: (a) children often model the hostile interactions they observe between their parents, (b) poor and inconsistent parenting practices result from the stress that marital discord creates, (c) the parent-child relationship is disrupted, and (d) the stress of living in the midst of parental hostility threatens the child's sense of security.

Target Child Attachment Security

Parent Psychological Distress and Attachment

Associations between paternal psychological distress and child attachment to father were non-significant across all paternal models, but a significant inverse relationship between

maternal psychological distress and mother-child attachment was found in each of the three maternal models as predicted. These maternal models extend a large body of research demonstrating that children of symptomatic mothers tend to develop insecure attachment strategies. Emotionally distressed mothers who are unhappy, detached, listless, and irritable often demonstrate lower maternal sensitivity, which ultimately predicts attachment insecurity in children (Campbell et al., 2004). Children likely experience these mothers as unresponsive, inconsistent, unavailable, or even rejecting.

The current results may also be explained by the fact that distressed mothers behave differently than high functioning mothers. Lyons-Ruth, Wolfe, Lyubchik and Steingard (2002) reported that emotionally distressed mothers have less physical contact with their children relative to parents without psychological distress. They were also less likely to be physically affectionate with their children and more likely to become frustrated with their children relative to healthy controls. These parents seemed to have particular difficulty establishing guidelines or routines for their own lives and for the lives of their children. Such disorganized mother-child interaction patterns are consistent with the development of an insecure attachment relationship. It is important for researchers and practitioners to account for systemic ways that parent psychological distress may influence the parent-child attachment relationship, including its association with diffuse boundaries between the parent and child subsystems, obscure guidelines and routines, and a generally disorganized and chaotic family environment.

It is important to consider the reasons that a similar inverse relationship between paternal psychological distress and father-child attachment was not found as had been predicted. Previous research suggests that mother-child bonds are qualitatively different from father-child bonds (Bogaerts et al., 2005; Samllbone & Dadds, 2000). Research has routinely demonstrated that

mothers are more involved than fathers in childcare (Lamb, Pleck, Charnov, & Levine, 1987). In addition, mothers tend to be more warm and supportive of children than fathers and generally have closer relationships with their children compared to fathers (Phares, 1999). As a result, the mother is often identified as a child's primary attachment figure. There is also evidence suggesting that child behaviors predicted by maternal bonds are different from child behaviors predicted by paternal bonds (Bogaerts et al., 2005, Marshall, Serran, & Cortoni, 2000; Smallbone & Dadds, 2000). While paternal psychological distress has been found to negatively impact family systems and child outcomes in many ways, it may be that paternal psychological distress does not impact the father-child attachment relationship in the same way that maternal psychological distress impacts the mother-child attachment relationship.

A more likely explanation, however, relates to issues of measurement. Some authors have suggested that the instrumental "playmate" role associated with fathers may have a different impact on the child's development than the emotional caregiver role associated with mothers (Van der Mark, Bakermans-Kranenburg, & van Ijzendoorn, 2002). While much research has demonstrated the importance of the father-child relationship, the traditional attachment construct may not be the best construct for describing this relationship. The current study used the CCSQ as a measure of both paternal and maternal attachment with only the terms "father" and "mother" altered on the items. It may be that fathers have unique contributions that were not well measured in this study. Using an assessment tool that is more sensitive to the unique dynamics of mother-child attachment and father-child attachment may have demonstrated the predicted inverse relationship between paternal psychological distress and child security.

Marital Adjustment and Attachment

Paternal marital adjustment and father-child attachment were positively associated in each of the substantiated paternal models, and maternal marital adjustment and mother-child attachment were positively associated in each of the maternal models. These findings are consistent with Davies and Cummings's (1994) theory that children who observe frequent and intense marital conflict between their parents may have less secure attachments to parents because children perceive that some of this inter-parental hostility is directed towards them. In addition, Davies and Cummings suggested that negative parenting behavior may facilitate the relationship between marital discord and insecure child attachment, with children regularly exposed to marital discord perceiving parent-child conflicts as being more threatening than children who are not regularly exposed to marital hostility. Parents who are routinely engaged in marital disputes may be viewed as being emotionally unavailable, which undercuts the emotional stability of the child. Moreover, the current findings may reflect Davies and Cummings's hypothesis that children who are exposed to regular and intense marital conflict are likely to have underdeveloped interpersonal coping strategies with which to manage distress.

This consistent positive relationship between parent's marital adjustment and child attachment security across the specified models is not surprising given that the marital relationship is the primary relationship to which most children are exposed. Through observing and modeling marital interactions, children learn about the safety and usefulness of interpersonal relationships. With such dynamics being supported by the current research findings, it is particularly important for researchers and practitioners to account for the ways that marital interactions may influence the child's experience of self and other.

Attachment and Child Psychological Dysfunction

A significant inverse relationship for both father-child and mother-child attachment with target child psychological dysfunction was observed in all substantiated models. These findings support the premise of attachment theorists that mental health depends, in large part, on whether a child has been able to meet his or her need for secure emotional connection with important others (Bowlby, 1980). Thriving children generally have primary attachment figures that are sensitive to their children's physical and emotional needs and who facilitate confident autonomy by providing a foundation of safety. In addition, most adaptive children seem to ensure that their needs are met by maintaining close emotional proximity to caregivers and by behaving in ways that elicit responsive care from others. The current research suggests that when nested in such a secure system of support, the child is less likely to demonstrate emotional and behavioral symptoms of distress.

This finding is consistent with previous research that has linked insecure parent-child relationships with problematic stress management (e.g., Spangler & Grossmann, 1993), externalizing behavior problems (e.g., Lyons-Ruth, Easterbrooks, & Cibelli, 1997), and dissociative behavior (Carlson, 1998) among young children. Sroufe (2005) argued that without the positive expectations concerning the self and other that are associated with attachment security, as well as the social support networks that tend to accompany these expectations, insecurely attached individuals lack the resilience that enables securely attached individuals to adaptively cope with adversity and emerge with limited psychological wounds. The current research supports the notion that secure parent-child attachment acts as a protective factor against emotional and behavioral distress. Although all children experience negative life events, those with a secure attachment may be less vulnerable to the stressors that they encounter. The

resilience of securely attached children may be tied to their enhanced ability to cope with problems relative to insecurely attached children. Mikulincer and Florian (2004) suggested that a secure attachment often acts as a resource that can help an individual to positively appraise stressful experiences, to constructively cope with these events, and to adaptively adjust to their circumstances. With the tremendous benefits associated with secure parent-child attachment relationships that have been demonstrated by current and past research, it is essential for researchers and practitioners to explore ways to help parents cultivate secure relationships with their children.

Indirect Effects of Attachment

Results of the study failed to support theoretically based predictions that father-child attachment would mediate the relationship between paternal psychological distress and child psychological dysfunction. This outcome is driven by the lack of a significant path between paternal psychological distress and father-child attachment, which was addressed above. The study also failed to produce convincing results supporting a path between maternal psychological distress and child psychological dysfunction through mother-child attachment. In maternal models 2a and 2c, which used mother rating of child psychological dysfunction and target child rating of psychological dysfunction as dependent variables, respectively, there were significant paths between maternal psychological distress and mother-child attachment, as well as between mother-child attachment and child psychological dysfunction. Although this would suggest that mother-child attachment plays a mediating role in the relationship between maternal psychological distress and child adaptability, these relationships were not strong enough to achieve significance unless a less stringent .10 cutoff value is employed. This may be related to the relative lack of power in the study given the relatively small sample size.

Results of the study supported theoretically based predictions that parent marital adjustment would be associated with child outcomes and that this relationship would be mediated by child attachment security. In models 1c, 2a, and 2c parent-child attachment mediated the relationship between parent marital adjustment and child psychological dysfunction. In each of these models, there was no significant direct relationship between parent marital adjustment and child psychological dysfunction, but significant paths from marital adjustment to parent-child attachment to child dysfunction. The mediation models utilizing the child's self-report of symptoms as the outcome were significant for both parents; the model predicting the respective parent's perception of child behavior was significant only for mothers. When the father's perception of child behavior was the outcome variable, neither maternal nor paternal models demonstrated mediation. These findings are consistent with previous research supporting the validity of maternal reports of child behavior relative to paternal ratings (Schaughency & Lahey, 1985). Interestingly, other research suggests that in middle childhood, the children themselves may be the most reliable reporter of their own behavioral and emotional symptoms (Ardoin & Martens, 2004). More research is needed utilizing multiple informants in order to validate this conclusion.

These findings extend previous research demonstrating that parent marital conflict is associated with emotional distress, anxiety, and anger in the child subsystem which frequently leads to child internalizing and externalizing problems including negative mood and anti-social behavior (Davies & Cummings, 2006). The current study suggests that parent-child attachment serves as the mechanism through which these effects are transmitted. This conceptualization suggests that marital discord spills over into the parent-child dyad resulting in diminished emotional security in the child, which ultimately leads to child maladjustment. These indirect

relationships are consistent with the work of El-Sheikh, Cummings, Kouros, Elmore-Staton, and Buckhalt (2008) who reported that children's emotional insecurity mediated the association between physical or psychological marital aggression and children's internalizing, externalizing, and posttraumatic stress disorder symptoms.

Current results are congruent with family systems theory, which posits that individuals live in a complex and dynamic interpersonal context. The marital system and the parent-child system are related and this research suggests that the relationship between these two systems influences child psychological dysfunction. Furthermore, these findings support Bonds and Gondoli's (2007) argument that "the executive subsystem could be interpreted as a distal predictor of all aspects of family and individual functioning" (p. 288).

In the family systems literature, relatively little research has considered attachment dyads within more complex family process models. Consideration of attachment as a mediating and/or moderating variable has often focused on the influence of either specific parenting behaviors or the global family environment on child development. The current research highlighted the influential role of child attachment security in the relationship between marital adjustment and child psychological dysfunction in the context of a systemic model that was neither too narrowly defined nor too globally inclusive.

Sibling Relationship Quality

Parameter estimates between parent psychological distress and sibling relationship quality or between parent marital adjustment and sibling relationship quality were not significant across all paternal and maternal models. In addition, the parameter estimates between sibling relationship quality and child psychological dysfunction were not significant across all paternal and maternal models. Despite this absence of significant findings related to sibling relationship

quality, the correlations between these variables were all in the direction hypothesized, suggesting that future examination of sibling relationship quality is still warranted. In the current study, it may have been difficult for target children to report accurately on the quality of the sibling relationship given their young age and limited life experiences. Even in middle childhood, these individuals have had few long-term, close relationships with which to compare the sibling relationship. Furthermore, their intimate involvement in the sibling relationship may have biased their view of this relationship and prevented an accurate assessment. A neutral observer with greater cognitive development and more experience in relationships may have provided a more valid report on the quality of the sibling relationship and may have led to significant associations between sibling relationship quality and parent psychological distress, parent marital adjustment, and child psychological dysfunction.

The absence of significant findings related to sibling relationship quality in the current study may also be related to the limited size of the sample. Of the 86 participating families, already a relatively small sample size for a path analysis, there were only 77 multi-child families that provided complete data. In addition, of those 77 families, only 37 families had older children to complete the SRQ. Given that the correlations between sibling relationship quality and other variables in the model were generally in the specified direction, a larger sample of participants completing the sibling relationship questionnaire may have yielded significant results supporting the hypotheses associated with sibling relationship quality.

Clinical Implications

In addition to continued theory development, the current research provides mental health care providers with valuable information regarding the systemic variables that are associated with child psychological dysfunction. By providing a more complete understanding of the

contribution of multiple family subsystems in children's mental health, these findings can be utilized to inform treatment planning and enhance intervention strategies. Given the complex etiology of child psychological dysfunction, it is important that practitioners account for the multiple interacting domains of family systems.

There are many public health implications of this research. Current findings suggest that clinical interventions focusing on the attachment system may greatly benefit children who are living in a family environment that is negatively affected by maternal psychological distress and parent marital discord. The emotional well-being of parents, particularly mothers, seems to have considerable effect on child attachment security and should be a central objective in all family therapy interventions. With the tremendous benefits associated with secure parent-child attachment relationships that have been demonstrated by current and past research (Ranson & Urichuk, 2008), it is particularly important for practitioners to consider the systemic ways that parent psychological distress influences parent-child attachment security. Mentally ill parents treat their children differently than healthy parents (Campbell, Cohn, & Meyers, 1995) and their children respond differently to them than children whose parents function adaptively (Teti, Gelfand, Messinger, & Isabella, 1995). It is important for clinicians to account for parent psychological distress when families present to therapy with concerns of child behavioral and emotional symptoms. In addition to parent self-care, distressed mothers and fathers may benefit from individual therapy in place of or in addition to family therapy that focuses on systemic dynamics. Anchored firmly to their own foundation of emotional wellbeing, parents will be able to offer the stability and consistency their children need. It is important for clinicians to help parents to be sensitive and responsive to their children's needs and to create sustained positive exchanges with their children. It is also important for family therapists to help families establish

boundaries between the parent and child subsystems, to define guidelines and routines, and to promote organization and purpose in the family environment.

The consistent positive relationship between parent marital adjustment and child attachment security across the specified models in the current study highlights the expectation that the marital relationship is the principal relationship to which most children are exposed. In observing marital interactions that are modeled for them on a daily basis, children learn about the safety and the value of interpersonal relationships. Given these dynamics, it is particularly important for family therapists to account for the ways that marital interactions influence the child's experience of self and other. Clinicians can help families explore the ways that children experience marital conflict and how these experiences contribute to child cognitions, emotions, and behaviors. To remediate these distressed family systems, it may be helpful for parents to seek couples counseling in place of or in addition to individual therapy and family therapy. Consistent with family systems theory, improvement in the functioning of the marital subsystem will impact other subsystems in the family, including the parent-child subsystem, as well individual parent or child well-being.

Limitations and Future Research Directions

This study uncovered several useful findings that have pragmatic applications. However, current findings should be interpreted against the backdrop of several limitations. For example, each of the questionnaires employed in the current study were self-report measures, which suggests that common method variance may have influenced the observed correlations between instruments. Response bias may have also occurred as participants could have been motivated to make themselves or their family members look good by endorsing socially acceptable responses. While self-report instruments are generally considered to be effective measures of an

individual's overt perspective, they do not always accurately reflect more subtle attitudes. Research employing more objective assessment tools and/or interviews coded by qualified raters would enhance the body of family systems research.

In addition, a selection bias might have occurred in that volunteers who agreed to participate may differ from non-participating families in systematic ways, including motivational aspects such as the monetary incentive or a desire to contribute to psychology research. When surveying the demographic characteristics of the sample, the educational achievements and current incomes reported by participating families are generally representative of middle-class families (US Census Bureau, 2010), so implications of findings are limited to that population. In addition, it was noted that nearly 80% of families identified as Caucasian. Given this lack of ethnic diversity relative to the general population, one must use caution when applying these findings to family systems of other ethnicities.

The current research may have yielded different results if a larger sample with greater power would have been used. Correlation data frequently suggested the presence of significant relationships that were not observed in the path models that included multiple variables simultaneously. A desirable goal is to have a 20 to 1 ratio for the number of subjects to the number of model parameters. Because the currently study only achieved a ratio of 10.8 to 1 for the paternal and maternal models, and a ratio of 7.8 to 1 for the systemic models, the estimates may have been unstable. While path analysis is a useful research methodology particularly for examining causal hypotheses, it cannot determine the direction of causality. Path analysis also does not account for situations where feedback loops are present in relationships. This method requires consistent causal progression across a specified path diagram and this may or may not

reflect the reality of the relationships being observed. Longitudinal research is better suited to addressing issues of causality.

This study highlighted several other areas for future research. Relationships between parent psychological distress and sibling relationship quality, between parent marital adjustment and sibling relationship quality, and between sibling relationship quality and child adaptability were not clarified in the current study because of the small number of participating families with siblings. However, the bivariate correlations between these variables were all in the direction hypothesized providing optimism for the future examination of sibling relationship quality as an important variable in family systems.

Although the current research highlighted the mediating role of attachment security in the relationship between parent marital adjustment and child adaptability, further systemic research is necessary to clarify the dynamics perpetuating this association. For example, it is important to empirically examine how children experience marital discord and how that experience translates into attachment distress so that parents and practitioners can respond accordingly. It is also important to further examine the mediating role of attachment in the relationship between marital adjustment and emotional/behavioral functioning among children at other ages. The current study explored this dynamic with 8-11 year old children but the interaction between these variables may differ with younger and/or older children.

Conclusion

This study tested a family process model proposing that both parent-child attachment and sibling relationship quality would mediate the associations of parent psychological distress and marital discord to child outcomes. Although previous research demonstrating the impact of the executive (i.e. parental) subsystem on child adjustment has laid a foundation for research that

considers systemic interactions, many of these designs have lacked the complexity and multidimensionality that adequately reflects family systems theory. The current research examined relationships among multiple variables of parent functioning and child outcomes and responded to the call for a “second generation” of research that considers the processes and pathways through which the executive subsystem influences child adjustment.

The current research also filled another void in this body of literature by examining attachment outcomes in school-aged children. The vast majority of attachment research has examined infants and toddlers with a conspicuous lack of research examining systemic outcomes in middle childhood. Though attachment models are developed in infancy and are typically stable over time, they can be affected by one’s environmental circumstances (Belsky, 1999). Therefore, along with considering early attachment relative to later outcomes, attachment dynamics at later developmental stages need to be examined as well. The current research advances the literature by examining how the psychological well-being of 8- to 11-year-old children is influenced by multiple levels of the family system.

Results of this study highlight the positive relationship between parent marital adjustment and parent-child attachment security, as well as the inverse relationship between maternal psychological distress and mother-child attachment security. In addition, the inverse relationship between parent-child attachment security and child psychological dysfunction was significant across nearly all paternal and maternal models. Particularly noteworthy was the consistent mediating influence of attachment security in the association between marital adjustment and child psychological dysfunction across paternal and maternal models.

The public health implications of this research are extensive. In addition to continued theory development, this research provides mental health care providers with information

regarding the systemic variables that are associated with child adjustment. By providing an expanded understanding of the contribution of multiple family subsystems in children's mental health, findings can inform treatment planning and improve therapeutic intervention efforts. Replicating these findings with other populations and further exploration of the nature of the sibling relationship in family systems are recommendations for next steps in this line research.

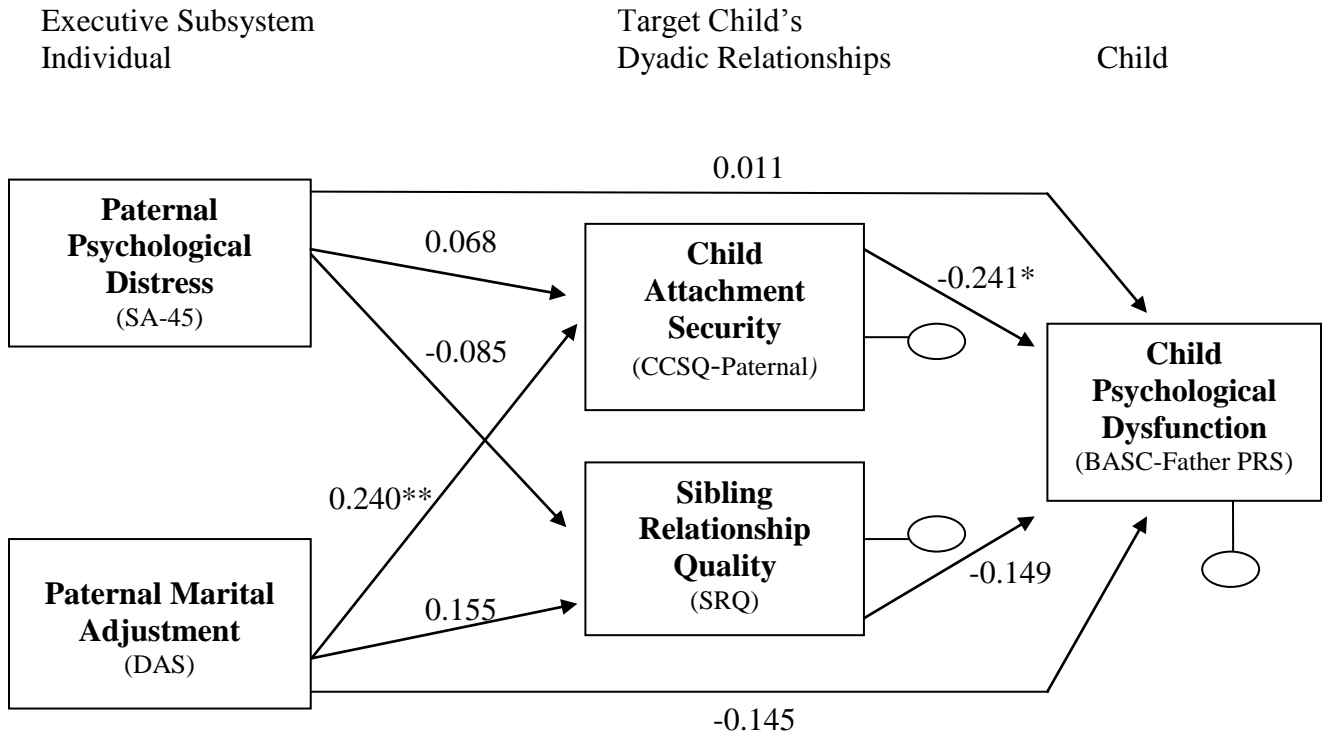


Figure . Paternal Path Model 1a.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

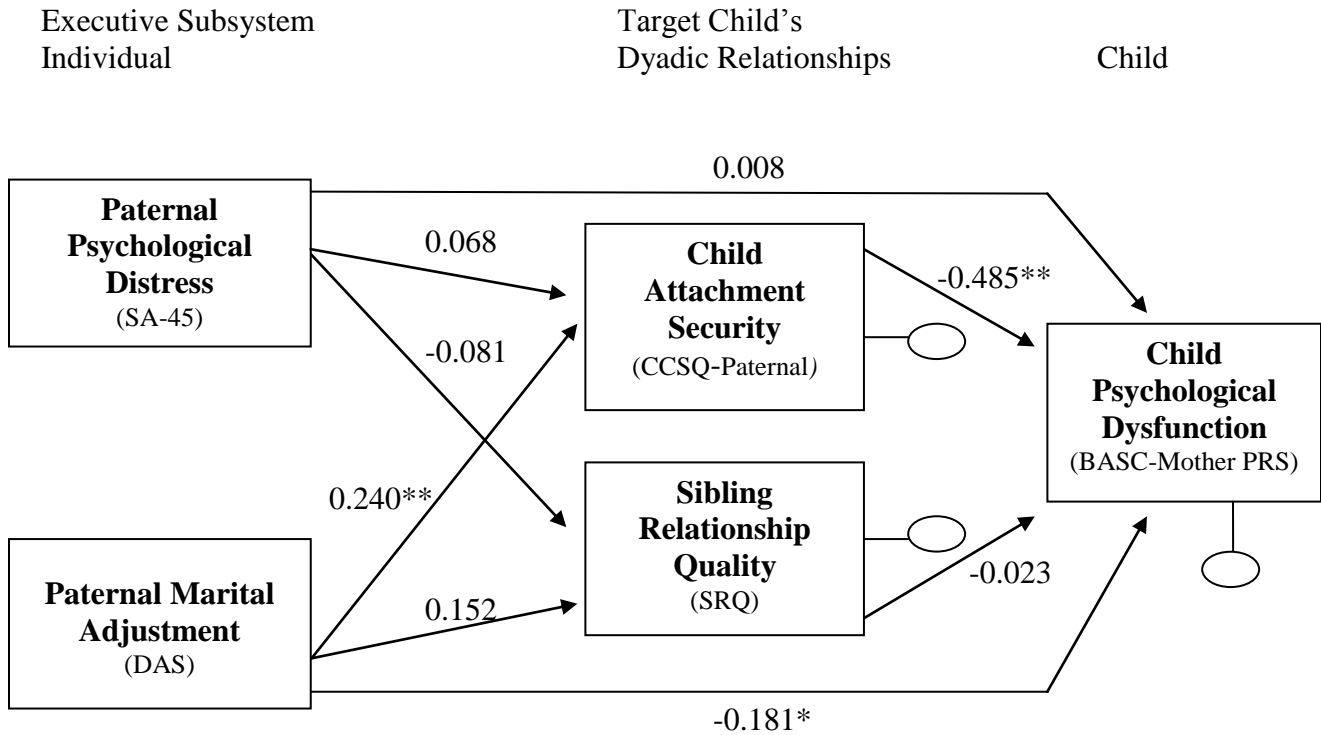


Figure 2. Paternal Path Model 1b using maternal rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

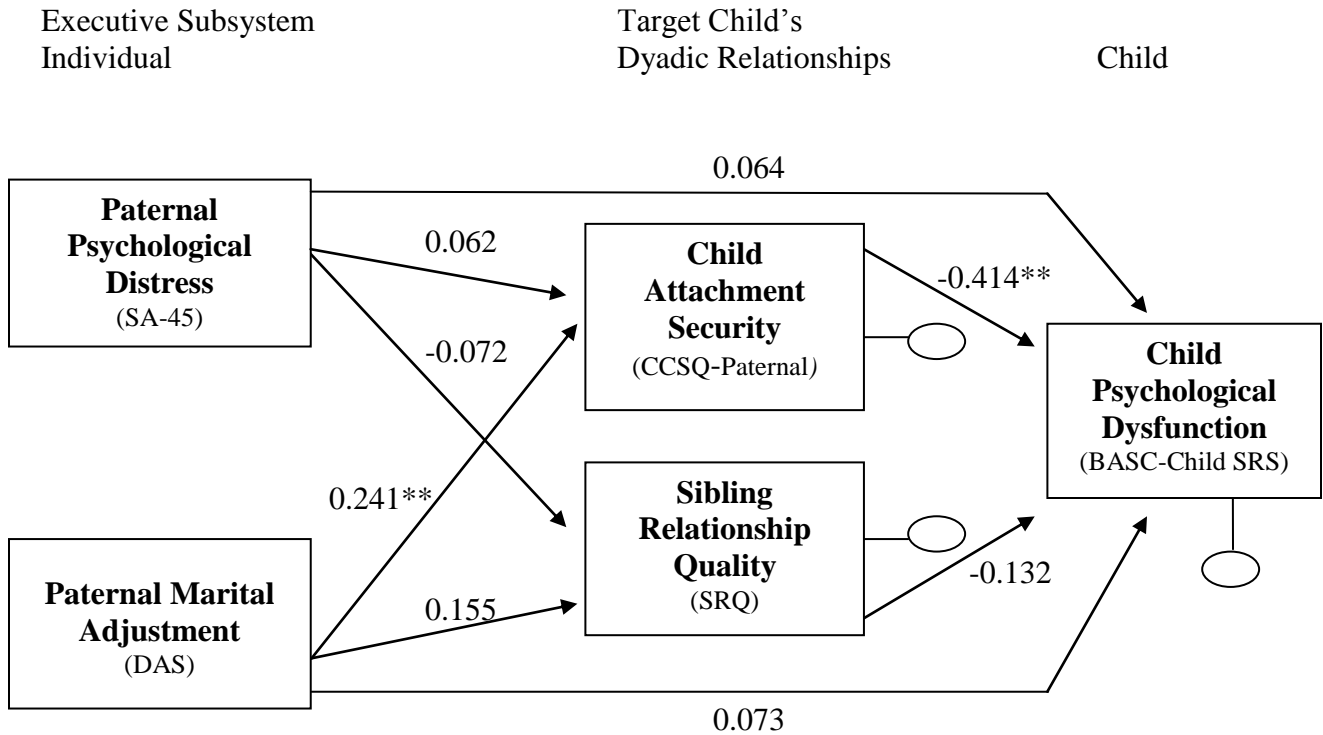


Figure 3. Paternal Path Model 1c using child rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

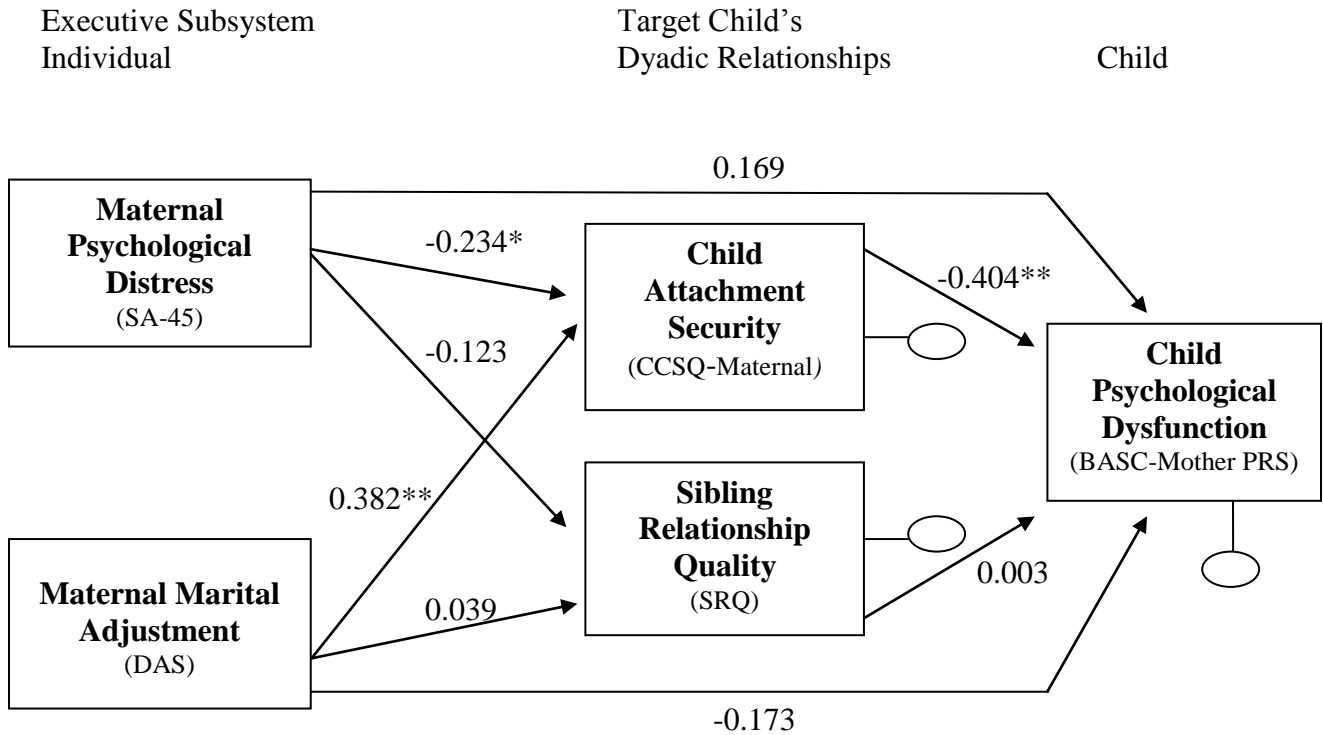


Figure 4. Maternal Path Model 2a.

*** Parameter is significant at the .01 level, *Parameter is significant at the .05 level*

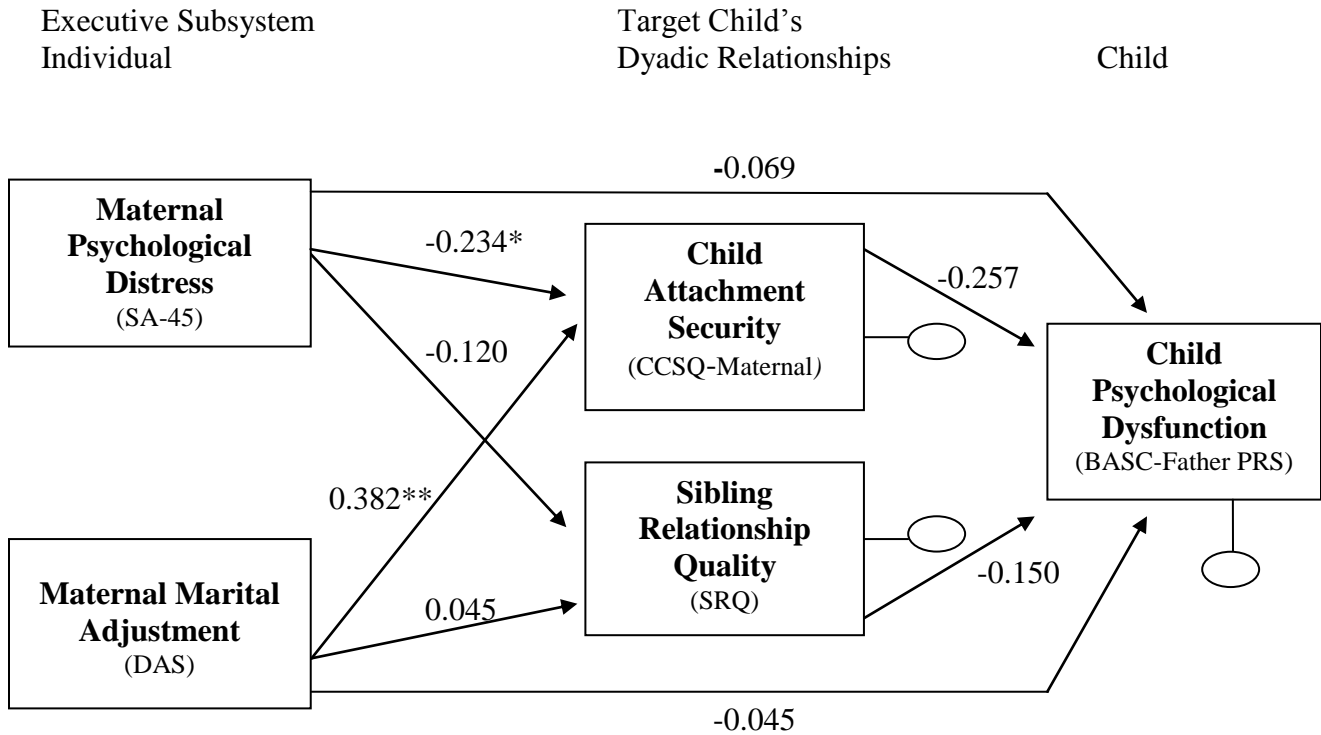


Figure 5. Maternal Path Model 2b using paternal rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

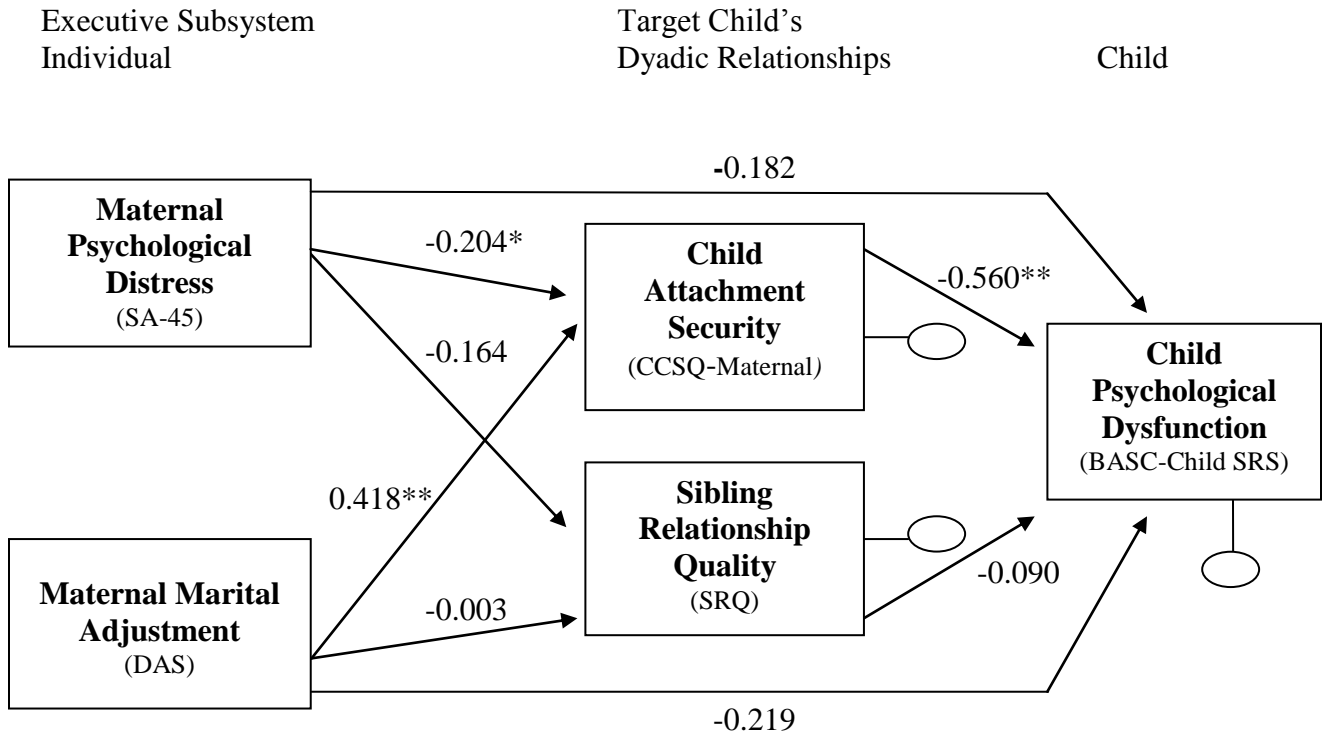


Figure 6. Maternal Path Model 2c using child rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

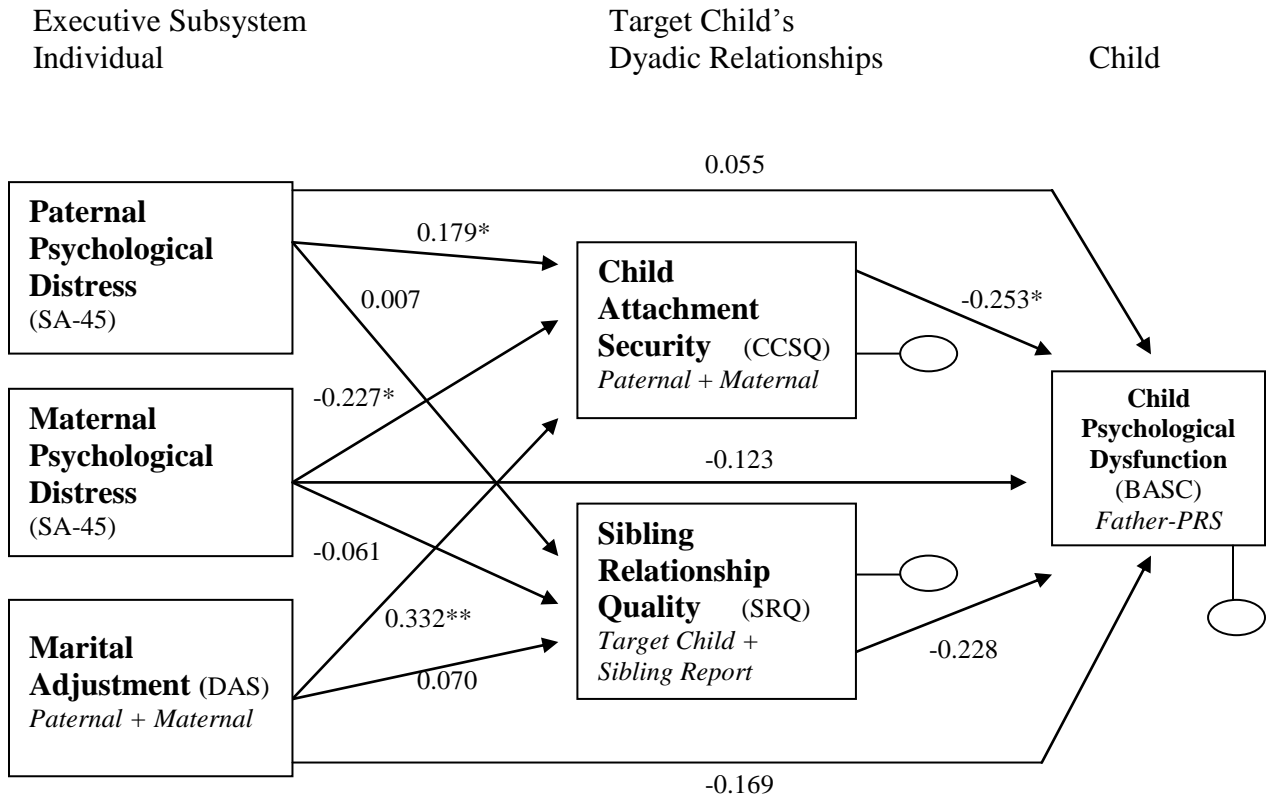


Figure 7. Systemic Path Model 3a using paternal rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

Executive Subsystem
Individual

Target Child's
Dyadic Relationships

Child

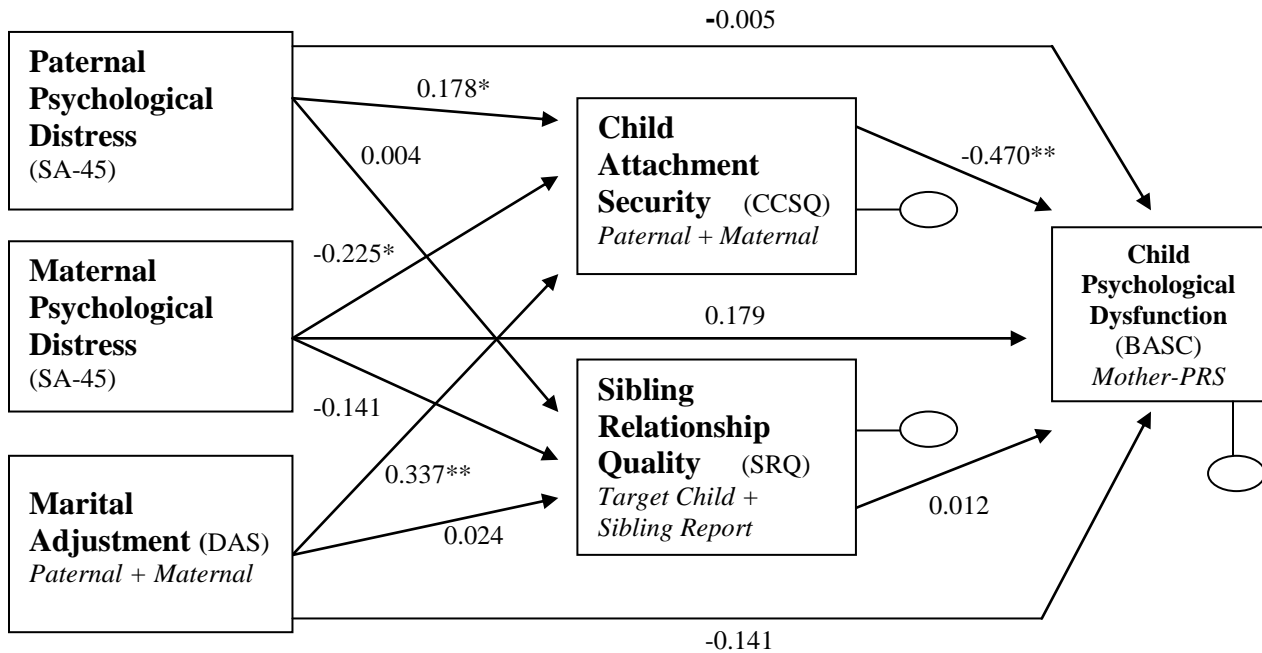


Figure 8. Systemic Path Model 3b using maternal rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

Executive Subsystem
Individual

Target Child's
Dyadic Relationships

Child

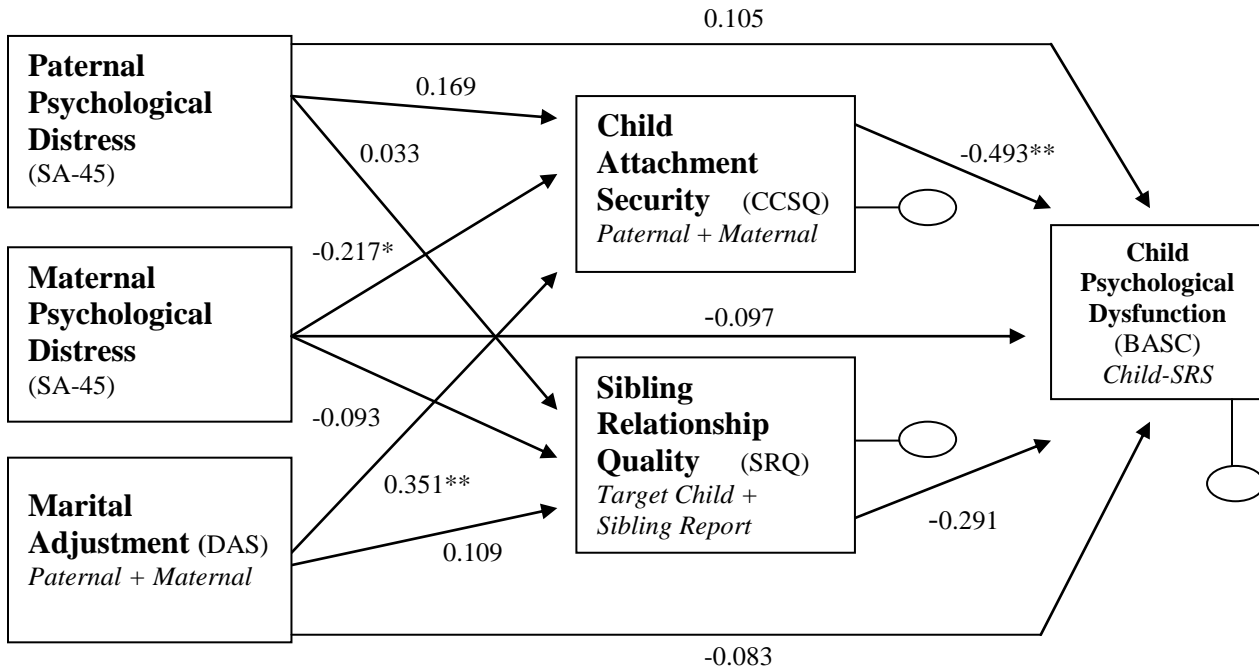


Figure 9. Systemic Path Model 3a using child rating of child psychological dysfunction as the dependent variable.

** Parameter is significant at the .01 level, *Parameter is significant at the .05 level

Table 1

Sample Demographics

	Total Parents (N = 172)	Father (N = 86)	Mother (N = 86)	Target Children (N = 86)
Ethnicity				
Caucasian	132 (76.7%)	67 (77.9%)	65 (75.6%)	62 (72.1%)
Asian	3 (1.7%)	1 (1.2%)	2 (1.2%)	1 (1.2%)
African American	13 (7.6%)	7 (8.1%)	6 (7.0%)	4 (4.7%)
Hispanic/Mexican Am.	16 (9.3%)	8 (9.3%)	8 (9.3%)	4 (4.7%)
Other	4 (2.3%)	1 (1.2%)	3 (3.5%)	11 (12.8%)
Missing	4 (2.3%)	2 (2.3%)	2 (2.3%)	4 (4.7%)
Gender				
Male	86	86		48
Female	86		86	38
Education				
High School Degree	20 (11.6%)	10 (11.6%)	10 (11.8%)	
Some College	33 (19.2%)	20 (23.3%)	13 (15.3%)	
2 yr/Tech Degree	22 (12.8%)	13 (15.1%)	9 (10.6%)	
Bachelor's Degree	62 (36.0%)	24 (27.9%)	38 (44.7%)	
Graduate Degree	32 (18.6%)	17 (19.8%)	15 (17.6%)	
Missing	3 (1.7%)	2 (2.3%)	1 (1.2%)	
Family Income				
Below \$15,000	6 (3.5%)	3 (3.5%)	3 (3.5%)	
\$15,000-30,000	13 (7.6%)	7 (8.1%)	6 (7.0%)	
\$30,000-45,000	23 (13.4%)	10 (11.6%)	13 (15.1%)	
\$45,000-60,000	29 (16.9%)	14 (16.3%)	15 (17.4%)	
\$60,000-75,000	30 (17.4%)	12 (14.0%)	18 (20.9%)	
Over \$75,000	60 (34.9%)	32 (37.2%)	28 (32.6%)	
Missing	11 (6.4)	8 (9.3)	3 (3.5%)	
Age				
Mean	37.49	38.48	36.51	9.86
SD	5.42	5.45	5.23	1.23

Table 2

Paternal Psychological Distress as Measured by SA-45

Symptom Subscale	Mean	SD	Borderline Sig (T > 60)	Clinically Sig (T > 70)
Anxiety	53.47	6.72	21.43%	1.19%
Depression	54.99	6.73	21.43%	3.57%
Obsessive Compulsive	56.07	8.54	35.71%	3.57%
Somatization	53.47	7.04	16.67%	3.57%
Phobic Anxiety	60.06	2.85	15.48%	3.57%
Hostility	55.41	6.41	21.43%	2.38%
Interpersonal Sensitivity	54.20	5.76	23.81%	1.19%
Paranoia	53.07	6.96	26.19%	1.19%
Psychoticism	59.10	3.25	33.33%	1.19%

Table 3

Maternal Psychological Distress as Measured by SA-45

Symptom Subscale	Mean	SD	Borderline Sig (T > 60)	Clinically Sig (T > 70)
Anxiety	52.49	7.16	14.12%	2.35%
Depression	53.71	6.12	16.47%	1.18%
Obsessive Compulsive	56.00	7.78	28.24%	5.88%
Somatization	52.98	6.82	18.82%	2.35%
Phobic Anxiety	59.00	2.77	12.94%	1.18%
Hostility	57.73	5.04	25.88%	3.53%
Interpersonal Sensitivity	54.42	6.51	28.24%	0.00%
Paranoia	51.43	6.02	10.59%	1.18%
Psychoticism	60.29	2.80	21.18%	4.71%

Table 4

Intercorrelations Between Measures

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. F:SA-45	--													
2. M:SA-45	.24*	--												
3. F: DAS	-.23*	-.37**	--											
4. M: DAS	-.15	-.43**	.55**	--										
5. F: CCSQ	.08	-.39**	.28**	.46**	--									
6. M: CCSQ	.01	-.22*	.22*	.39**	.73**	--								
7. T: SRQ	-.12	-.16	.16	.12	.26*	.23*	--							
8. S: SRQ	.08	.05	-.01	-.10	.28	.29	.30	--						
9. BASC-ESI	.07	.15	-.10	-.37**	-.62**	-.42**	-.22	-.33*	--					
10. F: BASC	.07	.07	-.23*	-.15	-.28*	-.30**	-.23	-.29	.37**	--				
11. M: BASC	.06	.39**	-.30**	-.43**	-.53**	-.52**	-.18	-.25	.41**	.53**	--			
12. DAS-COM	-.22	-.45**	.88**	.88**	.43**	.34**	.16	-.07	-.26*	-.21	-.41**	--		
13. CCSQ-COM	.05	-.32**	.27*	.46**	.93**	.93**	.26*	.31	-.55**	-.31**	-.56**	.42**	--	
14. SRQ-COM	-.04	-.16	.10	.10	.38*	.33	.83**	.78**	-.50**	-.37*	-.23	.11	.38*	--

Note. F: SA-45 = father SA-45 GSI score; M: SA-45 = mother SA-45 GSI score; F: DAS = father Dyadic Adjustment Scale score; M: DAS = mother Dyadic Adjustment Scale score; F: CCSQ = target child rating of father-child attachment on the Children's Coping Strategies Questionnaire; M: CCSQ = target child rating of mother-child attachment on the Children's Coping Strategies Questionnaire; T: SRQ = target child Sibling Relationship Questionnaire score; S: SRQ = sibling score on the Sibling Relationship Questionnaire; BASC-ESI = child report on BASC Emotional Symptoms Index; F: BASC = father report on the BASC Behavioral Symptoms Index; M: BASC = mother report on the BASC Behavioral Symptoms Index; DAS-Com = Dyadic Adjustment Scale composite score; CCSQ-Com = Children's Coping Strategies Questionnaire composite score; SRQ-Com = Sibling Relationship Questionnaire composite score.

* $p < .05$. ** $p < .01$.

Table 5

Means and Standard Deviations for Measures

	Father <i>M (SD)</i>	Mother <i>M (SD)</i>	Child <i>M (SD)</i>
SA-45	49.44 (11.21)	51.54 (7.93)	
DAS	44.28 (6.71)	44.36 (6.89)	
CCSQ			
Father-child Security			3.40 (0.59)
Mother-child Security			3.33 (0.58)
SRQ			
Target Child Report			9.07 (2.49)
Sibling Report			9.15 (2.30)
BASC			
Parent Report Score	52.56 (9.92)	51.40 (9.22)	
Self-Report Score			50.31 (10.07)

Table 6

Comparing Intact and Blended Families

	Intact	Blended
SA-45		
Paternal	49.29 (11.18)	51.00 (12.30)
Maternal	51.37 (7.59)	53.39 (11.60)
DAS		
Paternal	44.17 (6.48)	45.38 (9.12)
Maternal	44.58 (6.47)	42.00 (10.94)
CCSQ		
Father-child Security	3.37 (0.53)	2.95 (0.87)
Mother-child Security	3.45 (0.53)	2.83 (0.88)
SRQ		
Target Child Report	9.04 (2.50)	9.50 (2.52)
Sibling Report	9.17 (2.42)	9.00 (1.14)
BASC		
Paternal Report	51.97 (9.92)	58.86 (8.15)
Maternal Report	51.35 (9.28)	52.00 (9.27)
Self-Report Score	49.48 (9.13)	58.25 (15.27)

Table 7

Indices of Fit for Paternal Models

	Index Value	<i>p</i>
Model 1a		
Chi Square Test of Model Fit	2.449	0.12
Comparative Fit Index	0.882	
Root Mean Square Error of Approximation	0.130	
Standardized Root Mean Square Residual	0.044	
Model 1b		
Chi Square Test of Model Fit	2.539	0.11
Comparative Fit Index	0.950	
Root Mean Square Error of Approximation	0.130	
Standardized Root Mean Square Residual	0.049	
Model 1c		
Chi Square Test of Model Fit	2.236	0.14
Comparative Fit Index	0.915	
Root Mean Square Error of Approximation	0.120	
Standardized Root Mean Square Residual	0.046	

Table 8

Indices of Fit for Maternal Models

	Index Value	<i>p</i>
Model 2a		
Chi Square Test of Model Fit	2.569	0.11
Comparative Fit Index	0.970	
Root Mean Square Error of Approximation	0.135	
Standardized Root Mean Square Residual	0.046	
Model 2b		
Chi Square Test of Model Fit	2.563	0.11
Comparative Fit Index	0.945	
Root Mean Square Error of Approximation	0.135	
Standardized Root Mean Square Residual	0.044	
Model 2c		
Chi Square Test of Model Fit	3.170	0.08
Comparative Fit Index	0.962	
Root Mean Square Error of Approximation	0.159	
Standardized Root Mean Square Residual	0.051	

Table 9

Indices of Fit for Systemic Models

	Index Value	<i>p</i>
Model 3a		
Chi Square Test of Model Fit	5.130	0.02
Comparative Fit Index	0.851	
Root Mean Square Error of Approximation	0.219	
Standardized Root Mean Square Residual	0.067	
Model 3b		
Chi Square Test of Model Fit	4.571	0.03
Comparative Fit Index	0.934	
Root Mean Square Error of Approximation	0.204	
Standardized Root Mean Square Residual	0.067	
Model 3c		
Chi Square Test of Model Fit	10.223	0.00
Comparative Fit Index	0.832	
Root Mean Square Error of Approximation	0.327	
Standardized Root Mean Square Residual	0.079	

APPENDIX A
CONSENT FORM

**UNIVERSITY OF NORTH TEXAS COMMITTEE FOR
THE PROTECTION OF HUMAN SUBJECTS
RESEARCH CONSENT FORM**

Code:

Date:

Title of Study: Family System Predictors of Psychological Well-being in Middle Childhood

Principal Investigator: Shelley A. Riggs, Ph.D.
University of North Texas
Department of Psychology
P.O. Box 311280
Denton, TX 76203-1280

940-565-2672
riggs@unt.edu

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed activity. It describes the procedures, benefits, risks, and discomforts of the study. It also describes your right to withdraw from the study at any time. It is important for you to understand that no guarantees or assurances can be made as to the results of the study.

Purpose of the study and how long it will last:

The purpose of this research is to examine the functioning of 8- to 12-year-old children in the context of other family relationships and patterns. If you agree to participate by signing this form, your family will be videotaped during interaction tasks, you will complete a battery of paper-and-pencil instruments and an interview, and your children will also complete some questionnaires. The total data collection process will take approximately 2.5 to 3 hours. If you or your spouse do not complete the questionnaires during this time, you may take home the remaining instruments to complete at home. You will be provided with a postage paid envelope to return the questionnaires to the investigator.

Description of the study including the procedures to be used:

You have chosen to participate in a study investigating child and family functioning. You will review the purpose and procedures of the study with the researcher and have the opportunity to ask questions about the study and your participation. After the consent forms are signed, family members will be given a series of topics to discuss for approximately 20 minutes. Afterwards, you and your partner will be interviewed in separate room while your children will complete their questionnaires. After the data are collected, you will keep a copy of the consent form.

Description of procedures/elements that may result in discomfort or inconvenience:

Although not expected, it is possible that you may experience some discomfort as a result of the questions asked in the paper-and-pencil instruments or interview. If excessive discomfort is experienced when completing the various measures, you may choose to stop answering questions at any time without penalty. The researchers will try to prevent any problem that could happen

Research Consent Form -Page 1 of 3 _____Participant's initials

**UNIVERSITY OF NORTH TEXAS
RESEARCH CONSENT FORM (Continued)**

because of this research, but the study may involve risks to the participantd which are currently unforeseeable. Let the researchers know if there is a problem and they will help you. However, UNT does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research. If you feel the need to discuss your discomfort with a counselor, the researcher will provide you with a list of counseling resources in the community.

Compensation: You will receive \$30 once you have returned all questionnaires to the investigator.

Benefits to participants: A possible indirect benefit of participating in the study will be your contribution to ongoing efforts to learn more about child and family functioning. The knowledge gained in this study will enhance our understanding of factors that contribute to individual and system dysfunction and will offer practical information to family counselors that can usefully be applied to clinical intervention and prevention efforts.

Confidentiality of research records:

All information will be kept confidential by the investigators to the extent that is allowed by law. A number of steps will be taken to minimize the risk of loss of confidentiality. Codes, rather than names, will be used on all instruments and in the final report. You should not write your name anywhere on any of the questionnaires. Only the principal investigators, research assistants, transcribers and coders will have access to the questionnaires. The consent forms will be kept separate from the self-report instruments, which will be stored in a locked filing cabinet in the principal investigator's laboratory until October 2017. At that time, all paper-and-pencil instruments will be shredded and audiorecordings will be erased. The data will be used for training and research purposes only. It is anticipated that the results of the study will be presented at conferences and published in a psychological journal and/or book. Names and other identifying information will not be included in any presentation or publication.

Review for protection of participants:

This research project has been reviewed and approved by the UNT Institutional Review Board (940-565-3940.) Contact the UNT IRB with any questions regarding your rights as a research subject.

RESEARCH SUBJECTS' RIGHTS: I have read or have had read to me all of the above. The research assistant has explained the study to me and answered all of my questions. I have been told the risks or discomforts and possible benefits of the study.

Research Consent Form -Page 2 of 3 _____ Participant's initials

**UNIVERSITY OF NORTH TEXAS
RESEARCH CONSENT FORM (Continued)**

I understand that I do not have to take part in this study, and my refusal to participate or to withdraw will involve no penalty or loss of rights or benefits or legal recourse to which I am entitled. The study personnel may choose to stop my participation at any time.

In case there are problems or questions, I have been told I can call Dr. Shelley Riggs, whose phone number appears at the top of this form.

I understand my rights as a research subject, and I voluntarily consent to participate in this study. I also consent for my minor child(ren) listed below to participate in the study. I understand what the study is about and how and why it is being done. I have been told I will receive a copy of this consent form.

Minor Children and Ages: _____

Printed Name of Participant: _____

Participant's Signature

Date

For the Investigator or RA Designee:

I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known benefits and risks of the research.

Researcher's Signature

Date

List below a current address where you would like your compensation sent.

Print Name: _____

Address: _____

Check here if you give your permission to be contacted by the Principal Investigator for a follow-up study on the transition to adolescence. List below a permanent address and phone number where you or a family member might be reached in the next 3-5 years.

Research Consent Form - Page 3 of 3

Child Assent

You are being asked to be part of a research project being done by the University of North Texas Department of Psychology.

This study is interested in finding out more about how different family members interact and feel about their family relationships. You will be asked to join your parents in 3-5 family interaction tasks (e.g., plan a family activity for the weekend) that will take about 20 minutes. Afterwards, while your parents are being interviewed in other rooms, you will complete a few questionnaires with the researcher, then also complete some other questionnaires on your own. The time needed for all of the questionnaires will be about 45-60 minutes.

We hope that you will agree to help us with our study, but you may choose not to participate. If you do decide to be part of this study, please remember that you can ask the researcher for assistance at any time. Also, if you become uncomfortable at any point you can stop.

If you agree to be part of this study, please print and sign your name below.

Printed Name of Child: _____

Participant's Signature

Date

Researcher's Signature

Date

APPENDIX B
BACKGROUND INFORMATION QUESTIONNAIRE

Background Information Questionnaire – Form FKC

Part I: Demographic Information

1. Age: _____
2. Sex: a. Male b. Female
3. Ethnicity
- a. African-American
 - b. Native American
 - c. Asian/Pacific Islander
 - d. White/European American
 - e. Hispanic/Latino/Mexican American
 - f. Bi-racial or Multi-racial
(Specify: _____)
 - g. Other (Specify: _____)
4. Educational Achievement:
- a. Below high school
 - b. High school degree
 - c. Some college
 - d. Technical/2-year degree
 - e. Bachelor's degree
 - f. Graduate degree
5. Occupational Status:
- a. Employed full time
 - b. Employed part time
 - c. Student
 - d. Unemployed
6. Length of current marriage? _____
7. How many children? _____
8. How many previous marriages? _____
9. How many children from past relationship? _____
10. Please list all persons living in your home at the you:
- _____
- _____
- _____
11. Family Income Level
- a. Below \$15,000
 - b. \$15,000-\$30,000
 - c. \$30,000-\$45,000
 - d. \$45,000-\$60,000
 - e. \$60,000-\$75,000
 - f. over \$75,000

Part II: Family Background

12. Number of siblings: _____ Ages: _____
13. Were you adopted? A. Yes B. No
14. Did your parents' divorce? A. Yes, before I was 18 B. Yes, after I was 18 C. No
15. If your parents divorced, did your mother remarry? A. Yes B. No
If yes, how many times? _____ If yes, how old were you? _____
16. If your parents divorced, did your father remarry? A. Yes B. No
If yes, how many times? _____ If yes, how old were you? _____
17. Did you experience the death of a close family member (e.g. parent, sibling, grandparent) before the age of 18? A. Yes B. No
If yes, please circle the relevant relationship of the deceased family member to you.
- a. Mother
 - b. Father
 - c. Stepmother
 - d. Stepfather
 - e. Brother
 - f. Sister
 - g. Grandmother
 - h. Grandfather
18. Which of the following best describes your religious orientation?
- a. Pentecostal
 - e. Methodist
 - i. Judaism
 - m. Spiritual, but not religious

- b. Episcopal f. Mormon j. Hindu n. Atheist
- c. Presbyterian g. Baptist k. Islam o. No religious affiliation
- d. Lutheran h. Catholic l. Buddhist p. Other: _____

19. How religious was your family? Not at all a little somewhat fairly very
 (While you were growing up) 1.....2.....3.....4.....5

20. How religious is the family of which you are a parent currently? Not at all a little somewhat fairly very
 1.....2.....3.....4.....5

21. Have you ever sought counseling services? A. Yes B. No

If yes, please circle all relevant services and indicate duration in **MONTHS**. Using the following scale, indicate how helpful you found these experiences in the far right column below.

Not at all helpful	Somewhat helpful	Very helpful	
1	2	3	4 5
			<u>Months</u>
			<u>Helpful?</u>
a. Individual Therapy	A. Yes B. No		_____
b. Premarital Therapy	A. Yes B. No		_____
c. Couple Therapy	A. Yes B. No		_____
d. Family Therapy	A. Yes B. No		_____
e. Group Therapy	A. Yes B. No		_____
f. Career Counseling	A. Yes B. No		_____
g. AA/NA/etc	A. Yes B. No		_____

For questions 22-32: Please indicate by checking Yes or No whether you or any of your family members (including aunts, uncles, grandparents) have experienced the concerns/problems listed below.

If you check Yes, please indicate who it refers to using the corresponding letter in the following list (You may indicate more than one person):

- a. Mother
- e. Brother
- i. Uncle
- b. Father
- f. Sister
- j. Aunt
- c. Stepmother
- g. Grandmother
- k. Cousin
- d. Stepfather
- h. Grandfather
- l. Yourself

	Yes No	Who:
_____	___ 22. alcoholism or alcohol abuse	_____
_____	___ 23. abused drugs (other than alcohol)	_____
_____	___ 24. fatal or attempted suicide	_____
_____	___ 25. criminal charges	_____
_____	___ 26. was sexually abused	_____
_____	___ 27. was physically abused	_____
_____	___ 28. abused someone sexually	_____
_____	___ 29. abused someone physically	_____
_____	___ 30. took medicine prescribed for emotional problems	_____
_____	___ 31. hospitalization due to emotional problems	_____
_____	___ 32. diagnosed mental disorder (see #33)	_____

33. If you checked “Yes” for #32, mental disorder, please choose the category or categories that describe to the best of your knowledge the specific mental disorder(s) and who it refers to. (You may indicate more than one person if applicable)

Yes	No	Who:
<input type="checkbox"/>	<input type="checkbox"/> a. depression	_____
<input type="checkbox"/>	<input type="checkbox"/> b. bipolar (manic-depressive) disorder	_____
<input type="checkbox"/>	<input type="checkbox"/> c. anxiety	_____
<input type="checkbox"/>	<input type="checkbox"/> d. post-traumatic stress disorder	_____
<input type="checkbox"/>	<input type="checkbox"/> e. obsessive-compulsive disorder	_____
<input type="checkbox"/>	<input type="checkbox"/> f. attention-deficit hyperactivity disorder (ADD)	_____
<input type="checkbox"/>	<input type="checkbox"/> g. eating disorder (anorexia, bulimia)	_____
<input type="checkbox"/>	<input type="checkbox"/> h. schizophrenia	_____
<input type="checkbox"/>	<input type="checkbox"/> i. other disorder (specify:_____)	_____

Part III: Family Status [Answer 34-35 if 8-12 y.o. child lives apart from one or more biological parent(s)]

34. Length of marriage to 8-12 y.o. child’s biological parent in years: _____
35. How old was your 8-12 y.o. child when you separated/divorced his/her biological parent?__
36. Were you in your first marriage when your 8-12 y.o. child was born? Yes No
37. How old was your 8-12 y.o. child when you remarried? _____
38. If your 8-12 y.o. child does not live with both biological parents, how often does your child see the other biological parent?
- Almost every day
 - At least once a week
 - At least once a month
 - About once every 6 months
 - About once a year
 - About once every few years
 - Never

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