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Mediators of interparental conflict and adolescent internalizing/externalizing behaviors

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MEDIATORS OF INTERPARENTAL CONFLICT AND ADOLESCENT
INTERNALIZING/EXTERNALIZING BEHAVIORS

by

Sheehan David Fisher

<u>An Abstract</u>

Of a thesis submitted in partial fulfillment of the requirements for the Doctor of
Philosophy degree in Psychology in the Graduate College of the University of Iowa

July 2012

Thesis Supervisor: Professor Michael W. O'Hara

ABSTRACT

Interparental conflict has been shown to be associated with child psychopathology (internalizing and externalizing behaviors). Adolescents are at risk for developing internalizing and externalizing behaviors because they are aware of the implications of the interparental conflict, they can attempt to mediate the conflict, and because of age-related responsibilities, they often experience new and unfamiliar stressors. A comprehensive review of the literature revealed four mediational models with substantial empirical support that explain the relation between interparental conflict and adolescent psychopathology: the cognitive-contextual model, the triangulation model, the spillover model, and the interparental conflict-parental psychopathology model. Typically, the mediators of these models (self-blame/perceived threat; triangulation; negative parenting behaviors; parental psychopathology, respectively) have been examined individually. The aim of this study was threefold: 1) examine the specificity of adolescent psychopathology (dimension versus diagnosis), 2) test each theoretical model, and 3) develop and test an integrative model that included the mediational mechanisms from the individual models. A community sample of 152 families (mother, father, adolescent) was recruited from the contiguous United States. Considering specific psychiatric diagnoses did not improve the fit of models that included the respective adolescent dimensional internalizing or externalizing behaviors. The hypotheses of the cognitive-contextual model (mediator: perceived threat), spillover model (mediators: maternal/paternal parenting), and the interparental conflict-parental psychopathology model (mediators: maternal/paternal internalizing) were supported in this study, but mediation was not supported for the triangulation model. Considering the mediators together, adolescent

perceived threat, negative parenting, maternal internalizing and paternal externalizing behaviors were key in predicting adolescent psychopathology. Overall, the findings from the integrative models suggest that externalizing behaviors (interparental conflict, negative parenting, paternal externalizing behavior) lead to both adolescent internalizing and externalizing behaviors; whereas, parental internalizing behaviors leads to internalizing behaviors only. The implications of these findings, especially from the integrative model, have clinical implications and provide guidance for future research.

Abstract Approved: _____
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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

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has been approved by the Examining Committee for the thesis requirement for the Doctor
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To Suzanne Braswell

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Thank you to my family for their love and loyalty, especially while I have been away for so long. You always help me remember who I am.

Finally, thank you Wilmarie for always believing in me and your endless love. Tu haz tocado mi vida de una manera que sólo tu podías.

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INTRODUCTION

The family environment is affected by many forces, but interparental conflict is especially influential. The interparental relationship is the foundation of the family unit and therefore it can have a significant effect on the family environment and adolescent outcomes (Zimet & Jacob, 2001). Interparental conflict is characterized by high a frequency of disagreements, hostile conflict, covert conflict, and/or avoidant conflict (Buehler et al., 1997). These facets of interparental conflict may negatively affect the family environment and adolescent behavior (Grych & Fincham, 1993; Harold & Conger, 1997). There are four major models that that attempt to account for the association between interparental conflict and adolescent behavior, including the cognitive-contextual model (mediator: adolescent perception), triangulation model (mediator: triangulation), spillover model (mediator: negative parenting behavior), and the interparental conflict-parental psychopathology model (mediator: parental psychopathology). Furthermore, an integrative model that combines the mechanisms of these four models may provide a more comprehensive explanation of the family environment, which is characterized by interparental conflict. This 3-phase longitudinal study tested each of the four models separately with a sample of 152 families and tested an integrative model, which incorporated mediators from each of the four models. Understanding the mediators of interparental conflict and adolescent internalizing and externalizing behaviors has both theoretical and clinical implications.

This paper first reviews the literature that examines mediators of interparental conflict and adolescent outcomes and then proposes an empirical study that tests the four

models separately and then creates and tests an integrative model based on the four

models. In order to fully cover the scope of interparental conflict, multiple forms of

conflict between parents are included in this literature review under the umbrella term

"interparental conflict." Interparental conflict includes marital conflict,

interparental/marital discord, interparental/marital distress, interparental/marital dispute,

and divorce. Because parents do not necessarily have to be married to one another to

engage in conflict, the term "interparental" is judged to be more appropriate than the term

"marital." Previous reviews and meta-analyses have focused on the associations between

interparental conflict (Buehler et al., 1997; Emery, 1982), marital conflict (Davies &

Cummings, 1994; Fincham & Osborne, 1993; Grych & Fincham, 1990; Zimet & Jacob,

2001), and other forms of interparental interaction (Reid & Crisafulli, 1990; Risdal &

Singer, 2004) with outcomes of children of all ages. However, none of these reviews has

provided an overview of the models that illustrate how interparental conflict affects

adolescent outcomes specifically.

Adolescence, in particular, is the focus of the present study because it is a distinct

developmental stage in childhood. Adolescents are more cognitively developed than

younger children, which may contribute to adolescents having an increased likelihood of

involvement in the interparental conflict because they are more capable than younger

children (Schulz, Waldinger, Hauser, & Allen, 2005). This greater capability may provide

adolescents with a unique experience, awareness, and insight into the family environment

that may not be available to younger children. Also, adolescents' involvement in

interparental conflict may make them feel responsible for resulting problems (Bosco,

Renk, Dinger, Epstein, & Phares, 2003). An adolescent's insight and involvement in

interparental conflict may lead to the adolescent being affected negatively by the conflict, which may result in the adolescent expressing internalizing (e.g., depression, anxiety) or externalizing (e.g., misbehavior, aggression, delinquency) behaviors (Buehler, Lange, & Franck, 2007). For instance, children 10 to 12 years old who perceived interparental conflict as a threat to themselves were more likely to have internalizing behaviors than younger children (8 to 9 years old) (Brown, Wolchick, Tein, & Sandler, 2007). The increased likelihood of internalizing behaviors associated with interparental conflict often contributes to the onset of depression during adolescence (Collins & Dozois, 2008; Davies & Cummings, 1994).

Adolescence marks a developmental period when an individual has increased social roles (e.g., son/ daughter, friend, student) and desire for autonomy (Buehler et al., 2007; Doyle & Markiewicz, 2005). However, interparental conflict may lead the adolescent to feel compelled to intervene in the interparental conflict, which may inhibit his or her movement toward independence from the family (Schulz et al., 2005). In addition, the adolescent's psychological resources may be consumed with handling the interparental conflict, which may make him or her vulnerable when attempting to handle the stress of the social role transitions (Buehler, Lange, & Franck, 2007). Although the new social roles and ecologies outside of the family (e.g., school, peer groups, extracurricular activities) that develop during adolescence may have potential buffering effects against interparental conflict, parents continue to be important attachment figures in the adolescent's life (Doyle & Markiewicz, 2005). However, interparental conflict may prevent the adolescent from feeling comfortable in seeking emotional support from his or her parents when confronted by stressful circumstances (Buehler et al., 2007).

Adolescents have more responsibilities than younger children (e.g., care of younger siblings, employment), which are necessary to prepare them for adulthood. If parenting behaviors are influenced negatively by interparental conflict, adolescents may not receive the guidance from their parents necessary to be successful in managing their own responsibilities. Adolescents also are in the midst of establishing future goals and preparing academically for future careers. Therefore, disruption in adolescents' academic performance due to exposure to interparental conflict may have long-term effects on their achievement (Tillman, 2007). Finally, adolescence is a developmental period when substance use becomes prevalent and problematic (Segal & Stewart, 1996). Adolescent involvement with substance use and other severe forms of externalizing behavior can result in negative legal consequences. In sum, adolescence is a distinct intermediary period between childhood and adulthood that is characterized by greater responsibility, cognitive comprehension of the family environment, risk for current behavior to influence the adolescent's future, and immediate consequences for misbehavior in comparison to childhood. Therefore, this paper reviews empirical studies examining adolescent outcomes specifically.

Within the scope of the literature review, an adolescent constitutes any individual who is 10 to 18 years of age. The age range used to describe adolescence in this review extends below the conventional definition of adolescence, although other researchers also consider the age of 10 as the lower limit for adolescence (Salafia, Gondoli, & Grundy, 2008). The age of 10 is used as the lower age limit for early adolescence because the age marks a period of major transitions. Ten years of age is about the average age of the onset of puberty (Parent et al., 2003) and is the age when various risk factors (e.g.,

negative cognitions) are associated with the onset of depression (Collins & Dozois, 2008). In like manner, the age of 18 (late adolescence) is another transitional age when an adolescent usually completes high school, has increased legal responsibilities and freedoms (e.g., able to vote, drive, join military), may be preparing to further his or her education (e.g., attending college/university, vocational school), and may be legally independent from his or her parent. In short, the ages of 10 to 18 were used to characterize adolescence because of the age specific social, legal, and biological transitions that occur at those ages. Therefore, when the terms "adolescent" or "adolescence" is used within this literature review it is referring to 10 to 18 year old adolescents. But, when the term "child(ren)" is used it is referring to children from infancy to 18 years old.

The methodology of the empirical literature in this literature review is important when drawing conclusions from the findings. The study design (i.e., cross-sectional versus longitudinal) is particularly relevant when determining the importance of the results of each study. Because the majority of the literature on interparental conflict and adolescent outcome is based on correlational rather than experimental research, causal inferences are limited. However, longitudinal designs can provide support for a causal linkage between variables (Bradbury & Karney, 1993). In contrast, cross-sectional studies cannot offer strong support for causation but can provide support for associations between variables. In correlational research, a model can illustrate directionality of proposed causal processes through specific mechanisms. The models can be tested statistically through mediational analysis. Because the paths in the models are intended to suggest causation, longitudinal studies provide greater interpretational weight when

examining mediational models, than cross-sectional studies. In order to distinguish between mediational analyses based on longitudinal versus cross-sectional designed studies, different terms are used to suggest mediation. For findings supported by studies with longitudinal analyses, a form of the term "mediation" (e.g., "mediate(s)", "mediator") is used. For findings supported by cross-sectional analyses or findings that are not intended to claim mediation, a form of the term "confounding", "link(age)", "connect(ion)" is used to suggest potential mediation.

Second, an ample sample size is essential for drawing meaningful conclusions from statistical analysis. The sample size required is based partially on the design of the study and the number of intended statistical analyses. Thus, the design (cross-sectional versus longitudinal) and the sample size of the studies are considered when interpreting the strength of the findings because sample size and cross-sectional/ longitudinal design have the greatest statistical and interpretive impact on findings of studies of mediational models.

Structure of Literature Review

The purpose of this review is to examine the empirical literature on the relation between interparental conflict and adolescent internalizing and externalizing behaviors in order to provide a rationale behind the design of the proposed study. Four models emerged from the literature, which are used to organize the examination of the relation between interparental conflict and adolescent outcomes: the cognitive-contextual model, triangulation model, spillover model, and the interparental conflict-parental

psychopathology model[1]. The literature review is organized to examine the literature on

the four models to provide a rationale for the present study. First, each of the four

models is described to show how the model is designed to examine the relation between

interparental conflict and child outcomes. The four models were not developed to

address adolescent samples specifically, nor were the models developed to differentiate

their implications for childhood and adolescence. Therefore, the descriptions of the

models are meant to apply to children of all ages and not solely adolescents. The goal of

the descriptions of the models is to provide a brief overview of the models and their key

mechanisms. The description of each model is followed by a review of the empirical

literature that examined adolescent samples specifically. The review of the empirical

literature for each model is organized based on the type of adolescent behavioral outcome

(adolescent internalizing and externalizing behaviors, respectively).

A few studies address several mechanisms that are applicable to more than one

model. Thus, the findings from these studies are discussed in the context of more than

one model. In addition, findings that show correlations between mechanisms from

different models are discussed in this literature review. Ultimately, the goal of this

literature review is to provide a detailed investigation of the relation between

interparental conflict and adolescent outcomes.

Cognitive-Contextual Model

Grych and Fincham (1990) proposed the cognitive-contextual model to explain

the relation between interparental conflict and child internalizing and externalizing

behaviors (see Figure B1). In short, the cognitive-contextual model asserts that

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[1] This model does not have a specific name conventionally used in the literature but the name is being used to describe parental psychopathology as a mechanism that mediates the relation between interparental conflict and adolescent outcomes.

interparental conflict affects child outcome through the child's interpretation of the conflict. The cognitive-contextual model includes four characteristics of interparental conflict that may affect child outcomes: frequency, intensity, content, and resolution. The frequency of the interparental conflict is the amount of direct experience a child has with conflict between his or her parents. The intensity of the interparental conflict is the severity of the conflict between the child's parents. Grych and Fincham (1990) hypothesize that there is a marked difference in outcomes for children whose parents have moderate arguments with one another in the presence of the child and children whose parents threaten one another or use emotionally abusive language in the presence of the child. The content of the interparental conflict is particularly important, especially when the child is the source or subject of the conflict (Grych & Fincham, 1990). Finally, the cognitive-contextual model identifies the resolution of the interparental conflict as having an impact on child behavior. Parents who can successfully resolve conflict in the presence of their child may serve as an example to the child for resolving conflicts in the child's relationships. In addition, resolved conflicts may provide a greater sense of a unified family than unresolved conflict. These four interparental conflict factors can work with one another to produce different child behavior outcomes (Dadds, Atkinson, Turner, Blums, & Lendich, 1999). For example, children exposed to parents who have relatively frequent arguments about finances may be at lower risk of developing behavioral problems than children exposed to relatively infrequent interparental conflict concerning the children's behavior. This example illustrates how the frequency and the content of the interparental conflict may have interactive effects on child behavior. Grych and Fincham (1990) also proposed that adolescents' appraisal of the family

conflict may have a significant effect on their risk of developing internalizing and externalizing behavior problems.

According to Grych and Fincham's (1990) cognitive-contextual model, children's appraisal of the interparental conflict is separated into two forms of cognitive processing. Primary processing involves the children's assessment of the negativity of the interparental conflict, the level of threat it may pose, and the degree to which the conflict may affect them personally (e.g., concern he or she will be involved in conflict, conflict may affect parent-child relationship) (Grych & Fincham, 1990). Primary processing addresses the fear and insecurity the child experiences in the family environment. Secondary processing requires a deeper, more discerning examination of the interparental conflict by the child in comparison to primary processing. The cognitive-contextual model states that when children are exposed to interparental conflict, children attempt to discern what caused the conflict between their parents, whether they or someone else is responsible for the conflict, and whether or not they are equipped to deal with their negative family environment (Dadds et al., 1999; Grych & Fincham, 1990). Depending on the characteristics of the attributed cause of the interparental conflict ("locus", "stability", "globality"), children may develop a fear that the conflict may recur and may affect multiple aspects of the family environment (Grych & Fincham, 1990). It is particularly detrimental to behavioral outcomes when children take responsibility for the interparental conflict. Finally, the children's perception of their capability to reduce the interparental conflict in their family can profoundly influence their behavior (Dadds et al., 1999; Grych & Fincham, 1990; Grych, Fincham, Jouriles, & McDonald, 2000). Children's confidence in their ability to intervene may be influenced by previous attempts

to reduce the conflict between their parents (Grych & Fincham, 1990). In addition, the cognitive-contextual model proposes that children's involvement in interparental conflict may have negative effects on the family environment (Grych et al., 2000), which suggests a reciprocal effect. In sum, the child's cognitions and perceptions of the interparental conflict are associated with child maladaptive behaviors and problems within the family.

Empirical evidence for the cognitive-contextual model: Adolescent internalizing behaviors. Research based on the theoretical model of the cognitive-contextual model has been conducted to assess the potential effect of interparental conflict on adolescent outcome. The adolescent's perception of the severity of the interparental conflict predicts adolescent internalizing behaviors (Dadds et al., 1999; Harold et al., 1997; Oh et al., 2011; Osborne & Fincham, 1996; Rogers & Holmbeck, 1997). Additionally, the manner in which parents resolve their interparental disputes (e.g., avoiding, attacking resolution style) predicts adolescent internalizing behaviors (Dadds et al., 1999). More specifically, parents' avoidance of resolving interparental conflict is associated with adolescents' internalizing behaviors (Dadds et al., 1999). In addition, Grych and Fincham (1993) discovered that when the content of the interparental conflict was adolescent-related (e.g., what time the child would do his or her homework), adolescents were more likely to blame themselves for their parents' conflict. Numerous studies have shown that adolescent self-blame (e.g., feeling responsible for parental conflict) and perceived threat (e.g., potential physical harm, future negative parent-adolescent interaction or parental separation) are predictive of adolescent internalizing behaviors (Buehler et al., 2007; Dadds et al., 1999; Gerard et al., 2005; Grych, Harold, & Miles, 2003; Grych & Fincham, 1990). Moreover, adolescent self-blame and perceived

threat link interparental conflict and adolescent internalizing behaviors (Buehler et al., 2007; Gerard et al., 2005; Grych et al., 2000; Grych et al., 2003). The linkage of interparental conflict and adolescent internalizing behavior through adolescent self-blame and perceived threat was supported in community samples and at-risk samples (children from battered women's shelters), which demonstrates the spectrum of the cognitive-contextual model (Gerard et al., 2005; Grych et al., 2000).

Recently, Shelton and Harold (2008a) conducted a three-phase longitudinal study that examined the cognitive-contextual model and adolescent coping strategies with a sample of 252 adolescents. Interparental conflict was found to be associated with adolescent self-blame and perceived threat (Shelton & Harold, 2008a). In turn, self-blame was associated with adolescent over-involvement in the interparental conflict, which in turn was associated with adolescent internalizing behaviors (Shelton & Harold, 2008a). Also, perceived threat was correlated with adolescent avoidance of parental conflict, which was in turn correlated with adolescent internalizing behavior. In sum, Shelton and Harold's (2008a) research demonstrated that adolescents are at increased risk for developing internalizing behavior problems when adolescents feel that they are personally responsible for the conflict between their parents and blame themselves and when adolescents feel threatened and subsequently unsafe as a result of interparental conflict.

Empirical evidence for the cognitive-contextual model: Adolescent externalizing behaviors. Adolescent externalizing behaviors also can be explained by the cognitive-contextual model. Intense interparental conflict, as perceived by the adolescent, is associated with higher levels of adolescent externalizing behaviors (Dadds et al., 1999; Harold et al., 1997; Rogers & Holmbeck, 1997). When interparental conflict arises, parental avoidance of resolving the conflict is associated with increased levels of adolescent externalizing behavior problems (Dadds et al., 1999). Adolescents who witness unresolved interparental conflict may feel unsure of the future stability and permanence of the family unit, which is connected to the concept of perceived threat in the cognitive-contextual model. Adolescent perceived threat and self-blame predicts adolescent externalizing behaviors; however, the strength of the associations vary across studies (Buehler et al., 2007; Grych et al., 2000; Grych et al., 2003). In addition, longitudinal studies have shown that adolescent perceived threat and self-blame mediated the relation between interparental conflict and adolescent externalizing behaviors (Buehler et al., 2007; Shelton & Harold, 2008a). Shelton and Harold (2008a) suggested that the adolescent's coping strategies intervene between the adolescent's appraisals and adolescent externalizing behaviors. Additionally, Shelton and Harold (2008a) found that adolescent over-involvement in interparental conflict linked the relation between adolescent self-blame and adolescent externalizing behaviors; however, adolescent self-blame continued to have a direct association with adolescent externalizing behavior. Likewise, adolescent use of avoidance of interparental conflict as a coping strategy linked the relation between adolescent perceived threat and adolescent externalizing behavior (Shelton & Harold, 2008a).

In sum, the relation between interparental conflict and adolescent externalizing behaviors through adolescent cognitive appraisals is similar to the relation between interparental conflict and adolescent internalizing behaviors. The similarity suggests that the adolescent's cognitive appraisals can have a wide range of negative effects on the adolescent's psychological health and behavior, which may lead to further problems in their lives.

Triangulation Model

The triangulation model (see Figure B2) postulates that the risk of negative child behavioral consequences increases when parents incorporate their child into the interparental conflict (Afifi, McManus, Hutchinson, & Baker, 2007; Bosco, et al., 2003; Franck & Buehler, 2007). Triangulation is a form of covert interparental conflict because one parent is not directly attacking the other parent but instead the parent is using the child to indirectly attack the other parent. The indirect attack of a parent can be done by one parent sending messages through his/her child to the other parent or by a parent divulging sensitive information about the interparental conflict to his/her child in order to convince the child to sympathize with the parent's side in the conflict (Bradford, Vaughn, & Barber, 2008). Children affected by triangulation are hypothesized to have increased levels of behavioral problems because the child's involvement in the interparental conflict increases the child's exposure to the conflict (Franck & Buehler, 2007). In addition, Franck and Buehler (2007) argued that children in early adolescence who are affected by triangulation may be undermined in their efforts to increase autonomy from their parents when their parents draw them into the interparental conflict by compelling them to choose sides. When triangulation exists within the family environment, children

are more likely to harbor feelings of self-blame and perceived threat (as predicted by the cognitive-contextual model), which are associated with children's internalizing and externalizing behaviors (Franck & Buehler, 2007). Thus, triangulation can place the child at further risk for developing behavioral problems because of its connection with the child's perceptions of the family environment.

Triangulation can be especially potent when the children's parents are divorced (Afifi et al., 2007). Divorce is a division in the family that can easily provoke each parent to pressure the child to choose a side (Afifi & Schrodt, 2003). Being pressured to choose a side may cause children to feel trapped between their parents, confused about with which parent their loyalty should lie (Afifi & Schrodt, 2003). In addition, in comparison to younger children, adolescents are at an age where parents may feel more comfortable talking about the "adult" issues involved in the divorce. The adolescent's exposure to adult issues can lead to the adolescent taking on the "parent" role in the parent-adolescent relationship (e.g., giving advice), which is unsuitable for a child at that age (Afifi & Schrodt, 2003). Afifi et al. (2007) argue that a parent's loss of social support and loss of control over his or her life as a result of the divorce may be a major contributor to a parent seeking social and emotional support from his or her child (parentification). In fact, the custodial parent's "loss of control over the divorce stressors" is associated with the degree to which the parent discloses unsuitable details about the divorce to his/her child (Afifi et al., 2007; Afifi, Hutchinson, & Krouse, 2006). Parents may feel that their disclosures are beneficial for their child, such as using examples from the divorce to teach the child how he or she should behave in order to become a responsible adult (Afifi et al., 2007; Koerner, Jacobs, & Raymond, 2000;

Koerner, Wallace, Lehman, & Raymond, 2002). In addition, a parent's poor communication skills may contribute to the child feeling obligated to choose sides in the interparental conflict. For instance, parents may unintentionally reveal sensitive information about the interparental conflict to their child, which may, in turn, result in the parent unintentionally forcing the child to choose sides (Afifi & Schrodt, 2003). In sum, it is important to understand that parents who reveal unsuitable details about the divorce to their child may not know that their child is suffering as a result of these revelations (Afifi & Schrodt, 2003; Afifi et al., 2007). Therefore, it is reasonable to assume that the parents may continue revealing unsuitable details even after there may be negative effects on the child, which may prolong these inappropriate disclosures.

Empirical evidence for the triangulation model: Adolescent internalizing behaviors. Adolescent internalizing behavior problems are associated with higher levels of triangulation within the family (Bosco et al., 2003; Bradford et al., 2008; Buehler et al., 1998; Buehler & Welsh, 2009; Franck & Buehler, 2007; Gagne, Drapeau, Melancon, Saint-Jacques, Lepine, 2007; Grych, Raynor, & Fosco, 2004; McClellan, Heaton, Forste, & Barber, 2004; Peris, Geoke-Morey, Cummings, & Emery, 2008) and triangulation has been found to be a confounding variable between interparental conflict and adolescent internalizing behaviors (Franck & Buehler, 2007; Grych et al., 2004). Bosco et al. (2003) examined the effect of triangulation on all four parent-adolescent dyad combinations (mother and son/daughter; father and son/daughter) in order to account for possible gender differences in the assessment or effects of triangulation. Triangulation was associated with internalizing behaviors across each dyad, which demonstrates that the effect of the parent's and adolescent's gender may be inconsequential (Bosco et al., 2003;

Franck & Buehler, 2007). Thus, both mothers' and fathers' triangulation of their child into the interparental conflict may have an equal influence on their son or daughter. In addition, Bradford et al. (2008) examined the mechanism of the triangulation model and spillover model (parent-child conflict) and found that the contribution of triangulation in predicting adolescent depressive symptoms existed beyond the variance accounted for by parent-adolescent conflict. The effects of triangulation on adolescent depression may extend beyond the effects of overt parent-adolescent conflict because triangulation involves drawing adolescents into age-inappropriate situations and requires the adolescent to become an emotional caretaker of the parent (Afifi & Schrodt, 2003). The over-involvement of the adolescent in the interparental conflict can result in the adolescent avoiding revealing his/her feelings about the interparental conflict or divorce to his/her parents (Afifi & Schrodt, 2003). In addition, triangulation may make the adolescent feel insecure about the future stability of the family unit (Bradford et al., 2008) because the adolescent is in the center of the family turmoil. Afifi et al. (2007) found that the adolescents' assessment of triangulation in the family is a stronger predictor of the adolescent's well-being than the parent's assessment of triangulation. This illustrates two points: 1) adolescent-report is important when the dependent variable is adolescent outcome and 2) parents may be unaware of triangulation within the family or unaware of the potential negative effect on the adolescent.

Two studies have investigated the associations among the mechanisms of the cognitive-contextual model and the triangulation model. Tschann et al. (2002) discovered that adolescents exposed to covert interparental conflict (triangulation) showed increased levels of negative appraisals of the interparental conflict, which was

associated with adolescent depression, anxiety, and anger. Likewise, Peris et al. (2008) found that adolescents' report of higher levels of perceived threat was correlated with maternal triangulation. Peris' et al. (2008) findings suggest that adolescents' awareness of covert interparental conflict may lead to negative cognitions and perceived threat, which are associated with adolescent internalizing behaviors.

Empirical evidence for the triangulation model: Adolescent externalizing behaviors. Triangulation during interparental conflict is associated with both male and female adolescents' externalizing behavioral problems (Bosco et al., 2003; Bradford et al., 2008; Franck & Buehler, 2007; Gerard et al., 2005), however, two studies have failed to support this association (Baril, Crouter, & McHale, 2007; Gagne et al., 2007). There do not seem to be any systematic differences between the studies that would explain the inconsistency in the findings. Furthermore, triangulation and interparental conflict are associated with increased parent-adolescent conflict, which in turn predicts adolescent externalizing behaviors (Bradford et al., 2008). Male adolescents may be more prone than female adolescents to be involved in parent-adolescent conflict and thus more likely to exhibit externalizing behavior problems (Bradford et al., 2008). Therefore, triangulation has a direct association with adolescent externalizing behavior problems and has an association with adolescent externalizing behavior problems through parent-adolescent conflict. To illustrate, an adolescent may rebel against the undue pressure to mitigate his or her parents' conflictual relationship, resulting in friction between the parent and the adolescent (parent-adolescent conflict) when the parent attempts to pull the adolescent into the interparental conflict. It must be noted that parent-adolescent conflict

is a mechanism of the spillover model (discussed later in this paper), so the mechanisms of the triangulation model and spillover model may be associated.

In sum, the empirical literature on triangulation provides consistent support for triangulation as a mediator of interparental conflict and adolescent internalizing behavior. However, the findings for support of the triangulation model with respect to adolescent externalizing behavior are less consistent. Future research is needed to clarify the inconsistencies of the findings.

Spillover Model

The "spillover" model (see Figure B3) proposes that the negative affect experienced and the negative behavior displayed during interparental conflict *spills over* into parenting behaviors (Benson, Buehler, & Gerard, 2008; Bradford et al., 2004; Buehler, Benson, & Gerard, 2006; Krishnakumar, Buehler, & Barber, 2003). Spillover from the interparental conflict into parenting behaviors is associated with negative child outcomes (Bradford et al., 2004). For instance, parents who display aggression toward their partner may be more likely to display the same behavior toward their child, which may lead to the child developing behavior problems (Almeida, Wethington, & Chandler, 1999; Bradford et al., 2004; Buehler et al., 2006; Harold & Conger, 1997). Literature examining the spillover effect focuses on the effect of parental harshness (e.g., verbal and physical aggression) and parental acceptance (e.g., care, approval, involvement support) on child outcome, with greater empirical evidence supporting the negative effects of parental harshness on child outcome (Benson et al., 2008; Buehler et al., 2006). Lack of parental acceptance including care, approval, and support by parents is also an important predictor of child internalizing and externalizing behaviors (Benson et al., 2008).

However, interparental conflict can *spill over* through many other parenting mechanisms including, but not limited to, modeling, stress transfer, decreased responsivity, and decreased emotional availability (Benson et al., 2008; Buehler et al., 2006). Additionally, the consistency of the parenting behaviors can be affected by interparental conflict (Benson et al., 2008; Buehler et al. 2006; Gonzales et al., 2000). In turn, inconsistent parental practices are associated with child internalizing and externalizing behaviors (Benson et al., 2008). Children at risk for externalizing problems may find it difficult to refrain from misbehavior if they are not provided stable parental guidelines for acceptable behavior. Psychological control and intrusiveness are other parental behaviors that may transfer from the interparental relationship to the parent-child relationship (Benson et al., 2008; Buehler et al., 2006). It is reasonable to assume that parents who tend to display psychologically controlling behaviors toward their partner (who should be perceived as their equal) would be likely to attempt the same controlling behavior toward their children (who are their subordinates). On the other hand, parents who do not have control or power in the interparental relationship may use the parent-child relationship as an opportunity to exert power over others. These scenarios exemplify the association between interparental conflict and parental psychological control (Benson et al., 2008). Parental psychological control over their children may prevent the children from maturing and becoming independent individuals, which may lead to internalizing behaviors (Buehler et al., 2006).

The uniqueness of the spillover model in comparison to other models (e.g., cognitive-contextual model, triangulation) is that children do not need to be directly exposed to the interparental conflict and do not even need to be aware of the interparental

conflict in order to be affected by it (Harold, Aitken, & Shelton, 2007). A couple may

responsibly shield their child from their hostile interparental interactions, but if the

negative affect and behaviors from the interparental relationship transfer into the parent-

child interactions, the child may still be indirectly affected by the interparental conflict.

The parenting behaviors also could be a reflection of the parent's

personality/interpersonal interaction style. The transfer may occur because maladaptive

interactions in close relationships may be a part of the parent's pattern of behavior and/or

the interparental conflict serves as an "emotional primer" for negative interactions

between the parent and the child (Harold & Conger, 1997). Either directly or indirectly,

the child may be affected by the negative interactions with their parent, which may

decrease the child's well-being. Additionally, mechanisms of other models of

interparental conflict and child outcome may work alongside the spillover model (e.g.,

interparental conflict spills over to the parent-child relationship in the form of

triangulation, the child's appraisal of the negative parenting may be associated with the

child feeling insecure in the family), which may result in child behavioral problems. In

short, the spillover model provides an explanation of how interparental conflict may lead

to maladaptive parent-child interactions, which are associated with child internalizing and

externalizing behaviors.

Empirical evidence for the spillover model: Adolescent internalizing

behaviors. According to the spillover model, the negative emotions experienced during

interparental conflict may spill over into parenting behaviors and negatively affect the

way parents interact with their adolescent. The negative parent-adolescent interaction, in

turn, may lead to adolescent internalizing behavior problems (Benson et al., 2008;

Bradford, Vaughn, Barber, 2008; Chung, Flook, & Fuligni, 2009; Cui & Conger, 2008; Harold & Conger, 1997; Krishnakumar et al., 2003; Osborne & Fincham, 1996). Buehler et al. (2006) reported that parenting characterized by maternal harshness, acceptance, and psychological intrusiveness parenting completely linked the relation between interparental conflict and adolescent internalizing behaviors, based on the Baron and Kenny (1986) definition of linkage. In addition, the researchers found that maternal monitoring knowledge and inconsistency were associated with adolescent internalizing behaviors (Buehler et al., 2006). Similarly, Bradford et al. (2008) reported that conflict between a parent and an adolescent partially linked the relation between interparental conflict and adolescent internalizing behavior problems. Alternatively, Benson et al. (2008) found that maternal acceptance and intrusiveness provided the strongest connection between interparental conflict and adolescent internalizing behaviors, in comparison to harsh and inconsistent parenting. Buehler et al. (2006) found that paternal monitoring knowledge (e.g., "How well does your 'parent' know how you spend your free time?") linked the relation between interparental conflict and adolescent internalizing behaviors. In this study, when the effects of both partners' parental behaviors were simultaneously examined with adolescent internalizing behaviors, the mother's parenting behaviors were found to be associated uniquely with adolescent internalizing behaviors (Buehler et al., 2006). These findings point to an inconsistency between mother's and father's parenting behaviors and the potential effect on the adolescent. Overall, mothers tend to spend more time with their children and be more involved in parenting/caretaking than fathers (Simons, Lorenz, Wu, & Conger, 1993) and, in turn, maternal harshness,

intrusiveness, and low acceptance may have a greater risk of negatively affecting adolescent internalizing behaviors in comparison to negative paternal parenting.

The empirical literature investigating the spillover model in families with adolescents predominantly examined Caucasian samples. However, three studies have examined the generalizability of the spillover model to other racial and ethnic groups. Krishnakumar et al. (2003) examined the spillover model in European American and African American married and divorced families. The researchers found that the spillover model was supported by findings from a sample of European American married families through the confounding effects of maternal psychological control and parent-adolescent conflict, but the spillover model was not supported by findings from a sample of African American families (Krishnakumar et al., 2003). On the contrary, Bradford's et al. (2004) multi-national study found evidence supporting the spillover model in a South African (Black) sample based on the linkage of interparental conflict and adolescent depression through parental psychological control over the adolescent. In addition, Bradford et al. (2004) found that overt interparental conflict was associated indirectly with adolescent depression through parental support and psychological control in eight countries including Bangladesh, China, India, Bosnia, Germany, Colombia, United States, and South Africa. Similarly, Chung, Flook, and Fuligni (2009) found that parent-adolescent conflict mediated the relation between interparental conflict and adolescent emotional distress (anxiety, depressive symptoms) in Latin American, Asian, and European families. In contrast, the findings from a sample in Palestine found that overt interparental conflict was associated with adolescent depression solely through lack of parental support (Bradford et al., 2004). Overall, these findings support the linkage of

interparental conflict and adolescent internalizing behaviors through parenting behaviors, across the race and nationality of many of the samples. However, further research is needed to investigate the reasons for the lack of support for the spillover model in African American families.

Two studies have addressed the relations among the mechanisms of the spillover model and the cognitive-contextual model. In a study with 181 families, Harold et al. (2004) found that adolescents' cognitive representations of interparental conflict mediated the relation between interparental conflict and adolescent emotional security[2] about parenting behaviors. In turn, adolescent emotional security about parenting predicted adolescent internalizing behavior (Harold et al., 2004). Thus, adolescents' cognitions of the interparental conflict and of the parenting behaviors (that are influenced by the interparental conflict according to the spillover model) may lead to adolescent internalizing behaviors. On the other hand, the mechanisms of the two models may have moderating effects. For instance, Brown et al. (2007) found that in divorced families, maternal acceptance showed a trend for moderating the association between adolescents' negative self-appraisals and adolescent internalizing behavior (p = .06). These studies illustrate how adolescents' cognitions and parental behaviors may be associated with increased levels of adolescent internalizing behaviors. Therefore, the mechanisms of the cognitive-contextual model and the spillover model may be associated with one another and adolescent internalizing behaviors.

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[2] Emotional security includes emotional regulation, cognitive representations, and behavioral regulation. Emotional regulation is the adolescent's development of feelings of anger, sadness, fear, relief or happiness due to parenting. Cognitive representations are the adolescent's evaluation of the risk that the parenting behavior may negatively affect other parts of the family environment. Behavioral regulation is the adolescent's behavior response to the parenting behavior.

Studies also have found an association between the mechanisms of the spillover model and the triangulation model. Peris et al. (2008) found that maternal reliance on an adolescent for emotional support (parentification) was correlated with low levels of both mother's and father's parental warmth and support. In addition, both maternal and paternal parentification behaviors were correlated with mothers granting their children less autonomy. However, Peris et al. (2008) found that maternal parentification predicted adolescent outcomes beyond the effects of parenting behavior (psychological control). Likewise, Bradford et al. (2004) found that covert interparental conflict was associated indirectly with adolescent depression through parental support and psychological control in samples from China, India, Germany, and Palestine. These findings suggest that the mechanisms in the spillover model and the triangulation model may be associated with one another and may relate to adolescent outcomes.

Empirical evidence for the spillover model: Adolescent externalizing behaviors.

Maternal and paternal harshness toward the adolescent is the parenting characteristic that provides the strongest link between interparental conflict and adolescent externalizing behavior (Benson et al., 2003; Bradford et al., 2008; Buehler et al., 2006; Harold & Conger, 1997; Krishnakumar et al., 2003; Schulz et al., 2005). The strong association between interparental conflict and parental harshness accounts for parental harshness being a stronger confounding variable between interparental conflict and adolescent externalizing behaviors than other parenting behaviors (Benson et al., 2003). Therefore, according to the spillover model, hostile behaviors between parents are likely to transfer into the parent-adolescent relationship, which may lead to the adolescent

acting out or behaving in a hostile manner toward others. Adolescent externalizing behavior as an outcome of the spillover effect is uniquely different from adolescent internalizing behavior as an outcome. Adolescent externalizing behaviors are aggressive/hostile behaviors that are displayed outwardly toward other people, in comparison to adolescent internalizing behaviors which are psychological and inner behaviors. Thus, the negative affect and hostile parental behaviors displayed during interparental conflict spills over into parenting behaviors and, subsequently, spills over from the parenting behaviors into adolescent externalizing behaviors (Bradford et al., 2008; Cui & Conger, 2008; Schulz et al. 2005; Su, Simons, & Simons, 2011). This pattern displays the sequentially continuous nature of the maladaptive hostile behaviors that are rooted in the interparental conflict. In addition, other parenting behaviors such as parental monitoring knowledge, maternal acceptance behavior, and maternal psychological intrusiveness also link the relation between interparental conflict and adolescent externalizing behavior (Buehler et al., 2006; Krishnakumar et al., 2003). In these cases, interparental conflict may function as an "emotional primer" for maladaptive parental behaviors resulting from stress transfer, rather than a mere reflection of the behaviors that are displayed between the parents during conflict (Benson et al., 2003; Harold & Conger, 1997).

As previously stated, literature investigating the spillover model in families with adolescents predominantly examined Caucasian samples, but two studies have examined the generalizability of the spillover model to other racial and ethnic groups. In one study, an assessment of the spillover model with African American married and divorced families did not find any evidence that parenting behaviors linked the relation between

interparental conflict and adolescent externalizing behaviors (Krishnakumar et al., 2003). The findings in the African American sample contrast with the European American sample, which demonstrated support for parental monitoring and maternal acceptance as confounding variables between interparental conflict and adolescent externalizing behaviors (Krishnakumar et al., 2003). These results suggest that the relation between interparental conflict and adolescent externalizing behaviors in African American families either reflects a direct association (e.g., modeling) or may be better explained by another model (e.g., cognitive-contextual model, triangulation). In a multi-national study, Bradford et al. (2004) reported that parental psychological control linked the relation between overt interparental conflict and adolescent antisocial behavior in samples from China, Bosnia, Germany, Palestine, and Colombia. Bradford et al. (2004) also found that parental behavioral control linked the relation between overt interparental conflict and adolescent antisocial behavior in nine out of the ten samples from various nations. In contrast, covert interparental conflict was linked to adolescent antisocial behavior through parental psychological and behavioral control in two national samples (Bradford et al., 2004). Overall, similar to the findings involving African American adolescent internalizing behaviors, parenting behavior does not explain the relation between interparental conflict and adolescent externalizing behaviors in African American families, which may warrant further investigation. However, empirical studies that examined the spillover model and adolescent externalizing behavior in multi-national samples have found consistent support for the model.

In sum, various forms of parenting behaviors may link the relation between interparental conflict and adolescent internalizing behaviors. Similar results have been

found when examining adolescent externalizing behaviors with stronger support for the confounding effect of parental harshness/hostile behavior toward their adolescent. Findings from studies examining African American samples have been inconsistent with findings from European American and multi-national samples, which suggest that future research needs to be conducted to address this issue.

Interparental Conflict-Parental Psychopathology Model

According to the interparental conflict-parental psychopathology model (see Figure B4), there is empirical evidence and a theoretical basis to assert that interparental conflict and parental internalizing and externalizing behaviors are significantly associated and parental internalizing may mediate the relation between interparental conflict and child internalizing and externalizing behaviors (Downey & Coyne, 1990; Forehand, Biggar, & Kotchick, 1998; Goodman, 2007; Low & Stocker, 2005). Interparental conflict may lead to parental internalizing symptoms (Goodman, 2007), which may be due to the stress of the conflict, and may lead to parental externalizing behaviors because of the parent's inclination to using aggression to handle conflict. Previous research on parental internalizing behaviors has focused on parental depression primarily, but the high comorbidity of depression and anxiety warrants an examination of parental internalizing behaviors as a whole rather than parental depression solely (Burstein, Ginsburg, & Tein, 2010; Kessler, Chiu, Demeler, & Walters, 2005). Unlike parental internalizing behaviors, literature examining parental externalizing behaviors and child outcomes has been focused mainly on familial interpersonal externalizing behavior (i.e., interparental aggression, parent-child aggression/hostility) rather than parental externalizing behaviors in general. Although previous literature lacks an examination of

parental externalizing behaviors outside of familial interpersonal relationships, the significant amount of literature suggesting that children's exposure to interparental aggression (El-Sheikh, Cummings, Kouros, Elmore-Staton, & Buckhalt, 2008; Skopp, McDonald, Jouriles, & Rosenfeld) and parent-child aggression/hostility (mechanism of the spillover model) may have a negative effect on child outcomes. These findings along with the high comorbidity of adult internalizing and externalizing behaviors (Kessler et al., 2005) suggest that parental externalizing behaviors need to be examined in this model. Therefore, it is important to review the existing literature on the effects of parental psychopathology (internalizing/externalizing) on adolescent psychopathology and then further the literature by testing the potential effects of parental internalizing behaviors and externalizing behaviors (outside the context of an interpersonal interaction) on adolescent psychopathology.

Empirical evidence for the interparental conflict-parental psychopathology model: Adolescent internalizing behaviors. Previous literature has shown a significant relation between parental internalizing and externalizing behaviors and adolescent internalizing behaviors, which is consistent with the transmission of parental psychopathology symptoms to an adolescent through various mechanisms (e.g., modeling, stressful environment) (Burstein et al., 2010; Burstein, Stanger, Kamon, & Dumenci, 2006; Davies, Dumenci, Windle, 1999; Elgar, Mills, McGrath, Wascbusch, & Brownridge, 2007; Spence, Najman, Bor, O'Callaghan, & Williams, 2002). Parental depression and anxiety has been consistently found to be correlated with adolescents' internalizing behaviors (Davies et al., 1999; Davies & Windle, 1997; Du Rocher Schudlich & Cummings, 2003; McClure, Brennan, Hammen, & Brocque, 2001; Schreier,

Wittchen, Höfler, & Lieb, 2008; Shelton & Harold, 2008b), with only some research not reporting these significant positive correlations (Low & Stocker, 2005). In addition, young children exposed to maternal internalizing behaviors have higher levels of internalizing behaviors in adolescence (Spence et al., 2002), which suggests long-term effects. There is some literature that suggests that paternal internalizing behaviors are not directly correlated with adolescent-reported internalizing behaviors (Low & Stocker, 2005; Shelton & Harold, 2008b), but Du Rocher Schudlich and Cummings (2003) found that paternal internalizing behaviors were correlated with mothers' rating of adolescent internalizing behaviors. Interestingly, despite the strong relation between parental internalizing and adolescent internalizing behaviors, Burstein et al. (2010) found that parental externalizing behaviors significantly predicted adolescent internalizing behaviors beyond the effects of parental internalizing behaviors.

Parental internalizing behaviors may mediate the relation between interparental conflict and adolescent internalizing behaviors (Davies et al., 1999). Parental involvement in long-term interparental conflict may lead to parental feelings of hopelessness or despair in the future of their relationship, which may result in parental depression or anxiety. When adolescents are exposed to their parents' internalizing behavior, they have an increased likelihood of developing depressive symptoms and displaying internalizing behaviors.

Mechanisms of the spillover model (parenting behaviors and the parent-adolescent relationship) may have an influence on the development of adolescent internalizing behavior in the context of interparental conflict and parental internalizing and externalizing behavior in the family environment (Burstein et al., 2006). The findings

of Elgar et al. (2007) showed that lower levels of parental nurturance/monitoring and higher levels of parental rejection toward the adolescent mediated the relation between parental internalizing behavior and adolescent internalizing behavior (Elgar et al., 2007). Similarly, Low and Stocker (2005) found that the association between paternal internalizing behaviors and adolescent internalizing problems was linked by father-child hostility. These findings may indicate that there is a unique relation between paternal and adolescent internalizing behaviors. Paternal internalizing behaviors and adolescent internalizing behaviors are linked by the effects of a negative parent-adolescent relationship, which is not found in the relation between mothers and adolescents internalizing behaviors. This may be because fathers tend to be less involved in childcare and parenting in comparison to mothers (Simons et al., 1993). Therefore, if the interaction between a father with internalizing problems and an adolescent involves conflict and the father has less time and involvement with the adolescent to counteract the negative effects of the parent-adolescent conflict, then an adolescent may develop internalizing symptoms. This conclusion can also be drawn when examining the relation between parental externalizing behaviors and adolescent internalizing behaviors because positive parental involvement has been shown to moderate that relation (positive parental involvement lessens the effect of parental externalizing behavior) (Burstein et al., 2006).

Empirical evidence for interparental conflict-parental psychopathology model: Adolescent externalizing behaviors. Previous literature has shown that parental internalizing and externalizing behaviors are correlated with adolescent externalizing behavioral problems (Aisenberg, Trickett, Mennen, Saltzman, & Zaya, 2007; Burstein et al., 2010; Davies et al., 1999; Davies & Windle, 1997; Elgar et al., 2007; Gross, Shaw, &

Moilanen, 2008; Low & Stocker, 2005). Davies and Windle (1997) examined the correlation between maternal internalizing behaviors and adolescent externalizing behaviors and found that maternal internalizing behaviors were correlated with female adolescent externalizing behaviors and not male adolescent externalizing behaviors. However, Gross et al. (2008) conducted a longitudinal examination of male adolescent externalizing behavior and maternal internalizing behavior that revealed a significant relation between maternal internalizing behavior and male adolescent externalizing behavior. Similar to mothers, paternal internalizing behavior is associated directly with adolescents' externalizing behavior problems (Low & Stocker, 2005). Parental externalizing behavior significantly predicts adolescent externalizing behavior, but has been found to be moderated by parental internalizing behavior (i.e., anxiety) resulting in a decreased effect of parental externalizing on adolescent behavior (Burstein et al., 2010). These findings implicate both parental internalizing and externalizing behaviors as noteworthy factors in the prediction of adolescent externalizing behavior.

Parental internalizing behavior and interparental conflict are both associated with adolescent externalizing behaviors (Shelton & Harold, 2008b), but previous research has not supported parental internalizing behaviors as a mediator of the relation between interparental conflict and adolescent psychopathology. This may be because previous studies mainly examined interparental conflict as a mediator between parental internalizing behaviors and adolescent outcomes (Davies and Windle, 1997; Davies et al., 1999; Salafia et al., 2008). It is important to note that interparental conflict is a mechanism that can contains parental interpersonal externalizing behaviors (e.g., verbal/physical aggression), but previous research has not teased apart the unique effects

of interparental conflict and general parental externalizing behaviors when predicting

adolescent externalizing behavior. Research has shown that parental aggression

displayed during interparental conflict is associated with future adolescent externalizing

behaviors (Hare, Miga, & Allen, 2009; Peltonen, Ellonen, Larsen, & Helweg-Larsen,

2010), which may be because adolescents tend to identify with the aggressor, except for

in cases of severe interparental aggression (Winstok, Eisikovits, & Karnieli-Miller,

2004). Overall, these findings suggests that parental aggression and other forms of

general parental externalizing behaviors may lead to adolescent externalizing behaviors

and may potentially mediate the relation between interparental conflict and adolescent

externalizing behaviors. Therefore, separation of interparental conflict and parental

externalizing behaviors in general when predicting adolescent externalizing behaviors is

necessary in order to examine the potential mediation effects of parental externalizing

behaviors.

Parenting behavior (spillover model) is an important mechanism in the family

environment that may influence adolescent behavior, especially when there is parental

psychopathology and interparental conflict in the family environment. Elgar et al. (2007)

found that parental nurturance and parental rejection of the adolescent also has been

found to mediate the relation between parental internalizing behavior and adolescent

externalizing behavior (Baron & Kenny, 1986). Likewise, Low and Stocker (2005) found

that paternal internalizing behaviors were associated indirectly with adolescent

externalizing behaviors via father-child hostility (i.e., another form of parental

externalizing behavior). In addition, father-child hostility was a confounding variable in

the relation between interparental conflict and adolescent externalizing behaviors (Low &

Stocker, 2005). Interestingly, Low and Stocker (2005) found that mother-child hostility was not correlated significantly with adolescent externalizing behavior. Low and Stocker's (2005) finding suggests that adolescents may be at greater risk for developing externalizing behaviors as a result of conflictual interactions with their fathers than as a result of conflicts with their mothers. Because males have a greater likelihood of displaying aggressive behavior than females, father-child hostility may be more confrontational and aggressive than mother-child hostility. In turn, this may provide opportunities for adolescents to model their father's externalizing behavior. Additionally, Shelton and Harold's (2008b) longitudinal study found that maternal internalizing behavior and adolescent externalizing behaviors were linked through the effects of maternal insecurity in the interparental relationship and mother-child rejection. This effect was not found in the relation between paternal internalizing behaviors and adolescent externalizing behaviors (Shelton & Harold, 2008b). Thus, father-child hostility may have a stronger influence on adolescent externalizing behavior than mother-child hostility. However, mother-child rejection may have a stronger influence on adolescent externalizing behaviors than father-child rejection. It is important to note that parent-adolescent rejection appears to be more of a psychological factor while parent-adolescent hostility is more of an overt behavior. Therefore, mothers may tend to have an effect on adolescent externalizing behaviors through behaviors that involve mental and emotional factors, whereas fathers may tend to affect their child's behavior through aggressive, hostile behavior.

In summary, there is evidence that parental psychopathology may mediate the relation between interparental conflict and adolescent internalizing behavior, but further

research is needed to examine general parental externalizing behaviors (distinct from the interparental or parent-adolescent relationship) as a mediator between interparental conflict and adolescent psychopathology. Finally, parenting behaviors were also found to be associated with parental psychopathology and adolescent outcomes, which highlights the importance of examining the mechanism from the interparental conflict-parental psychopathology model and spillover model together.

Summary

The purpose of this literature review was to examine the relation between interparental conflict and adolescent outcomes. Adolescence is a period of development characterized by increased insight into the family environment, responsibilities inside and outside the home, burgeoning capabilities to influence the family environment, and legal/social consequences due to misbehavior. In reviewing the pertinent literature, four major models emerged to explain the association between interparental conflict and adolescent outcome: cognitive-contextual model, triangulation model, spillover model, and interparental conflict-parental psychopathology model. In summary, these models are the most investigated and useful models when examining the relations among interparental conflict and adolescent internalizing and externalizing behaviors. The mechanisms of these models also have been found to co-occur within the family environment. Thus, the mechanisms of the different models may collectively contribute to adolescent internalizing and externalizing behaviors.

Based on the cognitive-contextual model literature, adolescents have a tendency to blame themselves for the conflicts that arise between their parents, especially when the adolescents are the topic of the interparental conflict, which may lead to adolescent

internalizing and externalizing behavior problems (Buehler et al., 2007). Similarly, the adolescent's perception of the potential threat that the interparental conflict may have to the solidarity of the family unit or the adolescent's own safety is associated with adolescent internalizing and externalizing behaviors (Grych et al., 2000). Both longitudinal and cross-sectional studies that have similar measures of the mechanisms in the cognitive-contextual model have supported these findings. The studies consistently have found significant correlations between the mediating mechanisms (self-blame, perceived threat) and the predictor and outcome variables.

According to the empirical literature examining the triangulation model, adolescents are not affected only by exposure to interparental conflict, but also by being incorporated into the conflict as a mediator between their parents or as a social/emotional support for their parent. Literature suggests that triangulation may affect the adolescent's psychological and emotional health, which is logical because the adolescent is confronted with highly emotional information that is very difficult to process effectively (Franck & Buehler, 2007). The literature offers inconsistent findings about whether there is a relation between triangulation and adolescent externalizing behaviors (Baril et al., 2007; Bosco et al., 2003). The inconsistency in the findings may be because the majority of the studies did not use established measures of interparental conflict and triangulation, but rather created measures specifically for the study. Overall, there may be a stronger relation between triangulation and adolescent internalizing behaviors, in comparison to adolescent externalizing behaviors. However, there was a lack of longitudinal studies investigating the triangulation model, which is problematic when providing support for a mediational model.

According to the empirical literature examining the spillover model, the negativity that exists within interparental conflict may spill over into parenting behaviors and the parent-child relationship. In turn, maladaptive parental behavior may affect adolescent psychological well-being and may lead to adolescent externalizing behavior (Harold & Conger, 1997). According to the studies examining the spillover model, parental hostility is the strongest, most consistent mechanism linking the relation between interparental conflict and adolescent internalizing and externalizing behaviors. This is supported by the published correlations between the negative parenting and interparental conflict and adolescent outcomes from both cross-sectional and longitudinal studies. Also other parenting mechanisms (e.g., parental hostility, parental involvement) have been shown to significantly relate to interparental conflict and adolescent outcomes. Due to the numerous forms of parenting behaviors and their significant relation with the predictor and outcome variables of the spillover model, it may be beneficial to examine the parenting behaviors as one construct (i.e., negative parenting).

The interparental conflict-parental psychopathology model suggests that parental psychopathology mediates the relation between interparental conflict and adolescent internalizing and externalizing behaviors. The literature provided evidence that parental internalizing may be a mediator but there have not been any studies that examined the potential mediation effects of parental externalizing behaviors (e.g., using measures such as the Achenbach Adult Self-Report). Manifestations of high levels of parental externalizing behaviors have been shown to be related to adolescent behavior (Burstein et al., 2010). However, parental externalizing behaviors displayed in interpersonal relationships (e.g., parental hostility) have been found to be consistently associated with

adolescent outcomes. The studies investigating the relations in this model were soundly constructed, using well-established measures of depression (e.g., BDI, CES-D, SCL-90), interparental conflict (e.g., Dyadic Adjustment Scale, observation), and adolescent outcomes (Children's Depression Inventory), which adds power to the findings (Shelton & Harold, 2008b; Spence et al., 2002). In sum, the potential effects of an adolescent being exposed to parental internalizing and externalizing behaviors and interparental conflict may have adverse effects on the adolescent's mental health.

Implications

One of the major directions for future research involves the methodology used to support empirical conclusions. Longitudinal designs are essential for examining mediational models. Cross-sectional data provide evidence of directionality, but do not have the same strength as longitudinal data. Ideally, the predictor variables, mediating variables, and outcome variables should be assessed sequentially in the proposed directionality. Designing an empirical correlational study in this manner provides statistical support for causal links among the predictor, mediator, and outcome variables between each time point.

A second direction for future research involves the specificity of adolescent outcomes. Typically, research on adolescents has focused on adolescent internalizing and externalizing behaviors. Focusing on only two behavioral outcomes provides an overly simplistic dichotomy of the major adolescent outcomes. Internalizing and externalizing behaviors are part of a hierarchal structure with lower level factors (specific disorders that respectively make up the dichotomous concepts (Farmer, Seeley, Kosty, & Lewinsohn, 2009; Slade & Watson, 2006). Examining the effects of interparental conflict

on specific adolescent internalizing and externalizing behaviors and disorders could be beneficial in clinical settings. For instance, instead of adolescent internalizing behavior being examined as the outcome variable, the focus could be on adolescent depression, various anxiety disorders (e.g., generalized anxiety disorder, panic disorder), dysthymia, and other specific internalizing disorders. Likewise, research focusing on externalizing behaviors could examine conduct disorder, oppositional defiant disorder, substance abuse, and other lower level externalizing disorders. Increased specificity of adolescents' behaviors strengthens the utility of the findings in clinical settings and also provides more specific conclusions about the effects of interparental conflict and the mediational models (e.g., internalizing behavior versus generalized anxiety disorder).

Finally, an integrative model that examines the relation between interparental conflict and adolescent outcomes incorporating the mediators proposed in each of the four models reviewed needs to be created and tested empirically with adolescent samples. The literature review examined four models that, as a group, are unique in examining interparental conflict and adolescent outcomes. The literature review also showed that the some of the mechanisms in the four distinct models are associated with one another, but the relation between many of the mechanisms of the four models have not been tested empirically. This study aims to add to the literature by examining the relations among the mechanisms of the four models within an integrative model in order to better understand the processes and paths between interparental conflict and adolescent outcomes. A longitudinal design is necessary to test mediation properly in the context of an integrative model; moreover an examination of more specific adolescent outcomes

than has been researched previously will help clarify whether it is more parsimonious to examine dimensional or categorical adolescent outcomes.

Purpose

The primary purpose of this study was to examine an integrative model that considers the multiple paths between interparental conflict and adolescent internalizing and externalizing behaviors through key mediational mechanisms. Based on the findings of previous research, this 3-phase longitudinal study (at intervals of three months) tested an integrative model that combined the mechanisms of the cognitive-contextual model, triangulation model, spillover model, and the interparental conflict-parental psychopathology model with an adolescent sample. This study addressed a significant limitation of previous research that had predominantly addressed each model separately. In addition, the study was designed longitudinally and assessed the predictor and mediator variables at Phase 1 and 2 and the outcome variables at all three phases in order to provide strong support for causality.

Second, the specificity of adolescent outcomes (dimensional vs. categorical) when predicted by interparental conflict was addressed. As described earlier, previous research with adolescent samples has focused on adolescent internalizing and externalizing behavior outcomes. Interparental conflict may lead to multiple adolescent outcomes, so a dichotomous examination of adolescent outcomes may limit the potential findings. This study assessed several DSM-IV psychological disorders in adolescents in order to increase the specificity of adolescent outcomes that may be the result of interparental conflict. It addressed the question of whether including specific internalizing and externalizing diagnoses (based on DSM-IV) improved the fit of a model describing the

relations between interparental conflict and adolescent internalizing and externalizing behaviors (based on dimensional measures).

In summary, the purposes of this study were three fold. The first aim was to test whether interparental conflict best predicts dimensions or manifestations (i.e., diagnoses) of adolescent psychopathology. The second aim was to test each of the four models to examine how each explains the relation between interparental conflict and adolescent behavior. Finally, the third aim was to develop and test an integrative model that included the mechanisms from the four models.

CHAPTER II

METHOD

Participants

A community sample of 13 to 17 year-old adolescents (age at recruitment) who live in two-parent households was recruited from Iowa mainly, but also from the contiguous United States, with an initial sample size of 152 families at Phase 1 (see Figure B5 for attrition flowchart). The target adolescent and both of his or her parents had to consent to participate in order for the family to qualify for the study. Parents of the adolescent included at least one parent with guardianship of the adolescent and his/her partner who lived in the home (partner did not have to be a biological parent). Adolescents had to be able to complete the second phase of this study before moving out of the home. Several recruitment techniques were used to obtain participants.

Recruitment

Iowa City Community School District. The superintendent of the Iowa City Community School District gave permission to advertise in the school district. Undergraduate research assistants advertised the research project with flyer handouts to adolescents in middle school and high school and asked them to have their parents contact the primary investigator if their family was interested in participating. Adolescents were provided flyers with the pertinent information about the study and contact information.

Websites, flyers and handouts. Advertisements that briefly describe this project were posted on electronic websites including: University of Iowa's News Services website, Craigslist, and EBay. Advertisements were also posted and handed out in public

areas in the Iowa City, IA and Richmond, VA where adolescents and parents typically traffic (e.g., shopping centers, grocery stores, outside high schools). Contact information was listed so that families who were interested in participation could enroll.

      University mass email. Mass emails including information about the study were sent to faculty, staff, and students of major universities in Iowa including the University of Iowa, Iowa State University, and Kirkwood Community College. Interested participants were asked to respond by email or contact the principal investigator by phone.

Procedure

      All forms of recruitment instructed families to contact the principal investigator by phone or email if they were interested in participating in the study. Contact information (e.g., phone numbers, e-mail) of the family was collected in order to keep track of the participants during the study. The preferred form of contact for each member of the family was requested. Each family was informed that it would receive a consent form in the mail. Each parent of the family provided consented to participate in the study and each adolescent assented to participate in the study. In addition, one of the parents had to provide consent for their adolescent to participate in the study. Participants were informed that the study is longitudinal and would assess the family environment at three separate time points, three months apart. The measures that were completed by the participants varied at each time point. Time 1: Parent participation was approximately one hour; adolescent participation was approximately one hour. Time 2: Parent participation was approximately one hour; adolescent participation was approximately

one hour. Time 3: Parent participation was approximately 20 minutes; adolescent participation was approximately 20 minutes.

Initially, WebSurveyor, which contained electronic versions of the study's measures, was used for online data collection. Each family was emailed a link to the University of Iowa's WebSurveyor. Each member of each family was provided a username and password when signing into WebSurveyor and a personal identification code to input into the survey to identify their survey. WebSurveyor provided a form of assent before the participants completed the surveys. During the spring 2011, WebSurveyor had technical difficulties so REDCap (Harris et al., 2009) was used as the online data collection system. At each time point, families were contacted to remind them to complete the surveys and each member of the family was provided his or her unique identification code.

Compensation. Each subject received a $5 gift card from Wal-Mart or Target for participation at each time point. In addition, upon completion of all three time points, each family was entered into a drawing for prizes. Drawing for prizes occurred after every 10 families fully completed participation in the study. During each drawing, each family had a 1/10 (10%) chance to win a grand prize: $150 American Express gift card. At the completion of the study, any family who did not receive a prize was re-entered into a drawing to win a $200 American Express gift card.

Measures

Mother/father-report measures.

Demographics. (Time 1[3]): Demographic information was collected for each

participant. The information that was collected from each parent included: relationship to

child, gender, date of birth, relationship status, marriage year, race/ethnicity, primary

language, highest education level completed, adolescent birthdate, adolescent race,

number of individuals living in home, number of children in home, employment status,

work hours per week, personal estimated income, and parent or adolescent previous

diagnosis of a psychiatric disorder or physical disability.

Quality Marriage Index. (QMI; Norton, 1983) (Time 1, 2). The QMI is a six-item

parent-report global evaluation measure of the quality of the interparental relationship

(Norton, 1983). Items 1 through 5 are rated on a 6-point Likert scale and item 6 is rated

on a 10-point Likert scale (Funk & Rogge, 2007). The QMI was created as a more

homogeneous measure of marital satisfaction than the Dyadic Adjustment Scale and the

Marital Adjustment Test, which were considered to be heterogeneous measures of marital

satisfaction/ adjustment (Funk & Rogge, 2007). The QMI has been shown to have good

internal consistency and concurrent validity with the Kansas Marital Satisfaction Scale

(Cronbach alpha = .94) (Calahan, 1996; 1997). In this study, mother-report and father-

report on the QMI had good reliability (Time 1: α = .97, .95; Time 2: α = .96, .95,

respectively).

Multidimensional Emotional Abuse Scale. (MDEAS; Murphy & Hoover, 2001)

(Time 1, 2). The MDEAS is a 28-item parent-report measure of emotional abuse within a

romantic relationship. The scale consists of four subscales: restrictive engulfment (e.g.,

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[3] Denotes the time point in which the measure was administered.

tracking or monitoring partner), hostile withdrawal (e.g., avoidance of partner as punishment), denigration (e.g., humiliation of partner), and dominance/intimidation (e.g., non-physical aggression). Goerl (2005) evaluated the reliability of the MDEAS and found high internal consistency for both female participants and male participants. Goerl (2005) also found that the subscales of the MDEAS had good convergent validity with the Conflict Tactics Scale- Revised psychological abuse subscale. In this study, mother-report and father-report on the MDEAS had good reliability (Time 1: α = .95, .93; Time 2: α = .94, .94, respectively).

Marital Satisfaction Inventory-Revised. (MSI-R; Snyder, 1979). The MSI-R is a 32-item parent report measure of marital satisfaction. Items were rated as "true" or "false." High scores indicate less marital satisfaction. The MSI-R has good internal consistency and test-retest reliability. Synder and Aikman (1999) have provided evidence for the convergent and discriminant validity of the MSI-R when compared to the original Marital Satisfaction Inventory and other measures of the interparental relationship. In this study, mother-report and father-report on the MSI-R had good reliability (Time 1: α = .91, .92; Time 2: α = .93, .92, respectively).

Adult Self-Report. (ASR; Achenbach & Rescorla, 2003) (Time 1, 2). The ASR is a 126-item adult-report of adult internalizing and externalizing behaviors. Items were rated on a 0 – 2 scale: "0 = not true," "1 = somewhat or sometimes true," and "2 = very true or often true." The ASR was considered a valid measure of adult internalizing and externalizing behaviors when compared to other validated measures of adult internalizing and externalizing behaviors and had good reliability (i.e., internal consistency, test-retest) (Achenbach & Rescorla, 2003). In this study, mother-report and father-report on the

ASR internalizing (Time 1: α = .883, .887; Time 2: α = .915, .916, respectively) and externalizing (Time 1: α = .751, .860; Time 2: α = .771, .849, respectively) had good reliability.

   Inventory of Depression and Anxiety Symptoms. (IDAS; Watson et al., 2007) (Time 1, 2). The IDAS is a 64-item self-report measure of symptoms over the past two weeks rated on a 5-ponit Likert scale of symptom severity. The inventory consists of General Depression, Panic, Social Anxiety, and Traumatic Intrusions and other symptom scales not germane to this study, which are rated on a 5-point Likert scale. The scales demonstrated good internal consistency (i.e., community, psychiatric, college students, expert raters) and retest correlations (Watson et al., 2007) across multiple samples. In a standardized combined sample, the General Depression scale had strong convergent validity with the BDI-II and the Panic scale had strong convergent validity with the BAI (Watson et al., 2007). In this study, mother-report and father-report on the General Depression scale (Time 1: α = .91, .86; Time 2: α = .91, .92, respectively), Panic scale (Time 1: α = .76, .66; Time 2: α = .76, .84, respectively), Social Anxiety scale (Time 1: α = .73, .95; Time 2: α = .70, .77, respectively), and Traumatic Intrusions scale (Time 1: α = .82, .68; Time 2: α = .88, .70, respectively) had relatively good reliability.

   Alabama Parenting Questionnaire. (APQ; Shelton, Frick, & Wootton, 1996) (Time 1, 2). The 42-item parent-report measure of parenting behaviors consists of six subscales that are rated on a 5-point frequency scale of parenting with a range from 1 (never) to 5 (always): parental involvement (e.g., you help your child with his/her homework), positive parenting (e.g., you praise your child if he/she behaves well), poor monitoring/supervision (e.g., your child goes out without a set time to be home),

inconsistent discipline (e.g., you threatened to punish your child and then do not actually punish him/her), corporal punishment (e.g., you slap your child when he/she has done something wrong), and other discipline practices (e.g., you send your child to his/her room as a punishment). The subscales of the APQ have demonstrated convergent validity and good reliability (Shelton et al., 1996).   In this study, mother-report and father-report on the parental involvement scale (Time 1: α = .74, .78; Time 2: α = .78, .81, respectively), positive parenting scale (Time 1: α = .78, .80; Time 2: α = .74, .80, respectively), poor monitoring/supervision scale (Time 1: α = .75, .76; Time 2: α = .83, .81, respectively), inconsistent discipline scale (Time 1: α = .72, .70; Time 2: α = .82, .75, respectively), and corporal punishment scale (Time 1: α = .70, .62; Time 2: α = .79, .93, respectively) had good reliability.

Negative Parenting Measure. (Cui & Conger, 2008) (Time 1, 2). The 12-item parent-report measure of negative parenting consists of three subscales: inconsistent, harsh, and hostile parenting. The inconsistent parenting subscale includes three items (e.g., when you punish the target child, how often does the kind of punishment depend on your mood?) rated on a 5-point Likert scale (1 = never to 5 = always). The harsh parenting subscale includes four items (e.g., When the target child does something wrong, how often do you lose your temper and yell at him or her?) rated on a 5-point Likert scale (1 = never to 5 = always). The hostile parenting subscale includes five items rated on a 7-point Likert scale (e.g., how often did you get angry at him/her) (1 = never to 7 = always). In this study, mother-report and father-report on this measure had good reliability (Time 1: α = .79, .81; Time 2: α = .79, .84, respectively).

Triangulation measure. *(parent-report)* (Franck & Buehler, 2007) (Time 1, 2).

The parent-report measure of triangulation consists of 5 items (e.g., How often do you do

the following?: Scapegoat this child.) that are rated on a 7-point Likert scale (1 = never to

7 = everyday). In this study, mother-report and father-report on the triangulation measure

had relatively good reliability (Time 1: α = .63, .66; Time 2: α = .78, .70, respectively).

Child Behavior Checklist. (CBCL; Achenbach & Rescorla, 2001) (Time 1, 2, 3).

The CBCL is a 113-item parent-rated measure of child internalizing and externalizing

behaviors rated on a 0 – 2 Likert scale: "0 = not true (as far as you know)," "1 =

somewhat or sometimes true," and "2 = very true or often true." The internalizing and

externalizing scales of the CBCL had good internal consistency (α = .90, .94,

respectively) (Achenbach & Rescorla, 2001) and the CBCL has demonstrated content,

criterion-related, and construct validity (Achenbach & Rescorla, 2001). In this study,

mother-report and father-report on the CBCL internalizing scale (Time 1: α = .87, .84;

Time 2: α = .90, .81; Time 3: α = .89, .83, respectively) and externalizing scale (Time 1:

α = .82, .88; Time 2: α = .89, .90; Time 3: α = .89, .91, respectively) had good reliability.

Adolescent-report measures.

Children's Perception of Interparental Conflict Scale. (CPIC; Grych, Seid, &

Fincham, 1992) (Time 1, 2). The CPIC is a 51-item child-report measure that assesses

children's perspective of interparental conflict. The CPIC was specifically designed to

assess the relation between interparental conflict and child adjustment (Grych et al.,

1992). The CPIC response format is "True," "Sort of True," or "False." The CPIC

contains the following four scales:

Conflict Properties Scale. The Conflict Properties scale of the CPIC contains three subscales that assess the intensity, frequency, and resolution of interparental conflict. Grych et al. (1992) tested the CPIC on two samples of children (Sample 1: n = 222, age M = 10.75; Sample 2: n = 114, age M = 10.9 years). Sample items that measure the intensity, frequency, and resolution of interparental conflict include: "My parents get really mad when they argue," "I often see my parents arguing," and "When my parents have an argument, they usually work it out," respectively. The interparental conflict intensity, frequency, and resolution subscales have good internal consistency and stable test-retest reliability over 2 weeks (Grych et al., 1992). In addition, the validity of the Conflict Properties scale is supported by significant associations with parent-report measures of interparental conflict (Grych et al., 1992). In this study, adolescent-report on the interparental conflict subscale had good reliability (Time 1: α = .94; Time 2: α = .93).

Self-Blame & Perceived Threat Scales. The Self-blame scale measures the extent to which a child blames him/herself for interparental conflict (e.g., it's usually my fault when my parents argue). The Perceived threat scale measures the child's perspective of the likelihood that he or she will be affected by the interparental conflict or that the interparental conflict will escalate (e.g., when my parents argue I worry that they may get divorced). The internal consistency of each scale ranged between .78 and .84 (Grych et al., 1992). Grych et al. (1992) tested the validity of these the Self-Blame and Perceived Threat scales by correlating the scales with other items that assessed the concepts of self-blame and perceived threat, respectively, and the correlations were significant. In this study, adolescent-report on the self-blame subscale (Time 1: α = .80; Time 2: α = .87) and perceived threat subscale (Time 1: α = .85; Time 2: α = .86) had good reliability.

Triangulation Scale. The Triangulation subscale of the CPIC is a 5-item measure of the likelihood that parents involve their child in the interparental conflict (e.g., I feel caught in the middle when my parents argue). The Triangulation subscale has shown to have construct validity and good internal consistency (Bosco, Renk, Dinger, Epstein, & Phares, 2003; Grych et al., 1992). In this study, adolescent-report on the triangulation subscale had good reliability (Time 1: $\alpha = .81$; Time 2: $\alpha = .82$).

Triangulation measure (adolescent-report). (Franck & Buehler, 2007) (Time 1, 2). The measure consists of 7 adolescent-report items (e.g., how often does one of your parents try to get you to side with one of them?) that are rated on a 4-point Likert scale (1 = never to 4 = very often). Two items were adapted from Grych, Seid, and Fincham (1992) and five items are from Buehler et al. (1998). The items have construct validity (Bradford et al., 2004) and good internal consistency ($\alpha = .79$) (Franck & Buehler, 2007). In this study, adolescent-report on the triangulation measure had good reliability (Time 1: $\alpha = .82$ Time 2: $\alpha = .84$).

Youth's Inventory-4. (YI-4; Gadow et al., 2002) (Time 1). The YI-4 is a 128-item adolescent-report questionnaire that assesses behavioral, cognitive, and affective symptoms of psychological disorders based on the DSM-IV (Gadow et al., 2002). The YI-4 uses a four-level rating scale (never, sometimes, often, very often), which provides a dimensional Symptoms Severity score. In addition, the YI-4 can be used to assess symptom criteria necessary for a DSM-IV diagnosis. The Symptom Count score is the total number of symptoms that meet the severity level to be of concern for a specific DSM-IV disorder (i.e., often or very often). The Symptom Criterion score is the minimum number of symptoms that is needed to meet diagnostic criteria for a DSM-IV

disorder. The Symptom Count score was compared to the Symptom Criterion score

(Symptom Count ≥ Symptom Criterion) to diagnose the following disorders: ADHD

(Inattentive, Hyperactive-Impulsive, Combined types), ODD, CD, GAD, SAD, Panic

Attacks, MDD, Dysthymic Disorder, Substance Use, and other disorders not germane to

this study. The YI-4 demonstrated good internal consistency (range of $\alpha = .66 - .87$) and

test-retest reliability (range of $\alpha = .54 - .92$) (Gadow et al., 2002). In addition, the

majority of the YI-4 symptom level scales were found to have convergent validity when

comparing the YI-4 to the Youth Self-Report. Likewise, the YI-4's depression and

anxiety symptoms and the Children Depression Inventory's negative mood, anhedonia,

negative self-esteem, and total score scales had high convergent validity (Gadow et al.,

2002).

  Youth Self-Report. (YSR; Achenbach & Rescorla, 2001) (Time 1, 2, 3). The

YSR is a 112-item adolescent-rated measure of adolescent internalizing and externalizing

behaviors. Items are rated on a $0 - 2$ scale: "0 = not true," "1 = somewhat or sometimes

true," and "2 = very true or often true." The internalizing and externalizing scales of the

YSR both had identical good internal consistency ($\alpha = .90$) (Achenbach & Rescorla,

2001). Additionally, there was evidence of content, criterion-related, and construct

validity for the YSR (Achenbach & Rescorla, 2001). In this study, adolescent-report on

the YSR internalizing scale (Time 1: $\alpha = .91$; Time 2: $\alpha = .90$; Time 3: $\alpha = .89$) and

externalizing scale (Time 1: $\alpha = .80$; Time 2: $\alpha = .85$; Time 3: $\alpha = .87$) had good

reliability.

Aims and Analyses

      Data cleaning and preliminary analyses. Missing data were addressed in the following manner. Participants who completed less than 80% of a measure were asked to go back onto the online survey and complete the measure. At Time 1, 1.2% of data were missing at the item-level on questionnaires. At Time 2, 2.2% of data were missing at the item-level on questionnaires. At Time 2, 4.5% of data were missing at the item-level on questionnaires. Maximum likelihood was used to compute regressions based on all of the possible patterns of missingness.

      Means and standard deviations were calculated for all scales (see Table A1). Mother/father/adolescent-report measures were separate indicators in the measurement models for each latent variable. In cases where the measurement model did not have adequate fit, then intraclass correlations were used to assess if aggregation of the mother-report, father-report, and adolescent-report measures was required.

      Aims and data analytic strategy. Analyses were conducted via structural equation modeling with Mplus software (Muthen & Muthen, 2012) with maximum likelihood estimation. Multiple indices were used to assess global model fit including: the Comparative Fit Index (CFI; Bentler, 1990), the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973), the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993), and the Standard Root Mean Residual (SRMR; Hu & Bentler, 1999). The CFI and TLI values that are approximately .90 reflected adequate fit of the model. For the RMSEA and SRMR, values less than or equal to .10 indicated good fit and .10-.15 indicate there may be adequate fit. No one index can determine if the model does or does not have adequate fit, but the indices altogether are reviewed to determine if the

model has adequate fit. Once it was established that a model had demonstrated adequate global fit, parameter estimates were interpreted.

Aim 1. The first aim was to compare the fit of the full model with the paths between interparental conflict and dimensions and diagnoses free to vary to models that selectively set the path between interparental conflict and specific diagnoses to zero. This allowed the determination of whether including specific diagnoses improved the overall fit of models of internalizing and externalizing behaviors. (see Figures B6, B7).

Step 1: Fitting measurement models for latent variables. Interparental conflict was modeled with 4 observed variables: scores on the MDEAS (paternal and maternal ratings), scores on the MSI-R (paternal and maternal ratings), the QMI (paternal and maternal ratings), and the CPIC (adolescent rating). *Internalizing behavior* was modeled with the following observed variables: scores on the CBCL (maternal and paternal ratings) and the YSR (adolescent rating) at Time 1 *and* scores on the YI-4 (adolescent rating) at Time 1 for generalized anxiety disorder, social anxiety disorder, major depressive disorder, dysthymic disorder, panic attacks, and phobia. *Externalizing behavior* was modeled with the following observed variables: scores on the CBCL (maternal and paternal ratings) and the YSR (adolescent rating) at Time 1 *and* scores on the YI-4 (adolescent rating) at Time 1 for oppositional defiant disorder, conduct disorder, substance abuse and attention deficit hyperactivity disorder.

Step 2: Interparental conflict as a predictor of general and specific dimensions of behavior. A series of analyses was conducted in order to compare the effect of conflict on (a) the general internalizing dimension versus each of the specific manifestations of this dimension (i.e., generalized anxiety disorder, social anxiety disorder, major

depressive disorder, dysthymic disorder, panic attacks, and phobia) and (b) the general

externalizing dimension versus each of the specific manifestations of this dimension (i.e.,

oppositional defiant disorder, conduct disorder, substance abuse and attention deficit

hyperactivity disorder).

For example, the latent interparental conflict variable was examined as a predictor

of (a) the latent internalizing variable and (b) the observed indicators of all of the

internalizing diagnoses with generalized anxiety disorder (GAD) being fixed to 0. In

order to determine whether conflict has a greater impact on the general internalizing

dimension than the specific disorder GAD, the fits of the following two models were

examined: (a) a model with the path between interparental conflict and the targeted

observed indicator of the diagnosis fixed to 0 and the paths between interparental conflict

and the other internalizing diagnoses and dimension free to vary and (b) a model with all

of the paths free to vary. If the latter model was a better fit, it confirms the assumption

that there was a significant relation between interparental conflict and the targeted

diagnosis when the internalizing dimension is in the model and rejects the null hypothesis

that the relation between interparental conflict and the targeted diagnosis was non-

significant (i.e., fixed to 0). Therefore, there was a difference in the coefficients

corresponding to these two paths (IPC > internalizing dimension; IPC > targeted

diagnosis), and that the path with the larger coefficient was the dominant path through

which conflict contributed to internalizing behavior.

Aim 2. To replicate and expand upon prior research supporting varied

mechanisms through which interparental conflict contributes to subsequent adolescent

internalizing and externalizing behaviors. Mediation models with significant support in

the literature include: cognitive-contextual model (Model #1), triangulation model (Model #2), spillover model (Model #3), and interparental conflict-parental psychopathology model (Model #4). The aim was to test each of the four models and examine how the models explain the relation between interparental conflict and adolescent psychopathology

　　　　Step 1: Fitting measurement models for latent variables. The same measurement model for *interparental conflict* that was specified in Aim 1 was specified in Aim 2. *Triangulation* was modeled with 4 observed variables: scores on the CPIC (adolescent rating) and the triangulation measure (adolescent, paternal, and maternal ratings) for the first 2 time points. *Negative parenting behavior* was modeled with 3 observed variables: scores on the inconsistent parenting and involvement subscales of the APQ (paternal and maternal ratings) and the negative parenting measure (maternal and paternal ratings) for the first 2 time points. Finally, parental psychopathology was modeled with 6 observed variables: scores on the IDAS (maternal and paternal ratings on the General Depression, Panic, Social Anxiety, and Traumatic Intrusions scales, separately) and the ASR (maternal and paternal ratings on the internalizing and externalizing scale) for the first 2 time points. In the context of the cognitive-contextual model, s*elf-blame* and *perceived threat* were examined as observed variables because only one measure of each mechanism was collected and more than one measure of a construct is needed to create a latent variable.

　　　　Step 2: Fitting growth curve models of internalizing and externalizing behaviors. Please see Figure B8. Linear growth curve models were estimated for each of the time-varying variables -- adolescent internalizing behavior and adolescent externalizing

behavior -- and included (a) a latent intercept variable representing adolescent behavior at Time 3 of the study (factor loadings were set at -2, -1, and 0 in order to model the intercept as behavior at Time 3) and (b) a latent slope variable representing linear change in adolescent behavior over time. The intercept of adolescent behavior at Time 3 controlling for Time 1 and 2 was the target outcome because mediational models propose that there is a temporal sequence required to show mediation: predictor at Time 1 → mediator at Time 2 (controlling for Time 1) → outcome at Time 3 (controlling for Time 1 and 2). Assuming that the linear model demonstrated adequate global fit, parameter estimates were examined.

To account for the possibility that internalizing and externalizing behaviors do not change systematically over time but, rather, fluctuate randomly around individuals' mean levels of behavior, an "intercept only model" consisting solely of the latent *intercept* variable also was examined. The relative fit of the linear and intercept only models was assessed by conducting a chi-square difference test, which is appropriate because the intercept only model is nested within the linear model. If the chi-square difference test was significant, it was concluded that adding the latent slope variable to the model significantly improved model fit and, consequently, a linear model was retained for all subsequent analyses. If the chi-square difference test was not significant, it was concluded that adding the latent slope variable did not significantly improve model fit and, consequently, retained an intercept only model (modeling overall or average levels of behaviors over time) for all subsequent analyses.

Step 3: Fitting each of the four mediation models. Please see Figures B9 – B12 for each of the mediation models that were examined in Aim 2. Mediators of interparental

conflict and adolescent internalizing and externalizing were tested and examined as predictors of internalizing and externalizing latent intercept and latent slope variables in each of the growth curve models. In order to test for mediation in each of these models, procedures outlined by Holmbeck (1997) were followed.

    Aim 3. To develop an integrated model incorporating mechanisms from each of the four aforementioned models (Aim 2). The following model building procedure was used based on the recommendations of Kraemer, Stice, Kazdin, Offord, and Kupfer (2001). Kraemer et al. (2001) described an approach to building a model based on the relations between pairs of risk factors (i.e., correlation, precedence, dominance). The combinations of these three types of relations provide an explanation of how the pair of risk factors (variables) work together to predict outcomes in complex causal chains. Ways that risk factors can work together include: mediators, moderators, overlapping or independent risk factors, or one risk factor may be a proxy variable for another risk factor (i.e., variable B can be used in the place of variable A but variable A is truly the variable of interest). For example, just because risk factor A precedes B, B precedes C and A, B, and C are correlated does not mean that B is a mediator. Risk factor B could also be a proxy variable or a moderator depending on the dominance of the factor. For instance, just because interparental conflict precedes negative parenting, negative parenting precedes adolescent outcomes and interparental conflict, parenting, and adolescent behaviors are correlated does not mean that parenting behaviors are a mediator. Parenting could also be a proxy variable or a moderator depending on the dominance of the factor.

Step 1: Examining correlations. Correlations among interparental conflict and self-blame, perceived threat, triangulation, parenting behaviors, parental internalizing and externalizing behaviors were computed to assess the relations among the risk factors.

Step 2: Establish temporal precedence. Temporal precedence of risk factors was established conceptually (i.e., conceptually, did one risk factor temporally precede another risk factor) and based on the actual temporal precedence. The predictor variables (*Interparental Conflict*) had temporal precedence over the mediating variables (*Self-blame, Perceived Threat, Triangulation, Negative Parenting, Parental Internalizing* and *Externalizing Behaviors*), which in turn had temporal precedence over the outcome variables (*Adolescent Internalizing* and *Externalizing Behaviors* at Time 3).

Step #3: Examining predictive dominance. Each pair of risk factors (e.g., interparental conflict and self-blame) was examined as predictors of the latent *intercept* variable (Time 3 levels of adolescent behavior). Predictive dominance was determined by comparing the fit of the following two models (using the AIC and BIC) for each pair of variables: (a) a model with each path fixed to be equal to the other and (b) a model with each path free to vary. If the former model was better fit, then it was concluded that there was no significant difference in the coefficients corresponding to these two paths. If the latter model was a better fit, it was concluded that there was a significant difference in the coefficients corresponding to these two paths, thus establishing predictive dominance of one risk factor over the other based on the larger coefficient.

Step #4: Building an integrated model. Using the results of preliminary analyses (Steps 1 thru 3), the model building procedure was adapted from the principles outlined by Kraemer et al. (2001). The article outlines how to determine the relation among

variables (e.g., mediation, moderation) based on their precedence, correlation, and dominance when predicting an outcome, which is outlined by Figure B13. If B was a proxy risk factor for A or they were overlapping risk factors, then the variables were correlated in the model. If A and B were independent risk factors, then no relation between A and B was represented in the model. If B was a mediator of A or A was a moderator of B, then that relation was represented in the model.

After the model was created, I tested the global fit of this model and, assuming that it was adequate, I examined the component fit (the nature of the relations among variables). Modification indices provided by Mplus were examined which was appropriate because the observed dependent variables were continuous (Muthen & Muthen, 2009). The modification index provided the expected drop in chi-square by the addition of each parameter (Muthen & Muthen, 2012), which was used to make changes to the model. Paths recommended by the modification indices were added only if they were conceptually indicated. Once the model demonstrated adequate fit, then the relation between risk factors were interpreted based on the precedence, correlation, and dominance of the risk factors.

Power analyses. The sample size necessary to achieve sufficient power of at least .80 for the SEM analyses was estimated using Monte Carlo simulations in Mplus Version 5. The power for Aim 1 was for a confirmatory factor analysis with normally distributed continuous outcomes without missing data. Medium effect size was expected for the path between interparental conflict and a latent variable of internalizing and externalizing behavior, respectively. Medium effect size was expected for the paths between interparental conflict and the specific indicators of internalizing and

externalizing behaviors, respectively. Pattern of "missingness" was not controlled for

because measures of interparental conflict and adolescent outcomes were all measured at

Time 1, therefore missing data were not anticipated. A sample size of 120 was necessary

to test Aim 1. The power for Aim 2 was based on the most complicated mediational

model (controlling for Time 1 levels of the mediators and including growth curve models

of internalizing and externalizing behavior). Medium effect sizes were used for all paths

between predictors, mediators, and internalizing and externalizing outcome variables

based on the average effect sizes found in Fisher's (2009) review paper. The pattern of

"missingness" controlled for in the power analyses was as follows: 0% missing data at

Time 1, 5% missing data a Time 2, 10% missing data at Time 3. The necessary initial

sample size for Aim 2 is 120. In order to estimate the necessary sample size for Aim 3

that proposes the construction of an integrated model based on preliminary analyses, the

sample size of the most complicated model in Aim 2 was tested with a more stringent

power (.90), which suggested an initial sample size of at least 150. Based on the results of

these power analyses, an *initial* sample size of at least 150 was necessary have 80%

power to detect medium effect sizes in Aims 1 - Aim 3, assuming that there was some

degree of attrition over the data collection period (5% at Time 2 and 10% at Time 3).

CHAPTER III

RESULTS

Demographics

The sample consisted of 152 families. At the start of the study, mothers had a mean age of 45.46 (sd = 5.00), fathers had a mean age of 47.43 (sd = 5.91), and adolescents had a mean age of 15.20 (sd = 1.37). The adolescent sample was composed of 50.4% females and the adolescent sample was in the following age groups: 13 years old (26.8%), 14 years old (18.7%), 15 years old (21.1%), 16 years old (20.3%), and 17 years old (12.2%). The majority of the mothers, fathers, and adolescents participating in the study were White/Caucasian (92.1%, 91.3%, 74.8%, respectively) and college was the average highest education level for mothers and fathers. The majority of the parents were married (92.2%) for an average of 19.48 years.

Aim 1

The goal of Aim 1 was to assess the necessity examining specific dichotomous adolescent diagnoses versus dimensional adolescent internalizing and externalizing behaviors when examining adolescent outcomes. Overall, there was a low base rate of adolescent psychiatric diagnoses: MDD (n = 10), Dysthymic Disorder (n = 15), GAD (n = 12), SAD (n = 25), Panic Attacks (n = 10), ADHD (n = 6), ODD (n = 7), CD (n = 0), Substance Use (n = 1),

Measurement models of interparental conflict and dimensional internalizing and externalizing outcomes (Time 1: n = 152). To specify the measurement model of interparental conflict included in the overall structural model, I used multiple indicators. Indicators of interparental conflict included total scores of both mother and father reports

on the QMI, MDEAS, MSI, and adolescent report on the interparental conflict subscale of the CPIC. All dimensional variables of interparental conflict were significant indicators of the latent interparental conflict variable (p < .01). Confirmatory factor analysis procedures revealed satisfactory fit for the measurement model, χ^2(14, N= 152) = 60.48, p <.01, CFI = .92, TLI = .88, RMSEA = .15, SRMR = .05.

To specify the measurement model of adolescent internalizing behaviors included in the overall structural model, I used multiple indicators (see Figure B14). Dimensional indicators of internalizing behaviors were from mother and father reports on the internalizing subscale of the CBCL and adolescent report on the YSR. Categorical indicators of internalizing diagnoses (i.e., generalized anxiety disorder, major depression, dysthymia, specific phobia, social anxiety disorder, panic attack) were based on the YI-4 criterion scoring procedure for individual diagnoses based on adolescent-report. Diagnoses were scored dichotomously creating categorical variables; therefore, fit indices were not provided. All dimensional and categorical variables were significant indicators of the latent internalizing variable within the measurement model (p < .01).

To specify the measurement model of adolescent externalizing behaviors included in the overall structural model, I used multiple indicators (see Figure B15). Dimensional indicators of externalizing behaviors were from mother and father reports on the externalizing subscale of the CBCL and adolescent report on the YSR. Categorical indicators (externalizing diagnoses) for attention deficit hyperactivity disorder and oppositional defiant disorder were based on the YI-4 criterion scoring procedure for individual diagnoses based on adolescent-report. Conduct disorder and substance use diagnoses were omitted from the measurement model due to low prevalence in this

sample (n = 0; n = 1, respectively). Diagnoses were scored dichotomously creating

categorical variables; therefore, fit indices were not provided. Both dimensional and

categorical indicators significantly predicted the latent externalizing variable within the

measurement model (p < .05).

Paths between interparental conflict and internalizing behaviors and specific

diagnoses. Inspection of the path coefficients of the full model of interparental conflict

predicting the general internalizing dimension (latent internalizing factor) and

internalizing manifestations (specific diagnoses) revealed that interparental conflict was

significantly associated with the internalizing dimension, β = .19, p < .05 (See Figure

B14). Interparental conflict was not significantly related to specific diagnoses, including

major depression (β = .02, p = .89), dysthymia (β = -.19, p = .23), generalized anxiety

disorder (β = -.08, p = .76), social anxiety disorder (β = .04, p = .76), and panic attacks (β

= -.34, p = .13), but was significantly related to specific phobias (β = .23, p < .05). This

model accounted for variance in mother, father, and adolescent report of adolescent

internalizing behaviors (22.3%, 26.0%, 90.0%, respectively) that created the general

internalizing dimension.

Model comparisons: Internalizing dimension vs. each internalizing diagnosis.

In order to compare the relative effects of interparental conflict on the general

internalizing dimensions and specific diagnoses, six model comparisons were conducted.

For example, to compare the effect of interparental conflict on the general internalizing

dimension to the effect of interparental conflict on generalized anxiety disorder two

models were compared (a) interparental conflict predicting the internalizing dimension

and each of the specific internalizing diagnoses *with all paths free to vary* and (b) the

same model but with the path between interparental conflict and a particular diagnosis

fixed to zero. When comparing models, smaller values of AIC and BIC indicate a more

parsimonious explanation of the data and BIC takes precedence when comparing models.

The model of interparental conflict predicting the internalizing dimension and each of the

specific internalizing diagnoses *with all paths free to vary* (reported above) had an AIC =

10837.15 and a BIC = 10985.32. When comparing this model to separate models[4] of

interparental conflict predicting each of the manifestations separately with the path fixed

to zero, the major depression model (AIC = 10835.17; BIC = 10980.32), dysthymia

model (AIC = 10836.80; BIC = 10981.94), generalized anxiety disorder model (AIC =

10835.36; BIC = 10980.50), social anxiety disorder model (AIC = 10835.25; BIC =

10980.40), specific phobia model (AIC = 10839.69; BIC = 10984.84), and panic attack

model (AIC = 10837.59; BIC = 10982.74) were more parsimonious explanations for the

data. Therefore, for the above models, a model with the path between interparental

conflict and the specific diagnosis (e.g., major depression) fixed to zero- suggesting no

relation- is a better fit for the data. Therefore, interparental conflict best predicts general

adolescent internalizing liability rather than specific internalizing dichotomous diagnoses.

Paths between interparental conflict and externalizing behaviors and specific

diagnoses. Inspection of the path coefficients of the full model of interparental conflict

predicting the general externalizing dimension (latent externalizing factor) and

externalizing diagnoses with the paths free to vary revealed that interparental conflict was

related to the externalizing dimension, $\beta = .35$, $p < .01$ (See Figure B15). Interparental

conflict was not significantly related to the specific diagnoses of externalizing: attention

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[4] For simplicity purposes, individual models of IPC predicting a specific manifestation with the path between IPC and the specific manifestation fixed to 0 will be named by the specific manifestation (e.g., major depression model).

deficit disorder (β = -.07, p = .78) or oppositional defiant disorder (β = -.15, p = .45). This model accounted for the variance in mother, father, and adolescent report of adolescent externalizing behaviors (60.9%, 73.4%, 35.6%, respectively) that created the general externalizing dimension.

Model comparisons: Externalizing dimension vs. each externalizing diagnosis. In order to compare the relative effects of interparental conflict on the general externalizing dimensions and specific diagnoses, 2 model comparisons were conducted (same model structure as interparental conflict predicting internalizing). The model of interparental conflict predicting externalizing dimension and each of the specific externalizing diagnoses *with the paths free to vary* (reported above) had an AIC = 10269.33 and a BIC = 10381.21. When comparing this model to separate models of interparental conflict predicting each of the manifestations separately with the path fixed to zero, the attention deficit hyperactive disorder model (AIC = 10267.41; BIC = 10376.27) and oppositional defiant disorder model (AIC = 10267.92; BIC = 103767.78) were the more parsimonious explanation for the data. In sum, interparental conflict best predicts general adolescent externalizing liability rather than specific externalizing disorders.

Aim 2

The goal was to establish the model fit of each of the latent variables that were included in the individual mediation models: interparental conflict at Time 1 (all models) triangulation (triangulation model), parenting behaviors (spillover model), parental

internalizing and externalizing behaviors (interparental conflict-parental psychopathology model). Then, the four theoretical models were tested for mediation[5].

       Measurement models of Time 1 interparental conflict. To specify the measurement model of interparental conflict included in the mediation models, I used multiple indicators. Indicators of interparental conflict included total scores of both mother and father reports on the QMI, MDEAS, MSI, and adolescent report on the interparental conflict subscale of the CPIC. All dimensional variables of interparental conflict were significant indicators of the latent interparental conflict variable (p < .01) (see Figure B14, B15). Confirmatory factor analysis procedures revealed satisfactory fit for the measurement model, $\chi^2(14, N= 128) = 60.21$, $p < .01$, CFI = .90, TLI = .85, RMSEA = .16, SRMR = 05.

       Measurement models of Time 2 triangulation. To specify the measurement model of Time 2 triangulation included in the mediation models, I used multiple indicators. Indicators of triangulation included total scores of both mother and father reports on the triangulation measure (parent version), adolescent report on the triangulation measure (adolescent version), and the triangulation subscale of the CPIC. All dimensional variables of triangulation were significant indicators of the latent triangulation variable (p < .01) (See Figure B16). Confirmatory factor analysis procedures revealed satisfactory fit for the measurement model, $\chi^2(2, N= 152) = 5.81$, $p < .05$, CFI = .97, TLI = .91, RMSEA = .12, SRMR = 04.

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[5] The mechanisms of the cognitive-contextual model (self-blame, perceived threat) were examined as observed variables rather than latent variables because only one measure was used for each construct.

Measurement models of Time 2 negative parenting behavior. To specify the measurement model of Time 2 parenting behavior included in the overall structural model, I used multiple indicators. A general latent model of overall parenting behavior indicated from mother and father report did not have good fit, despite numerous combinations of observed indicators to create a latent general parenting variable. Separate parenting latent variables were created for mothers and fathers by the following indicators of parenting behavior: total score of the negative parenting measure and the involvement and inconsistent discipline subscales of the APQ. All dimensional variables of parenting behavior were significant indicators of both mother and father latent parenting behavior variables (p < .001) (see Figure B17, B18). Confirmatory factor analysis procedures revealed identical satisfactory fit for both measurement models, $\chi^2(0,$ $N= 152) = 0$, $p < .01$, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .00.

Measurement models of Time 2 parental internalizing behavior. To specify the measurement model of parental internalizing behavior included in the overall structural model, I used multiple indicators. A general latent model of overall parental internalizing behavior in the family indicated from mother and father report did not have good fit. Separate latent variables of maternal and paternal externalizing were created from parent report on the IDAS General Depression, Panic, Social Anxiety, and Traumatic Intrusions scales and the ASR internalizing scale. All variables of parental internalizing behavior were significant indicators of the mother and father latent parental internalizing behavior (p < .01) (see Figures B19, B20). Confirmatory factor analysis procedures revealed satisfactory fit for the measurement models of maternal and paternal internalizing behavior, ($\chi^2(5, N= 128) = 14.70$, $p < .05$, CFI = .97, TLI = .95, RMSEA =

.12, SRMR = .03; χ^2(5, *N*= 128) = 15.57, *p* <.01, CFI = .96, TLI = .92, RMSEA = .13, SRMR = .04, respectively).

Measurement models of Time 2 parental externalizing behavior. To specify the measurement model of parental externalizing behavior included in the overall structural model, I used multiple indicators. A general latent model of overall parental externalizing behavior in the family indicated from mother and father report did not have good fit. Separate latent variables of maternal and paternal externalizing were created from parent report on the ASR Aggressive Behavior, Rule-Breaking Behavior, and Intrusive subscales. All variables of parental externalizing behavior were significant indicators of the mother and father latent parental externalizing behavior (p < .01) (see Figures B21, B22). Confirmatory factor analysis procedures revealed identical satisfactory fit for the measurement models of maternal and paternal externalizing behavior, (χ^2(0, *N*= 128) = 0, *p* <.01, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .00).

Baseline growth curve model of adolescent internalizing behavior. Adolescent internalizing symptoms were hypothesized to change linearly over time. Measurement models were created for Time 1, 2, and 3 adolescent internalizing behavior, which all had identical good fit (χ^2(0, *N*= 152) = 0, *p* <.01, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .00). However, growth curve models that reflected systematic, linear change of symptoms or change that fluctuated around the mean level of symptoms could not be created from the latent adolescent internalizing models, despite using different estimators (e.g., ML, MLR) and increasing the number of iterations (e.g., 100,000,000). Therefore, aggregated scores of maternal, paternal, and adolescent report of adolescent internalizing

behavior were used at Time 1, 2, and 3 to create the growth curve model. The decision to aggregate scores was based on the significant intraclass correlations (Time 1, 2, 3: .92, .61, .71, respectively) and the reliability (Time 1, 2, 3: α = .93, .93, .93, respectively) of the aggregated scores. I tested a linear growth model with the aggregated scores (consisting of both a latent intercept variable and a latent slope variable). This model demonstrated satisfactory fit, χ^2(1, N= 128) = 2.19, p = .14, χ^2/df = 2.19, CFI = 1.00, TLI = .99, RMSEA = .10, SRMR = .02. Results indicated that internalizing behaviors changed systematically over time (β = -1.77, SE = .47, p < .01), and there was significant variance in the slope factor (β = 23.21, SE = 8.23, p < .01). Consequently, the slope factor was included as an outcome variable in the subsequent analyses. The variance for the intercept variable was significant (β = 185.26, SE = 28.11, p < .01) suggesting it was appropriate to examine this variable in subsequent analyses. A linear growth measurement model was used for all subsequent analyses.

Baseline growth curve model of adolescent externalizing behavior.
Adolescent externalizing symptoms were hypothesized to change linearly over time. Measurement models were created for Time 1, 2, and 3 adolescent externalizing behavior, which all had identical good fit (χ^2(0, N= 152) = 0, p <.01, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .00). Similar to adolescent internalizing models, growth curve models that reflected systematic, linear change of symptoms or change that fluctuated around the mean level of symptoms could not be created from the latent adolescent externalizing models, despite using different estimators (e.g., ML, MLR) and increasing the number of iterations (e.g., 100,000,000). Aggregated scores of maternal, paternal, and adolescent report of adolescent externalizing behavior were used at Time 1,

2, and 3 to create the growth curve model based on the significant intraclass correlations

(Time 1, 2, 3: .77, .73, .77, respectively) and the strong reliability (Time 1, 2, 3: α = .92,

.93, .86, respectively) of the aggregated scores. I tested a linear growth model with the

aggregated scores (consisting of both a latent intercept variable and a latent slope

variable). This model demonstrated satisfactory fit, χ^2(1, N= 128) = .14, p = .710, χ^2/df =

.14, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .00. Results indicated that

externalizing behaviors did not change systematically over time (β = -.42, SE = .35, p =

.23), and there was not significant variance in the slope factor (β = 7.37, SE = 6.40, p =

.25). Consequently, the slope factor was not included as an outcome variable in the

subsequent analyses. The variance for the intercept variable was significant (β = 185.24,

SE = 26.93, p < .01) suggesting it was appropriate to examine this as an endogenous

variable in subsequent analyses. An intercept only model was tested to assess if

externalizing symptoms would fluctuate around an adolescent's mean level of symptoms

rather than changing systematically over time, which had good fit (χ^2(4, N= 128) = 9.44,

p = .05, χ^2/df = 2.36, CFI = .99, TLI = .99, RMSEA = .10, SRMR = .08). The linear

growth model and the intercept only model were compared by examining the AIC

(2686.87, 2690.17, respectively), BIC (2709.62, 2704.39, respectively), and chi-square

difference (χ^2(3, N = 128) = 9.30, p < .05); overall, the linear growth model was the

better fitting model. Therefore, the linear growth measurement model was used for all

subsequent analyses, but only the intercept of the linear growth model is included in the

path analyses given that the slope variable did not demonstrate significant variance.

Mediation models. First, the relations between the predictor (interparental conflict) and adolescent outcomes were modeled. Then, mediation is established by comparing the relative fit of (a) the complete model with the direct path between predictor (Time 1 interparental conflict) and outcome (adolescent internalizing/externalizing) free to be estimated and (b) the complete model with the direct path between predictor and outcome *constrained* to zero by examining the AIC and BIC. Non-significant paths are not reported.

IPC predicting adolescent internalizing and externalizing. The model of interparental conflict predicting adolescent internalizing and externalizing behaviors had good fit (χ^2(62, *N*= 128) = 185.42, *p* < .01, χ^2/df = 3.00, CFI = .91, TLI = .88, RMSEA = .13, SRMR = .06) (see Figure B23). Interparental conflict predicted internalizing intercept (β = .33, p < .01), internalizing slope (β = .22, p = .07), and externalizing intercept (β = .42, p < .01). Notably, interparental conflict predicted increase of adolescent internalizing behaviors over time.

Cognitive-contextual model. Estimation of this model yielded satisfactory fit, χ^2(81, *N*= 128) = 238.58, p <.01, χ^2/df = 2.95, CFI = .89, TLI = .85, RMSEA = .12, SRMR = .07 (see Figure B24). Inspection of the path coefficients revealed that interparental conflict was positively related to adolescent self-blame (β = .181, p < .05) and perceived threat (β = .35, p <.001) and, in turn, adolescent self-blame was positively related to adolescent externalizing (intercept) (β = .25, p <.01) and adolescent perceived threat was positively related to internalizing (intercept) (β = .29, p < .01). The cognitive-contextual model explained 19.9% of adolescent internalizing (intercept), 9.7% of adolescent internalizing (slope), and 25.5% of adolescent externalizing (intercept).

Overall, the comparison of the constrained versus the unconstrained model based on the AIC (13017.46, 13008.50, respectively), BIC (13162.51, 13162.09) suggests that the unconstrained model may be more parsimonious and mediation cannot be inferred. Because the BICs were so close, I tested the mediators in the model separately. The BIC for the perceived threat fixed model (12502.84) was less than the free model (12502.90), so mediation was supported for perceived threat when predicting adolescent internalizing (intercept) and externalizing (intercept) behaviors (see Figure B24).

Triangulation model. Estimation of this model yielded satisfactory fit, $\chi2(112, N = 128) = 299.87$, p < .01, $\chi2/df = 2.68$, CFI = .88, TLI = .85, RMSEA = .12, SRMR = .09 (see Figure B25). Inspection of the path coefficients revealed that interparental conflict was positively related to triangulation ($\beta = .413$, p < .001) and, in turn, triangulation was marginally related to adolescent internalizing (intercept & slope) ($\beta = .18$, p = .10; $\beta = .256$, p = .08). The triangulation model explained 13.7% of adolescent internalizing (intercept), 10.6% of adolescent internalizing (slope), and 18.8% of adolescent externalizing (intercept) behaviors.

Because the relations between triangulation and adolescent internalizing were marginal, I tested for mediation to assess if the potential mediation model would have better fit. Overall, the comparison of the constrained versus the unconstrained model based on the AIC (13786.91, 13773.812, respectively), BIC (13943.338, 13938.775) suggests that the unconstrained model may be more parsimonious; therefore, it was concluded that mediation could not be inferred.

Spillover model. Estimation of this model yielded satisfactory fit, $\chi2(141, N=$
128) = 315.12, p <.001, $\chi2/df$ = 2.24, CFI = .89, TLI = .87, RMSEA = .10, SRMR = .07
(see Figure B26). Inspection of the path coefficients revealed that interparental conflict
was positively related to maternal parenting (β = .43, p < .01) and paternal parenting (β =
.51, p < .01) and, in turn, maternal parenting was positively related to adolescent
internalizing (intercept) (β = .28, p < .01) and adolescent externalizing (intercept) (β =
.23, p <.01) and paternal parenting was positively related to adolescent externalizing
(intercept) (β = .60, p < .01) and marginally related to adolescent internalizing (intercept)
(β = .21, p = .08). Because paternal parenting had a marginal relation to adolescent
internalizing (intercept), I tested paternal parenting in the model without maternal
parenting and the relation between paternal parenting and adolescent internalizing
(intercept) was significant (β = .28, p < .01) (see Figure B26). The spillover model
explained 21.1% of adolescent internalizing (intercept), 4.3% of adolescent internalizing
(slope), and 49.5% of adolescent externalizing (intercept) behaviors.

Overall, the comparison of the constrained versus the unconstrained model based
on the AIC (15760.57, 15763.67, respectively), BIC (15945.44, 15957.07) suggests that
the constrained model is more parsimonious. Therefore, it was concluded that partial or
full mediation can be inferred based on the complete model with the paths free to be
estimated. The relation between interparental conflict and adolescent internalizing
(intercept) (β = .11, p = .33) and adolescent externalizing (intercept) (β = .04, p = .73)
became non-significant when the mediators were added to the model. When testing
paternal parenting alone as a mediator, the constrained model was more parsimonious
(BIC = 13845.09) than the unconstrained model (BIC = 13855.06) and the relation

between interparental conflict and adolescent outcomes was non-significant. Thus, both maternal and paternal parenting are full mediators of interparental conflict and adolescent externalizing (intercept) and adolescent internalizing (intercept) behaviors.

Interparental conflict-parental psychopathology model[6] . Estimation of this model yielded satisfactory fit, $\chi^2(358, N= 128) = 777.60$, p <.01, $\chi^2/df = 2.17$, CFI = .83, TLI = .80, RMSEA = .10, SRMR = .09. Inspection of the path coefficients revealed that interparental conflict was significantly related to maternal and paternal internalizing behaviors ($\beta = .24$, p < .01; $\beta = .46$, p < .01, respectively) and maternal and paternal externalizing behaviors ($\beta = .42$, p < .01; $\beta = .58$, p < .01, respectively). Adolescent internalizing behaviors (intercept) were significantly predicted by maternal and paternal internalizing behaviors ($\beta = .30$, p < .01; $\beta = .23$, p < .05). There were not any significant predictors of adolescent externalizing behavior, but it was marginally predicted by maternal internalizing behaviors ($\beta = .17$, p = .09) (see Figure B27). The interparental conflict-parental psychopathology model explained 29.0% of adolescent internalizing (intercept), 14.4% of adolescent internalizing (slope), and 23.5% of adolescent externalizing (intercept).

Overall, the comparison of the constrained versus the unconstrained model based on the AIC (21013.98, 21308.82, respectively), BIC (21013.97, 21315.46), suggests that the constrained model is more parsimonious; therefore, it was concluded that partial or full mediation can be inferred based on the complete model with the paths free to be estimated. Because the relation between interparental conflict and adolescent internalizing behaviors (intercept) ($\beta = .25$, p < .05) and adolescent externalizing

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[6] The alternative model in which interparental conflict was evaluated as a mediator of the relation between parental psychopathology and adolescent outcomes was tested. Interparental conflict was not found to be a mediator.

(intercept) (β = .28, p < .05) remained significant when the mediators were added to the model, partial mediation can be supported for maternal and paternal internalizing behaviors when predicting adolescent internalizing behaviors (intercept), but not externalizing behaviors (intercept).

Aim 3

The goal of Aim 3 was to develop an integrated model that included the mechanisms from each of the four mediation models from Aim 2 based on the model building procedure provided by Kraemer et al. (2001).

Integrative models. The statistics for examining the dominance of each pair of risk factors (combination of all risk factors from Time 1 and Time 2) predicting adolescent internalizing and externalizing behaviors was outlined in Tables A2 and A3, respectively. The intercept was only examined for adolescent outcomes (controlling for change in behaviors over time) because the slope was consistently non-significant in the previous analyses. The precedence, correlation, and dominance of each pair of risk factors, along with an interpretation of the relation between each pair of risk factors based these three criteria when predicting adolescent internalizing and externalizing behaviors is presented in Tables A4 and A5, respectively. Then, the mechanisms of the individual mediation models were added to an integrative model based on the relations between the risk factors. Partially due to the measurement models of parenting and parental internalizing and externalizing behaviors being split into separate models, all of the mechanisms could not fit into one model because the sample size was not sufficient for the number of parameters. Instead, two separate models were tested with interparental conflict predicting triangulation, self-blame, perceived threat, either maternal parenting,

internalizing, and externalizing behaviors or father parenting, internalizing and externalizing behaviors, and adolescent internalizing/externalizing. Moderation was suggested for one pair of variables (i.e., interparental conflict & self-blame) when predicting adolescent outcomes, so I tested moderation in the integrative models, but the moderation effects were not significant. Given that the moderation effects were non-significant, the more parsimonious models that omitted the moderation effects were retained. Non-significant paths are not reported.

Integrative model: Interparental conflict predicting adolescent perception, triangulation and maternal parenting and psychopathology. Estimation of this model yielded satisfactory fit, $\chi^2(378, N= 128) = 725.02$, p <.01, $\chi^2/df = 1.92$, CFI = .86, TLI = .84, RMSEA = .09, SRMR = .09 (see Figure B28). Inspection of the path coefficients revealed that interparental conflict was marginally related to self-blame ($\beta = .17$, p = .07) and significantly related to perceived threat ($\beta = .34$, p < .01), maternal internalizing ($\beta = .22$, p < .05), maternal externalizing ($\beta = .37$, p < .001), maternal parenting ($\beta = .41$, p < .01) and triangulation ($\beta = .40$, p < .01). Adolescent internalizing was significantly predicted by perceived threat ($\beta = .26$, p < .05) and maternal internalizing ($\beta = .29$, p < .05), and marginally predicted by maternal parenting behavior ($\beta = .22$, p = .06). Adolescent externalizing behavior was predicted by self-blame ($\beta = .22$, p < .01), maternal parenting ($\beta = .31$, p < .01), and Time 1 interparental conflict ($\beta = .20$, p < .05). Thus, perceived threat and maternal internalizing may be full mediators of interparental conflict and adolescent internalizing; maternal parenting may be a partial mediator of adolescent externalizing. This model explained 32.6% of adolescent internalizing (intercept) and 37.1% of adolescent externalizing (intercept).

Integrative model: Interparental conflict predicting adolescent perception, triangulation and paternal parenting and psychopathology. Estimation of this model yielded satisfactory fit, $\chi 2(375, N= 128) = 724.44$, p <.01, $\chi 2/df = 1.93$, CFI = .86, TLI = .83, RMSEA = .09, SRMR = .09 (see Figure B29). Inspection of the path coefficients revealed that interparental conflict was significantly related to self-blame ($\beta = .18$, p < .05), perceived threat ($\beta = .34$, p < .01), paternal internalizing ($\beta = .43$, p < .01), paternal externalizing ($\beta = .53$, p < .01), paternal parenting ($\beta = .50$, p < .01) and triangulation ($\beta = .39$, p < .01). Adolescent internalizing was significantly predicted by perceived threat ($\beta = .22$, p < .05), paternal parenting ($\beta = .43$, p < .01), paternal externalizing ($\beta = .45$, p < .05), and marginally predicted by paternal internalizing ($\beta = .25$, p = .07). Adolescent externalizing behavior was predicted by paternal parenting ($\beta = .77$, p < .01), and paternal externalizing ($\beta = .36$, p < .05). This suggests that perceived threat, paternal externalizing, and paternal parenting may be full mediators of the relation between interparental conflict and adolescent internalizing, while paternal internalizing may be a proxy for interparental conflict when predicting adolescent internalizing. Paternal parenting behavior may be a full mediator of the relation between interparental conflict and adolescent externalizing, whereas paternal externalizing may be a proxy variable for interparental conflict. This model explained 32.0% of adolescent internalizing (intercept) and 55.7% of adolescent externalizing (intercept).

CHAPTER IV

DISCUSSION

This study yielded several important findings within a community sample that was characterized by low levels of familial distress and psychopathology. Taking into account individual adolescent diagnoses did not improve the fit of the models of interparental conflict and adolescent internalizing and externalizing behaviors. The cognitive-contextual, triangulation, spillover, and interparental conflict-parental psychopathology theoretical models were tested with dimensional adolescent outcomes and all of the models supported at least one path of mediation, except for the triangulation model. When the mechanisms of each model were merged into an integrative model, parental psychopathology, negative parenting behaviors, and adolescent perceived threat were mediators of the relation between interparental conflict and adolescent outcomes. The integrative models builds upon previous research by demonstrating what are the key mechanisms of the family environment as a whole that affect the development of adolescent psychopathology, rather than simply portions of the family dynamic as illustrated by the four individual theoretical models. The findings have several research and clinical implications and provide direction for future research.

Adolescent Internalizing and Externalizing Behaviors: Dimension versus Diagnosis

Previous research has not been clear regarding whether it is more beneficial to classify adolescent psychopathology into dimensions or diagnoses. Developmental research on adolescent psychopathology has overwhelming focused on dimensions of psychopathology, a focus which has been perpetuated by the common use of the Achenbach School-Age Forms (i.e., Child Behavior Checklist, Youth Self-Report,

Teacher's Report Form). Weiss, Süsser, and Catron (1998) developed a model that

explained the manifestation of child psychopathology: expression of a syndrome =

common features (psychopathology versus normality) + broadband-specific features

(internalizing versus externalizing) + narrowband-specific features (e.g., diagnoses) +

error (individual differences in expressing psychopathology). The Weiss et al., (1998)

model examines the hierarchical structure of child psychopathology providing

increasingly specific levels of differentiation. The causes of adolescent psychopathology

may lead to different types (internalizing/externalizing; anxiety/depression) and severity

(dimension of internalizing/externalizing; mild/moderate/severe major depressive

disorder) of adolescent outcomes (Weiss et al., 1998), so assessing the level of specificity

of an outcome based on the type of cause (e.g., interparental conflict) can increase the

specificity and efficiency of models examining the epidemiology of adolescent

psychopathology.

Interparental conflict best predicts adolescent dimensions of psychopathology

within a community sample in comparison to specific internalizing and externalizing

dichotomous diagnoses. In general, interparental conflict predicts the general broadband

features of adolescent negative mood and acting out behaviors, but does not predict

specific psychiatric diagnoses. Adolescents may be inclined to direct negative emotions

inward (depressive, anxious, somatic complaints) or act out their negative emotions (rule

breaking, aggression) in a general, nonspecific manner in reaction to conflict between

their parents. Within broadband dimensions of adolescent outcomes there is

differentiation in interparental conflict predicting outcomes. The model of interparental

conflict predicting adolescent dimensional and diagnostic externalizing behaviors was

more parsimonious (BIC = 10054.00) than a model of interparental conflict predicting

adolescent dimensional and diagnostic internalizing behaviors (BIC = 10503.65).

Previous research supports the hypothesis that interparental conflict is a better predictor

of adolescent externalizing behaviors than internalizing behaviors (Buehler et al., 1997),

and in particular, boys are more likely to display externalizing behaviors than girls when

exposed to interparental conflict (Zimet & Jacob, 2001). The strong relation between

interparental conflict and externalizing behavior suggests that adolescents may be

inclined to act out as a way of expressing their emotions in reaction to the negative family

environment. Adolescent acting out behaviors can have significant negative

consequences (e.g., juvenile detention center, substance addiction, expulsion) and long-

term negative effects on their future (e.g., hindered career path, legal record, conduct

disorder leading to antisocial personality disorder). Adolescent externalizing behaviors

can also negatively affect social/romantic relationships, thus having an impact on

adolescents' ability to fulfill their current social roles. In addition, adolescent

externalizing behaviors may extend into their adult social/romantic relationships

including their interparental relationships. Externalizing behaviors displayed in the

interparental relationship may be in the form of interparental conflict, which could

perpetuate the cycle of interparental conflict effects on future generations.

Although interparental conflict better predicts adolescent externalizing behaviors

than internalizing behaviors, the significant correlation between internalizing and

externalizing behaviors may suggest that the acting out behaviors may be rooted in

unresolved internalizing problems. Mahon, Yarcheski, Yarcheski, and Hanks (2010)

conducted a meta-analysis that found that adolescent anxiety and depression had the

largest effect sizes after trait anger ($ES = .45$; $ES = .41$, $ES = .47$, respectively) when predicting anger in adolescents in comparison to other predictors that typically influence externalizing behaviors including: stress, exposure to violence, victim of violence, hostility, self-esteem, social support, and demographics. In sum, in the present study considering specific psychiatric diagnoses did not improve the fit of the models that included dimensional measures of internalizing and externalizing behaviors. Also, adolescent externalizing behavior has a stronger association with interparental conflict than adolescent internalizing behaviors.

Cognitive-Contextual Model

The findings provided mixed support for the cognitive-contextual model by Grych and Fincham (1990). As expected, adolescents exposed to interparental conflict perceive the distress in the parental relationship as threatening to their physical/emotional well-being and the stability of the family unit. Adolescents' interpretation of the threat posed by the interparental conflict mediates the relation between interparental conflict and adolescent internalizing and externalizing behavior. Contrary to the model proposed by Grych and Fincham (1990), self-blame does not act as a mediator but it does predict future internalizing and externalizing behaviors and change in adolescent internalizing behavior over time. However, the relation of adolescent perceived threat and self-blame and adolescent behaviors highlights the importance of adolescent interpretation of the parental relationship when predicting adolescent outcomes. The role of cognitions in mental health and behavior have been examined extensively in the adult literature, but relatively little research has examined adolescents (Lakdawalla, Hankin, & Mermelstein, 2007). Compared to other cognitive theories (e.g., Beck's Cognitive Theory of

depression, Response Style Theory), the hopelessness theory has had a significant amount of research conducted examining child and adolescent populations. The hopelessness theory hypothesizes that an individual can make three types of negative inferences in response to a stressful event: causal inferences (the cause of the negative event and whether it is stable or global), inferred consequences, and inferences about the self in relation to the negative event (Lakdawalla et al., 2007). Negative inferences can lead to hopelessness and depression in adolescents. The meta-analysis of Lakdawalla et al. (2007) found that the interactive effect of negative inferences and stress leading to depression is greater in adolescents than children, which suggests that cognitive development is necessary to have an increased cognitive vulnerability to stressful events. This theory, examining the interaction between negative inferences and stress, compliments the cognitive-contextual model because self-blame (causal inferences; inferences about self in relation to interparental conflict) and perceived threat (inferred consequences) lead to adolescents developing internalizing symptoms.

In addition, negative self-representations have been found to be associated with adolescent overt aggression and assaultive behavior (i.e., externalizing) (Moretti, Holland, & Mckay, 2001). There may be interplay between negative cognitions and affect that lead to externalizing behaviors (Moretti et al., 2001). For example, cognitive distortions and preoccupation with hostile/aggressive stimuli in the environment (e.g., interparental conflict, hostile parenting) are associated with externalizing behaviors (Kendal, 1993). In sum, adolescent mental health and behavior have a strong association with adolescent cognitions about the family environment, which emphasizes the

importance of including adolescent cognitions and perception in developmental and family research.

Triangulation Model

Contrary to previous research (Franck & Buehler, 2007; Grych et al., 2004), mediation was not supported for the triangulation model. But, the results supported the portion of the theoretical model that hypothesizes that parents who are experiencing high levels of conflict are likely to pull their child into their conflict by divulging sensitive information or relaying messages to their partner through their child. In turn, the relation of triangulation with adolescent outcomes was marginal but specific to adolescent internalizing behaviors. The specificity in predicting adolescent internalizing supports previous literature that has consistently found an association between triangulation and adolescent internalizing (Bosco et al., 2003; Bradford et al., 2008; Buehler et al., 1998; Buehler & Welsh, 2009; Franck & Buehler, 2007; Gagne, Drapeau, Melancon, Saint-Jacques, Lepine, 2007; Grych, Raynor, & Fosco, 2004; McClellan, Heaton, Forste, & Barber, 2004; Peris, Geoke-Morey, Cummings, & Emery, 2008), but inconsistent empirical support for the relation between triangulation and externalizing behaviors (Baril, Crouter, & McHale, 2007; Franck & Buehler, 2007; Gagne et al., 2007; Gerard et al., 2005). The trend-level association of triangulation with adolescent mental health may be the result of overinvolvement in the interparental conflict and exposure to age-inappropriate information that can be too intense for an adolescent to emotionally process at this developmental stage. According to the cognitive-contextual model, adolescents already tend to have a negative view of interparental conflict, so the increased exposure to the interparental conflict through triangulation and exposure to adult topics may

heighten the number and intensity of the negative appraisals (Franck & Buehler, 2007; Tschann et al., 2002). Rather than acting out, adolescents tend to internalize the negative emotions, cognitions, and stress that are created by being triangulated into their parents' conflict. Parents' ignorance of the degree to which they are triangulating their adolescent into the conflict (Koerner et al., 2000), unawareness of the negative effects that triangulation may have on their adolescent, and their time/attention being dominated by the conflict may limit the emotional support provided to their adolescents and limit adolescents' comfort with conveying to their parents the extent that the interparental conflict affects them (Afifi & Schrodt, 2003). Altogether, triangulation puts adolescents in a vulnerable position to develop internalizing problems.

Spillover Model

This study supported previous research that found parenting behavior to be a mediator of the relation between interparental conflict and adolescent outcomes (Benson et al., 2003; Bradford et al., 2008; Buehler et al., 2006; Harold & Conger, 1997; Krishnakumar et al., 2003). Mother and father negative parenting behaviors in this study consisted of high levels of hostile parenting, high levels of inconsistent discipline, and low levels of positive parental involvement, which altogether were full mediators when testing the spillover model. Previous research suggests that parental hostility and inconsistent discipline mediate the relation between interparental conflict and adolescent internalizing behavior (Bradford et al., 2008; Buehler et al., 2006; Chung et al., 2009) and parental hostility mediates the relation between interparental conflict and adolescent externalizing (Benson et al., 2003; Bradford et al., 2008; Buehler et al., 2006; Krishnakumar et al., 2003), findings that are consistent with the results of this study.

Hostile parenting may lead to adolescent externalizing behavior. According to Patterson's coercion theory, children react to hostile parenting by behaving in hostile, oppositional, and antisocial manner (Lansford et al., 2011). Both parents' and adolescents' externalizing behavior is perpetuated because parents learn that hostile behavior leads to immediate adolescent compliance and adolescents learn from their parents that hostility and aggression are ways to get others to comply (Lansford et al., 2011). However, a reciprocal effect can occur in which adolescent externalizing behavior can predict increased parental hostility a year later (Lansford et al., 2011). The reciprocal effect model hypothesizes that parents' behavior, in general, can influence child behavior that in turn influences parental behavior. Regarding hostile parenting, the parental aggressive, hostile behavior can lead to a cycle of negative behaviors between the parent and adolescent. Altogether, this may explain why parents and adolescents continue to react to one another in a hostile manner, even though the behavior is ineffective (long-term) and problematic.

Parental inconsistency has been found to be associated with adolescent internalizing and externalizing symptoms. Dwairy (2008) furthered the empirical literature on parental inconsistency by examining this type of parenting in families with varying levels of connectedness (emotional and functional connectedness/ interdependence). He found that parental inconsistency leads to psychological symptoms (major depression, generalized anxiety disorder, conduct disorder) in families with all levels of connectedness, but the effect was stronger when there was a stronger connection between the parent and adolescent (Dwairy, 2008). The larger effect of inconsistent parenting on adolescents in more connected families could be particularly problematic

when parents are overly reliant on the adolescent for emotional support (parentification) or the parents triangulate the child into the interparental relationship. The increased exposure to the interparental conflict, the negative effects of triangulation, and the higher levels of inconsistent parenting may lead to increased adolescent internalizing and externalizing behavior. On the other hand, parental support has been found to predict lower levels of adolescent depression, which suggests that having supportive parents aids in healthy psychosocial adjustment (Graziano, Bonino, & Cattelino, 2009). Parental support provides a nurturing, supportive environment that fosters closeness with the parent that can help adolescents manage their emotions and behavior. Research on parenting heavily focuses on the negative parenting behaviors that may affect adolescent outcomes, but positive parenting behaviors are important when predicting decreased adolescent psychopathology. In summary, parents who exercise unhealthy interpersonal behaviors in the interparental relationship are not likely to display healthy parenting behaviors, which can create a dysfunctional parent-adolescent relationship and adolescent psychopathology.

Interparental Conflict-Parental Psychopathology Model

Both maternal and paternal internalizing behaviors mediated the relation between interparental conflict and adolescent internalizing behaviors, which confirms the findings of Davies et al. (1999) and the theoretical model of Downey and Coyne (1990). The distress from the unstable, conflictual relationship is associated with the development of parental internalizing behaviors. It is important to note that parental internalizing behaviors were only partial mediators, which means that interparental conflict affects adolescent outcomes beyond the effects of parental internalizing behaviors. Other factors

in the family environment may need to be included in the model to further explain the relation between interparental conflict and adolescent psychopathology. Parental externalizing behaviors did not significantly predict adolescent outcomes, which suggests that internalizing behaviors outweigh externalizing behaviors when examining both maternal and paternal psychopathology together. Adolescent externalizing behaviors were not predicted by parental psychopathology, which suggests that adolescents who are exposed to parental mental health problems are more likely to internalize their emotions and develop depression and/or anxiety. Adolescents may experience hopelessness because they cannot control or influence their parent's mental health and may recognize the negative consequences of their parent's mental health, such as impaired parenting, parentification, or interparental conflict. It is logical for adolescents to develop internalizing behaviors when their family is characterized as a hopeless environment where their main source of emotional support and nurturance is affected by psychopathology and a family dynamic that is conflictual and dysfunctional.

Integrative Models: Maternal and Paternal Mediators

The individual theoretical models pointed to specific mediators that may affect the development of adolescent psychopathology. Once parents begin to have interparental conflict these mediators (adolescent perception, triangulation, negative parenting, parental psychopathology) occur together following the conflict. When these mediators occur concurrently, some may outweigh others when mediating the relation between interparental conflict and adolescent psychopathology. A longitudinal examination of the four key co-occurring mediators (mediators chosen based on an extensive literature review) of the relation between interparental conflict and adolescent

psychopathology has never been investigated prior to this study. The integrative models tested in this study provide a better all-inclusive understanding of the importance (adolescent perceived threat, parental psychopathology, negative parenting) or lack of importance (i.e., triangulation, self-blame) of each mechanism in the family environment.

There were three notable findings in the tests of the integrative models that examined maternal and paternal behaviors separately. First, the type of parental psychopathology that affected adolescent behavior was gender specific. Mothers may affect their adolescent's psychopathology through maternal internalizing behavior, while fathers may affect their adolescent's psychopathology (internalizing) through paternal externalizing behavior. When interparental conflict predicted adolescent outcomes, maternal internalizing behavior was a mediator, whereas paternal externalizing behavior was a mediator of the relation between interparental conflict and adolescent internalizing.. Paternal internalizing behavior only functioned as a proxy variable for interparental conflict when predicting adolescent internalizing behavior. Therefore, maternal *internalizing* and paternal *externalizing* behaviors are key risk factors for the development of adolescent psychopathology. In the past, family and developmental research that examined the effects of parental mental health on child/adolescent outcomes have focused on the contribution of mothers predominantly. Research on maternal mental health has focused on categories of internalizing psychopathology that were prevalent amongst mothers or exclusive to this population (e.g., major depression, postpartum depression). As fathers began to be included in research that examined the family environment and child/adolescent development, the research focus continued to remain on psychopathology that was pertinent to mothers. The transition to include

fathers in this research area never fully addressed and accounted for the type of

psychopathology that may be more prevalent in fathers and/or more consequential when

father's psychopathology predicted child/adolescent psychopathology. The findings from

this study emphasize the importance of considering mechanisms that are relevant to

fathers (i.e., externalizing psychopathology), which in turn may have a larger impact on

adolescent behavior than other paternal factors.

Second, parenting behavior was a mediator consistently when predicting

adolescent internalizing and externalizing behaviors. Negative parenting, even amongst

the other potential mediators, was important when predicting adolescent outcomes. The

parent-adolescent relationship and the parents' approach toward nurturing an adolescent's

development are influential in the adolescent's psychosocial adjustment and ability to

adapt to environmental stressors (i.e., interparental conflict). The hostility and instability

that exists in the interparental relationship may *spill over* into the parent-adolescent

relationship. Similar to the association between interparental conflict and future parental

mental health (distressed relationship > parental psychopathology), parent-adolescent

conflict and interpersonal distress is associated with adolescent psychopathology. Parent

adolescent conflict and adolescent psychopathology may even have a reciprocal effect

(distressed relationship > adolescent psychopathology > distressed relationship)

(Lansford et al., 2011), which mirrors an empirically supported theory by Downey and

Coyne (1990) that found a reciprocal relation between interparental conflict and parental

internalizing behaviors when predicting adolescent outcomes (Du Rocher Schudlich &

Cummings, 2003; Goodman, 2007). Based on the first two major findings from the

integrative models, psychopathology (parent, adolescent) and interpersonal relationships

(interparental, parent-adolescent) may be intertwined and key to perpetuating dysfunction in the family environment.

Finally, because the outcome variable of this study is adolescent psychopathology, it is imperative to understand the importance of the adolescent's perception of the familial dysfunction around them. The adolescent's perception of the threat posed by the interparental conflict, whether on the solidarity of the family or physical safety of its members, may lead to feelings of depression and/or anxiety. The relation of perceived threat and adolescent internalizing behavior specifically illustrates a reaction of defeat and hopelessness in response to an external threat. Taken in the context of the global family environment, adolescents have a reason to feel hopeless and threatened in a dysfunctional family environment: 1) adolescents are not in control of the interparental conflict or their parents' internalizing symptoms that may have a continuous cyclic relation, 2) adolescents may influence, but do not ultimately control their parents' negative parenting behaviors and 3) the pervasive negative effect of interparental conflict on the mechanisms in the family environment may offer little encouragement that the family unit may recover. In sum, adolescent perceived threat may be a reasonable reaction to interparental conflict and its resulting correlates because the adolescent is in a powerless position to unify the family unit or assuage factors that may exacerbate the interparental relationship (e.g., parental internalizing).

Summary

In summary, this study confirms that interparental conflict affects various aspects of parental behavior (triangulation, parenting, internalizing/externalizing behavior) and adolescent's view of the stability and safety of the family unit and then adds a unique

contribution to the literature by incorporating these factors together in the integrative models. The integrative models provided an opportunity to examine at a more global view of the family environment and move beyond the limited scope of the individual theoretical models. Also, this study is unique because it included general parental externalizing behavior as a potential mediator under the umbrella of parental psychopathology, which has not been included in previous theoretical models or examined in previous research. The importance of examining all of the mediational factors together in the integrative model and of the inclusion of parental externalizing behaviors is exemplified by the comparison between the interparental conflict-parental psychopathology model and the integrative models. When maternal and paternal mental health is examined alone, parental internalizing behaviors were the sole key risk factors for adolescent psychopathology. But when examining mental health and other behaviors of mothers and fathers separately, then the form of parental psychopathology (internalizing/ externalizing) that affected the adolescent depended on the gender of the parent. Furthermore, negative parenting behavior (a factor that contains characteristics of externalizing behaviors) mediated the relation between interparental conflict and adolescent psychopathology, except for when maternal parenting predicted adolescent internalizing behavior amongst other maternal mediators, such as maternal internalizing behavior. Adolescent perceived threat (a split between fear that the family unit may dissolve and fear that a parent poses a physical threat to the adolescent and/or the other parent) was consistently a significant mediator for an adolescent to develop internalizing problems, which suggests that the adolescent perception of the interparental conflict and distress based on this perception exists despite the other potent risk factors and was not

overshadowed by their inclusion in the family environment. It is important to note that the longitudinal relation between the predictors and mediators, and adolescent outcomes may be due to unmeasured factors (e.g., genetic vulnerability), especially for the transmission of psychopathology from parents to the adolescents.

In short, this study demonstrated adolescents are concurrently exposed to negative parental behaviors that are threatening to the adolescent and lead to the development of adolescent psychopathology, which is best measured as a dimension rather than a dichotomous diagnosis. Based on the findings of this study, the relation among interparental conflict, the mediators, and the longitudinal development of adolescent psychopathology can be understood by the paths of the parental and adolescent internalizing and externalizing behaviors. Parental internalizing behavior and the manifestation (negative parenting, parental externalizing problems) and perception (perceived threat) of parental externalizing behaviors links interparental externalizing behaviors (interparental conflict) to adolescent internalizing and externalizing behaviors. Parents and adolescents react the same to the externalizing behaviors exhibited during interparental conflict: either with externalizing behaviors (negative parenting, paternal externalizing, adolescent externalizing) or internalizing behaviors (maternal internalizing, adolescent internalizing), but internalizing behaviors (parental) only lead to future internalizing behaviors (adolescent).

Research and Clinical Implications

Research examining interparental conflict and adolescent psychopathology in a community sample should assess dimensions of adolescent behaviors rather than specific dichotomous diagnoses. It may not be economically efficient (amount of time, subject

payment, clinician fees) for a research study to focus on specific dichotomous diagnoses, whether by subject self-report or clinical assessment. Studying whether an adolescent's symptoms met DSM-IV diagnostic criteria will not add significant explained variance of the outcome, so a simplified classification of adolescent outcomes is important.

Testing theoretical models individually limits the examination of the family environment and key risk factors that are associated with adolescent psychopathology. Individual models can be tested to confirm that the theoretical models fit the specific sample, but a theoretically, empirically, and statistically-based approach should be used when attempting to further this area of research. If this is not accomplished, then the empirical literature will be a piecemeal of findings that provides relatively redundant examinations of different portions of the family environment involving interparental conflict without having a more global understanding of what the adolescent is experiencing in the home. First, an extensive literature review that targets a specific population and outcome can provide the direction an investigator needs to take a comprehensive approach to future research. Then, theoretical and statistical rationales should be used to build upon and integrate the well-established existing models and findings. Examination and refinement of study methods and measurement should be considered including: the specificity of mechanisms (e.g., dimensional/categorical, observed/latent), assessment of mechanisms (reliability/validity of measures, multiple report), and translational research. The type of measurement is especially important when creating latent variables of a general phenomenon in the family environment. Not only is it important to include multiple observed indicators to create a latent variable, but if a researcher wants to assess the overall phenomenon in the home rather than the mother or

father manifestation of the phenomenon, then objective measures are needed. For instance in this study, measures of parenting behaviors were based on self-report measures completed by mothers and fathers. This resulted in separate maternal and paternal parenting latent variables. However, measures of triangulation were based on self-report measures from the mother and father and adolescent report of parental triangulation behaviors in the home. The adolescent report of triangulation provided an objective viewpoint, which resulted in a latent variable that measured general parental triangulation in the home, rather than maternal triangulation and paternal triangulation individually. Therefore, the number and types of informants (subjective: self-report; objective: family member-report, clinician-report) should be dictated by the specificity of the phenomenon being measured (specific vs. general). In sum, an informed systematic approach needs to be taken to ensure that future research is advancing the family and development research field.

There are two major clinical implications of interparental conflict better predicting dimensions of adolescent psychopathology than specific dichotomous diagnoses. First, family therapists should focus on assessing the impact of interparental conflict on adolescents by the severity of internalizing and externalizing behaviors displayed rather than diagnostic clinical criteria for a psychiatric disorder. Dimensional measures of adolescent psychopathology can assess the incremental effects of the family environment on the adolescent over time. Adolescent psychiatric symptoms that are sub-threshold of diagnostic criteria can still be caused by the family environment and may be significant regarding adolescents' current emotional well-being and the symptoms' potential impact on their future. Family therapy treatment may lead to gradual change in

adolescent psychopathology, which could be overlooked by a dichotomous rating of adolescent psychiatric diagnoses; therefore, a dimensional assessment would help to better understand the effects of the improving family environment on adolescent behavior.

Second, although parent-rating of internalizing and externalizing behaviors were similarly correlated with their adolescent's report of symptoms, parents had a higher interparental convergence on their rating of adolescent externalizing behaviors at Time 1. This suggests that parents may be more likely to agree with each other on their observation of adolescent externalizing behaviors in comparison to internalizing behaviors. Therefore, parents may be more inclined to bring their adolescent into treatment for aggression, misbehavior, and rule-breaking behaviors than depression, anxiety, and somatic complaints. Family therapists and child psychologists should be aware of this tendency and conduct a full assessment of both adolescent internalizing and externalizing behaviors, even if the parents' presenting complaint is the adolescent's externalizing behaviors. Previous research has shown that internalizing behaviors may potentially contribute to externalizing behaviors (Mahon et al., 2010), which further emphasizes the importance for family and child psychologists to assess adolescent internalizing behaviors during assessment and treatment of adolescent externalizing behaviors.

The importance of parental psychopathology in the family environment and the previous research supporting a reciprocal relation between distressed interpersonal relationships and psychopathology suggest that family therapists need be mindful of potential reciprocal effects of interparental conflict and parental psychopathology, which

may indicate referring parents to individual psychotherapy and/or psychiatry to lessen the

psychopathology that may be perpetuating the discord in the home. Terminating this

cycle may have positive effects on the adolescent by decreasing the risk for internalizing

and externalizing problems.   Likewise, family therapists should be aware of the

reciprocal relation between hostile parenting and adolescent externalizing behavior by

helping the parents and adolescent to understand the ineffectiveness and counterintuitive

effect of their aggressive behavior. Finally, adolescents' perception of the threat that the

interparental conflict poses should be a key part of treatment in order to decrease

adolescent depression and anxiety. In general, the adolescent's perception of various

aspects of the family dynamic should be included in the assessment and treatment of the

family unit.

Limitations

This sample of adolescents had a low rate of psychiatric disorders, which may

have influenced the structural models comparing interparental conflict predicting

dimensions versus diagnoses of adolescent internalizing and externalizing behaviors.

The subsample of adolescents who were diagnosed with a psychiatric disorder was a

small percentage of the total sample and none of the adolescents met criteria for conduct

disorder and only one adolescent met criteria for substance use. A larger number of

adolescents with a psychiatric disorder may have strengthened the relation between

interparental conflict and the diagnoses (manifestations) of internalizing and

externalizing behaviors. Examination of this model in a community sample contributed to

the low rate of adolescent psychiatric diagnoses, which may not have been the case if the

study sampled populations with higher rates of disorders (e.g., at-risk community sample,

clinical sample). Also, psychiatric diagnoses were based on adolescent self-report, which means that the diagnoses may be less valid compared to clinician-rating of diagnoses.

The lack of an objective report of parenting behaviors and parental internalizing/externalizing behaviors resulted in separate latent variables for maternal and paternal behaviors rather than potentially having latent variables of the overall phenomenon in the family environment like those that were created for other mechanisms that were based on mother, father, and adolescent reports (i.e., interparental conflict, triangulation, adolescent behavior). The separate latent variables for mothers and fathers contributed to the number of parameters being beyond the capability of the sample size and prevented an examination of overall parenting behaviors and parental psychopathology in the family environment. The sample size was not sufficient to test the integrative model with all of the mechanisms and paths included in the model. This prevented an examination of the relation among maternal and paternal mechanisms within the context of the full integrative model to assess if maternal or paternal mechanisms outweighed each other in the full integrative model.

Future Directions

Future research should compare interparental conflict predicting dimensions versus manifestations of adolescent internalizing and externalizing problems in an at-risk community sample and a clinical sample. Testing this hypothesis with an at-risk community sample (e.g., low socioeconomic community) will provide a higher rate of psychiatric diagnoses while still being applicable to a community sample, and testing this hypothesis in a clinical sample will provide an higher rate of psychiatric diagnoses and provide findings that are more applicable to a treatment setting (e.g., family psychiatry).

Clinician-rating of adolescent psychopathology will provide a more valid assessment of psychiatric diagnoses and affords an opportunity to test clinician inter-rater reliability in order to assess the consistency of the diagnoses. The structural model of interparental conflict predicting dimensional and diagnostic adolescent psychopathology should be duplicated with the mediating mechanisms of the four models (i.e., self-blame, perceived threat, triangulation, parenting behaviors, parental psychopathology). Weiss et al. (1998) stated that predictors may be associated with dimensional versus diagnostic outcomes differently, so further investigation of each of the mediators should be examined and applied to family systems research.

The full integrative model from this study should be tested with a larger sample that is sufficient to test all of the pathways in the model. A four-phase longitudinal model could be tested to examine the reciprocal effects of 1) interparental conflict and parental psychopathology and 2) negative parenting (i.e., hostile parenting) and adolescent psychopathology. This is the first study to examine an integrative model based on the four major models that examine the relation between interparental conflict and adolescent outcomes, so the findings from this study can be used to calculate a more precise power that will allow the full model to be tested. The sample size will also depend on whether an investigator plans to examine mother and father behaviors individually or as one general factor. If an investigator plans to examine one general factor, additional report besides self-report is needed.

Adolescents are at an age of cognitive development and awareness that they are able to provide an insightful view of their parents' behavior. Adolescents' viewpoint is important because the purpose of the integrative model is to explain how adolescents'

exposure and awareness to the parental mechanisms influences their mental health and behavior. Therefore, it may be beneficial to collect an adolescent-report of parenting behaviors and other phenomena. None of the literature examining parental psychopathology has employed adolescent-report. Previous research has shown that adolescents are aware of their surroundings, including their parents' mental health. It is theorized that adolescents may mirror their parents' internalizing and externalizing behaviors, which leads to adolescent mental health problems. However, researchers have not assessed the *adolescent's* view of the phenomenon that is hypothesized to be affecting their mental health due to the adolescent's exposure and awareness. This suggests that measures that validly and reliably assess adolescent-report of parental psychopathology as dimensions (e.g., internalizing, externalizing) and spectrums of diagnoses/categories (e.g., depression, aggression) need to be developed. Previous researchers have transformed already well-validated self-report measures into observer-rated measures (e.g., Edinburgh Postnatal Depression Scale into the Edinburgh Postnatal Depression Scale-Partner) (Fisher, Kopelman, & O'Hara, in press), so it may not be necessary to develop a completely new scale although it may be warranted. For example, the ASR could be reformatted as an adolescent-report measure of parental psychopathology.

CHAPTER V

CONCLUSION

Previous literature lacked a theoretically and empirically informed integrative approach to examining how interparental conflict may lead to the development of adolescent psychopathology. This study accomplished three goals: 1) determined that interparental conflict best predicted dimensions of adolescent internalizing and externalizing psychopathology rather than individual diagnoses, 2) tested the four mediation models that previous literature suggested best explained the relation between interparental conflict and adolescent psychopathology, and 3) developed and tested integrative models that incorporated mechanisms from the theoretical models based on the statistical relations between the mechanisms to explain how the mechanisms work to together to predict adolescent psychopathology.   Taken together, the findings highlight the importance of negative parenting (hostile, inconsistent, low support), parental psychopathology (maternal internalizing, paternal externalizing), and adolescent perception (adolescent perceived threat) as co-occurring mediators that link interparental conflict to adolescent psychopathology.

APPENDIX A. TABLES

Table A1. Measures: Means, Standard Deviations, Minimum and Maximum Scores

	M	*SD*	Min.	Max.
Mother (T1): QMI	37.94	6.73	14.00	45.00
Mother (T2): QMI	36.38	7.82	12.00	45.00
Father (T1): QMI	38.29	6.66	18.57	45.00
Father (T2): QMI	36.73	7.22	6.43	45.05
Mother (T1): MSI	9.98	7.11	.00	29.00
Mother (T2): MSI	10.30	7.66	.00	32.00
Father (T1): MSI	10.02	7.61	1.00	29.00
Father (T2): MSI	9.99	7.62	1.00	29.00
Mother (T1): MDEAS	17.79	25.90	.00	173.00
Mother (T2): MDEAS	12.87	17.56	.00	98.00
Father (T1): MDEAS	16.34	21.22	.00	121.00
Father (T2): MDEAS	14.04	20.60	.00	96.00
Adolescent (T1): CPIC- (Interparental Conflict)	47.44	8.65	20.00	57.00
Adolescent (T2): CPIC- (Interparental Conflict)	47.84	8.06	20.00	57.00
Adolescent (T1): CPIC- (Self-Blame)	24.77	2.66	16.00	27.02
Adolescent (T2): CPIC- (Self-Blame)	24.77	3.11	12.00	27.00
Adolescent (T1): CPIC- (Perceived Threat)	29.87	4.70	15.00	36.22
Adolescent (T2): CPIC- (Perceived Threat)	30.39	4.70	15.00	36.10
Mother (T1): TRI	6.26	1.64	5.00	15.00
Mother (T2): TRI	6.43	2.19	5.00	18.00
Father (T1): TRI	5.87	1.40	5.00	11.00
Father (T2): TRI	6.19	1.80	5.00	14.00
Adolescent (T1): TRI	9.39	2.88	7.00	19.00
Adolescent (T2): TRI	16.31	2.78	11.00	26.00
Adolescent (T1): CPIC (Triangulation)	13.07	2.45	5.00	15.45
Adolescent (T2): CPIC (Triangulation)	12.95	2.36	5.00	15.00
Mother (T1): NPM	51.42	4.36	40.00	60.00
Mother (T2): NPM	52.23	4.07	40.00	60.00
Father (T1): NPM	51.58	4.76	39.00	60.00
Father (T2): NPM	52.21	4.76	35.00	60.00

Table A1. Continued

	M	SD	Min.	Max.
Mother (T1): APQ (Involvement)	40.51	4.38	29.00	50.00
Mother (T2): APQ (Involvement)	39.77	4.83	24.00	50.00
Father (T1): APQ (Involvement)	37.41	5.27	20.00	50.00
Father (T2): APQ (Involvement)	36.77	5.51	20.00	50.00
Mother (T1): APQ (Inconsistent Discipline)	11.94	2.92	6.00	22.00
Mother (T2): APQ (Inconsistent Discipline)	11.92	3.36	6.00	26.00
Father (T1): APQ (Inconsistent Discipline)	12.52	3.13	6.00	22.00
Father (T2): APQ (Inconsistent Discipline)	12.38	3.32	6.00	20.00
Mother (T1): IDAS (Depression)	33.54	8.87	20.00	85.00
Mother (T2): IDAS (Depression)	34.20	8.86	20.00	82.00
Father (T1): IDAS (Depression)	33.48	7.71	20.00	52.00
Father (T2): IDAS (Depression)	34.84	9.55	20.00	65.00
Mother (T1): IDAS (Social Anxiety)	6.60	2.12	4.86	20.00
Mother (T2): IDAS (Social Anxiety)	6.70	2.33	5.00	20.00
Father (T1): IDAS (Social Anxiety)	6.27	1.69	5.00	14.00
Father (T2): IDAS (Social Anxiety)	6.43	1.93	4.67	14.00
Mother (T1): IDAS (Panic)	9.68	2.32	7.73	24.00
Mother (T2): IDAS (Panic)	9.47	2.28	7.92	22.30
Father (T1): IDAS (Panic)	9.50	1.91	7.97	18.00
Father (T2): IDAS (Panic)	9.19	2.11	7.87	19.00
Mother (T1): IDAS (Traumatic Intrusions)	4.88	1.91	4.00	16.00
Mother (T2): IDAS (Traumatic Intrusions)	4.96	2.18	3.65	19.00
Father (T1): IDAS (Traumatic Intrusions)	4.88	1.53	4.00	15.00
Father (T2): IDAS (Traumatic Intrusions)	4.84	1.29	4.00	10.00
Mother (T1): ASR (Internalizing)	8.15	6.95	.00	44.00
Mother (T2): ASR (Internalizing)	7.87	7.82	.00	51.00
Father (T1): ASR (Internalizing)	7.52	6.55	.00	37.00
Father (T2): ASR (Internalizing)	7.76	7.70	.00	40.00
Mother (T1): ASR (Aggression)	3.07	2.80	.00	13.00
Mother (T2): ASR (Aggression)	2.66	2.63	.00	13.00
Father (T1): ASR (Aggression)	3.36	2.97	.00	13.00
Father (T2): ASR (Aggression)	3.57	3.31	.00	12.00

Table A1. Continued

	M	*SD*	Min.	Max.
Mother (T1): ASR (Rule Breaking)	1.32	1.86	.00	11.00
Mother (T2): ASR (Rule Breaking)	1.00	1.59	.00	11.00
Father (T1): ASR (Rule Breaking)	2.18	3.21	.00	18.00
Father (T2): ASR (Rule Breaking)	1.93	2.58	.00	14.00
Mother (T1): ASR (Intrusive)	1.70	1.56	.00	6.00
Mother (T2): ASR (Intrusive)	1.50	1.43	.00	5.47
Father (T1): ASR (Intrusive)	2.30	1.96	.00	8.00
Father (T2): ASR (Intrusive)	1.94	1.80	.00	7.00
Mother (T1): CBCL (Internalizing)	5.76	5.69	.00	28.00
Mother (T2): CBCL (Internalizing)	5.42	6.14	.00	33.00
Mother (T3): CBCL (Internalizing)	4.74	5.59	.00	31.00
Father (T1): CBCL (Internalizing)	5.43	4.78	.00	21.00
Father (T2): CBCL (Internalizing)	4.71	4.51	.00	20.00
Father (T3): CBCL (Internalizing)	3.95	4.19	.00	19.00
Adolescent (T1): YSR (Internalizing)	10.02	8.15	.00	45.00
Adolescent (T2): YSR (Internalizing)	10.06	8.00	.00	51.00
Adolescent (T3): YSR (Internalizing)	8.86	7.26	.00	37.00
Mother (T1): CBCL (Externalizing)	4.11	4.37	.00	24.00
Mother (T2): CBCL (Externalizing)	4.02	4.95	.00	32.00
Mother (T3): CBCL (Externalizing)	3.75	4.93	.00	29.00
Father (T1): CBCL (Externalizing)	4.29	5.14	.00	24.00
Father (T2): CBCL (Externalizing)	4.35	5.74	.00	33.00
Father (T3): CBCL (Externalizing)	3.92	5.04	.00	31.00
Adolescent (T1): YSR (Externalizing)	12.24	5.39	3.67	32.00
Adolescent (T2): YSR (Externalizing)	11.99	5.78	4.00	34.00
Adolescent (T3): YSR (Externalizing)	12.08	6.56	3.35	41.00

Note. Min. = Minimum score; Max = Maximum score; T1 = Time 1 mechanism; QMI = Quality of Marriage Index; T2 = Time 2; MSI = Marital Satisfaction Inventory; MDEAS = Multidimensional Emotional Abuse Scale; CPIC = Child Perception of Interparental Conflict Scale; TRI = Triangulation Measure; NPM = Negative Parenting Measure; APQ = Alabama Parenting Questionnaire; IDAS = Inventory of Depression and Anxiety Symptoms; ASR = Adult Self-Report; CBCL = Child Behavior Checklist; YSR = Youth Self-Report; T3 = Time 3 mechanism.

Table A2. Pairs of Risk Factors Predicting Adolescent Internalizing: Free and Fixed Models

	r	Variable 1 Coefficient	SE	Test	Variable 2 Coefficient	SE	Test	BIC free model	BIC fixed model
Perceived threat (T2) & father parenting (T2)	.29**	0.32	0.09	3.67**	0.34	0.10	3.55**	4986.37	4988.04
Perceived threat (T2) & father externalizing (T2)	.29**	0.38	0.08	4.50**	0.03	0.11	0.28	4568.54	4564.76
Perceived threat (T2) & mother parenting (T2)	.24**	0.33	0.08	3.94**	0.37	0.09	3.94**	4933.38	4936.58
Perceived threat (T2) & mother externalizing (T2)	0.17	0.35	0.08	4.27**	0.34	0.11	3.14**	4361.92	4369.94
Self-blame (T2) & perceived threat (T2)	.41**	0.10	0.09	1.01	0.34	0.09	3.80**	2831.41	2827.54
Self-blame (T2) & father parenting (T2)	.36**	0.12	0.10	1.27	0.12	0.16	0.78	4996.65	4999.88
Self-blame (T2) & father externalizing (T2)	0.17	0.22	0.09	2.48*	0.11	0.11	0.99	4578.88	4576.62
Self-blame (T2) & mother parenting (T2)	.20*	0.18	0.09	2.01*	0.40	0.10	4.25**	4943.11	4947.65

Table A2. Continued

	r	Variable 1 Coefficient	SE	Test	Variable 2 Coefficient	SE	Test	BIC free model	BIC fixed model
Self-blame (T2) & mother externalizing (T2)	0.03	0.22	0.09	2.59**	0.39	0.11	3.67**	4371.14	4380.57
Interparental conflict (T1) & perceived threat (T2)	.34**	0.24	0.10	2.41*	0.33	0.09	3.75**	9096.80	9094.36
Interparental conflict (T1) & self-blame (T2)	.16+	0.31	0.09	3.33**	0.19	0.09	2.21*	9104.51	9105.00
Interparental conflict (T1) & father parenting (T2)	.50**	0.18	0.11	1.57	0.32	0.12	2.75**	11245.34	11240.96
Interparental conflict (T1) & father externalizing (T2)	.55**	0.39	0.12	3.16**	0.08	0.14	0.55	10820.99	10823.46
Interparental conflict (T1) & father internalizing (T2)	.43**	0.23	0.11	2.24*	0.24	0.11	2.24*	12217.43	12229.77
Interparental conflict (T1) & mother parenting (T2)	.41**	0.19	0.11	1.84	0.34	0.11	3.16**	11200.89	17169.34
Interparental conflict (T1) & mother externalizing (T2)	.40**	0.21	0.11	1.91	0.31	0.12	2.64**	10633.97	10647.11
Interparental conflict (T1) & mother internalizing (T2)	.21*	0.25	0.09	2.73**	0.38	0.09	4.48**	12292.49	12315.48

Table A2. Continued

	r	Variable 1 Coefficient	SE	Test	Variable 2 Coefficient	SE	Test	BIC free model	BIC fixed model
Interparental conflict (T1) & triangulation (T2)	.41**	0.25	0.11	2.41*	0.19	0.11	1.80	11291.76	11301.88
Father parenting (T2) & father externalizing (T2)	.68**	0.54	0.15	3.60**	0.16	0.17	0.96	6694.27	6700.92
Father parenting (T2) & mother externalizing (T2)	.23+	0.36	0.09	3.88**	0.32	0.11	2.91**	6530.67	6549.54
Father internalizing (T2) & perceived threat (T2)	.33**	0.24	0.10	2.44*	0.33	0.09	3.70**	5954.59	5959.99
Father internalizing (T2) & self-blame (T2)	.27**	0.30	0.10	3.08**	0.17	0.09	1.85	5963.30	5971.07
Father internalizing (T2) & father parenting (T2)	.50**	0.17	0.11	1.53	0.34	0.11	3.09**	8101.99	8118.03
Father internalizing (T2) & father externalizing (T2)	.68**	0.35	0.15	2.40*	0.03	0.15	0.18	7660.74	7657.70
Father internalizing (T2) & mother parenting (T2)	0.17	0.28	0.09	3.03**	0.38	0.09	4.12**	8068.24	8089.66
Father internalizing (T2) & mother externalizing (T2)	.25*	0.25	0.10	2.56**	0.33	0.11	3.07**	7497.22	7492.60

Table A2. Continued

	r	Variable 1 Coefficient	SE	Test	Variable 2 Coefficient	SE	Test	BIC free model	BIC fixed model
Father internalizing (T2) & triangulation (T2)	.22*	0.29	0.09	3.04**	0.23	0.10	2.37*	8157.54	8152.83
Mother parenting (T2) & father parenting (T2)	.46**	0.26	0.12	2.13*	0.31	0.11	2.77**	7088.77	7083.99
Mother parenting (T2) & father externalizing (T2)	.22*	0.42	0.10	4.25**	0.06	0.11	0.50	6684.20	6691.56
Mother parenting (T2) & mother externalizing (T2)	.57**	0.30	0.14	2.20*	0.23	0.15	1.57	6463.23	6479.30
Mother externalizing (T2) & father externalizing (T2)	.38**	0.39	0.13	3.060**	0.01	0.13	0.04	6111.03	6109.17
Mother internalizing (T2) & perceived threat (T2)	0.05	0.42	0.08	5.30**	0.36	0.08	4.72**	6009.94	6035.00
Mother internalizing (T2) & self-blame (T2)	.16+	0.42	0.09	4.95**	0.18	0.09	2.09*	6024.40	6044.04
Mother internalizing (T2) & father parenting (T2)	.17+	0.39	0.08	4.70**	0.36	0.09	4.20**	8182.02	8212.14
Mother internalizing (T2) & father externalizing (T2)	0.17	0.43	0.09	5.11**	0.07	0.11	0.62	7766.56	7766.90

Table A2. Continued

	r	Variable 1 Coefficient	SE	Test	Variable 2 Coefficient	SE	Test	BIC free model	BIC fixed model
Mother internalizing (T2) & father internalizing (T2)	.23**	0.38	0.09	4.44**	0.25	0.09	2.68**	9149.03	9145.03
Mother internalizing (T2) & mother parenting (T2)	.42**	0.33	0.10	3.28**	0.28	0.11	2.59**	8122.22	8146.14
Mother internalizing (T2) & mother externalizing (T2)	.65**	0.37	0.13	2.87**	0.12	0.14	0.85	7524.81	7520.89
Mother internalizing (T2) & triangulation (T2)	.23*	0.39	0.09	4.53**	0.20	0.09	2.10*	8220.38	8217.19
Triangulation (T2) & perceived threat (T2)	.65**	0.05	0.12	0.46	0.38	0.10	3.85**	5025.91	5022.70
Triangulation (T2) & self-blame (T2)	.40**	0.23	0.10	2.16*	0.17	0.10	1.81	5034.52	5037.56
Triangulation (T2) & father parenting (T2)	0.10	0.24	0.09	2.63**	0.39	0.09	4.44	7191.13	7210.06
Triangulation (T2) & father externalizing (T2)	0.13	0.28	0.10	2.88**	0.11	0.11	0.94	6776.18	6772.42
Triangulation (T2) & mother parenting (T2)	.24*	0.21	0.10	2.11*	0.38	0.10	3.94**	7137.82	7154.69
Triangulation (T2) & mother externalizing (T2)	.23[+]	0.21	0.10	2.07*	0.34	0.11	3.10**	6568.40	6564.13

Note. T2 = Time 2 mechanism; T1 = Time 1 mechanism.

[+]$p < .10$. *$p < .05$. **$p < .01$.

Table A3. Pairs of Risk Factors Predicting Adolescent Externalizing: Free and Fixed Models

	r	Variable 1 coefficient	SE	Test	Variable 1 coefficient	SE	Test	BIC free model	BIC fixed model
Perceived threat (T2) & father parenting (T2)	.29**	0.14	0.08	1.83[+]	0.70	.07	9.90**	4818.10	4853.14
Perceived threat (T2) & father externalizing (T2)	.29**	0.23	0.09	2.56**	0.20	0.12	1.73[+]	4436.48	4436.30
Perceived threat (T2) & mother parenting (T2)	.24**	0.22	0.08	2.65**	0.47	0.09	5.23**	4802.48	4811.86
Perceived threat (T2) & mother externalizing (T2)	0.17	0.26	0.09	3.06**	0.27	0.12	2.25*	4240.53	4242.49
Self-blame (T2) & perceived threat (T2)	.41**	0.35	0.09	4.02**	0.03	0.10	.30	4899.49	2697.76
Self-blame (T2) & father parenting (T2)	.36**	0.13	0.08	1.60	0.65	0.07	9.53**	4818.78	4847.04
Self-blame (T2) & father externalizing (T2)	0.17	0.29	0.09	3.46**	0.21	0.11	1.94*	4431.74	4434.30
Self-blame (T2) & mother parenting (T2)	.20*	0.27	0.08	3.36**	0.46	0.09	5.24**	4798.60	4805.23
Self-blame (T2) & mother externalizing (T2)	0.03	0.33	0.08	4.04**	0.30	0.11	2.66**	4234.96	4240.78

Table A3. Continued

	r	Variable 1 coefficient	SE	Test	Variable 1 coefficient	SE	Test	BIC free model	BIC fixed model
Interparental conflict (T1) & perceived threat (T2)	.34**	0.36	0.10	3.74**	0.19	0.09	2.16*	8968.68	8972.14
Interparental conflict (T1) & self-blame (T2)	.16⁺	0.37	0.09	4.23**	0.29	0.08	3.48**	8961.95	8964.58
Interparental conflict (T1) & father parenting (T2)	.50**	0.10	0.10	0.10	0.63	0.09	7.06**	11070.68	11073.97
Interparental conflict (T1) & father externalizing (T2)	.55**	0.40	0.12	3.29**	0.03	0.14	.20	10679.23	10688.27
Interparental conflict (T1) & father internalizing (T2)	.43**	0.33	0.10	3.18**	0.19	0.11	1.77⁺	12082.69	12098.76
Interparental conflict (T1) & mother parenting (T2)	.41**	0.25	0.10	2.37*	0.39	0.11	3.59**	11061.33	17029.73
Interparental conflict (T1) & mother externalizing (T2)	.40**	0.34	0.11	3.23**	0.17	0.13	1.25	10500.85	10511.97
Interparental conflict (T1) & mother internalizing (T2)	.21*	0.34	0.09	3.79**	0.29	0.09	3.27**	12163.99	12186.23
Interparental conflict (T1) & triangulation (T2)	.41**	0.41	0.10	4.05**	0.01	0.11	.07	11156.61	11164.38

Table A3. Continued

	r	Variable 1 coefficient	SE	Test	Variable 1 coefficient	SE	Test	BIC free model	BIC fixed model
Father parenting (T2) & father externalizing (T2)	.68**	0.92	0.14	6.61**	0.37	0.17	2.21*	6514.59	6538.74
Father parenting (T2) & mother externalizing (T2)	.23+	0.64	0.07	9.13**	0.16	0.11	1.48	6355.82	6388.62
Father internalizing (T2) & perceived threat (T2)	.33**	0.27	0.10	2.67**	0.22	0.09	2.44*	5830.99	5835.91
Father internalizing (T2) & self-blame (T2)	.27**	0.26	0.10	2.70**	0.28	0.09	3.17**	5827.30	5835.08
Father internalizing (T2) & father parenting (T2)	.50**	0.00	0.11	0.03	0.68	0.09	7.66**	7928.17	7964.49
Father internalizing (T2) & father externalizing (T2)	.68**	0.26	0.15	1.69+	0.10	0.16	.66	7523.16	7518.58
Father internalizing (T2) & mother parenting (T2)	0.17	0.25	0.09	2.78**	0.45	0.09	4.98**	7931.50	7955.33
Father internalizing (T2) & mother externalizing (T2)	.25*	0.28	0.10	2.76**	0.24	0.12	1.98*	7369.60	7364.79
Father internalizing (T2) & triangulation (T2)	.22*	0.31	0.10	3.21**	0.10	0.10	.98	8031.84	8028.64

Table A3. Continued

	r	Variable 1 coefficient	SE	Test	Variable 1 coefficient	SE	Test	BIC free model	BIC fixed model
Mother parenting (T2) & father parenting (T2)	.46**	0.19	0.13	1.42	0.59	0.10	6.11**	6913.18	6912.15
Mother parenting (T2) & father externalizing (T2)	.22*	0.47	0.09	5.00**	0.16	0.11	1.44	6536.79	6552.53
Mother parenting (T2) & mother externalizing (T2)	.57**	0.51	0.14	3.76**	0.00	0.16	.01	6327.36	6341.00
Mother externalizing (T2) & father externalizing (T2)	.39**	0.25	0.14	1.84	0.17	0.13	1.26	5973.11	5968.40
Mother internalizing (T2) & perceived threat (T2)	0.05	0.35	0.09	4.11**	0.27	0.08	3.39**	5895.85	5909.43
Mother internalizing (T2) & self-blame (T2)	.16+	0.33	0.09	3.65**	0.30	0.08	3.60**	5894.52	5908.60
Mother internalizing (T2) & father parenting (T2)	.17+	0.26	0.08	3.25**	0.62	0.07	9.12**	8013.33	8066.80
Mother internalizing (T2) & father externalizing (T2)	.17	0.34	0.09	3.72**	0.20	0.11	1.81	7633.19	7629.08
Mother internalizing (T2) & father internalizing (T2)	.23**	0.30	0.09	3.32**	0.26	0.10	2.70**	9026.44	9021.69

Table A3. Continued

	r	Variable 1 coefficient	SE	Test	Variable 1 coefficient	SE	Test	BIC free model	BIC fixed model
Mother internalizing (T2) & mother parenting (T2)	.42**	0.19	0.10	1.83	0.41	0.10	3.96**	7991.74	8015.13
Mother internalizing (T2) & mother externalizing (T2)	.65**	0.35	0.14	2.55*	0.04	0.15	.23	7400.63	7397.03
Mother internalizing (T2) & triangulation (T2)	.23*	0.35	0.09	3.74**	0.09	0.10	.85	8101.83	8099.59
Triangulation (T2) & perceived threat (T2)	.65**	0.06	0.12	0.55	0.36	0.09	3.87**	4901.36	4896.53
Triangulation (T2) & self-blame (T2)	.40**	0.03	0.10	.30	0.35	0.09	4.02**	4899.49	4896.78
Triangulation (T2) & father parenting (T2)	.10	0.09	0.09	.99	0.66	0.07	10.04**	7019.04	7051.56
Triangulation (T2) & father externalizing (T2)	.13	0.14	0.10	1.38	0.24	0.11	2.17*	6639.47	6635.00
Triangulation (T2) & mother parenting (T2)	.24*	0.05	0.10	.50	0.49	0.09	5.25**	7004.19	7017.42
Triangulation (T2) & mother externalizing (T2)	.23+	0.11	0.11	.98	0.28	0.12	2.28*	6444.03	6440.02

Note. T2 = Time 2 mechanism; T1 = Time 1 mechanism.
+p< .10. *p < .05. **p < .01.

Table A4. Prediction and Interpretation of Risk Factors Predicting Adolescent Internalizing

	Precedence	Correlated	Dominance	Interpretation
Perceived threat (T2) & father parenting (T2)	None	Correlated	Father parenting (T2)	Perceived threat may be a proxy for father parenting
Perceived threat (T2) & father externalizing (T2)	None	Correlated	Co-dominant	Perceived threat and father externalizing may be overlapping RFs
Perceived threat (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Perceived threat may be a proxy for mother parenting
Perceived threat (T2) & mother externalizing (T2)	None	Uncorrelated	Perceived threat (T2)	Independent RFs with dominance
Self-blame (T2) & perceived threat (T2)	None	Correlated	Co-dominant	Self-blame and perceived threat may be overlapping RFs
Self-blame (T2) & father parenting (T2)	None	Correlated	Father parenting (T2)	Self-blame may be a proxy for father parenting
Self-blame (T2) & father externalizing (T2)	None	Uncorrelated	Co-dominant	Self-blame and father externalizing may be independent RFs

Table A4. Continued

	Precedence	Correlated	Dominance	Interpretation
Self-blame (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Self-blame may be a proxy for mother parenting
Self-blame (T2) & mother externalizing (T2)	None	Uncorrelated	Mother externalizing (T2)	Independent RFs with dominance
Interparental conflict (T1) & perceived threat (T2)	Interparental conflict (T1)	Correlated	Co-dominant	Perceived threat may be a mediator for interparental conflict
Interparental conflict (T1) & self-blame (T2)	Interparental conflict (T1)	Uncorrelated	Interparental conflict (T1)	Moderation
Interparental conflict (T1) & father parenting (T2)	Interparental conflict (T1)	Correlated	Co-dominant	Father parenting may be a mediator of interparental conflict
Interparental conflict (T1) & father externalizing (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Father externalizing may be a mediator of interparental conflict
Interparental conflict (T1) & father internalizing (T2)	Interparental conflict (T1)	Correlated	Father internalizing (T2)	Father internalizing may be a mediator of interparental conflict

Table A4. Continued

	Precedence	Correlated	Dominance	Interpretation
Interparental conflict (T1) & mother parenting (T2)	Interparental conflict (T1)	Correlated	Mother parenting (T2)	Mother parenting may be a mediator of interparental conflict
Interparental conflict (T1) & mother externalizing (T2)	Interparental conflict (T1)	Correlated	Mother externalizing (T2)	Mother externalizing may be a mediator of interparental conflict
Interparental conflict (T1) & mother internalizing (T2)	Interparental conflict (T1)	Correlated	Mother internalizing (T2)	Mother internalizing may be a mediator of interparental conflict
Interparental conflict (T1) & triangulation (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Triangulation may be proxy for interparental conflict
Father parenting (T2) & father externalizing (T2)	None	Correlated	Father parenting (T2)	Father externalizing may be a proxy for father parenting
Father parenting (T2) & mother externalizing (T2)	None	Uncorrelated	Father parenting (T2)	Independent RFs with dominance
Father internalizing (T2) & perceived threat (T2)	None	Correlated	Perceived threat (T2)	Father internalizing may be a proxy for perceived threat

Table A4. Continued

	Precedence	Correlated	Dominance	Interpretation
Father internalizing (T2) & self-blame (T2)	None	Correlated	Father internalizing (T2)	Self-blame may be a proxy for self-blame
Father internalizing (T2) & father parenting (T2)	None	Correlated	Father parenting (T2)	Father internalizing may be a proxy for father parenting
Father internalizing (T2) & father externalizing (T2)	None	Correlated	Co-dominant	Father internalizing and father externalizing may be overlapping RFs
Father internalizing (T2) & mother parenting (T2)	None	Uncorrelated	Mother parenting (T2)	Independent RFs with dominance
Father internalizing (T2) & mother externalizing (T2)	None	Correlated	Co-dominant	Father internalizing and mother externalizing may be overlapping RFs
Father internalizing (T2) & triangulation (T2)	None	Correlated	Co-dominant	Father internalizing and triangulation may be overlapping RFs
Mother parenting (T2) & father parenting (T2)	None	Correlated	Co-dominant	Mother parenting and father parenting may be overlapping RFs

Table A4. Continued

	Precedence	Correlated	Dominance	Interpretation
Mother parenting (T2) & father externalizing (T2)	None	Correlated	Mother parenting (T2)	Father externalizing may be a proxy for mother parenting
Mother parenting (T2) & mother externalizing (T2)	None	Correlated	Mother parenting (T2)	Mother externalizing may be a proxy for mother parenting
Mother externalizing (T2) & father externalizing (T2)	None	Correlated	Co-dominant	Mother externalizing and father externalizing may be overlapping RFs
Mother internalizing (T2) & perceived threat (T2)	None	Uncorrelated	Mother internalizing (T2)	Independent RFs with dominance
Mother internalizing (T2) & self-blame (T2)	None	Uncorrelated	Mother internalizing (T2)	Independent RFs with dominance
Mother internalizing (T2) & father parenting (T2)	None	Uncorrelated	Mother internalizing (T2)	Independent RFs with dominance
Mother internalizing (T2) & father externalizing (T2)	None	Uncorrelated	Mother internalizing (T2)	Independent RFs with dominance

Table A4. Continued

	Precedence	Correlated	Dominance	Interpretation
Mother internalizing (T2) & father internalizing (T2)	None	Correlated	Co-dominant	Mother internalizing and father internalizing may be overlapping RFs
Mother internalizing (T2) & mother parenting (T2)	None	Correlated	Mother internalizing (T2)	Mother internalizing may be a proxy for mother internalizing
Mother internalizing (T2) & mother externalizing (T2)	None	Correlated	Co-dominant	Mother internalizing and mother externalizing may be overlapping RFs
Mother internalizing (T2) & triangulation (T2)	None	Correlated	Co-dominant	Mother internalizing and triangulation may be overlapping RFs
Triangulation (T2) & perceived threat (T2)	None	Correlated	Co-dominant	Triangulation and perceived threat may be overlapping RFs
Triangulation (T2) & self-blame (T2)	None	Correlated	Triangulation (T2)	Self-blame may be a proxy for triangulation
Triangulation (T2) & father parenting (T2)	None	Uncorrelated	Father parenting (T2)	Triangulation may be a proxy for father parenting

Table A4. Continued

	Precedence	Correlated	Dominance	Interpretation
Triangulation (T2) & father externalizing (T2)	None	Uncorrelated	Co-dominant	Triangulation and father externalizing may be independent RFs
Triangulation (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Triangulation may be a proxy for mother parenting
Triangulation (T2) & mother externalizing (T2)	None	Uncorrelated	Co-dominant	Triangulation and mother externalizing may be independent RFs

Note. T2 = Time 2 mechanism; T1 = Time 1 mechanism.

Table A5. Prediction and Interpretation of Risk Factors Predicting Adolescent Externalizing

	Precedence	Correlated	Dominance	Interpretation
Perceived threat (T2) & father parenting (T2)	None	Correlated	Father parenting (T2)	Perceived threat may be a proxy for father parenting
Perceived threat (T2) & father externalizing (T2)	None	Correlated	Co-dominant	Perceived threat and father externalizing may be overlapping RFs
Perceived threat (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Perceived threat may be a proxy for mother parenting
Perceived threat (T2) & mother externalizing (T2)	None	Uncorrelated	Mother externalizing (T2)	Independent RFs with dominance
Self-blame (T2) & perceived threat (T2)	None	Correlated	Co-dominant	Self-blame and perceived threat may be overlapping RFs
Self-blame (T2) & father parenting (T2)	None	Correlated	Father parenting (T2)	Self-blame may be a proxy for father parenting
Self-blame (T2) & father externalizing (T2)	None	Uncorrelated	Self-blame (T2)	Independent RFs with dominance

Table A5. Continued

	Precedence	Correlated	Dominance	Interpretation
Self-blame (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Self-blame may be a proxy for mother parenting
Self-blame (T2) & mother externalizing (T2)	None	Uncorrelated	Self-blame (T2)	Independent RFs with dominance
Interparental conflict (T1) & perceived threat (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Perceived threat may be a proxy for interparental conflict
Interparental conflict (T1) & self-blame (T2)	Interparental conflict (T1)	Uncorrelated	Interparental conflict (T1)	No relation is inferred
Interparental conflict (T1) & father parenting (T2)	Interparental conflict (T1)	Correlated	Father parenting (T2)	Father parenting may be a mediator of interparental conflict
Interparental conflict (T1) & father externalizing (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Father externalizing may be a proxy of interparental conflict
Interparental conflict (T1) & father internalizing (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Father internalizing may be a proxy of interparental conflict

Table A5. Continued

	Precedence	Correlated	Dominance	Interpretation
Interparental conflict (T1) & mother parenting (T2)	Interparental conflict (T1)	Correlated	Mother parenting (T2)	Mother parenting may be a mediator of interparental conflict
Interparental conflict (T1) & mother externalizing (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Mother externalizing may be a proxy of interparental conflict
Interparental conflict (T1) & mother internalizing (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Mother internalizing may be a proxy of interparental conflict
Interparental conflict (T1) & triangulation (T2)	Interparental conflict (T1)	Correlated	Interparental conflict (T1)	Triangulation may be a proxy for interparental conflict
Father parenting (T2) & father externalizing (T2)	None	Correlated	Father parenting (T2)	Father externalizing may be a proxy for father externalizing
Father parenting (T2) & mother externalizing (T2)	None	Uncorrelated	Father parenting (T2)	Independent RFs with dominance
Father internalizing (T2) & perceived threat (T2)	None	Correlated	Father internalizing (T2)	Perceived threat may be a proxy for father internalizing

Table A5. Continued

	Precedence	Correlated	Dominance	Interpretation
Father internalizing (T2) & self-blame (T2)	None	Correlated	Self-blame (T2)	Father internalizing may be a proxy for self-blame
Father internalizing (T2) & father parenting (T2)	None	Correlated	Father parenting (T2)	Father internalizing may be a proxy for father parenting
Father internalizing (T2) & father externalizing (T2)	None	Correlated	Co-dominant	Father internalizing and father externalizing may be overlapping RFs
Father internalizing (T2) & mother parenting (T2)	None	Uncorrelated	Mother parenting (T2)	Independent RFs with dominance
Father internalizing (T2) & mother externalizing (T2)	None	Correlated	Co-dominant	Father internalizing and mother externalizing may be overlapping RFs
Father internalizing (T2) & triangulation (T2)	None	Correlated	Co-dominant	Father internalizing and triangulation may be overlapping RFs
Mother parenting (T2) & father parenting (T2)	None	Correlated	Co-dominant	Mother parenting and father parenting may be overlapping RFs

Table A5. Continued

	Precedence	Correlated	Dominance	Interpretation
Mother parenting (T2) & father externalizing (T2)	None	Correlated	Mother parenting (T2)	Father externalizing may be a proxy for mother parenting
Mother parenting (T2) & mother externalizing (T2)	None	Correlated	Mother parenting (T2)	Mother externalizing may be a proxy for mother parenting
Mother externalizing (T2) & father externalizing (T2)	None	Correlated	Co-dominant	Mother externalizing and father externalizing may be overlapping RFs
Mother internalizing (T2) & perceived threat (T2)	None	Uncorrelated	Mother internalizing (T2)	Independent RFs with dominance
Mother internalizing (T2) & self-blame (T2)	None	Uncorrelated	Mother internalizing (T2)	Independent RFs with dominance
Mother internalizing (T2) & father parenting (T2)	None	Uncorrelated	Father parenting (T2)	Independent RFs with dominance
Mother internalizing (T2) & father externalizing (T2)	None	Uncorrelated	Co-dominant	Mother internalizing and father externalizing may be independent RFs

Table A5. Continued

	Precedence	Correlated	Dominance	Interpretation
Mother internalizing (T2) & father internalizing (T2)	None	Correlated	Co-dominant	Mother internalizing and father internalizing may be overlapping RFs
Mother internalizing (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Mother internalizing may be a proxy for mother parenting
Mother internalizing (T2) & mother externalizing (T2)	None	Correlated	Co-dominant	Mother internalizing and mother externalizing may be overlapping RFs
Mother internalizing (T2) & triangulation (T2)	None	Correlated	Co-dominant	Mother internalizing and triangulation may be overlapping RFs
Triangulation (T2) & perceived threat (T2)	None	Correlated	Co-dominant	Triangulation and perceived threat may be overlapping RFs
Triangulation (T2) & self-blame (T2)	None	Correlated	Co-dominant	Triangulation and self-blame may be overlapping RFs
Triangulation (T2) & father parenting (T2)	None	Uncorrelated	Father parenting (T2)	Independent RFs with dominance

Table A5. Continued

	Precedence	Correlated	Dominance	Interpretation
Triangulation (T2) & father externalizing (T2)	None	Uncorrelated	Co-dominant	Triangulation and father externalizing may be independent RFs
Triangulation (T2) & mother parenting (T2)	None	Correlated	Mother parenting (T2)	Triangulation may be a proxy for mother parenting
Triangulation (T2) & mother externalizing (T2)	None	Uncorrelated	Co-dominant	Triangulation and mother externalizing may be independent RFs

Note. T2 = Time 2 mechanism; T1 = Time 1 mechanism.

APPENDIX B. FIGURES

Figure B1. Cognitive-Contextual Model
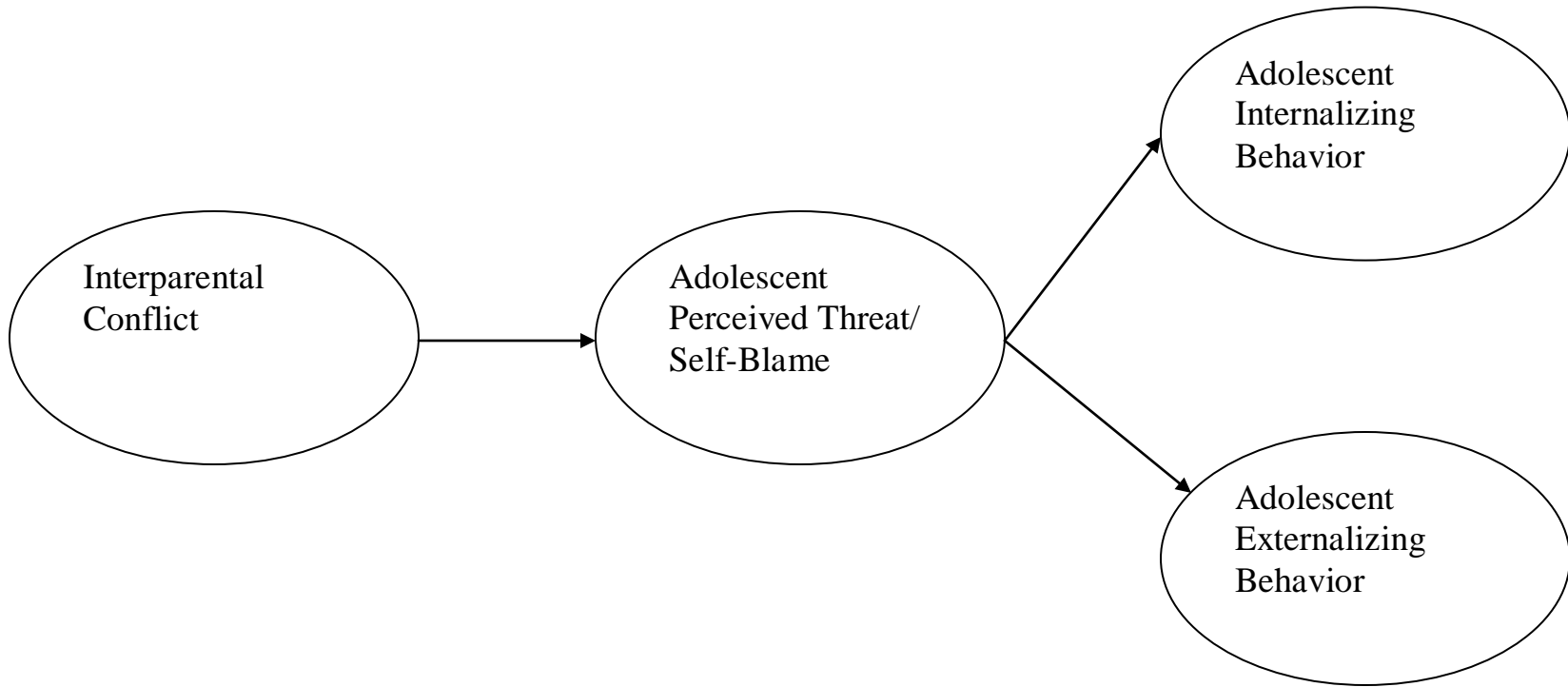
Figure B2. Triangulation Model
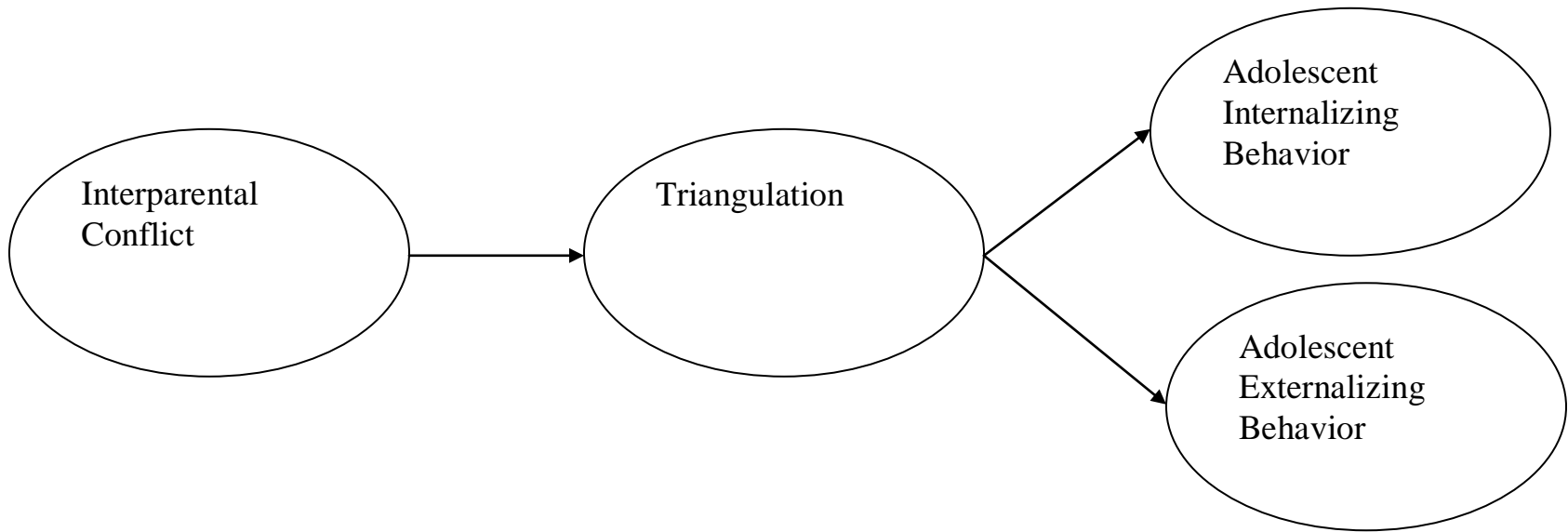
Figure B3. Spillover Model
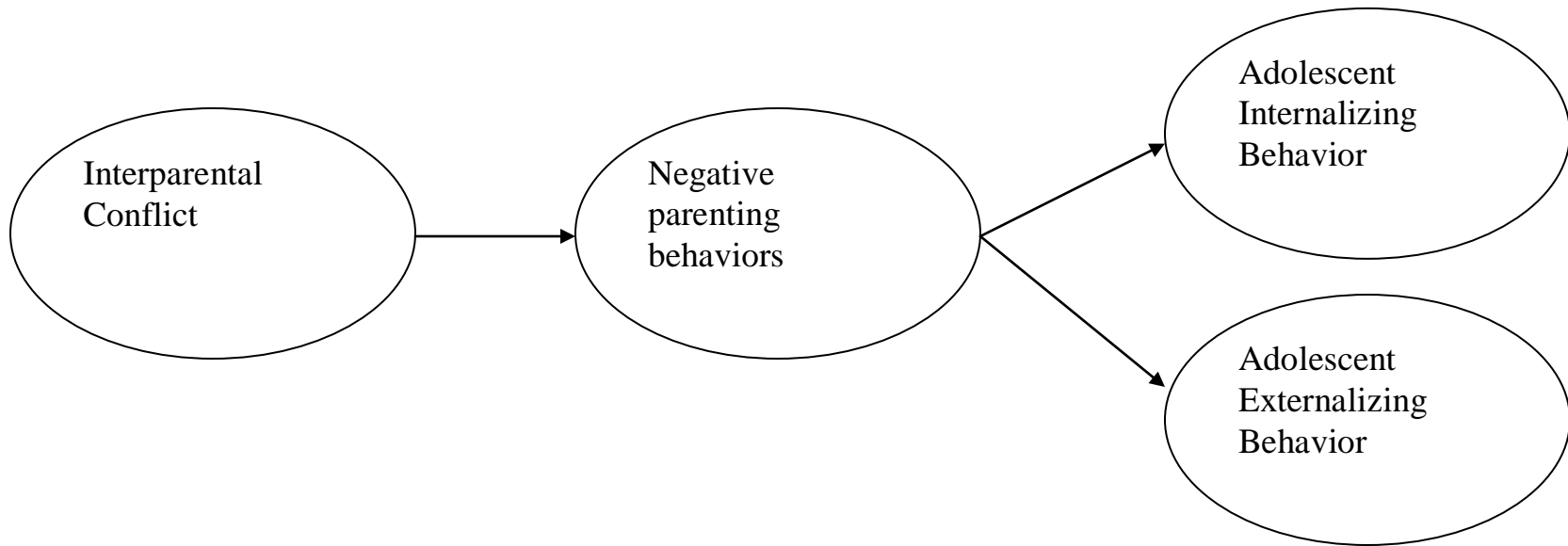
Figure B4. Interparental Conflict-Parental Psychopathology Model
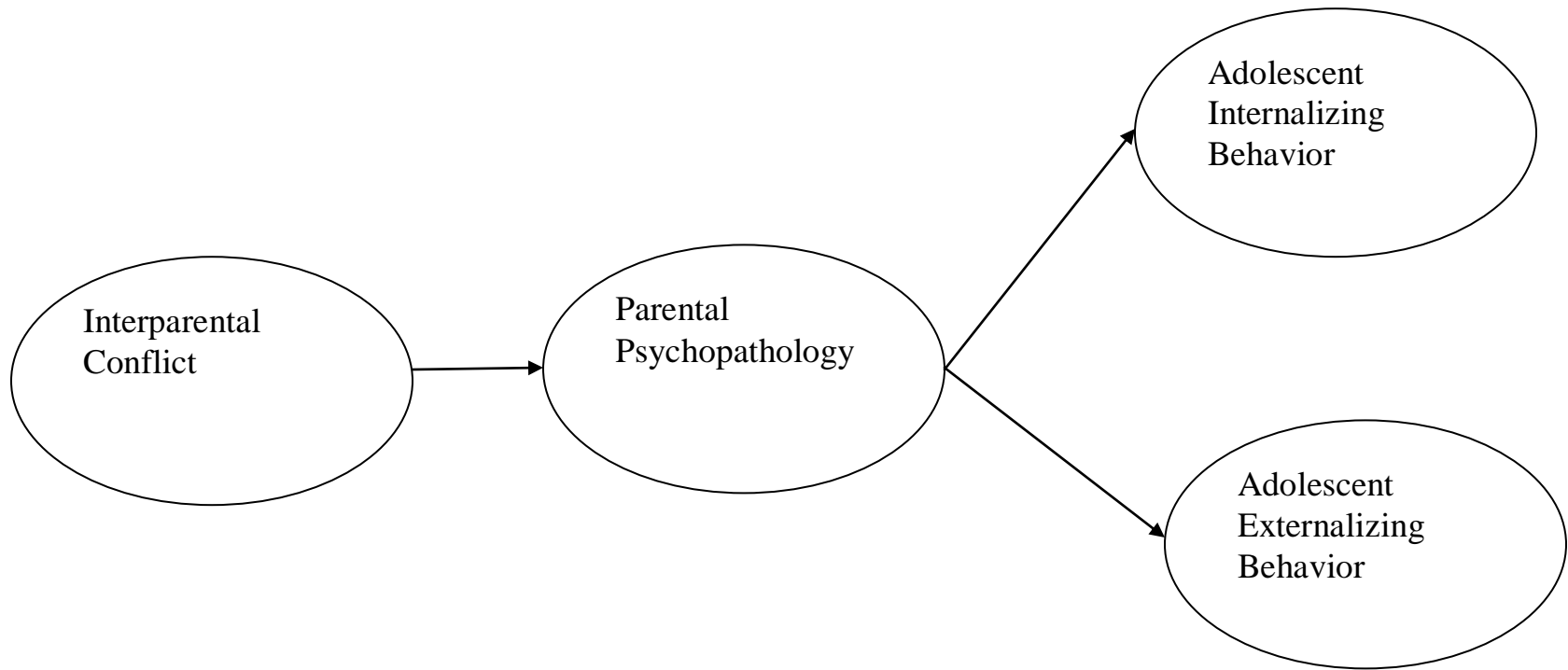
Figure B5. Attrition Flowchart

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┌─────────────────────┐
│  Subjects Consented  │
│      n = 197         │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│      Phase 1         │
│      n = 152         │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│      Phase 2         │
│      n = 140         │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│      Phase 3         │
│      n = 128         │
└─────────────────────┘
```
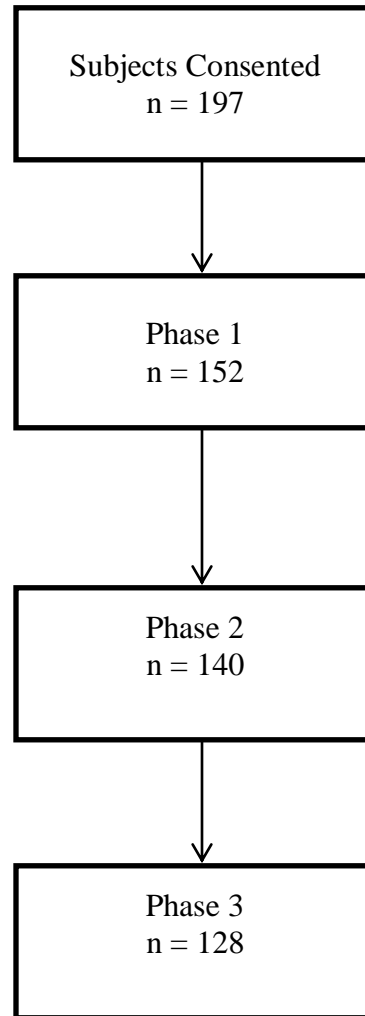
Figure B6. Adolescent Internalizing Behaviors: Dimension versus Diagnosis[1]

Figure B7. Adolescent Externalizing Behaviors: Dimension versus Diagnosis[1]
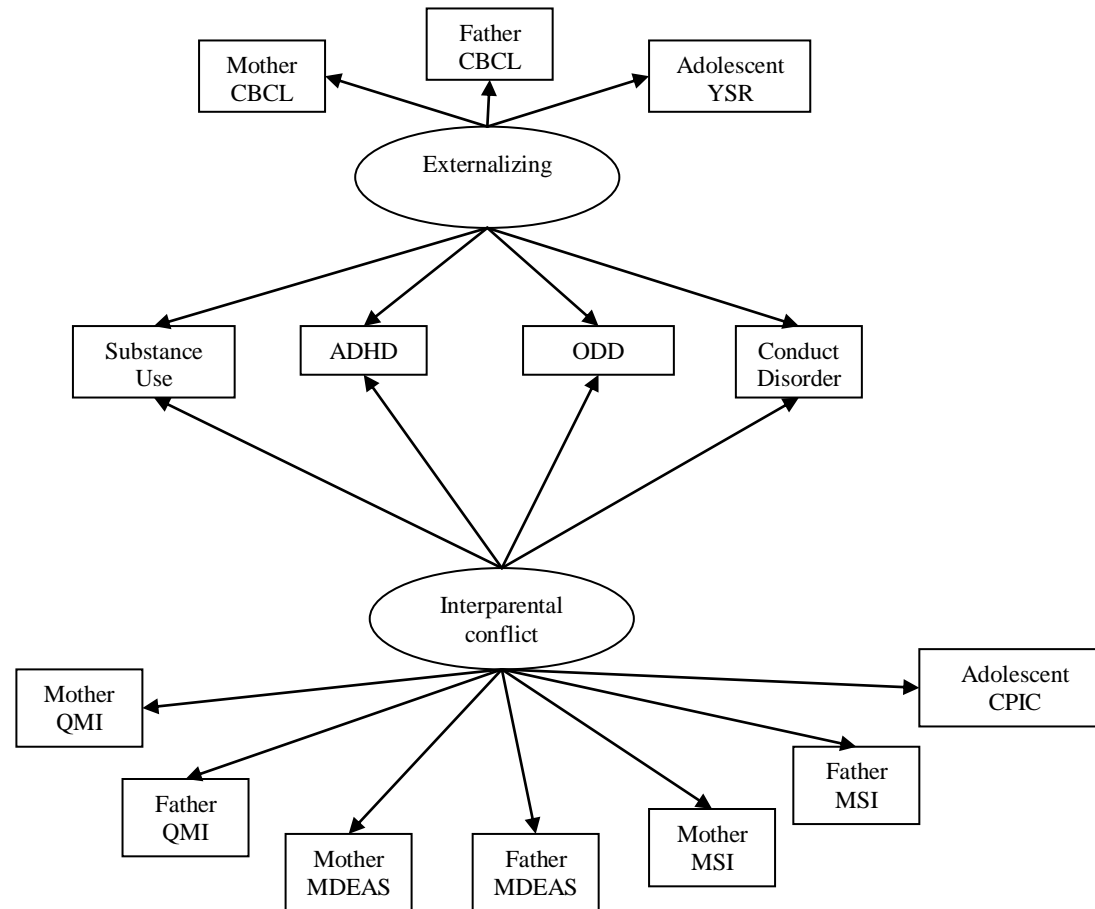
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[1] CBCL = Child Behavior Checklist; YSR = Youth Self-Report; ADHD = Attention Deficit-Hyperactive Disorder; ODD = Oppositional Defiant Disorder; QMI = Quality of Marriage Index; MDEAS = Multidimensional Emotional Abuse Scale; MSI = Martial Satisfaction Inventory-Revised; CPIC = Children's Perception of Interparental Conflict.

Figure B8. Growth Curve Model for Internalizing Behavior and Externalizing Behavior[1]
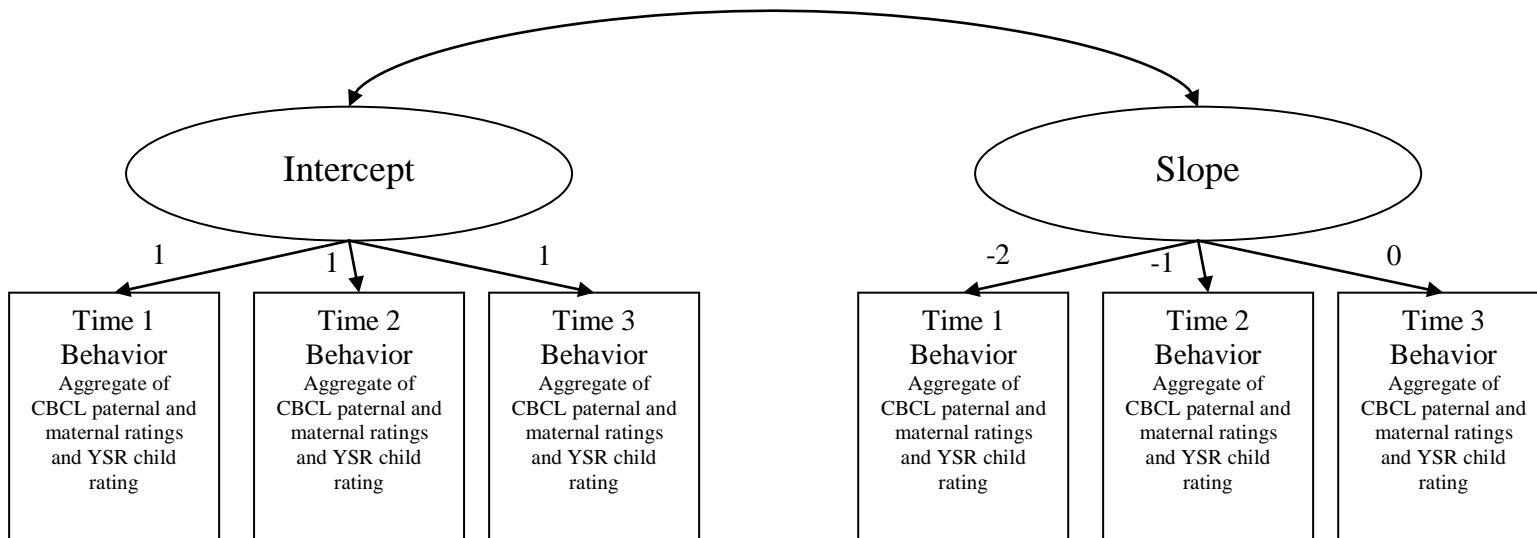
Figure B9. Model #1: A Path Model of the Cognitive-Contextual Model[1]
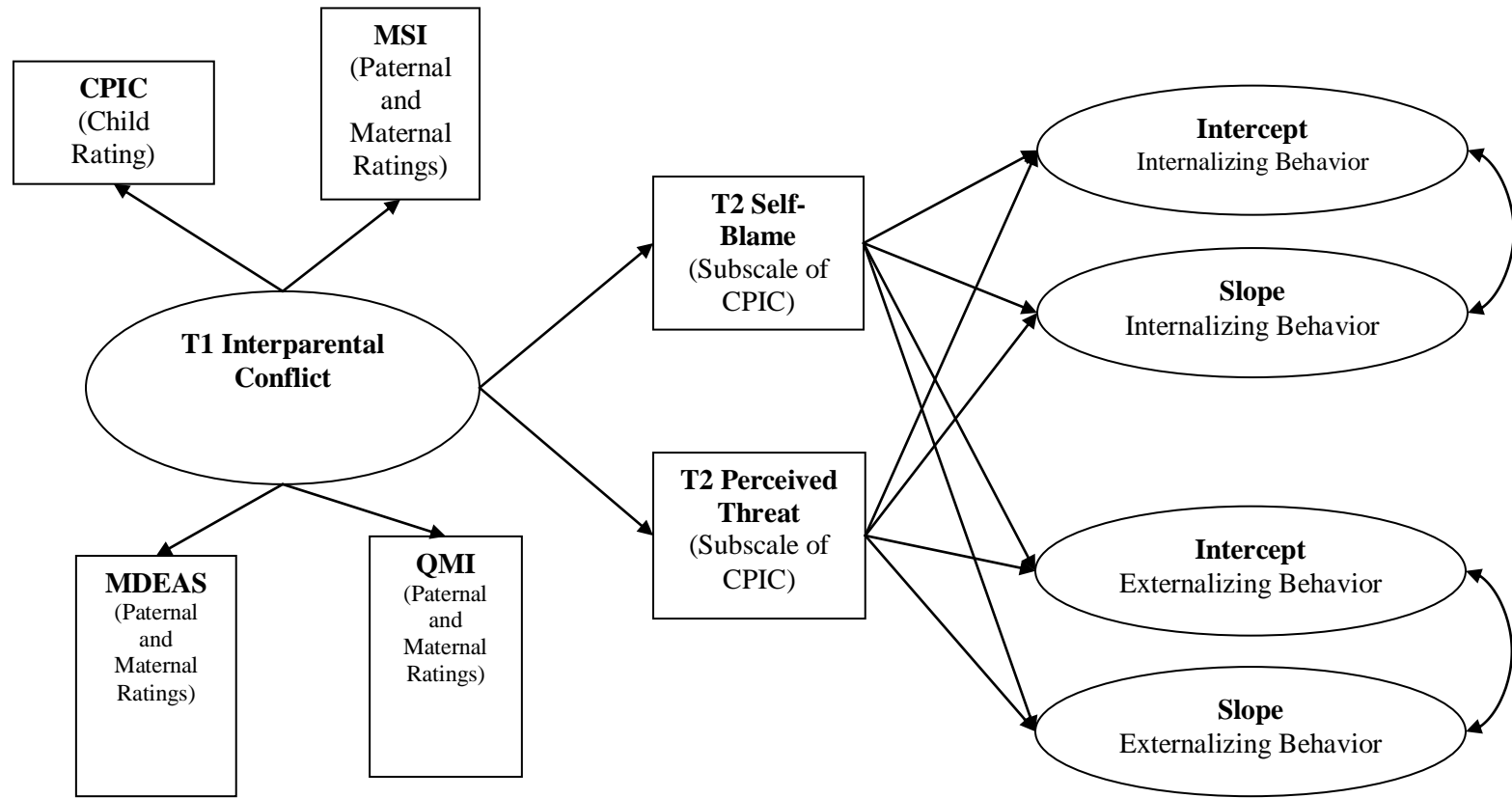
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[1] CPIC = Children's Perception of Interparental Conflict; MSI = Marital Satisfaction Inventory- Revised; MDEAS = Multidimensional Emotional Abuse Scale; QMI = Quality of Marriage Index.

Figure B10. Model #2: A Path Model of the Triangulation Model
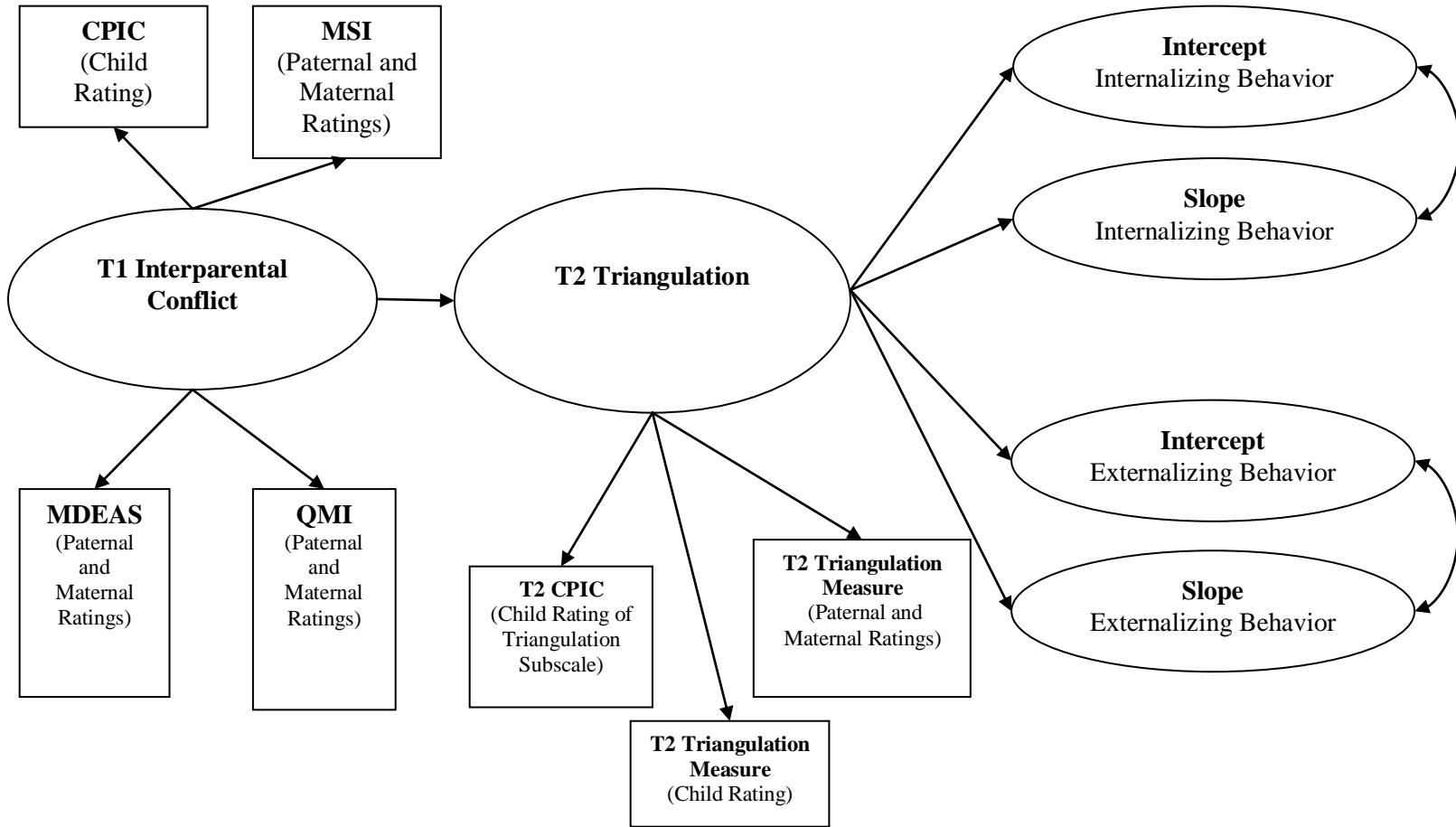
Figure B11. Model #3: A Path Model of the Spillover Model[1]
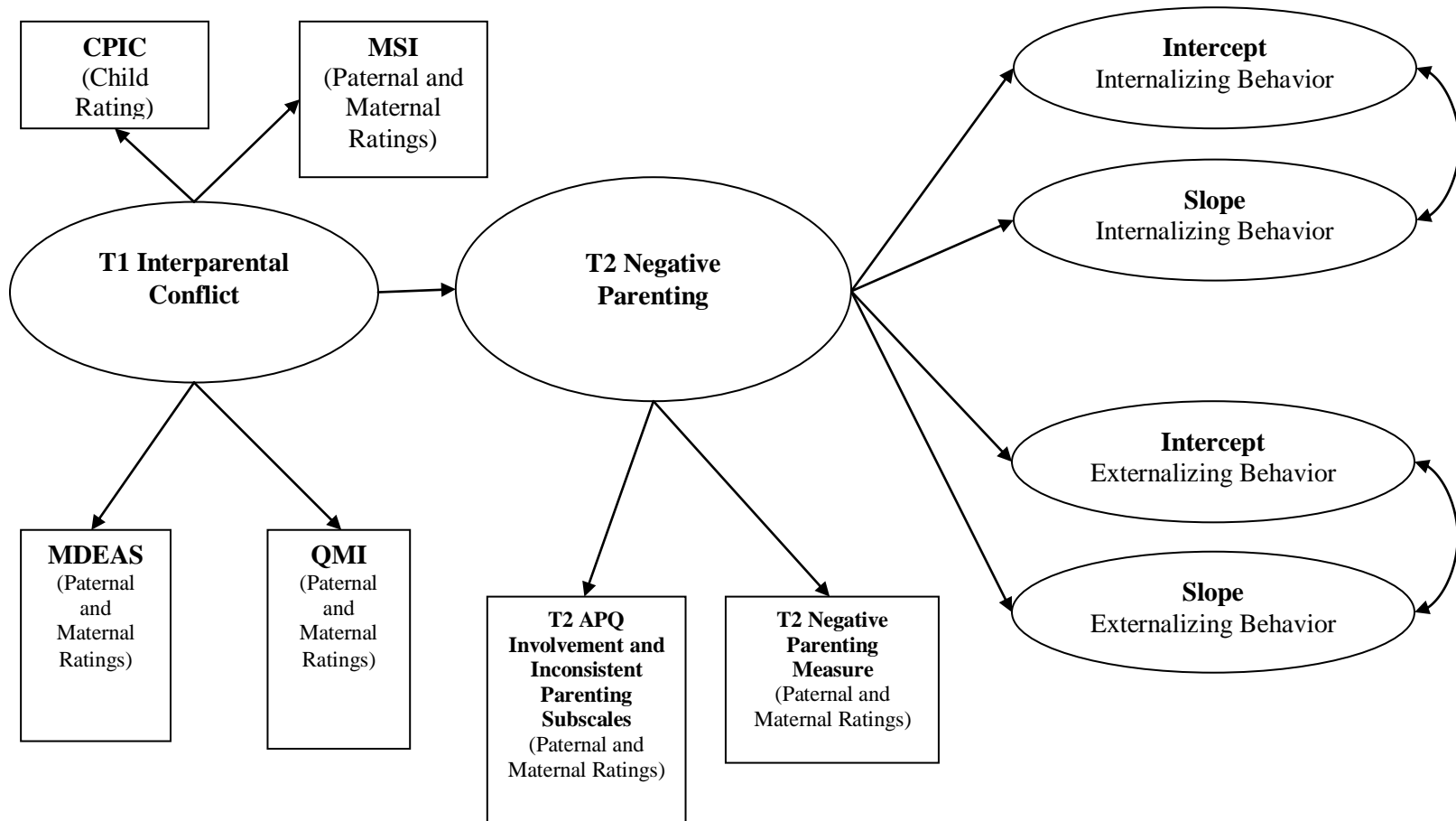
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[1] CPIC = Children's Perception of Interparental Conflict; MSI = Marital Satisfaction Inventory- Revised; MDEAS = Multidimensional Emotional Abuse Scale; QMI = Quality of Marriage Index; APQ = Alabama Parenting Questionnaire.

Figure B12. Model #4: A Path Model of the Interparental Conflict-Parental Psychopathology Model. CPIC = Children's Perception of Interparental Conflict; MSI = Marital Satisfaction Inventory- Revised; MDEAS = Multidimensional Emotional Abuse Scale; QMI = Quality of Marriage Index; IDAS = Inventory of Depression and Anxiety Symptoms; ASR = Adult Self-Report.
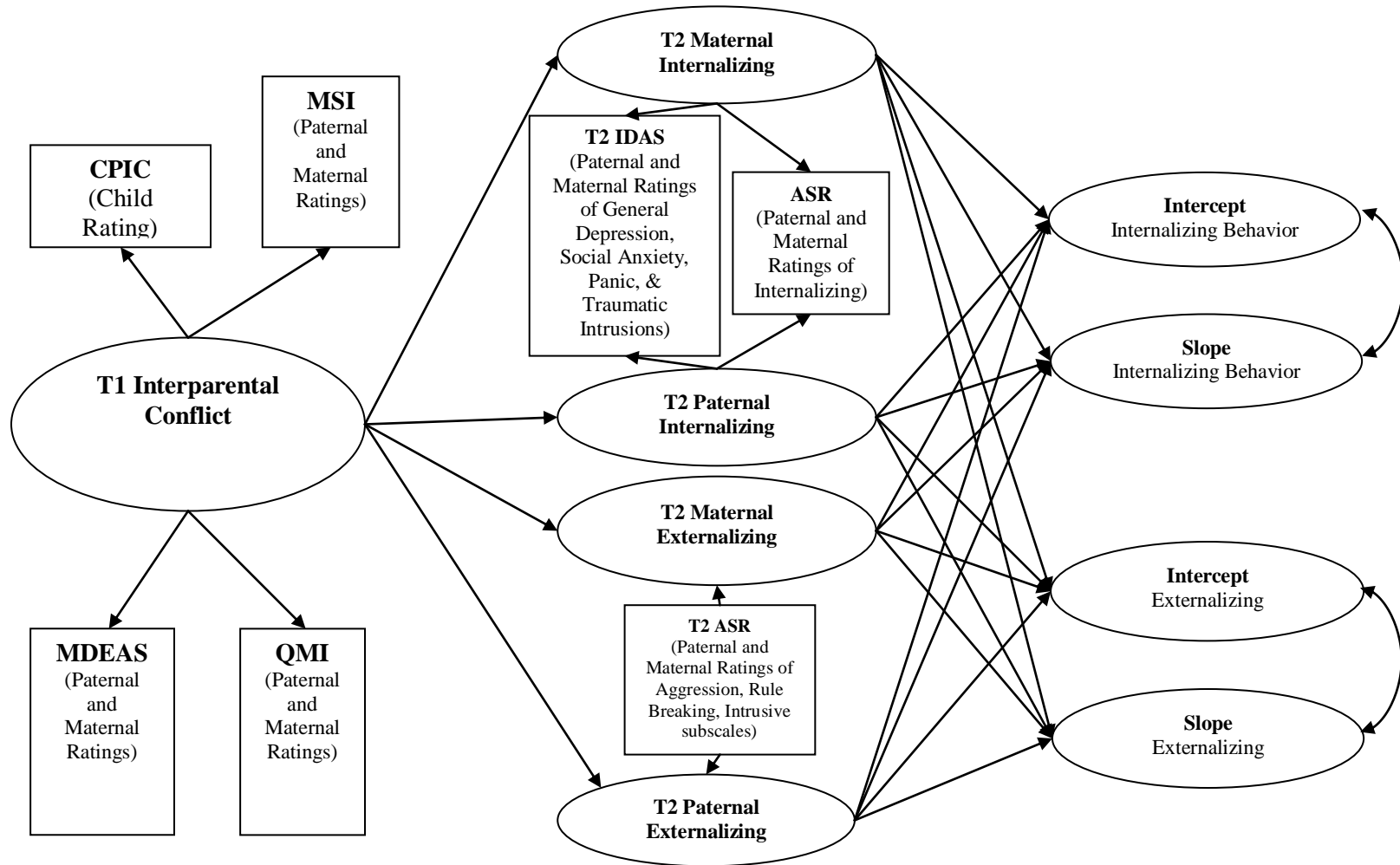
Figure B13. Model Building Flowchart
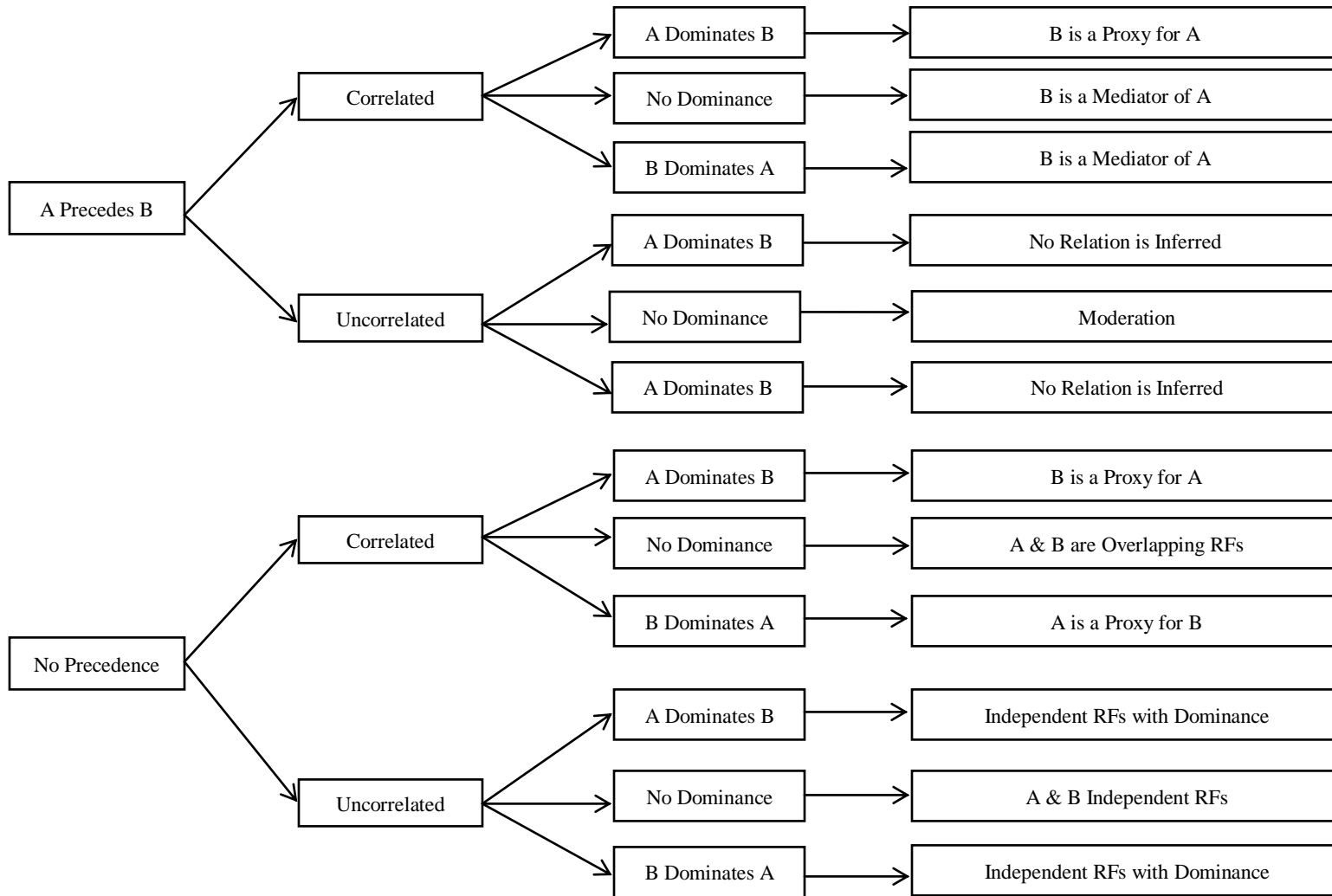
Figure B14. Structural Model of the Association Between Interparental Conflict
Dimensional and Diagnostic Internalizing Behavior. *p < .05. **p < .01.[1]

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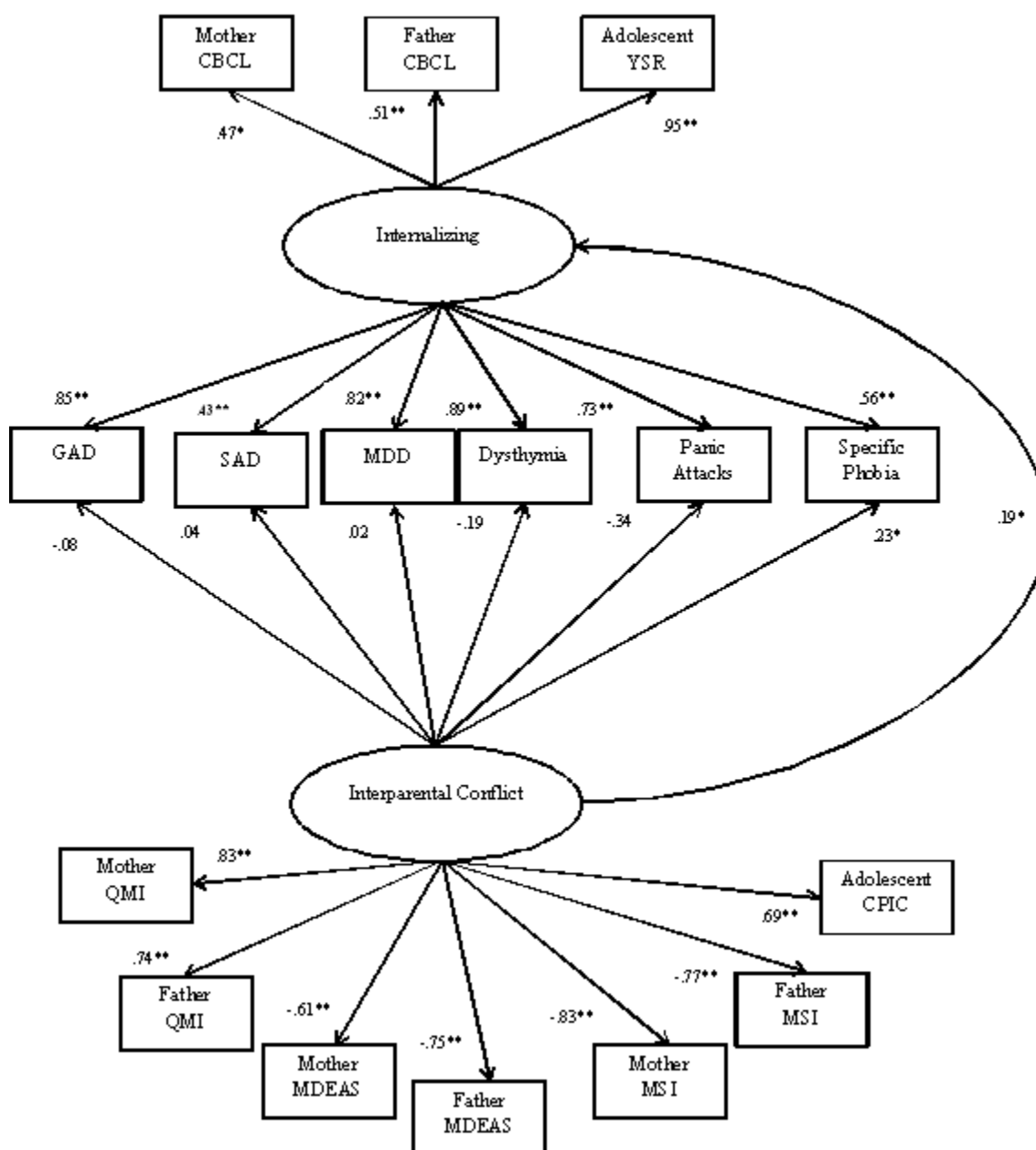
[1] CBCL = Child Behavior Checklist; YSR = Youth Self-Report; GAD = Generalized Anxiety Disorder;
SAD = Social Anxiety Disorder; MDD = Major Depressive Disorder; QMI = Quality of Marriage Index;
MDEAS = Multidimensional Emotional Abuse Scale; MSI = Martial Satisfaction Inventory-Revised; CPIC
= Children's Perception of Interparental Conflict.

Figure B15. Structural Model of the Association Between Interparental Conflict Dimensional and Diagnostic Externalizing Behavior. *p < .05. **p < .01.[1]

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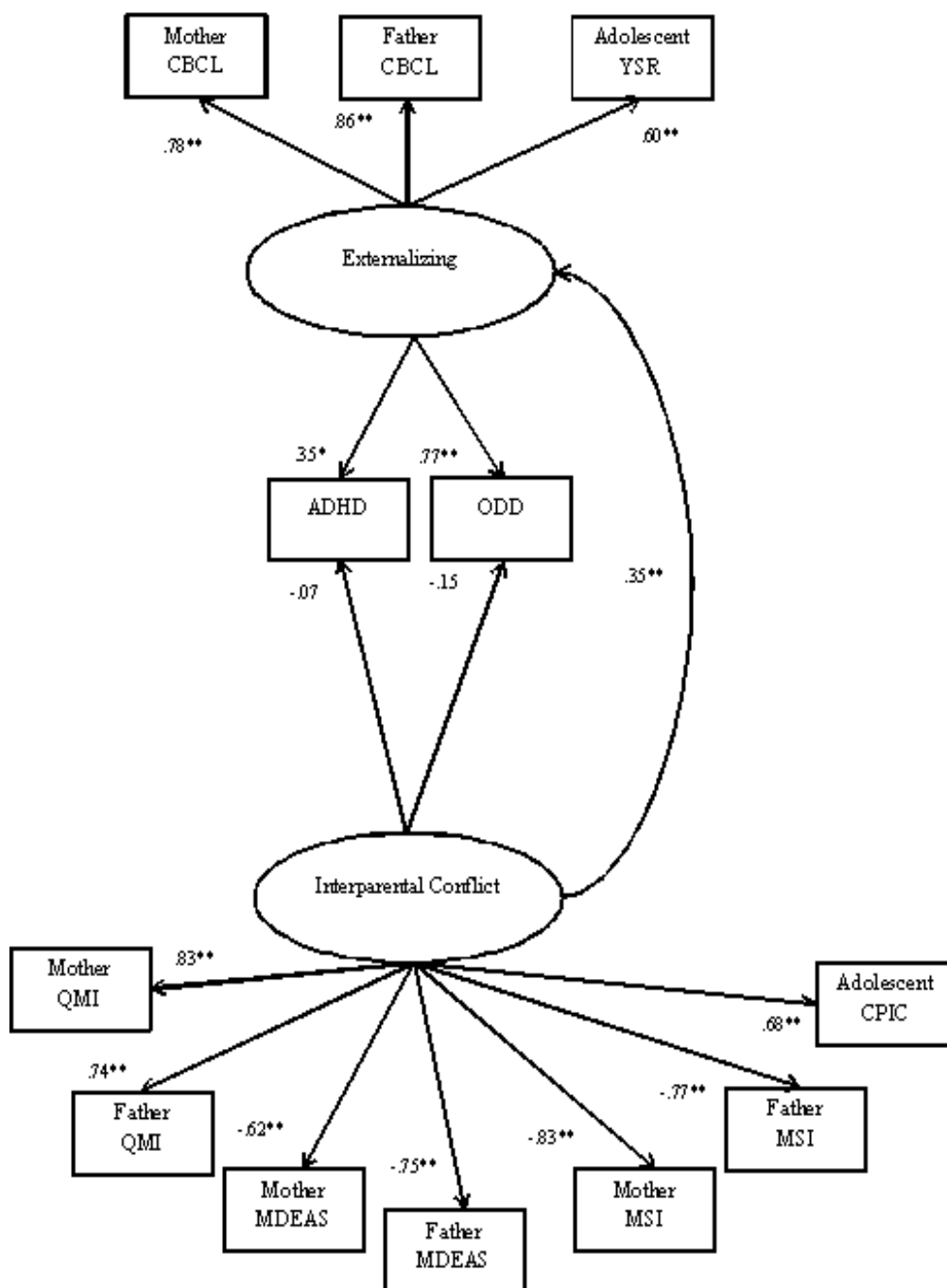
[1] CBCL = Child Behavior Checklist; YSR = Youth Self-Report; ADHD = Attention Deficit-Hyperactive Disorder; ODD = Oppositional Defiant Disorder; QMI = Quality of Marriage Index; MDEAS = Multidimensional Emotional Abuse Scale; MSI = Martial Satisfaction Inventory-Revised; CPIC = Children's Perception of Interparental Conflict.

Figure B16. Measurement Model of Triangulation. **p < .01.[1]

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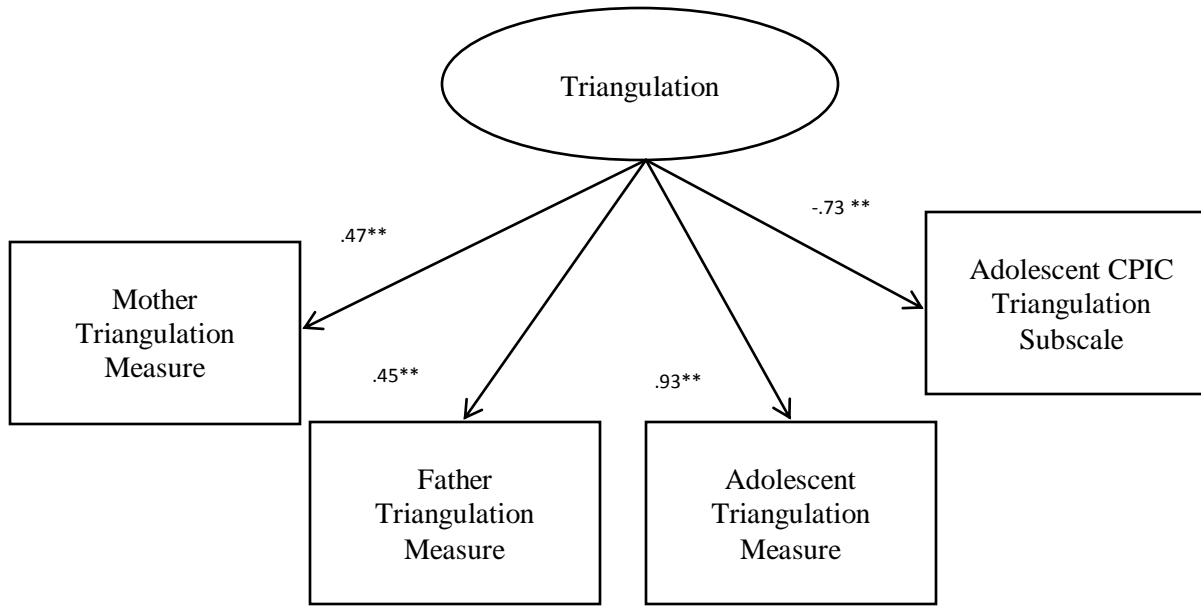
[1] CPIC = Children's Perception of Interparental Conflict Scale (This measure is scored such that lower scores represent higher levels of triangulation.)

Figure B17. Measurement Model of Maternal Negative Parenting. **p < .01.[1]

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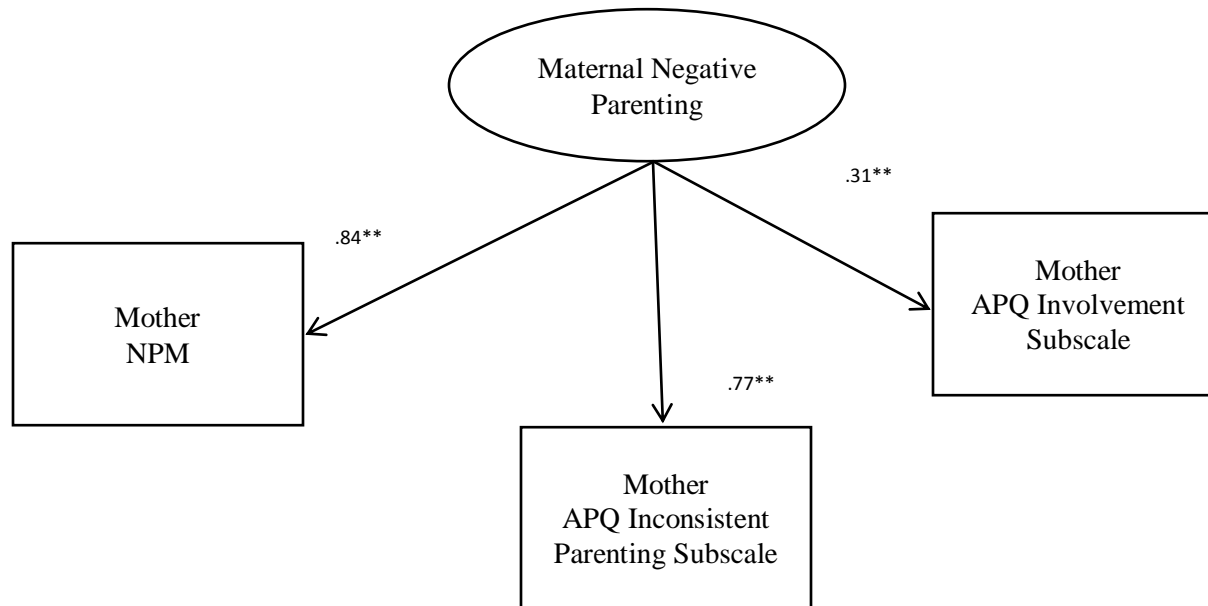
[1] NPM = Negative Parenting Measure; APQ = Alabama Parenting Questionnaire.

Figure B18. Measurement Model of Paternal Negative Parenting. **p < .01.[1]

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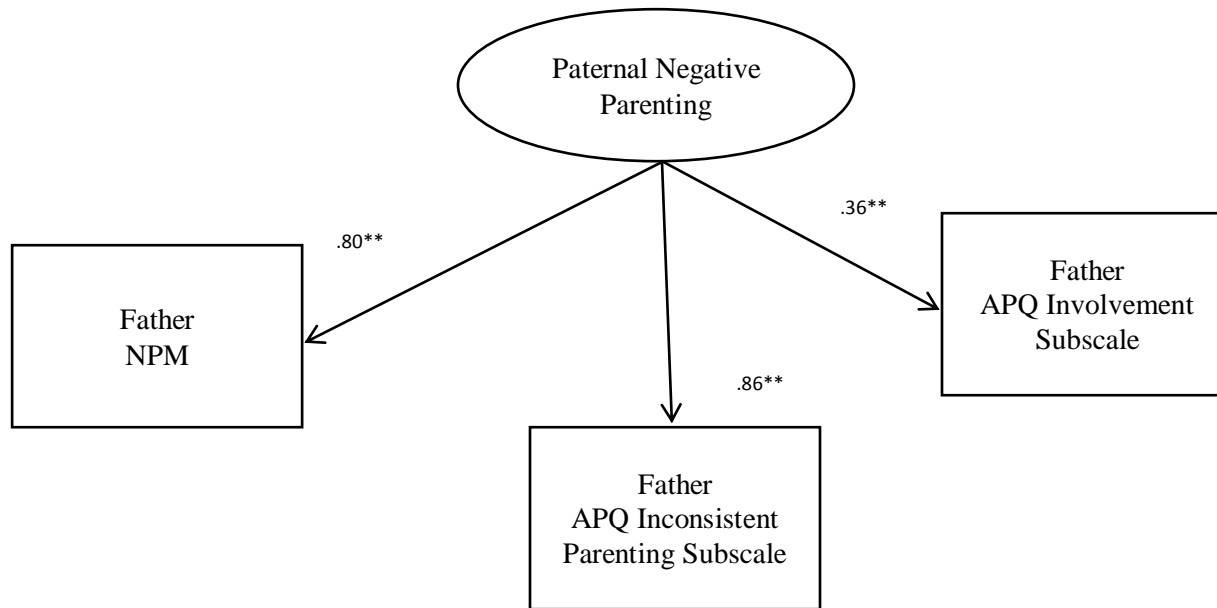
[1] NPM = Negative Parenting Measure; APQ = Alabama Parenting Questionnaire.

Figure B19. Measurement Model of Maternal Internalizing Behaviors.**p < .01.[1]
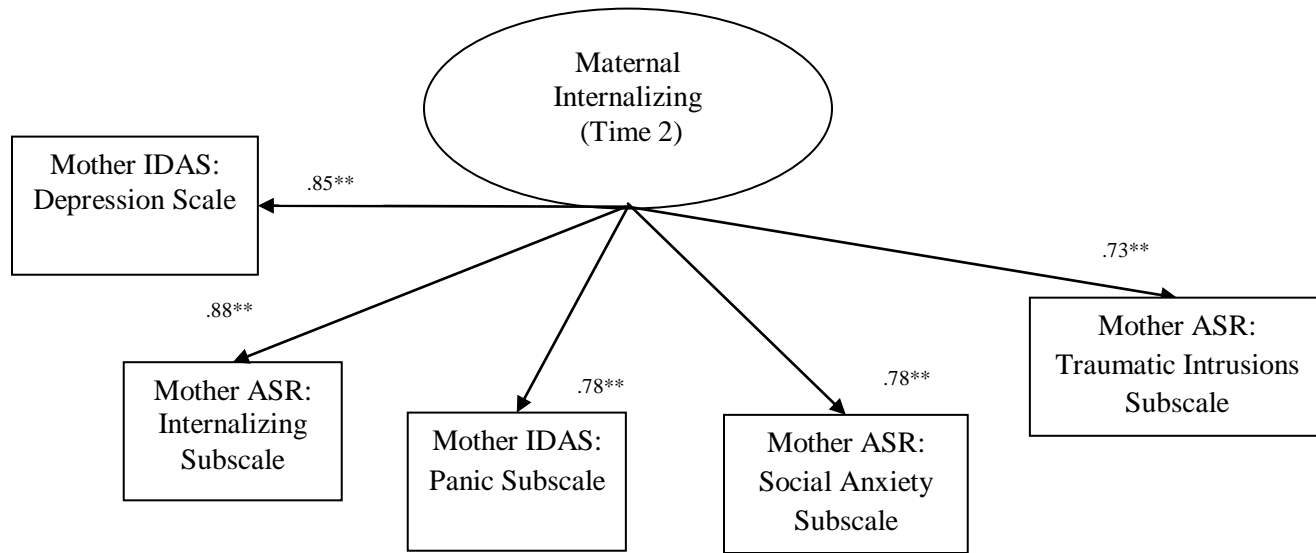
Figure B20. Measurement Model of Paternal Internalizing Behaviors. **p < .01.[1]

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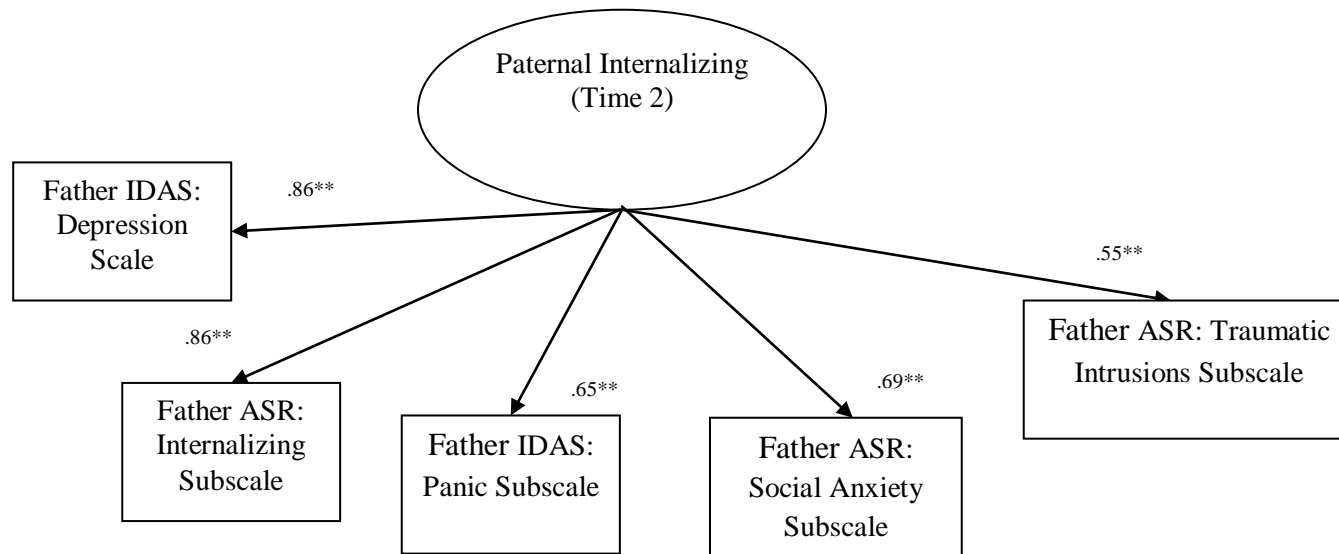
[1] ASR = Adult Self-Report.

Figure B21. Measurement Model of Maternal Externalizing Behaviors. **p < .01.[1]
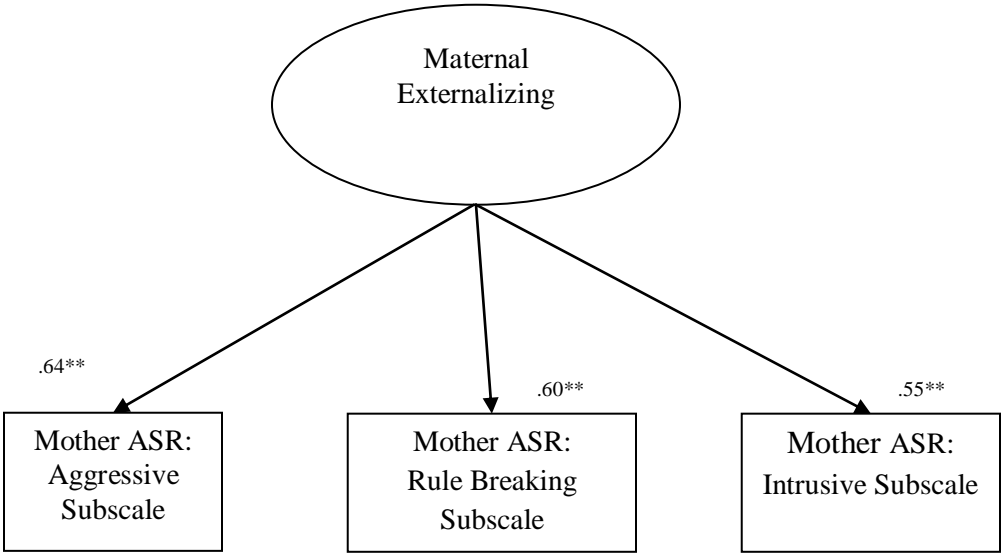
Figure B22. Measurement Model of Paternal Externalizing Behaviors.**p < .01.[1]
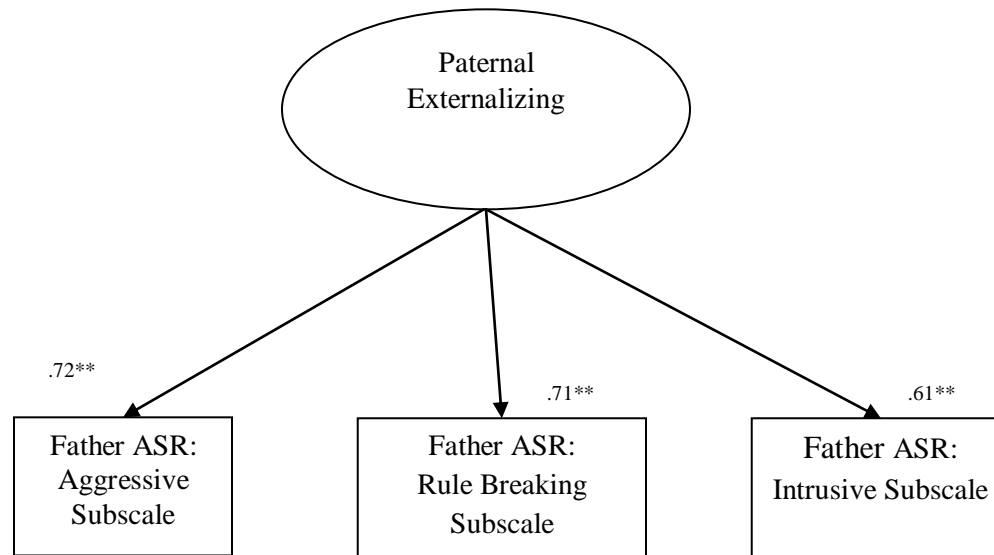
Figure B23. Interparental Conflict (Time 1) Predicting Adolescent Internalizing and Externalizing. $^+$p< .10. **p < .01.
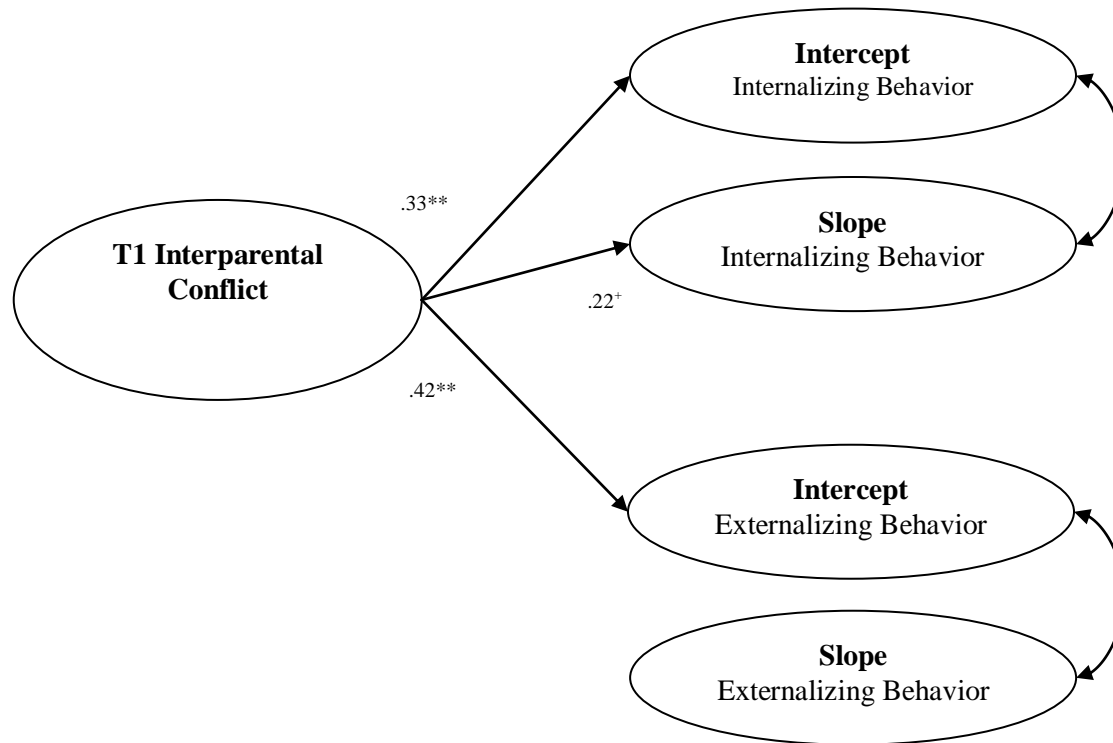
Figure B24. Mediation Model: Cognitive-Contextual Model. *p < .05. **p < .01.
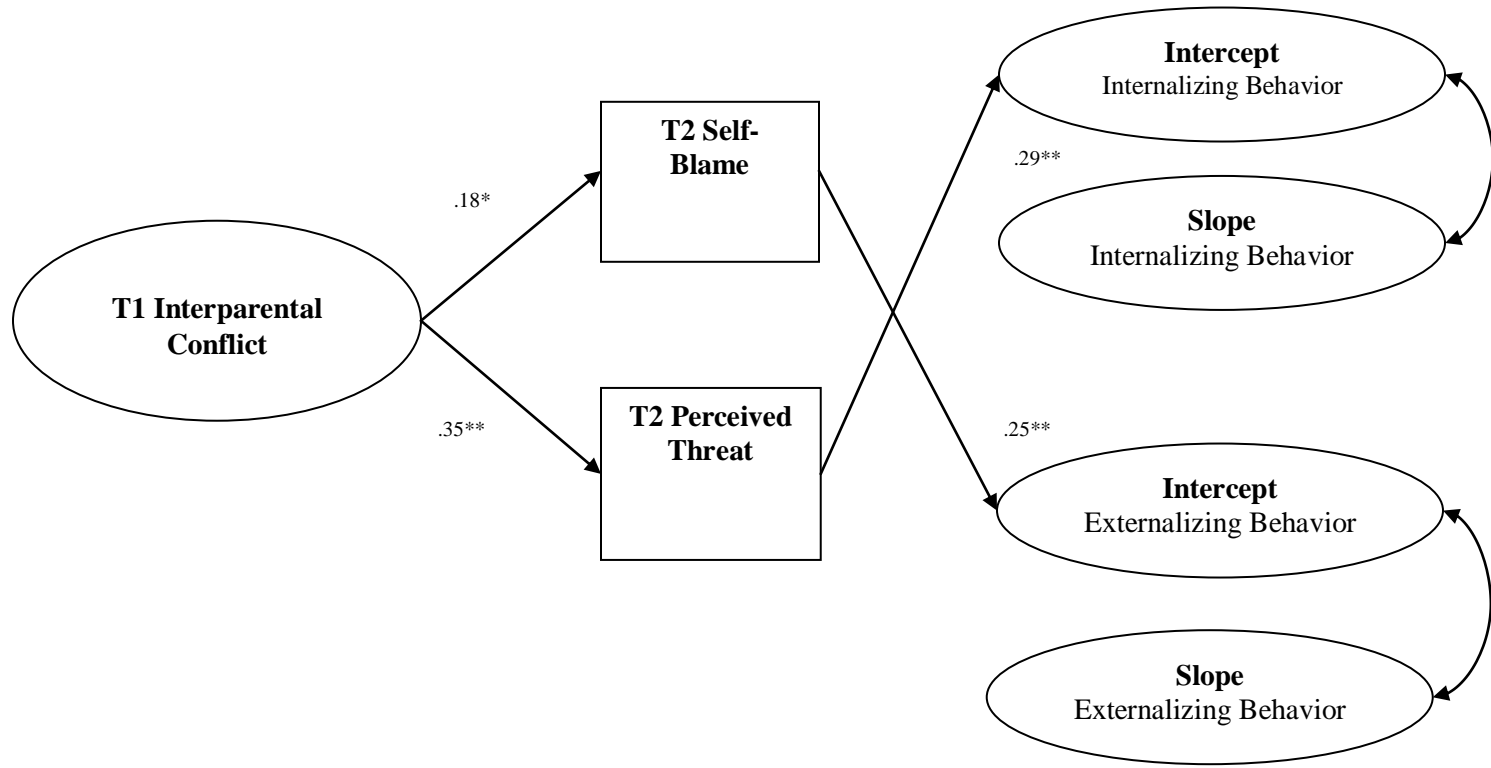
Figure B25. Mediation Model: Triangulation Model. [+]p< .10. **p < .01.
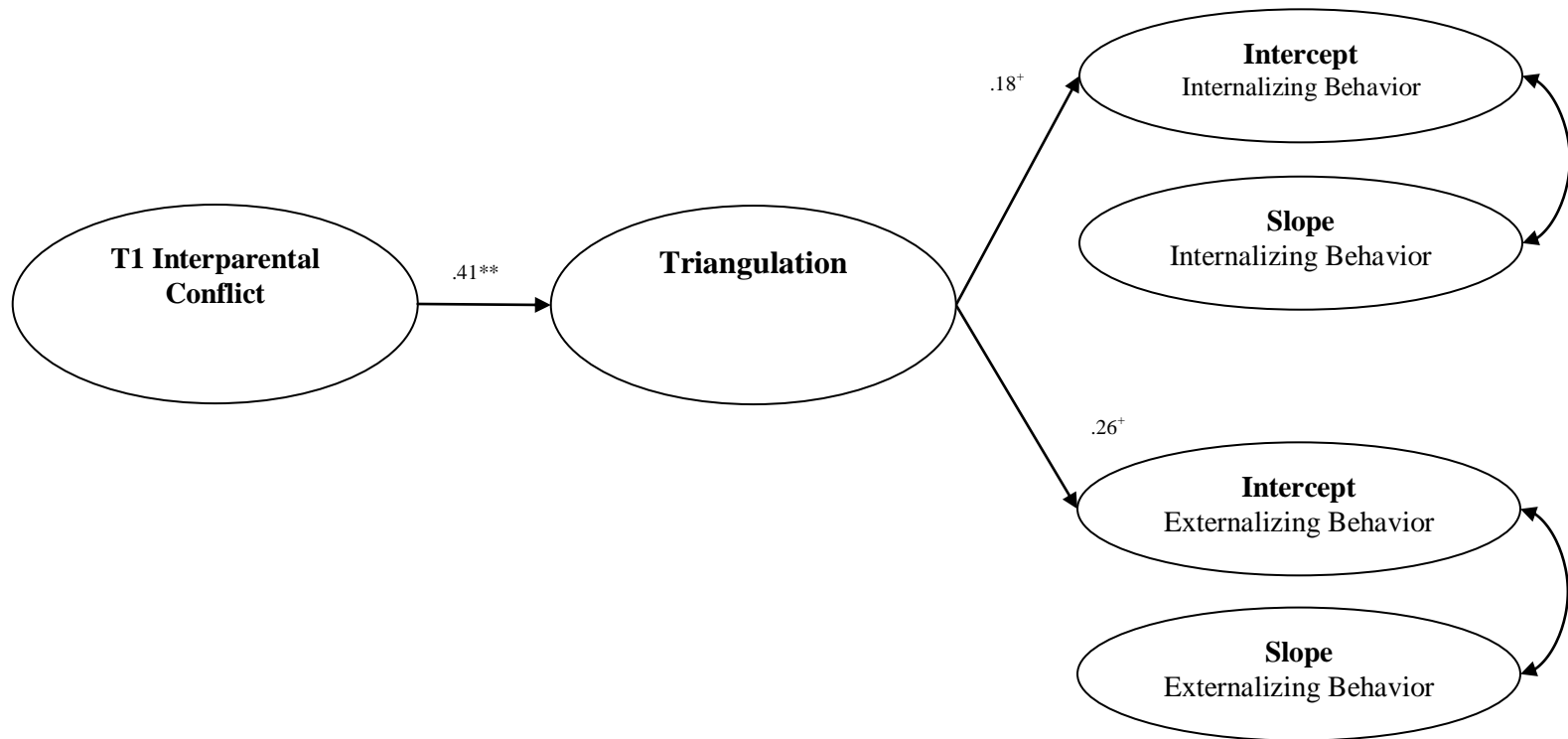
Figure B26. Mediation Model: Spillover Model. [+]p< .10. **p < .01.

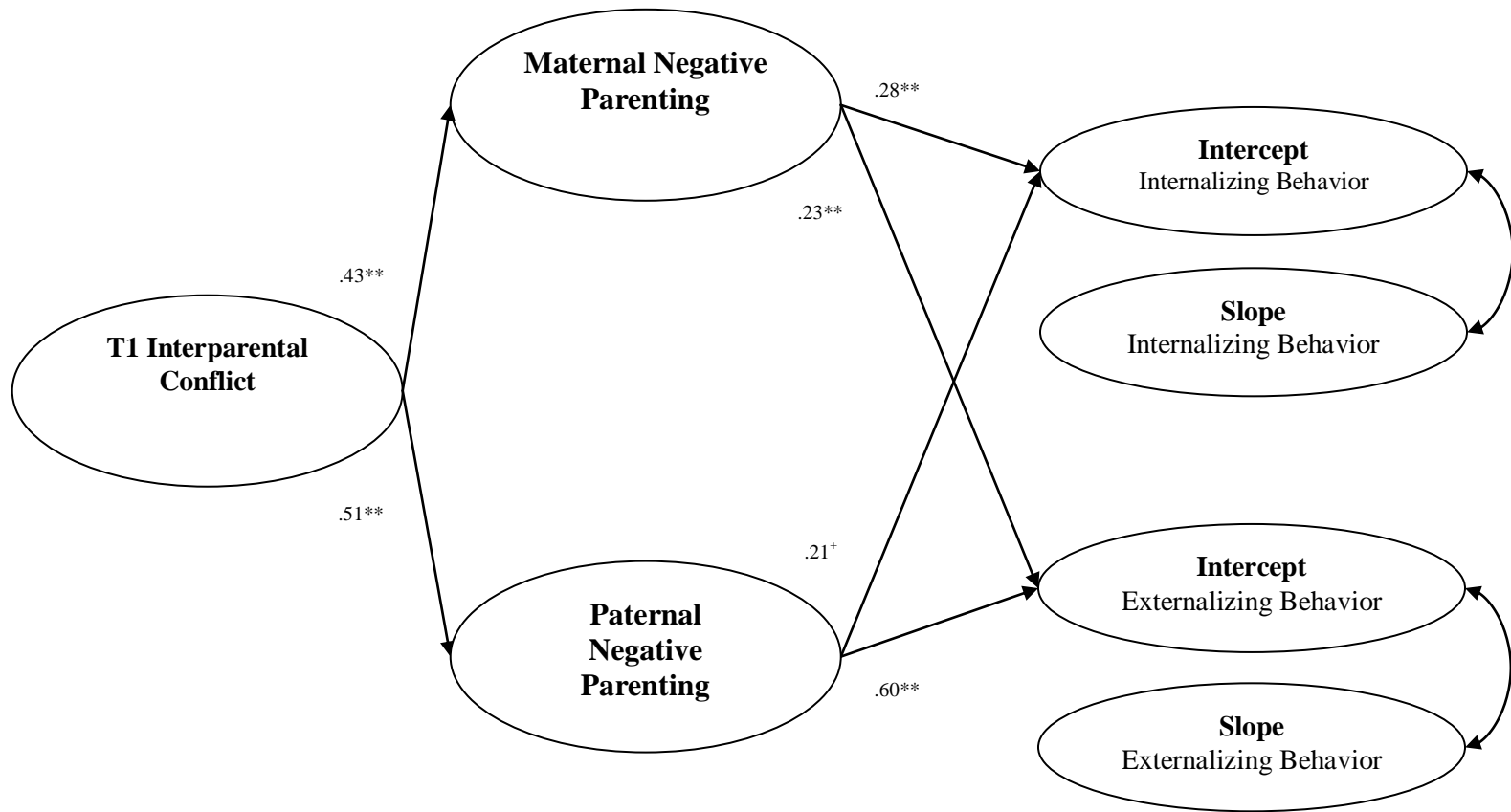Figure B27. Mediation Model: Interparental Conflict-Parental Psychopathology Model. $^+$p< .10. *p < .05. **p < .01.
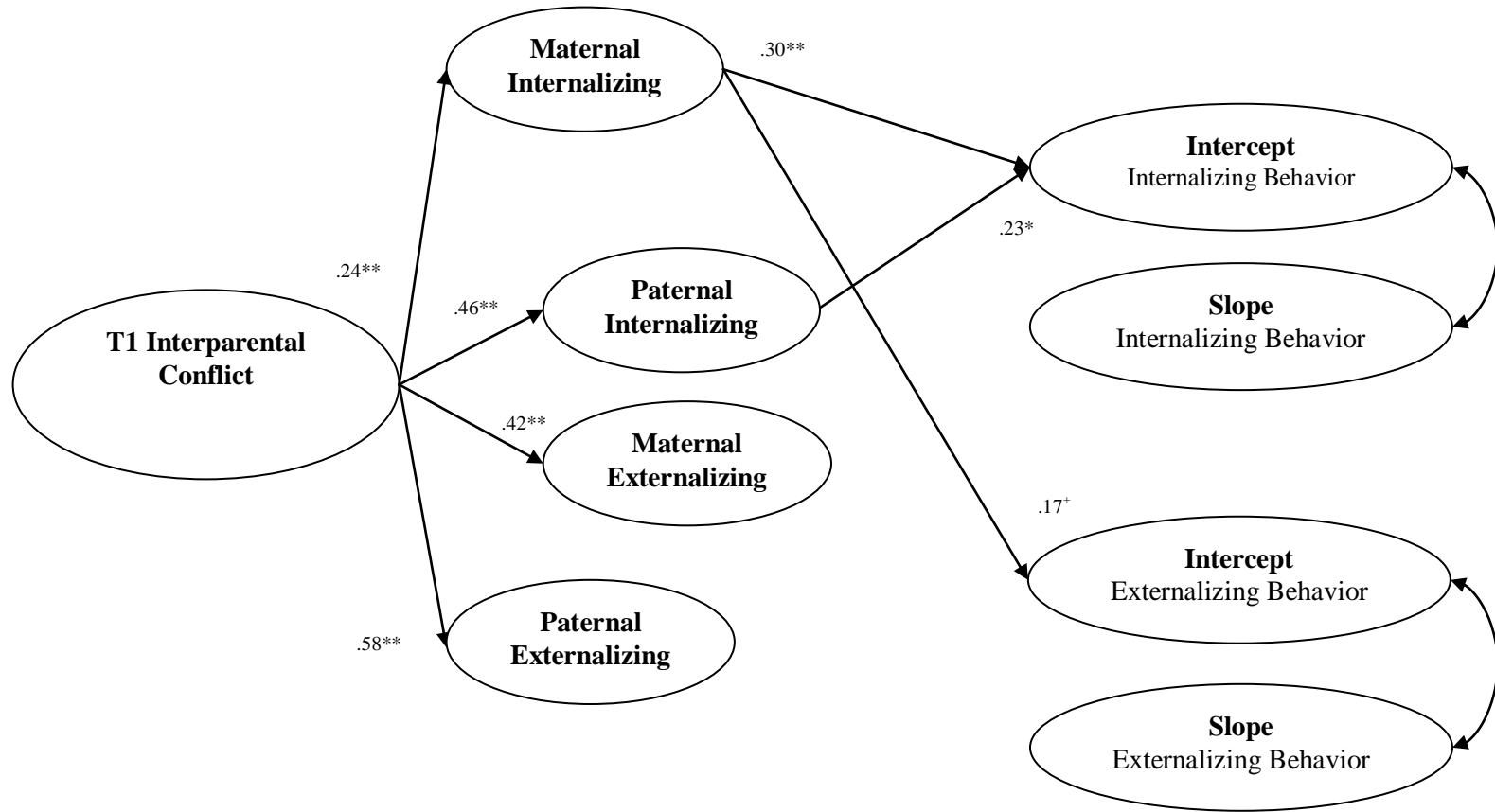
Figure B28. Integrative Model: Interparental Conflict Predicting Maternal Family Environment and Adolescent Outcomes. An integrative model of interparental conflict, maternal psychopathology and parenting, triangulation, adolescent perception, and adolescent psychopathology. Perceived threat and maternal internalizing may be full mediators of interparental conflict and adolescent internalizing; maternal parenting may be a partial mediator of adolescent externalizing.
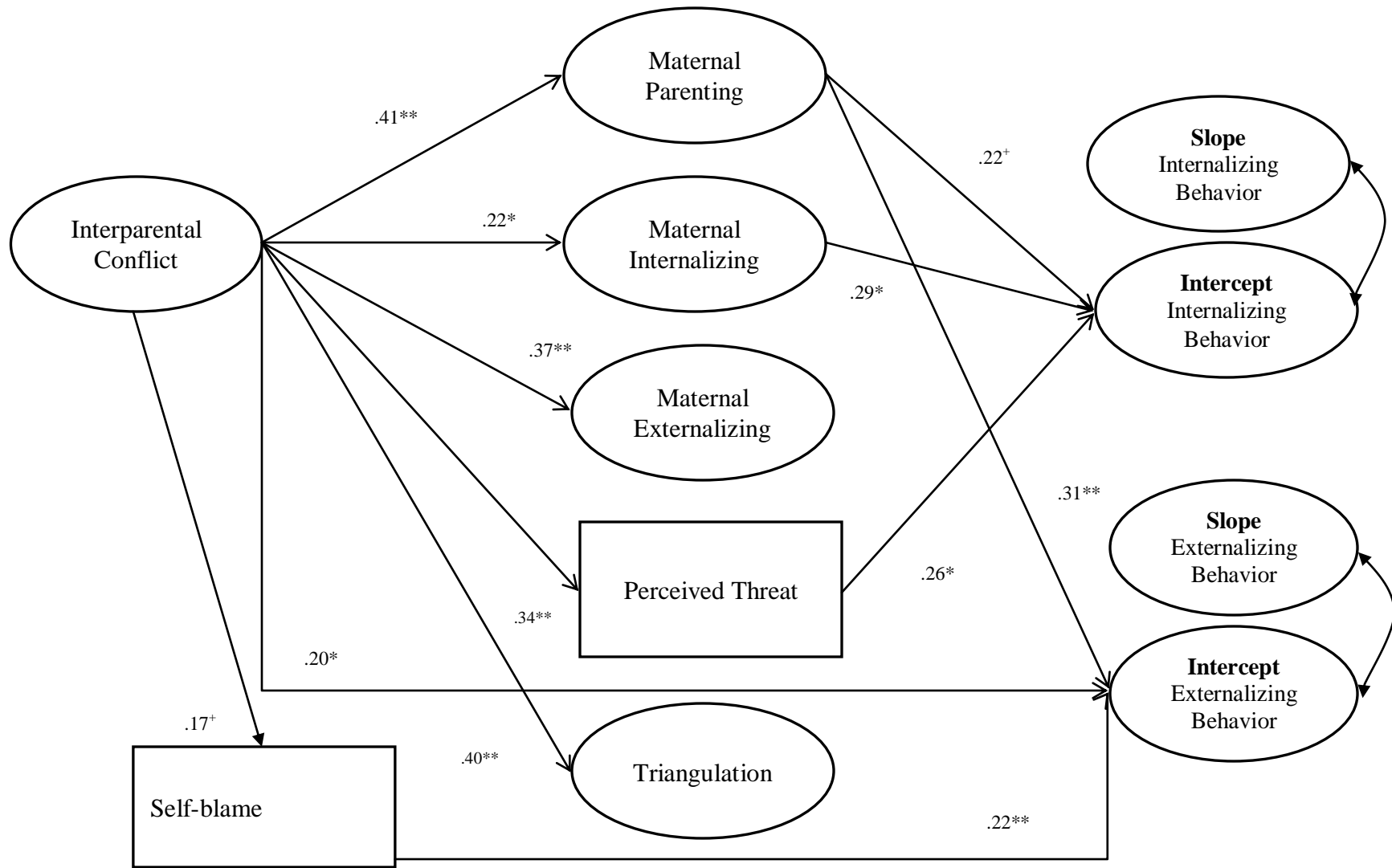
$^{+}$p< .10. *p < .05. **p < .01.

Figure B29. Integrative Model: Interparental Conflict Predicting Paternal Family Environment and Adolescent Outcomes. An integrative model of interparental conflict, paternal behaviors, triangulation, adolescent perception, and adolescent outcomes. Perceived threat, paternal externalizing, and paternal parenting may be full mediators of the relation between interparental conflict and adolescent internalizing, while paternal internalizing may be a proxy for interparental conflict when predicting adolescent internalizing. Paternal parenting behavior may be a full mediator of the relation between interparental conflict and adolescent externalizing, whereas paternal externalizing may be a proxy variable for interparental conflict. [+]p< .10. *p < .05. **p < .01.
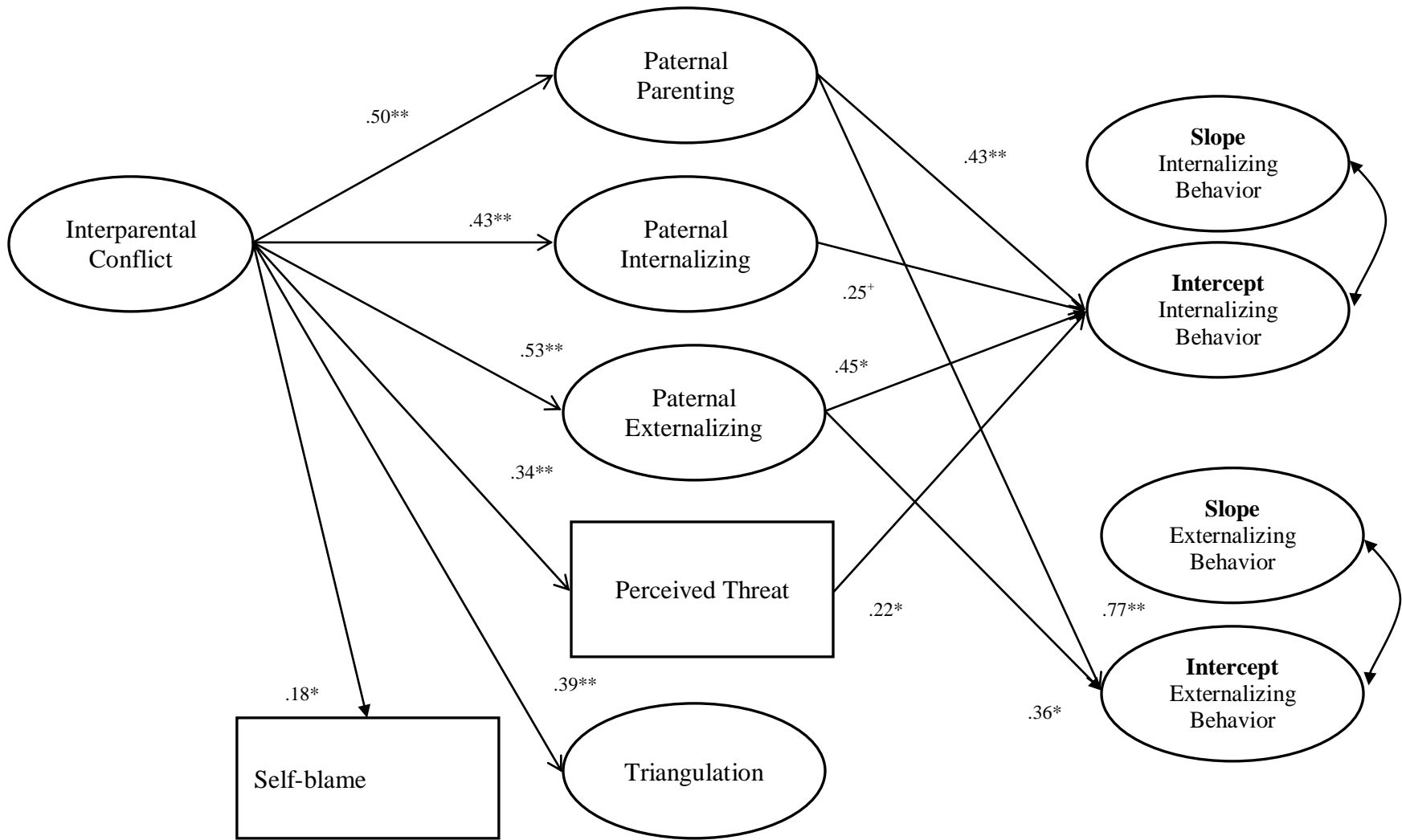
REFERENCES

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Achenbach, T. M., & Rescorla, L. A. (2003). *Manual for the ASEBA adult forms & profiles.* Burlington: University of Vermont, Research Center for Children, Youth, and Families.

Afifi, T. D & Schrodt, P. (2003). "Feeling caught" as a mediator of adolescents' and young adults' avoidance and satisfaction with their parents in divorced and non-divorced households. *Communication Monographs, 70,* 142-173.

Afifi, T. D., Hutchinson, S., & Krouse, S. (2006). Toward a theoretical model of communal coping in postdivorce families and other naturally occurring groups. *Communication Theory, 16,* 378-409.

Afifi, T. D., McManus, T., Hutchinson, S., & Baker, B. (2007). Inappropriate parental divorce disclosures, the factors that prompt them, and their impact on parents' and adolescents' well-being. *Communication Monographs, 74,* 78-102.

Aisenberg, E., Trickett, P. K., Mennen, F. E., Saltzman, W., & Zayas, L. H. (2007). Maternal depression and adolescent behavior problems: An examination of mediation among immigrant Latino mothers and their adolescent children exposed to community violence. *Journal of Interpersonal Violence, 22,* 1227-1249.

Almeida, D. M., Wethington, E., & Chandler, A. L. (1999). Daily transmission of tensions between marital dyads and parent-child dyads. *Journal of Marriage and the Family, 61,* 49-61.

Baril, M. E., Crouter, A. C., & McHale, S. M. (2007). Processes linking adolescent well-being, marital love, and coparenting. *Journal of Family Psychology, 21,* 645-654.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Benson, M. J., Buehler, C., & Gerard, J. M. (2008). Interparental hostility and early adolescent problem behavior: Spillover via maternal acceptance, harshness, inconsistency, and intrusiveness. *Journal of Early Adolescence, 28,* 428-454.

Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107,* 238-246.

Bosco, G. L., Renk, K., Dinger, T. M., Epstein, M. K., & Phares, V. (2003). The connections between adolescents' perceptions of parents, parental psychological symptoms, and adolescent functioning. *Applied Developmental Psychology, 24,* 179-200.

Bradbury, T. N. & Karney, B. R. (1993). Longitudinal study of marital interaction and dysfunction: Review and analysis. *Clinical Psychological Review, 13,* 15-27.

Bradford, K., Barber, B. K., Olsen, J. A., Maughan, S. L., Erickson, L.D., Ward, D., et al. (2004). A Multi-national study of interparental conflict, parenting, and adolescent functioning: South Africa, Bangladesh, China, India, Bosnia, Germany, Palestine, Colombia, and the United States. *Marriage & Family Review, 35,* 107-137.

Bradford, K., Vaughn, L. B., & Barber, B. K. (2008). When there is conflict: Interparental conflict, parent child conflict and youth problem behaviors. *Journal of Family Issues*, 29, 780-805.

Brown, A. C., Wolchik, S. A., Tein, J., & Sandler, I. N. (2007). Maternal acceptance as a moderator of the relation between threat to self appraisals and mental health problems in adolescents from divorced families. *Journal of Youth and Adolescence, 36,* 927-938.

Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 445-455). Newbury Park, CA: Sage.

Buehler, C. & Welsh, D. P. (2009). A process model of adolescents' triangulation into parents' marital conflict: The role of emotional reactivity. *Journal of Family Psychology, 23,* 167 – 180.

Buehler, C., Anthony, C., Krishnakumar, A., Stone, G., Gerard, J., & Pemberton, S. (1997). Interparental conflict and youth problem behaviors: A meta-analysis. *Journal of Child and Family Studies, 6,* 233-247.

Buehler, C., Benson, M. J., & Gerard, J. M. (2006). Interparental hostility and early adolescent problem behavior: The mediating role of specific aspects of parenting. *Journal of Research on Adolescence, 16,* 265-292.

Buehler, C., Benson, M. J., Gerard, J. M. (2006). Interparental hostility and early adolescent problem behavior: The mediating role of specific aspects of parenting. *Journal of Research on Adolescence, 16,* 265 – 292.

Buehler, C., Krishnakumar, A., Stone, G., Anthon, C., Pemberton, S., Gerard, J. et al. (1998). Interparental conflict styles and youth problem behaviors: A two-sample replication study. *Journal of Marriage and the Family, 60,* 119 – 132.

Buehler, C., Lange, G., & Franck, K. L. (2007). Adolescents' cognitive and emotional responses to marital hostility. *Child Development, 78,* 775-789.

Burstein, M., Ginsburg, G. S., Tein, J. (2010). Parental anxiety and child symptomatology: An examination of additive and interactive effects of parent psychopathology. *Journal of Abnormal Child Psychology, 38,* 897 – 909.

Burstein, M., Stanger, C., Kamon, J., & Dumenci, L. (2006). Parent psychopathology, parenting, and child internalizing problems in substance-abusing families. *Psychology of Addictive Behaviors, 20,* 97 – 106.

Calahan, C. A. (1996). Internal consistency, reliability, and concurrent validity of the Kansas Marital Satisfaction Scale and the Quality Marriage Index. *Psychological Reports, 80,* 49 – 50.

Calahan, C. A. (1997). Correlations of scores on the Kansas Marital Satisfaction Scale and the Quality Marriage Index. *Psychological Reports, 78,* 530.

Chung, G. H., Flook, L., & Fuligni, A. J. (2009). Daily family conflict and emotional distress among adolescents from Latin American, Asian, and European backgrounds. *Developmental Psychology, 45,* 1406 – 1415.

Collins, K. A. & Dozois, D. J. A. (2008). What are the active ingredients in preventative interventions for depression? *Clinical Psychology: Science and Practice, 15,* 313-330.

Cui, M. & Conger, R. D. (2008). Parenting behavior as mediator and moderator of the association between marital problems and adolescent maladjustment. *Journal of Research on Adolescence, 18,* 261-284.

Dadds, M. R., Atkinson, E., Turner, C., Blums, G. J., & Lendich, B. (1999). Family conflict and child adjustment: Evidence for a cognitive-contextual model of intergenerational transmission. *Journal of Family Psychology, 13,* 194-208.

Davies, P. T. & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin, 116,* 387-411.

Davies, P. T. & Windle, M. (1997). Gender-specific pathways between maternal depressive symptoms, family discord, and adolescent adjustment. *Developmental Psychology, 33,* 657-668.

Davies, P. T., Dumenci, L., & Windle, M. (1999). The Interplay between maternal depressive symptoms and marital distress in the prediction of adolescent adjustment. *Journal of Marriage and the Family, 61,* 238-254.

Downey, G. & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108,* 50-76.

Doyle, A. B. & Markiewicz, D. (2005). Parenting, marital conflict and adjustment from early- to mid-adolescence: Mediated by adolescent attachment style? *Journal of Youth and Adolescence, 34,* 97-110.

Du Rocher Schudlich, T. D. & Cummings, E. M. (2003). Parental dysphoria and children's internalizing symptoms: Marital conflict styles as mediators of risk. *Child Development, 74,* 1663-1681.

Dwairy, M. A. (2008). Parental inconsistency versus parental authoritarianism: Associations with symptoms of psychological disorders. *Journal of Youth & Adolescence, 37,* 616 – 626.

Elgar, F. J., Mills, R. S. L., McGrath, P. J., Waschbusch, D. A., Brownridge (2007). Maternal and paternal depressive symptoms and child maladjustment: The mediating role of parental behavior. *Journal of Abnormal Child Psychology, 35,* 943-955.

El-Sheikh, M., Cummings, E. M., Kouros, C. D., Elmore-Staton, L., & Buckhalt, J. (2008). Marital psychological and physical aggression and children's mental and physical health: Direct, mediated and moderated effects. *Journal of Consulting and Clinical Psychology, 76,* 138 – 148.

Emery, R. E. (1982). Interparental conflict and the children of discord and divorce. *Psychological Bulletin, 92,* 310-330.

Emery, R. E. (1982). Interparental conflict and the children of discord and divorce. *Psychological Bulletin, 92,* 310 – 330.

Farmer, R. F., Seeley, J. R., Kosty, D. B., & Lewinsohn, P. M. (2009). Refinements in the hierarchical structure of externalizing psychiatric disorders: Patterns of lifetime liability from mid-adolescence through early adulthood. *Journal of Abnormal Psychology, 118,* 699 – 710.

Fincham, F. D. & Osborne, L. N. (1993). Marital conflict and children: Retrospect and prospect. *Clinical Psychology Review, 13,* 75-88.

Fisher, S. D. & Schiller-Edler, C. (2011). *Adolescent internalizing/externalizing behaviors in the context of interparental conflict: A review of four models.* Under revision.

Fisher, S. D., Kopelman, R., O'Hara, M. W. (in press) Partner-report of paternal depression using the Edinburgh Postnatal Depression Scale – Partner. *Archives for Women's Mental Health.*

Forehand, R., Biggar, H., & Kotchick, B. A. (1998). Cumulative risk across family stressors: Short- and long-term effects for adolescents. *Journal of Abnormal Child Psychology, 26,* 119-128.

Franck, K., L. & Buehler, C. (2007). A family process model of marital hostility, parental depressive affect and early adolescent problem behavior: The roles of triangulation and parental warmth. *Journal of Family Psychology, 21,* 614-625.

Funk, J. L. & Rogge, R. D. (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology, 21,* 572 – 583.

Gadow, K. D., Sprafkin, J., Carlson, G. A., Schneider, J., Nolan, E. E., Mattison, R. E., & Rundberg-Rivera, V. (2002). A DSM-IV-referenced, adolescent self-report rating scale. *Journal of the American Academy of Child and Adolescent Psychiatry, 41,* 671 – 679.

Gagne, M., Drapeau, S., Melancon, C., Saint-Jacques, M., & Lepine, R. (2007). Links between parental psychological violence, other family disturbances, and children's adjustment. *Family Process, 46,* 523-542.

Gerard, J. M., Buehler, C., Franck, K., Anderson, O. (2005). In the eyes of the beholder: Cognitive appraisals as mediators of the association between interparental conflict and youth maladjustment. *Journal of Family Psychology, 19,* 376-384.

Goerl, A. P. (2005). An examination of a typology of intimate partner psychological aggression using the Multi-Dimensional Emotional Abuse Scale (MDEAS). University of Maryland, College Park, MD.

Gonzales, N. A., Pitts, S. C., Hill, N. E., & Roosa, M. W. (2000). A Mediational model of the impact of interparental conflict on child adjustment in a multiethnic, low-income sample. *Journal of Family Psychology, 14,* 365-379.

Goodman, S. H. (2007). Depression in mothers. *Annual Review of Clinical Psychology, 3,* 107-135.

Graziano, F., Bonino, S. & Cattelino, E. (2009). Links between maternal and paternal support, depressive feelings, and social and academic self-efficacy in adolescence. *European Journal of Developmental Psychology, 6,* 241 – 257.

Gross, H. E., Shaw, D. S., & Moilanean, K. L. (2008). Reciprocal associations between boys' externalizing problems and mothers' depressive symptoms. *Journal of Abnormal Child Psychology, 36,* 693-709.

Grych, J. H. & Fincham, F. D. (1990). Marital conflict and children's adjustment: A Cognitive-contextual framework. *Psychological Bulletin, 108,* 267-290.

Grych, J. H. & Fincham, F. D. (1993). Children's appraisals of marital conflict: Initial investigations of cognitive-contextual framework. *Child Development, 64,* 215-230.

Grych, J. H., Fincham, F. D., Jouriles, E. N., & McDonald, R. (2000). Interparental conflict and child adjustment: Testing the mediational role of appraisals in the cognitive-contextual framework. *Child Development, 71,* 1648-1661.

Grych, J. H., Harold, G. T., & Miles, C. J. (2003). A prospective investigation of appraisals as mediators of the link between interparental conflict and child adjustment. *Child Development, 74,* 1176-1193.

Grych, J. H., Raynor, S. R., & Fosco, G. M. (2004). Family processes that shape the impact of interparental conflict on adolescents. *Development and Psychopathology, 16,* 649-665.

Grych, J. H., Seid, M., Fincham, F. D. (1992). Assessing marital conflict from the child's perspective: The Children's Perception of Interparental Conflict Scale. *Child Development, 63,* 558 – 572.

Hare, A. L., Miga, E. M., & Allen, J. P. (2009). Intergenerational transmission of aggression in romantic relationships: The moderating role of attachment security. *Journal of Family Psychology, 23,* 808 – 818.

Harold, G. T. & Conger, R. D. (1997). Marital conflict and adolescent distress: The role of adolescent awareness. *Child Development, 68,* 333-350.

Harold, G. T., Aitken, J. J., & Shelton, K. H. (2007). Inter-parental conflict and children's academic attainment: A longitudinal analysis. *Journal of Child Psychology and Psychiatry, 48,* 1223-1232.

Harold, G. T., Fincham, F. D., Osborne, L. N., Conger, R. D. (1997). Mom and dad are at it again: Adolescent perceptions of marital conflict and adolescent psychological distress. *Developmental Psychology, 33,* 333-350.

Harold, G. T., Shelton, K. H., Goeke-Morey, M. C., & Cummings, E. M. (2004). Marital conflict, child emotional security about family relationships and child adjustment. *Social Development, 13,* 350-376.

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., Conde, J. G. (2009). Research electronic data capture (REDCap) - A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics, 42,* 377 – 381.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65,* 599 – 610.

Hu, L. T. & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, *Structural Equation Modeling, 6,* 1 – 55.

Kendal, P. C. (1993). Cognitive-behavioral therapies with youth: Guiding theory, current status, and emerging developments. *Journal of Consulting and Clinical Psychology, 61*, 235 – 247.

Kessler, R. C., Chiu, W. T., Demeler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 2-month DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62,* 617 – 627.

Koerner, S. S., Jacobs, S. L., & Raymond, M. (2000). When mothers turn to their adolescent daughters: Predicting daughters' vulnerability to adjustment outcomes. *Family Relations, 49,* 301-309.

Koerner, S. S., Jacobs, S. L., Raymond, M. (2000). When mothers turn to their adolescent daughters: Predicting daughters' vulnerability to negative adjustment outcomes. *Family Relations, 49,* 301 – 309.

Koerner, S. S., Wallace, S., Lehman, S. J., Lee, S., & Escalante, K. A. (2004). Sensitive mother-to-adolescent disclosures after divorce: Is the experience of sons different from that of daughters? *Journal of Family Psychology, 18,* 46-57.

Kraemer, H. C., Stice, E., Kazdin, A., Offord, D., and Kupfer, D. (2001). How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. *American Journal of Psychiatry, 158,* 848 – 856.

Krishnakumar, A., Buehler, C., & Barber, B. K. (2003). Youth perceptions of interparental conflict, ineffective parenting, and youth problem behaviors in European-American and African-American families. *Journal of Social and Personal Relationships, 20,* 239-260.

Lakdawalla, Z., Hankin, B. L., & Mermelstein, R. (2007). Cognitive theories of depression in children and adolescents: A conceptual and quantitative review. *Clinical Child and Family Psychology Review, 10,* 1 – 24.

Lansford, J. E., Criss, M. M., Laird, R. D., Shaw, D. S., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2011). *Development and Psychopathology, 23,* 225 – 238.

Low, S. M. & Stocker, C. (2005). Family functioning and children's adjustment: Associations among parents' depressed mood, marital hostility, parent-child hostility, and children's adjustment. *Journal of Family Psychology, 19,* 394-403.

Mahon, N. E., Yarcheski, A. Yarcheski, T. J., & Hanks, M. M. (2010). A meta-analytic study of predictors of anger in adolescents. *Nursing Research, 59,* 178 – 184.

McClellan, C. L., Heaton, T. B., Forste, R., & Barber, B. K. (2004). Familial impacts on adolescent aggression and depression in Colombia. *Marriage & Family Review, 36,* 91-118.

McClure, E. B., Brennan, P. A., Hammen, C., & Le Brocque, R. M. (2001). Parental anxiety disorders, child anxiety disorders, and the perceived parent-child relationship in an Australian high-risk sample. *Journal of Abnormal Child Psychology, 29,* 1 – 10.

Moretti, M. M. Holland, R., McKay, S. (2001). Self-other representations and relational and overt aggression in adolescent girls and boys. *Behavioral Sciences and the Law, 19,* 109 – 126.

Murphy, C.M., & Hoover, S.A. (2001). Measuring emotional abuse in dating relationship as a multifactorial construct. In O'Leary, K.D., & Maiuro, R.D. (Eds.), *Psychological abuse in violent domestic relations* (pp. 29-46). New York, NY: Springer Publishing Company.

Muthén, L.K. and Muthén, B.O. (1998-2010). Mplus User's Guide. Sixth Edition. Los Angeles, CA: Muthén & Muthén.

Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and Family, 45,* 141 – 151.

Oh, J. K., Lee, S., & Park, S. H. (2011). The effects of marital conflict on Korean children's appraisal of conflict and psychological adjustment. *Journal of Child and Family Studies, 20,* 444 – 451.

Osborne, L. N. & Fincham, F. D. (1996). Marital conflict, parent-child relationships, and child adjustment: Does gender matter? *Merrill-Palmer Quarterly, 42,* 48-75.

Parent, A., Teilmann, G., Juul, A., Skakkebaek, N. E., Toppari, J., & Bourguignon, J. (2003). The Timing of normal puberty and the age limits of sexual precocity: Variations around the world, secular trends, and changes after migration. *Endocrine Reviews, 24,* 668-693.

Peltonen, K., Ellonen, N., Larsen, H. B., & Helweg-Larsen, K. (2010). Parental violence and adolescent mental health. *European Child & Adolescent Psychiatry, 19,* 813 – 822.

Peris, T. S., Goeke-Morey, M. C., Cummings, E. M., & Emery, R. E. (2008). Marital conflict and support seeking by parents in adolescence: Empirical support for the parentification construct. *Journal of Family Psychology, 22,* 633-642.

Reid, W. J. & Crisafulli, A. (1990). Marital discord and child behavior problems: A meta-analysis. *Journal of Abnormal Child Psychology, 18,* 105-117.

Risdal, D. & Singer, G. H. S. (2004). Marital adjustment in parents of children with disabilities: A historical review and meta-analysis. *Research & Practice for Persons with Severe Disabilities, 29,* 95-103.

Rogers, M. J. & Holmbeck, G. N. (1997). Effects of interparental aggression on children's adjustment: The moderating role of cognitive appraisal and coping. *Journal of Family Psychology, 11,* 125-130.

Salafia, E. H. B., Gondoli, D. M., & Grundy, A. M. (2008). Marital conflict as a mediator of the longitudinal connections between maternal emotional distress and early adolescent maladjustment. *Journal of Child and Family Studies, 17,* 928 – 950.

Schreier, A., Wittchen, H., Höfler, M., & Lieb, R. (2008). Anxiety disorders in mothers and their children: Prospective longitudinal community study. *The British Journal of Psychiatry, 192,* 308 – 309.

Schulz, M. S., Waldinger, R. J., Hauser, S. T., & Allen, J. P. (2005). Adolescents' behavior in the presence of interparental hostility: Developmental and emotion regulatory influences. *Developmental and Psychopathology, 17,* 489-507.

Segal, B. M. & Stewart, J. C. (1996). Substance use and abuse in adolescence: An overview. *Child Psychiatry and Human Development, 26,* 193 – 210.

Shelton, K. H. & Harold, G. T. (2008a). Pathways between interparental conflict and adolescent psychological adjustment: Bridging links through children's cognitive appraisals and coping strategies. *The Journal of Early Adolescence, 28,* 555-582.

Shelton, K. H. & Harold, G. T. (2008b). Interparental conflict, negative parenting, and children's adjustment: Bridging links between parents' depression and children's psychological distress. *Journal of Family Psychology, 22,* 712-724.

Shelton, K. K., Frick, P. J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology, 25,* 317 – 329.

Simons, R. L., Lorenz, F. O., Wu, C., & Conger, R. D. (1993). Social network and marital support as mediators and moderators of the impact of stress and depression on parental behavior. *Developmental Psychology*, 29, 368-381.

Skopp, N. A., McDonald, R., Jouriles, E. N., & Rosenfeld, D. (2007). Partner aggression and children's externalizing problems: Maternal and partner warmth as protective factors. *Journal of Family Psychology, 21,* 459 – 467.

Slade, T. & Watson, D. (2006). The structure of common DSM-IV and ICD-10 mental disorders in the Australian general population. *Psychological Medicine, 36,* 1593 – 1600.

Snyder, D. K. (1979). Multidimensional assessment of marital satisfaction. *Journal of Marriage and Family, 41,* 813 – 823.

Spence, S. H., Najman, J. M., Bor, W., O'Callaghan, M. J., & Williams, G. M. (2002). Maternal anxiety and depression, poverty, and marital relationship factors during early childhood as predictors of anxiety and depressive symptoms in adolescence. *Journal of Child Psychology and Psychiatry, 43,* 457-469.

Su, X., Simons, R. L., & Simons, L. G. (2011). Interparental aggression and antisocial behavior among African American youth: A simultaneous test of competing explanations. *Journal of Youth Adolescence, 40,* 1489 – 1502.

Synder, D. K. & Aikman, G. G. (1999). The Marital Satisfaction Inventory-Revised. In M. E. Maruish (Ed.), *Use of psychological testing for treatment planning and outcomes assessment.* (2[nd] ed.) (pp. 1173 – 1210). Mahwah, NJ: Erlbaum.

Tillman, K. H. (2007). Family structure pathways and academic disadvantage among adolescents in stepfamilies. *Sociological Inquiry, 77,* 383-424.

Tschann, J. M., Flores, E., VanOss Marin, B., Pasch, L. A., Baisch, E. M., Wibbelsman, C. J. (2002). Interparental conflict and risk behaviors among Mexican American adolescents: A cognitive-emotional model. *Journal of Abnormal Child Psychology, 30,* 373-385.

Tucker, L.R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38,* 1-10.

Watson, D., O'Hara, M. W., Simms, L. J., Kotov, R., Chmielewski, M., McDade-Montez, E. A., … Stuart, S. (2007). Development and validation of the Inventory of Depression and Anxiety Symptoms (IDAS). *Psychological Assessment, 19,* 253 – 268.

Weiss, B., Süsser, K., and Catron, T. (1998). Common and specific features of childhood psychopathology. *Journal of Abnormal Psychology, 107,* 118 – 127.

Winstok, Z., Eisikovits, Z. & Karnieli-Miller, O. (2004). The impact of father-to-mother aggression on the structure and content of adolescents' perceptions of themselves and their parents. *Violence Against Women, 10,* 1036 – 1055.

Zimet, D. M. & Jacob, T. (2002). Influences of marital conflict on child adjustment: Review of theory and research. *Clinical Child and Family Psychology Review, 4,* 319 – 335.