

The impact of marital conflict on adolescent adjustment

by

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## ABSTRACT

The present study examines the impact of marital conflict on adolescent adjustment problems. Based on this general interest, the study further explores several related research questions, such as what specific aspects of marital conflict lead to adolescent adjustment problems, whether changes in marital conflict predict changes in adolescent problems, what kinds of adolescent problems are exhibited, and by what processes the relation between marital conflict and adolescent adjustment problems operates. While focusing on these research issues, this study also tries to overcome some of the methodological limitations in previous studies. The study used data from the Iowa Youth and Families Project. The results from structural equation modeling and latent growth curve analyses demonstrated that (1) two specific aspects of marital conflict, overt marital conflict and conflict over child-rearing, as well as general marital distress, had negative influences on adolescent adjustment; (2) increases in general marital distress and overt marital conflict predicted increases in adolescent problems over time; (3) poor parenting behavior mediated the relation between marital problems and adolescent poor well-being, externalizing problems, and internalizing problems; whereas adolescent feelings of insecurity mediated the relation between marital problems and adolescent poor emotional well-being and internalizing problems; (4) no moderating effect by poor parenting behavior or adolescent feelings of insecurity was found; and (5) the findings did not differ by adolescent gender.

## CHAPTER ONE.

## INTRODUCTION

Earlier studies have provided evidence of a relationship between marital conflict and child adjustment (see reviews in Cummings & Davies, 1994; Emery, 1982; Grych & Fincham, 1990; Reid & Crisafulli, 1990). Exposure to high levels of marital conflict have been associated with the development of a wide variety of problems in children and adolescents, including externalizing problems, internalizing problems, social maladjustment, and deficits in cognitive competency (e.g., Davies, Hops, Alpert, & Sheeber, 1998; Goodman, Barfoot, Frye, & Belli, 1999; Grych, 1998; Stocker & Youngblade, 1999). For earlier studies, see reviews in Cummings & Davies (1994), Emery (1982), and Grych and Fincham (1990). Additionally, the relationship between marital conflict and child adjustment has been documented in both clinical and nonclinical samples (Grych & Fincham, 1990; Reid & Crisafulli, 1990), among boys as well as girls (Emery & O'Leary, 1984; Purcell & Kaslow, 1994), and across a wide range of ages including preschoolers (Dadds & Powell, 1991; Jouriles, Pfiffner, & O'Leary, 1988), school-aged children (Cummings, Davies, & Simpson, 1994; Davies & Cummings, 1998; Kerig, 1998; Smith & Jenkins, 1991), and adolescents (Brody & Forehand, 1990; Fauber, Forehand, Thomas, & Wierson, 1990; Grych, Fincham, Jouriles, & McDonald, 2000; Johnson, Gonzales, & Campbell, 1987; Long, Forehand, Fauber, & Brody, 1987; Peterson & Zill, 1986; Wierson, Forehand, Fauber, & McCombs, 1989).

With the association between marital conflict and child adjustment problems well-documented, the research question has changed to one that asks what specific aspects of marital conflict are related to what particular aspects of child adjustment (Fincham, 1994). In

this regard, two theoretical frameworks are especially pertinent for the present investigation. Grych and Fincham's (1990) "Cognitive Contextual Framework" proposes that marital conflict that is intense, poorly resolved, and child-related represents a destructive form of conflict that is particularly upsetting to children. Their framework also proposes that the degree of threat perceived by the child as a result of interparental conflict will have a significant influence on the child's development. They argue that marital conflict that is more threatening to children will invoke greater fear in children and will, therefore, have a greater impact on them.

Davies and Cummings' (1994) "Emotional Security Hypothesis" proposes that some forms of marital conflict are especially likely to undermine children's sense of emotional security and psychological well-being. They propose that marital conflicts that are intense, that involve direct threat to children, and are child-related are particularly stressful for children. When these types of conflict occur, they are likely to decrease children's emotional security. Both of these hypotheses agree that marital conflict that is intense, openly hostile, and that involves child-related issues is especially harmful for children. Many studies have supported the hypotheses and found that child problems are most likely to occur when marital conflict is openly hostile (e.g., Buehler et al., 1998; Hetherington, Cox, & Cox, 1982; Katz & Gottman, 1993; Rutter et al., 1974) and child related (e.g., Dadds & Powell, 1991; Grych & Fincham, 1993; Nixon & Cummings, 1999; Snyder, Klein, Gdowski, Faulstich, & LaCombe, 1988). Moreover, some studies have shown that the impact of marital conflict on children is greater than the influence of general marital distress which concerns spousal reports of their unhappiness, dissatisfaction, or lack of commitment in their marriage (Grych & Fincham, 1990). The present study examines whether overt marital conflict and conflict

over child-rearing, the two specific aspects of marital conflict proposed to be most damaging by the cognitive contextual framework and the emotional security hypothesis, have negative influences on various adolescent adjustment problems. The research also evaluates whether the impact of overt and child-related marital conflict is more damaging to child adjustment than general marital distress.

Even though several studies have provided evidence that marital conflict influences child adjustment problems, little has been done to examine whether level or change in marital conflict have an impact on changes in child problems over time (Fincham, Grych, & Osborne, 1994). Because most previous studies have not involved longitudinal designs, evidence is sparse with regard to this research question. The present prospective, longitudinal study extends earlier research by investigating (1) whether the level of marital conflict leads to increases in adolescent maladjustment; (2) whether increases in marital conflict over time will predict increases in adolescent adjustment problems; (3) which type of marital conflict over time is most detrimental to adolescents; and (4) which types of adolescent problems are most affected in the long run.

Another research question that has drawn great interest concerns how marital conflict leads to child adjustment problems. The Disrupted Discipline Hypothesis (Emery, 1982), for example, argues that conflict in the marital relationship adversely affects the quality and consistency of parenting. Parents in conflict may be lax in their management of child behavior or may use opposing discipline strategies. These inconsistencies in parental discipline, in turn, contribute to adjustment problems in children. According to Davies and Cummings' (1994) Emotional Security Hypothesis, marital conflict can also directly undermine children's sense of security, which in turn, has an impact on child adjustment.

Studies have found support for both poor parenting (e.g., Conger, Conger, Elder, Lorenz, Simons, & Whitbeck, 1993; Fauber, et al, 1990) and emotional security (e.g., Davies & Cummings, 1998) as mediators of the relationship between marital conflict and child adjustment problems. However, some studies found that, instead of mediating, parenting behavior and children's appraisal of marital conflict moderate the relationship between marital conflict and child adjustment problems (e.g., Black & Pedro-Carroll, 1993; El-Sheikh & Harger, 2001; Frosch & Mangelsdorf, 2001; Kerig, 1998). The present study will examine whether parenting behavior and adolescent feelings of insecurity mediate or moderate the relationship between marital conflict and adolescent adjustment problems.

With regard to children's gender differences in response to marital conflict, earlier studies show that boys are more likely to exhibit externalizing problems whereas girls are at greater risk for internalizing problems (e.g., Block, Block, & Morrison, 1981; Cummings & Davies, 1994). Moreover, gender differences also have been found in the mediating process. For example, Block and colleagues (1981) suggest that boys are more affected by inconsistent parenting than girls when marital conflict occurs. However, some studies found that boys and girls are similarly affected by exposure to marital conflict (e.g., Buehler et al., 1998; Johnson & O'Leary, 1987). The present study tries to further understanding of whether boys and girls react differently to marital conflict and whether the possible mediating or moderating processes involving parenting behavior and adolescent feelings of insecurity vary by adolescent gender.

Another important aspect of the present study is that it examines the influence of marital conflict on three separate adolescent outcomes. Previous studies have tended to examine a single domain of adjustment problems, such as conduct problems or internalizing

problems; or alternatively, some studies have aggregated various dimensions of adolescent adjustment (see Johnson, 1996). The present study will use poor emotional well-being, externalizing problems, and internalizing problems as separate adolescent outcome measures to examine whether marital conflict has the same or different effects on different aspects of adolescent development.

The next chapter provides a review of theories and previous studies in the area of marital conflict and child adjustment problems. Based on these theories and previous studies, the analytic models propose that (1) both overt marital conflict and conflict over child-rearing will have adverse influences on adolescent adjustment, and their influence will be stronger than the effect of general marital distress; (2) both the level of and increases in marital conflict will lead to increases in adolescent adjustment problems over time; and (3) poor parenting behavior and adolescent feelings of insecurity will mediate or moderate the relationship between marital conflict and adolescent adjustment problems. As mentioned previously, the study will examine the influence of marital conflict on different domains of adolescent outcomes separately. Also, adolescent gender differences will be tested. In subsequent chapters, methods of study are reviewed, results are presented, and the findings are discussed in relation to the aims of the research. Using a prospective, longitudinal design, the present study focuses on 5 assessments of 451 adolescents and their parents over a period of 6 years. Both latent structural equation modeling and latent growth curve analyses are used to evaluate the analytic models.

## CHAPTER TWO.

### LITERATURE REVIEW AND ANALYTIC MODEL

#### Marital Conflict and Adolescent Adjustment Problems

Marital conflict has been associated with the development of a wide variety of problems in children and adolescents, such as aggression, conduct disorders, and anxiety (Emery, 1982, 1988). Research on the effect of divorce on children also indicates that the conflict associated with divorce, rather than the breakup of the family, is primarily responsible for many of the problems seen in children whose parents divorced (e.g., Buehler, et al., 1998; Emery, 1988; Kline, Johnston, & Tschann, 1991; Long & Forehand, 1987). Because many children are likely to experience a parents' divorce or live in intact families marked by a high degree of marital conflict, the impact of marital conflict on children should be a central focus of inquiry (Grych & Fincham, 1990). Earlier research has found greatest support for a connection between marital conflict and children's externalizing problems, such as aggression and delinquency. Other studies have examined other domains of adjustment, including internalizing problems (e.g., anxiety, depression, and withdrawal), poor emotional well-being, academic problems, and low social competency (e.g., Cummings & Davies, 1994; Emery, 1982; Grych & Fincham, 1990).

Fincham (1994) classified studies conducted through the early 1990s as "first generation research". These investigations demonstrated an association between marital conflict and child functioning. Also, the first generation research made some progress in understanding some of the specific aspects of marital conflict that are most deleterious for children. According to Fincham, "second generation research", more sophisticated in design and statistical analysis, provides us with a more complex understanding by extending earlier

research in several ways. First, more recent research continues to contribute more to the understanding of specific aspects of marital conflict that are most detrimental. Second, more recent research attempts to move from correlation to causation and emphasizes longitudinal research that studies the association between marital conflict and child problems across time. Third, more recent research tries to explain why an association exists between marital conflict and child adjustment problems. Consistent with Fincham's analysis, the following review first considers the evidence for a connection between marital conflict and children's adjustment problems, including externalizing problems, internalizing problems, and poor emotional well-being. Second, evidence is considered regarding the specific aspects of marital conflict that are found to be important for child adjustment. Third, the review examines how level and change in marital conflict might relate to change in adolescent problems over time. Fourth, the discussion turns to mechanisms that may explain the association between marital conflict and child problems. Finally, possible adolescent gender differences in response to interparental conflict will be discussed.

### Child and Adolescent Adjustment

#### Externalizing Problems

Emery (1982) notes that most of the early investigations of marital discord and child adjustment focused on externalizing problems (e.g., aggression, deviant behavior), and significant associations were found in both clinic children (e.g., Emery & O'Leary, 1982; Oltmanns, Broderick, & O'Leary, 1977; Porter & O'Leary, 1980) and nonclinic children (Rutter, 1971; Whitehead, 1979; Wolkind & Rutter, 1973). Cummings and Davies (1994) report similar associations between marital conflict and children's externalizing problems. They note that children who are exposed to high levels of marital conflict are vulnerable to

externalizing disorders such as aggression and delinquency. Among the studies Grych and Fincham (1990) reviewed, marital conflict is associated with externalizing problems, including conduct disorder (e.g., Johnson & O'Leary, 1987; Jouriles, Murphy, & O'Leary, 1989; Wierson, Forehand, & McCombs, 1988), aggression (e.g., Jacobson, 1978; Johnston, Gonzalez, & Campbell, 1987); and delinquency/antisocial behavior (Emery & O'Leary, 1984; Peterson & Zill, 1986). More recent studies continue to support this association between marital conflict and youth externalizing problems (e.g., Buehler et al., 1998; Davies et al, 1998; Harold & Conger, 1997; Harold, Fincham, Osborne, & Conger, 1997).

### Internalizing Problems

Emery (1982) points out that investigations of internalizing problems (e.g., anxiety, withdrawal) have provided mixed results. Some studies found no significant associations between marital conflict and internalizing problems. For example, Emery and O'Leary (1982) and Oltmanns et. al. (1977) found no significant associations between marital conflict and anxiety in clinic children. Rutter (1971) and Wolkind and Rutter (1973) reported no significant relations for neurotic problems in nonclinic samples.

However, some other studies found significant associations between marital conflict and children's internalizing problems. Porter and O'Leary (1980) found marital discord to be related to anxiety in clinic children. Whitehead (1979) reported significant relations for neurotic problems in nonclinic children. Among the studies Grych and Fincham (1990) reviewed, many found a relationship between marital conflict and internalizing problems, such as depression (Johnson et al., 1987; Peterson & Zill, 1986) and anxiety/withdrawal (e.g., Long, Slater, Forehand, & Fauber, 1988; Wierson et al., 1988). More recent studies also

found an association between marital conflict and children's internalizing problems (e.g., Davies & Cummings, 1998; Grych, 1998; Harold & Conger, 1997; Harold et al., 1997).

Even though some studies have found a significant association between marital conflict and internalizing problems, the association appears to be less robust compared with the association between marital conflict and externalizing problems (Cummings & Davies, 1994; Emery, 1982). Buehler et al. (1997) note that the effect of interparental conflict on youth externalizing problems is greater than that on internalizing problems. Cummings and Davies (1994) suggest that internalizing problems are relatively subtle behaviors which may be underreported. In a recent study, however, Davies and Cummings (1998) found that marital conflict predicted internalizing symptoms equally as well as externalizing problems. Additional studies are needed to examine whether there is a relationship between marital conflict and internalizing problems and whether the relation is weaker than that between marital conflict and externalizing problems.

#### Poor Emotional Well-being

Some studies have found an association between marital conflict and children's psychological well-being. Amato (1986), for example, demonstrated that interparental conflict was negatively related to school-aged children's self-esteem. Black and Pedro-Carroll (1993) also found an association between interparental conflict and late adolescents' psychological well-being (including interpersonal trust, emotional empathy, and dependency). In a cross-cultural study of 39 countries on 6 continents, Gohm, Oishi, Darlington, and Diener (1998) studied young men's and women's subjective well-being, including life satisfaction and balance of positive affect (e.g., affection, joy, contentment, and pride) and negative affect (e.g., such as fear, anger, sadness, and guilt). They found that well-

being was negatively associated with marital conflict. In an especially interesting analysis, Amato, Loomis, and Booth (1995), using a 12-year longitudinal study, found that young adults had higher levels of well-being (e.g., happiness) if parents in high conflict marriages divorced rather than stayed together. On the other hand, young adults had higher levels of well-being if parents in low conflict marriages stayed together rather than divorced. Finally, in marriages that did not end in divorce, marital conflict was negatively associated with the well-being of young adult children.

One problem of previous studies is that they have tended to examine a single domain of adjustment problems, such as externalizing problems, internalizing problems, or poor psychological well-being. Alternatively, some studies have combined various dimensions of adolescent adjustment into a single measure (see Johnson, 1996). The present study will use externalizing problems, internalizing problems, and poor psychological well-being as three separate outcome measures to examine whether marital conflict operates the same way in relation to each of these three adolescent adjustment problems.

#### Specific Aspects of Marital Conflict that Lead to Adolescent Adjustment Problems

Children exposed to marital conflict do not necessarily develop emotional and/or behavioral problems. In fact, exposure to some types of conflict may promote the development of constructive problem-solving or coping strategies (Cummings, Goeke-Morey, & Papp, 2001; Grych & Fincham, 1990). Fincham (1994) suggests that researchers studying marital conflict need to “get down to specifics”. Since both marital conflict and child adjustment can take many forms, scholars need to differentiate various aspects of these central constructs to understand the association between them. That is, rather than addressing the question of an overall relation between marital conflict and adjustment, the question

needs to change to one that asks what specific aspects of marital conflict are related to what specific aspects of child adjustment. Therefore, it is important to identify which aspects of marital conflict are related to children's problems.

Grych and Fincham's (1990) "cognitive contextual framework" proposes that marital conflict that is intense, poorly resolved, and child-related represents a destructive form of conflict that is particularly upsetting to children. Marital conflicts differ widely in their intensity, ranging from calm discussion to physical violence. It may be that exposure to low-intensity conflict is unrelated to child problems and that marital conflict is upsetting to children only when it involves open hostility or physical aggression (Grych & Fincham, 1990). Also, children respond differently to various topics of marital conflict. Grych and Fincham (1990) propose that children may be more distressed if the conflict concerns them. That is, child-related conflict is hypothesized to be distressing because of its apparent self-relevance for the child. Therefore disagreement over child rearing may lead to greater self-blame and fear of becoming involved in the conflict (Grych & Fincham, 1993).

Davies and Cummings' (1994) "emotional security hypothesis" also proposes that marital conflict that is intense and that concerns child-related issues is particularly stressful for children. Both of these hypotheses propose that overt, hostile marital conflict and marital conflict over child-rearing issues will have the most adverse influence on child adjustment. Children should feel greater threat and fear from marital conflict that is openly hostile than from marital conflict that is quite subtle or occurs without their knowledge. Similarly, children should feel more responsible for and involved in interparental conflict that pertains to the topic of child-rearing. The following discussion reviews studies on specific aspects of marital conflict and their relation to child adjustment problems.

### Overt Marital Conflict

Researchers have shown that openly expressed marital conflict is important in predicting child adjustment problems. Johnson and colleagues (1987) reported that the degree of physical aggression between divorcing parents was related to parental reports of behavior problems in children assessed 2 years after the divorce. Gordis, Margolin, and John (1997), using a sample of ninety 2-parent families with children 9 to 13 years old, reported that exposure to interparental physical aggression during the previous year was related to child withdrawal, anxiety, and distraction during a family discussion task. In a series of studies examining children's immediate responses to anger between adults, Cummings and his colleagues found that children exhibited the greatest distress when observing naturally occurring anger between their parents that involved physical aggression or when they watched videotapes of angry exchanges between other adults that included physical aggression (Cummings, Vogel, Cummings, & El-sheikh, 1989).

However, assessing the degree of physical aggression present during conflict is only one possible operationalization of overt marital conflict. Overt marital conflict is more often conceptualized as the degree of negative affect or hostility expressed by parents (Grych & Fincham, 1990). Using interviewer ratings, Rutter et al. (1974) found a stronger relation between child problems and unhappy marriages characterized by quarrelsomeness than between child problems and unhappy marriages characterized by apathy. Similarly, Porter and O'Leary (1980) found that a self-report measure of open marital conflict was a superior predictor of problems in children when compared with a general index of marital satisfaction.

Katz and Gottman (1993) propose that once married couples reach the point at which their interactions are marked by hostility and contempt, their arguments are intense, easily

overheard by their children, and may lead to greater child adjustment problems. Consistent with this idea, Hetherington et al (1982) reported that overt interparental conflict had adverse impacts on children's problem behaviors and social interactions, whereas encapsulated interparental conflict to which the children were not directly exposed had no apparent negative effect on children's functioning. More recent studies continue to demonstrate the detrimental impact of overt marital conflict on children and adolescents. El-Sheikh (1997) reported that 7-9 year old children from high conflict homes perceived videotaped inter-adult arguments as more angry and reported feeling more fearful than those from low conflict homes. Rogers and Holmbeck (1997) reported that more intense conflict was associated with greater adjustment problems for 6-9th graders. Buehler et al. (1998) found that overtly hostile marital conflict was more strongly associated with 9 -15 year old youth's behavior problems than frequency of disagreement. Grych (1998) also found that the level of parental hostility predicted preadolescents' feelings of threat, pessimism, and distress. In fact, Fincham (1994) notes that overt marital hostility to which children are exposed has recently been identified as the most relevant form of marital discord for understanding child adjustment problems. Kelly's (2000) review also indicates that openly hostile marital conflict had the largest and most consistent impact on children's adjustment, with intense conflict leading to more externalizing (disobedience, aggression, delinquency) and internalizing (depression, anxiety, poor self-esteem) symptoms in both boys and girls, compared with children experiencing low-intensity conflict.

Studies also have shown that overt marital conflict is a better predictor of child adjustment problems than global marital distress (Emery & O'Leary, 1984; Jenkins & Smith, 1991; Johnson & O'Leary, 1987; Jouriles et al., 1989; Porter & O'Leary, 1980). For

example, Johnson and O'Leary (1987) found that parents of girls viewed as exhibiting conduct disorder reported more interparental hostility and aggression than did parents of girls not viewed as exhibiting conduct disorder. However, the two groups of parents did not differ in marital satisfaction. Similarly, Katz and Gottman (1993) found that children of married couples who engaged in mutually hostile communication patterns during a laboratory problem-solving task exhibited greater externalizing behavior problems three years later. The couples' level of marital satisfaction was not related to the child outcome. Jouriles et al. (1989), using a sample of married couples who were seeking marital therapy, reported that marital aggression between spouses predicted parental ratings of child conduct disorder, personality disorder, inadequacy/immaturity, and clinical levels of child behavior problems even after considering the level of marital satisfaction. Taken together, the findings from these studies suggest that marital conflict that is openly hostile may be especially threatening, harmful, and predictive of child adjustment problems, and that overt marital conflict may be a better predictor of child adjustment problems than general marital distress.

#### Conflict over Child-rearing

Emery, Joyce, and Fincham (1987) suggest that marital conflict over child-rearing seems to be particularly harmful to children. Several studies support this idea. Block et al (1981) found that parental disagreement on child-rearing values predicted adjustment problems in children one to four years later. Snyder and colleagues (1988) demonstrated that parental reports of marital conflict over child rearing were significantly correlated with parental ratings of child adjustment, such as depression, delinquency, anxiety, withdrawal, and social skill impairment. McHale, Freitag, Crouter, and Barko (1991) found that children whose parents reported high levels of marital conflict were not significantly more likely to

display adjustment or conduct problems than were children whose parents reported lower levels of marital conflict. Instead, they found that disagreements about child-rearing strategies were linked to conduct disorder and child problems.

In a recent study, Nixon and Cummings (1999) examined the effect of marital conflict over child-rearing by comparing children with disabled siblings and children without disabled siblings. They found that, compared with families without disabled siblings, families with disabled siblings had more child-rearing conflicts and the conflicts are more threatening, and have more negative implications for family functioning. Children in families with disabled siblings evidenced greater feelings of responsibility and emotional distress. The investigators suggested that for these children from families under duress, marital conflict over child-rearing issues fosters a greater sense of responsibility and is more disturbing than marital conflicts about marital issues.

Jouriles, Farris, and McDonald (1991) propose that parental child-rearing disagreement has a stronger impact on the development of child behavior problems than general marital discord for two reasons. First, children may be more likely to blame themselves for parental disputes over child-rearing than for disputes about other topics. Second, children who are aware of parental disagreement concerning appropriate child behavior may be uncertain about the rules regarding their behavior, and they may be forced to decide what is acceptable and behave accordingly. If the child follows the admonitions of one parent that are in disagreement with the preferences of the second parent, he or she may then be perceived at least by one parent as misbehaving. Consistent with these ideas, some empirical studies have suggested that marital conflict specific to the topic of child-rearing is a better predictor of child behavior problems than either general marital distress or conflict in

areas not related to child-rearing (e.g., Dadds & Powell, 1991; Grych & Fincham, 1990; Jouriles et al., 1991; Snyder et al., 1988).

### General Marital Distress

Before identifying marital conflict as a particularly important aspect of marital functioning for children's development, most earlier studies established relations between general marital distress and adjustment problems in children. For example, Jouriles et al (1991) found that marital unhappiness was related to child conduct problems. Later studies on marital conflict, as indicated earlier, have demonstrated that marital conflict predicts child problems better than indexes of general marital distress. To further examine the relative influence of different domains of marital functioning on child adjustment, the present study evaluates three specific aspects of the marital relationship: overt marital conflict, conflict over child-rearing, and general marital distress. The research investigates whether the three aspects of marital problems operate differently in relation to different dimensions of adolescent adjustment problems.

#### Does Change in Marital Problems Influence Change in Child Problems?

The impact of marital conflict on children occurs over the course of many years. Thus, one must consider the effects of marital conflict over time (Cummings, Davies, & Campbell, 1999). Moreover, children's development is not static or fixed, but is best conceptualized in terms of pathways of development (Cummings et al., 2001). So a dynamic model of marital functioning and child adjustment best fits current thinking about these issues. Ascertaining the effect of one variable on another over time, however, presents a significant challenge that involves conceptual as well as statistical issues (Fincham et al., 1994). As a result, most of the research on marriage and child development has used

concurrent measures of conflict and behavior problems, leaving unanswered questions pertaining to the effects of change in marital conflict on child adjustment and the impact of exposure to marital conflict on changes in behavior problems over time (Grych & Fincham, 1994).

In an advance over cross-sectional research, some studies measured marital conflict at one time point and child problems at a later point in time. Katz and Gottman (1993) found that mutual hostility expressed between spouses during a laboratory task predicted teacher ratings of externalizing problems 3 years later. A few studies have measured child problems both concurrently with marital conflict and at a later point in time, therefore examining change in child problems. For example, Ingoldsby, Shaw, Owens, and Winslow (1999) reported exposure to marital conflict to be linked to both concurrent and later behavior problems. Harold and colleagues (1997) studied marital conflict and changes in adolescent distress over time and reported that marital conflict predicted adolescents' concurrent distress and distress 12 months later through awareness of conflict and perceptions of parental hostility. In another study, Harold and Conger (1997) found that marital conflict was related to change in externalizing and internalizing symptoms over time.

Even fewer studies have examined change in marital conflict and its relation to child problems. Fincham et al. (1994) pointed out that researchers tend to focus heavily on using initial levels of marital conflict to predict child functioning but have done little to examine change in marital conflict as a predictor variable. Cummings and his colleagues have investigated past histories of marital conflict and its influence on children's reactions. For example, Cummings et al (2001) proposed and found that in response to the same current conflict, compared to children from low conflict homes, children exposed to high levels of

conflict in the past evidenced greater reactivity (e.g., more distress, anger, and aggression). Unfortunately, these data reflect only a retrospective account of marital history and do not speak to the process of change in marital conflict and its impact on child problems. Ingoldsby et al (1999) suggest that patterns of marital conflict over time make a unique contribution in predicting later child problems. Specifically, they found that behavior problems were lower only for children experiencing low levels of interparental conflict at both time points compared to those experiencing high conflict at one or both time points.

In sum, only a few studies have examined the relation between marital conflict and child problems over time. Even when they do so in longitudinal studies, earlier research has focused only on change in one variable (usually child problems) and level in the other (usually marital conflict). In this instance, it is common to study change by statistically partialing out the effect of a variable at an earlier time point (Fincham et al., 1994). That is, child problems at Time 1 may be statistically controlled when marital conflict at Time 1 is used to predict child problems at Time 2. Conceptually, this results in looking at whether level in marital conflict predicts change in a measure of child adjustment from Time 1 to Time 2. In this case, change in child problems is predicted from a static measure of marital conflict. Totally absent from the literature is research that studies change in marital conflict and change in child problems. Fincham and colleagues (1994) propose that increases in the level of marital conflict over time will lead to higher levels of child adjustment problems. But this hypothesis has never been examined empirically. With a longitudinal design and repeated measures of marital conflict and adolescent adjustment problems across time, the present study will advance earlier work by investigating the impact of change in marital conflict on change in adolescent adjustment problems.

### Accounting for the Association between Conflict and Adjustment

Although the association between marital conflict and child adjustment problems is fairly well established, little attention was paid until the early 1990s to the processes that might give rise to the association between marital conflict and child problems (Grych & Fincham, 1990). Recent studies have extended earlier work by developing and testing conceptual models that clearly specify mechanisms by which marital conflict can lead to different developmental outcomes for children and adolescents (Fincham, 1994; Holmbeck, 1997). Several studies have suggested that parenting practices and children's perception of marital conflict are important for understanding the relationship between marital conflict and child adjustment problems. In theory marital conflict should affect both the quality of parenting practices and also the ways in which the child perceives parental interactions. Several investigators have proposed that the influence of marital conflict on parenting behaviors and children's perceptions explains, accounts for, or mediates the relationship between marital conflict and child adjustment.

#### Parenting Practices

Three hypotheses are especially pertinent for studying parenting practices in mediating the relation between marital conflict and child problems. First, Emery (1982) notes that a mechanism by which marital conflict may affect children is through an alteration in parental discipline practices. The "disrupted discipline hypothesis" (Emery, 1982) argues that conflict in the marital relationship adversely affects the quality and consistency of parenting, which in turn contributes to poorer adjustment in children. Parents experiencing marital distress may be more likely to give in to a child's coercive commands, or they may be preoccupied with their own problems and become lax in their child management behavior, or

they may use opposing discipline strategies with their children due to their conflict. They may also lack communication about each other's opinions about disciplining the child, which results in inconsistent discipline.

Second, negative parental affect in parenting also contributes to children's development problems (Cummings & Davies, 1994). The "spillover hypothesis" (Engfer, 1988) argues for the spillover of negative affect from the marital relationship to the parent-child relationship. According to the spillover hypothesis, distress and hostility accompanying marital conflict are carried over into parenting practices, leading to negative affect and behavior, such as rejection, hostility, unresponsiveness, and harsh discipline (Cummings et al., 2001). That is, the emotional climate in the home is contagious: negative affect moves across the spousal boundary into the parent-child subsystem, such as overt hostility toward the child, withdrawal and neglect of the child, or punishing the child as a result of marital frustration and distress (Cummings & Davies, 1994; Fincham et al., 1994).

Third, Emery and O'Leary (1982) propose that children whose parents have marital problems may experience a "loss of love". As a result, the quality of the marital relationship may also disrupt the quality of the children's relationships with their parents. Marital conflict may be emotionally draining to parents, depleting them of emotional resources for their children, and thus reducing their ability to recognize and respond to their children's emotional needs. As a result, parents in conflict will decrease their parental warmth and affection (Fincham et al., 1994; Harold et al., 1997).

Studies have tested the mediating effect of parental discipline strategies on the relationship between marital conflict and child adjustment. Caspi and Elder (1988) found that marital conflict influenced child problems indirectly through its effect on non-optimal

parenting practices, specifically the discipline strategies used by parents. Evidence for the mediating role of parenting has also been provided in a series of reports by Conger and his colleagues (Conger et al., 1992, 1993; Conger, Ge, Elder, Lorenz, & Simons, 1994). For example, Conger and colleagues (1993), using a sample of 220 7<sup>th</sup> grade girls living in intact families, found that marital conflict was negatively related to nurturant-involved parenting. The disruptions in skillful parenting, in turn, had adverse consequences for adolescent girls' adjustment. Fauber and colleagues (1990), using structural equation modeling, revealed that relations between marital conflict and adolescents' internalizing problems were mediated by parental rejection and psychological control. Relations between marital conflict and adolescents' externalizing problems were only partially mediated by parental rejection and withdrawal inasmuch as the direct relation between marital conflict and externalizing problems was still significant after controlling for the parenting variables. Fauber and colleagues (1990) concluded that most of the relationship between marital conflict and adolescent problems is explained by perturbations in parenting. Frosch, Mangelsdorf, and McHale (2000) found that mother's parenting partially mediated the linkage between marital conflict and mother-child attachment. Kitzmann (2000) examined marital conflict's indirect effect on children through disruptions in parenting for 40 couples with a 6-8 year old son. This study found that after conflictual marital discussion, fathers showed lower support/engagement toward their sons, and co-parenting styles were also less democratic. These perturbations in parenting, in turn, were related to child problems.

The mediating effects of inconsistent parenting are also replicated in economically disadvantaged, predominantly ethnic minority children. Gonzales, Pitts, Hill, and Roosa (2000) used path analysis to determine whether the effects of interparental conflict on

children's depression and conduct disorder were mediated by parenting with a low-income minority sample of preadolescent children. They found support for the mediational model that the effect of marital conflict on children's depression and conduct disorder were mediated through inconsistent discipline and low acceptance by parents.

Studies also support the spillover hypothesis. Almeida, Wethington, and Chandler (1999) suggest that tension is transmitted from marital dyad to parent-child dyad on a day-to-day basis. Using a sample of 117 couples, they found that both mothers and fathers were more likely to have tense interactions with their children on days when there had been some marital tension the previous day. Conger and Elder (1994) propose that marital conflict affects adolescent adjustment by disrupting parents' child-rearing skills, particularly the spill over from marital conflict to hostile interactions and harsh discipline by parents to children and adolescents. They expect that marital difficulties increase parents' irritability and harshness with their children. In a longitudinal study of 180 boys and 198 girls, Conger and colleagues (1994) found marital conflict to be predictive of adolescent problems through parent hostility toward the adolescent. Harold and colleagues (1997) also found marital conflict to influence adolescents' internalizing and externalizing problems through their reports of parental hostility toward them. Johnson (1996) found that parents' negative affect (anger, hostility, depression) toward the child partially mediated the effects of marital conflict on externalizing behaviors. Other studies supporting the spillover hypothesis include those by Jouriles and Farris (1992), Mahoney, Boggio, and Jouriles (1996), Margolin, Christensen, and John (1996), and Russell (1997).

The "loss of love" hypothesis is also supported by several studies. Easterbrooks and Emde (1988) reported that observations of high marital conflict during a conflict-resolution

task predicted observations of low levels of parental warmth and involvement in parent-child interaction. Parent reports of disagreement over child rearing were strongly and negatively related to warm parent-child interaction. Similarly, Hetherington et al (1992) reported a composite measure of marital conflict was related to composite measures of parental negativity and low warmth. Holden and Ritchie (1991) found that the presence of marital aggression predicted maternal reports of high parenting stress, lack of parental warmth, and low parental involvement. Bond and McMahon (1984) reported a trend for maritally distressed mothers to demonstrate less praise and less positive physical contact toward their children and more inappropriate commands for compliance from their children than non-distressed mothers. Kline and colleagues (1991) also found that marital conflict had an indirect effect on children's emotional distress (including self esteem) through less warmth by mother. Webster-Stratton and Hammond (1999) found a mediational effect by both mothers and fathers' critical parenting (e.g., overt critical statement directed at children) and low emotional responsivity (e.g., low positive affect and negative affect valence) between marital conflict and child problems.

The above review of theories and research demonstrate that marital conflict is likely to result in parents' inconsistent and harsh discipline and reduced warmth and affection, which in turn, increase the likelihood of adjustment problems for children. Fauber and Long (1991) argue that parenting behavior is the solely important factor that links marital conflict and child adjustment. However, other researchers suggest that other factors also contribute to the connection (e.g., Emery, Fincham, & Cummings, 1992). They believe that children's appraisals of marital conflict also play an important role in the process.

### Children's Feelings of Insecurity

Grych and Fincham's (1990) cognitive contextual framework proposes that the impact of marital conflict on child adjustment is mediated by children's understanding and appraisals of conflict. However, Grych and Fincham's model is relatively general with regard to children's reactions in terms of emotionality. Davies and Cummings' (1994) emotional security hypothesis provides a specific model that identifies emotional security as the paramount factor in children's regulation of emotional arousal and organization in their response to marital stress. Davies and Cummings propose that emotional security is both a product of past experiences with marital conflict and also has an influence on future responding. Thus, according to these researchers, emotional security plays a central role as an immediate mediator in situations in which children are exposed to marital conflict.

According to Davies and Cummings, emotional security includes emotional reactivity and also internal representation of family relations. Emotional reactivity occurs when children witness destructive marital conflict, which will increase their negative emotional arousal and threaten their emotional security. Negative emotional reactivity, in turn, is associated with higher levels of both internalizing and externalizing symptoms (Cummings & Davies, 1994, 1996; Harold & Conger, 1997; Thompson & Calkins, 1996; Wilson & Gottman, 1995).

From this perspective, children's internal representations of marital and family relations are a component process of emotional security that also serve as a mediator of the effects of marital conflict. Children exposed to marital conflict are likely to appraise marital conflict as a threat to the quality of family relations, therefore predicting their adjustment problems. Especially relevant to adolescents, since they are old enough to understand and

interpret the meaning and potential consequences of marital conflict for family relations, when they witness negative conflict, they may develop insecure internal representations of family relations (e.g., feeling insecure in their own relationship with their parents, Cummings & Davies, 1994). Grych (1998) also suggests that as adolescents age and increase their ability to understand complex social interactions, their perceptions of the causes of affect and behavior become increasingly sophisticated. Therefore, marital conflict can affect adolescents' beliefs about their relations with their parents. That is, marital conflict may lead to a deterioration of children's feelings of closeness in the parent-child relationship and intensify children's feelings of loss or rejection (Fincham et al., 1994). These adolescent feelings of insecurity are expected to play a key role in the influence of marital conflict on children's functioning.

The most convincing support for emotional security as a mediator is a recent study by Davies & Cummings (1998). In this study, the investigators used a sample of 6-9 year old children to examine whether links between negative marital conflict and children's adjustment problems were mediated by children's emotional security. The results from latent variable path analysis indicated that emotional reactivity and internal representations were closely linked with marital conflict and child adjustment, especially with respect to internalizing symptoms. However, they found that even a higher order construct combining emotional reactivity and internal representations only partially explained the linkage between marital conflict and internalizing symptoms, suggesting that marital conflict continues to exert appreciable direct effects on internalizing problems. However, a limitation of this test with regard to inferences about causality is that it is based on a cross-sectional research design. Tests in terms of prospective, longitudinal research designs are necessary to provide

more convincing examinations of the validity of the theory (Cummings, et al., 2001). The present study, with a prospective, longitudinal design, is able to examine whether adolescent feelings of insecurity mediate the relation between marital conflict and change in adolescent adjustment problems over time.

#### Mediating or Moderating Mechanisms?

Although several investigations have indicated that parenting behavior and adolescent feelings of insecurity mediate the effects of marital conflict on child problems, an alternative process – moderation – has received less attention until recently. Recent studies that paid attention to moderating effects have found several moderating factors that condition the association between marital conflict and child problems, including vagal tone (El-Sheikh, Hargar, & Whitson, 2001); difficult temperament, perceived family support, and a history of behavior problems in childhood (Davies & Windle, 2001); and self-blame and perceived threat (El-sheikh & Hargar, 2001). In particular, Gordis et al (1997) reported that the interaction between interparental aggression and observed parent hostility to child accounted for significant variance in boys' behavior. Specifically, boys who had been exposed to physical marital aggression were more anxious and distracting when their parents were more hostile toward them during the discussion. Frosch and Mangelsdorf (2001) found that the presence of mother's hostile intrusive parenting increased children's vulnerability to behavior problems. In other words, they found that mother's hostile parenting moderated the association between marital conflict and child problems in that the association was particularly pronounced when mothers were more hostile. However, they didn't find this moderating effect for father's hostile parenting. After controlling for parenting behavior, they found that marital conflict still explained a significant portion of the variance in observer

report of child behavior problems. Therefore, they conclude that the effect of marital conflict on child problems was not mediated through parenting behavior. Actually, according to Baron and Kenny (1986), even if marital conflict explains a significant portion of the variance after controlling for parenting, it is still possible for parenting to partially mediate the association since the reduction in the magnitude of the direct effect of marital conflict can be significant after the parenting variable is entered into the model. Therefore further tests are needed to show whether the mediating effect is present.

With regard to children's appraisal and understanding of marital conflict, the same issue of moderating or mediating still exists. According to the cognitive-contextual framework (Grych & Fincham, 1990), children's appraisal and understanding of marital conflict mediate the association between exposure to conflict and child outcomes. There is, however, also growing support for the proposition that appraisal and understanding moderate the effects of marital conflict (Kerig, 1998; Rogers & Holmbeck, 1997; Rossman & Rosenberg, 1992). This moderating effect demonstrates a vulnerability function in this association. This means that appraisal and understanding are likely to be due to individual differences and/or environmental influences other than marital conflict. For example, appraisal and understanding may interact with marital conflict in making children more susceptible to adjustment problems associated with marital conflict.

In a study of school-age children, Kerig (1998) directly compared mediation and moderation to examine the role of appraisals of conflict in the association between marital and child adjustment. She found support for moderating effects that demonstrated vulnerability functions in these associations. In particular, Kerig (1998) found that appraisals of conflict properties (i.e., threat, self-blame, and perceived control) moderated the effects of

marital conflict on externalizing problems and anxiety in boys whereas appraisals of threat, self-blame, perceived control, and self calming acted as moderators of internalizing problems in girls. El-Sheikh and Hargar (2001) also found that feelings of threat and self blame moderated the association between marital conflict and child adjustment. However, Grych and colleagues (2000) also examined mediation and moderation models in relation to marital conflict, appraisals, and early adolescents' adjustment and found that perceived threat mediates the association between marital conflict and internalizing problems but not externalizing problems. They found no evidence of moderating effects for appraisals.

With regard to children's emotional security in particular, Fincham et al. (1994) suggest that adolescents' feelings about the quality of the parent-child relationship may reduce the stressfulness of marital conflict under some conditions, but increase it in others. According to this hypothesis of a moderating relationship, children who feel they have a close and stable relationship with both parents may be affected less when marital conflict occurs than children who are less secure in their relationships. They may be less threatened by marital conflict because they believe that family cohesion is strong and that their parents will protect them from harm. Thus, feelings of warm parent-child relations may buffer children from the effects of marital conflict by decreasing children's appraisal of threat. Black and Pedro-Carroll (1993) found emotional security with parents moderated the effect of marital conflict on adolescent psychological well-being, supporting the notion that security buffers subjects from the negative effect of marital conflict. Ingoldsby and colleagues (1999), using a sample of 129 mother-son dyads from low income, two-parent families with sons aged 2 -5 years old, found that children's emotional reactivity in response to marital conflict had no direct relation to marital conflict and only a modest relation to behavior problems.

However, marital conflict and emotional reactivity interacted to predict both internalizing and externalizing problems at ages 3.5 and 5. Thus, support was demonstrated for emotional reactivity as a moderator in the development of young children's behavior problems. One goal of the present study is to test whether the relation between marital conflict and adolescent problems is mediated or moderated by adolescent feelings of insecurity.

#### Adolescent Gender Differences

Theoretically, it might be expected that gender differences will be found in terms of children's responses to marital conflict (Davies et al., 1998). In fact, previous studies have shown adolescent gender differences in response to marital conflict, but the results are not consistent and are likely to be complex (Grych, 1998). Emery (1982) reports that several studies (e.g., Block et al, 1981; Emery & O'Leary, 1982; Porter & O'Leary, 1980; Rutter, 1971) demonstrated that marital discord had a greater effect on boys' than on girls' obviously maladaptive behavior. On the other hand, Emery (1982) suggests that girls may be more affected by marital conflict by reacting in a manner that is more appropriate to their sex role, such as becoming anxious or withdrawn instead of angry and impulsive. Cummings and Davies (1994) also note that boys and girls differ in their manner of expression such that boys show dysfunction by increased aggressiveness whereas girls more often become withdrawn and anxious (Block, 1983; Block et al., 1981, 1986; Cohn, 1991; Emery, 1982). Some of their earlier studies (e.g., Cummings et al, 1985, 1989) have found that boys displayed more hostile reactions to background anger and girls displayed more distressed reactions. In their study with 2 year olds, Cummings and colleagues (1985) suggest that this gender-specific reaction to marital conflict might begin at an early age.

Grych and Fincham (1990), however, note that more recent investigations suggest that both boys and girls are similarly and adversely affected by exposure to interparental conflict (Emery & O'Leary, 1984; Johnson & O'Leary, 1987; Jouriles et al., 1988; Katz & Gottman, 1993; Long et al., 1987; Peterson & Zill, 1986). These studies reported significant relations between interparental conflict and internalizing and externalizing problems in both boys and girls. More recent studies continue to find similar effects on boys and girls. For example, Buehler et al. (1998) found fairly consistent results for boys and girls for both internalizing and externalizing problems. Jekielek (1998) also found that both boys and girls responded similarly to marital conflict in terms of poorer emotional well-being. In sum, some studies have found gender differences in the relation between marital conflict and children's adjustment, but the results are not always consistent.

Adolescent gender also is suggested to play a role in the mediating process of parenting behavior. Stoneman, Brody, and Burke (1989) reported that marital conflict was associated with within- and between-parent inconsistency in their discipline of daughters. Emery (1982) suggests that if parents disagree about discipline, boys should be affected more than girls because boys are disciplined more often by both parents. In comparison with girls, boys are exposed to more parental negativity (Rutter, 1990b), inconsistent discipline (Kurdek, 1986), and psychological insensitivity (Guidubaldi & Perry, 1985). Because boys engage in more aggression, misconduct, and impulsivity than girls, while girls more often show depression, anxiety, and withdrawal than boys (Block, Block, & Gjerde, 1986; Cohn, 1991; Emery, 1982; Nolen-Hoeksema, 1987), boys' problems are more noticeable than girls and therefore receive more negative parenting practices. In a longitudinal study, Block et al.

(1981) found that parental disagreement about discipline was related to later externalizing problems in boys and internalizing problems in girls.

With regard to adolescent gender differences in perceiving and reacting to marital conflict, the evidence suggests that boys are more prone to feelings of threat and girls more prone to self-blame. This pattern may result in more aggression and conduct problems in boys and more withdrawal and anxiety in girls (Davies & Cummings, 1994). Grych (1998) found that girls were more distressed by intense anger than were boys, who reported little difference in high- and low-intensity conditions. Some studies also found that preadolescent girls were more distressed by conflict than were boys (e.g., Cummings et al., 1989). However, Hetherington et al. (1985) found similar levels of disturbance in boys' and girls' behaviors in late childhood and adolescence. In a recent study Grych and colleagues (2000), using two samples of children, one from the community and the other having mothers living in shelters for battered women, found that perceived threat mediated the association between marital conflict and internalizing problems for adolescent boys and girls in both samples, and self-blame mediated this association for boys in both samples and girls in the shelter sample. Perceived threat and self-blame did not mediate links with externalizing problems. Grych (1998) suggests that this gender difference is only expressed when involving overt expression of hostility, not with minimal anger.

In sum, even though there has been a steady accumulation of information about gender in the relation between marital conflict and child problems, the results are not always consistent and are likely to be complex (Snyder, 1998). Further, the pattern of findings does not justify any definite conclusions about the relative vulnerability of boys and girls to marital conflict through mediating or explanatory processes (Davies & Cummings, 1994).

Researchers have suggested various reasons why gender differences are found in some studies but not in others. Davies et al (1998), for example, suggest that gender differences must be considered in the context of children's developmental stages. Block et al (1981) reported that gender differences in response to parent disagreement over childrearing were related to child psychological functioning, and that the gender differences were clear in preschool years, but by age 7 the sex-differentiated pattern appeared to be converging. They call for further studies on adolescents to see whether there are no longer gender differences in adolescent years.

More recently, Davies et al (1998) proposed that though boys may be more aggressive than girls during childhood (e.g., Patterson, 1982), girls demonstrate increasing parent-child conflict as they move to adolescence (Steinberg, 1987), and their response to marital aggression may converge with that of boys. Cummings, Ballard, and El-sheikh (1991) reported that as girls age their reactions to background anger become more hostile. Moreover, as boys reach adolescence, their reactions include more displays of sadness (Cummings, Ballard, El-Sheikh, & Lake, 1991). Davies et al (1998), using a sample of 156 adolescents ranging in age from 14 to 18 years, found that in response to marital conflict, girls displayed aggressive behavior as much as boys. The present study will test adolescent gender differences in the relation between marital conflict and adjustment problems as well as in the mediating or moderating processes related to conflict and adjustment. The analyses will determine if adolescent gender has any main effect on adolescent outcomes and also whether gender moderates the effect of marital conflict on adolescent problems.

## The Present Study

### The Analytic Models

The present study will examine (1) the degree to which overt marital conflict and conflict over child-rearing are related to various kinds of adolescent problems, and whether the effects of these specific aspects of marital conflict are stronger than that of general marital distress; (2) whether level and changes in marital conflict will predict changes in adolescent problems over time; and (3) whether parenting practices and adolescents' feelings of insecurity mediate or moderate the relation between marital conflict and adolescent adjustment problems.

Based on the earlier review of theory and previous research, we hypothesized that (1) overt marital conflict and conflict over child-rearing will have a greater impact than general marital distress on adolescent poor emotional well-being, externalizing problems and internalizing problems; (2) level of marital conflict and increases in marital conflict over time will predict increases in adolescent adjustment problems over time; and (3) parenting practices and adolescents' feelings of insecurity will mediate and/or moderate the association between marital conflict and adolescent adjustment. As indicated earlier, different kinds of adolescent problems will be modeled separately and adolescent gender effects also will be tested.

Figures 1 and 2 illustrate the analytic models for the study. Figure 1 is used to test hypothesized mediating and/or moderating effects in the relationship between the level of marital conflict and change in adolescent adjustment. The dates in the model indicate the years in which the constructs were assessed for the present study. Different aspects of marital conflict, parenting or adolescent feelings, and different domains of adolescent outcomes will

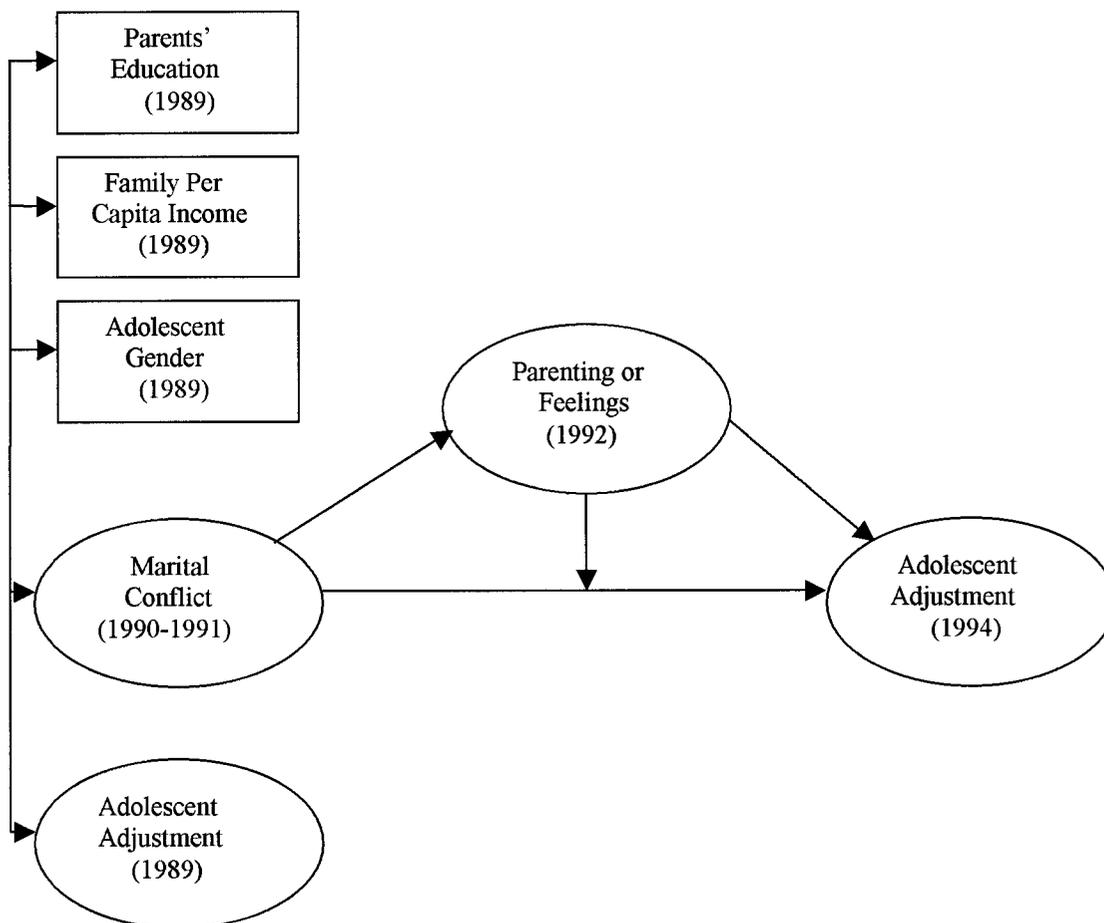


Figure 1. The analytic model for testing the influence of the level of marital conflict on hypothesized mediating and/or moderating effects on change in adolescent adjustment.

be tested separately to see if different aspects of marital conflict have different impacts on various outcomes through different mechanisms. Adolescent gender is a control variable. Other control variables (i.e. parents' education and family per capita income) also are included in the analyses to assure that socioeconomic status does not account for the

proposed relationships between conflict and adjustment. Also, adolescent outcomes are measured at an earlier time point (1989) to assure that adjustment in 1994 is not simply a continuation of earlier behavior. By adding earlier adjustment as a predictor, the model is designed to evaluate the degree to which marital conflict explains change in adolescent adjustment.

To test the mediating hypothesis, it is expected that rather than a significant direct relation, marital conflict will have an impact on adolescent outcomes indirectly through poor parenting behavior or adolescent feelings of insecurity. To test the moderating hypothesis, it is expected that the relation between marital conflict and adolescent problems depends on parenting or adolescent feelings. That is, the interaction between marital conflict and parenting or adolescent feelings is important to adolescent outcomes. Statistically it is possible for a single variable to serve as both a mediator and a moderator (Baron & Kenny, 1986), and we expect that to occur in the present situation. For example, we predict that marital conflict will diminish effective parenting practices which will directly relate to child adjustment (a mediating process). However, we also predict that poor parenting will intensify the direct relation from marital conflict to adjustment (a moderating process). That is, poor parenting makes the child even more vulnerable to marital conflict.

Figure 2 illustrates the model to test changes in marital conflict and changes in adolescent problems. Consistent with Figure 1, it is expected that initial level of marital conflict will predict initial level as well as change in adolescent problems, and also change in marital conflict will predict change in adolescent problems. Consistent with the proposed temporal ordering of effects, in these analyses marital conflict measures were taken from 1989, 1990, 1991, and 1992, whereas adolescent problems measures were taken from 1990,

1991, 1992, and 1994. To our knowledge, these are the first analyses designed to directly evaluate the hypothesis that change in marital conflict will lead to change in child adjustment problems. The analytic models in Figures 1 and 2 guide the empirical evaluation of study hypotheses.

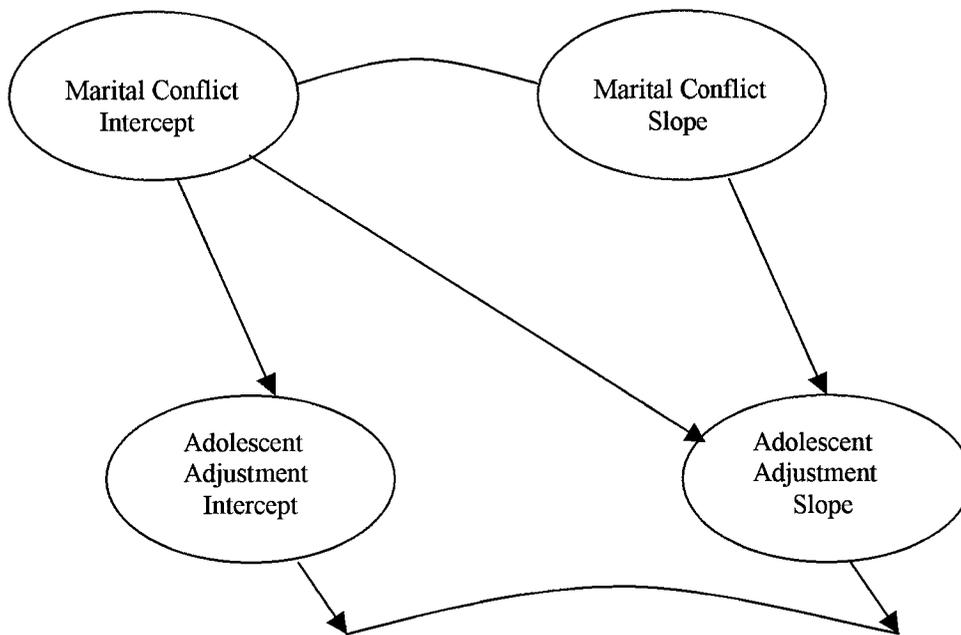


Figure 2. The analytic model for testing changes in marital conflict and adolescent adjustment.

### Methodological Strengths of the Present Study

In addition to addressing several important theoretical issues, the present study also improves upon some of the methodological limitations in previous research. First, this study used a prospective longitudinal research design. As Emery (1982) points out, prospective

investigations are badly needed, since longitudinal data can provide controls for reverse causality as well as yield descriptive information on the course of children's response to marital conflict. Fincham et al. (1994) also note that although research examining specific dimensions of marital conflict has advanced understanding of the nature of its association with child adjustment, it has not necessarily provided convincing evidence regarding causal relationships among constructs. To strengthen inferences about causation, longitudinal research is critical. The present study used a prospective, longitudinal design to study changes in adolescent adjustment from 7<sup>th</sup> to 12<sup>th</sup> grade as a function of level and change in marital conflict. In the mediating and/or moderating models, adolescent outcomes were controlled at an earlier time point to distinguish the effect of marital conflict from continuities in adolescent behavior. In the growth models (Figure 2), change in both marital conflict and adolescent adjustment was examined over time.

Second, many studies are flawed in that data were obtained from a single source (Porter & O'Leary, 1980; Rutter et al., 1974, see reviews in Emery, 1982), which introduced method bias. As a result, little confidence can be placed in studies of marital discord that rely on only one informant's perspective to measure marital conflict and child behavior. For example, Gonzales et al (2000) found support for mediational effects by parenting practices when using child's report of all variables. However, when mother's report of child problems were used, the mediational effect was not found. Although some studies have used separate raters of marital conflict and child problems, they have most commonly used teachers as judges of child adjustment, which reflects only a limited sample of children's behavior and a measure more reliable for externalizing than internalizing behaviors (Grych & Fincham, 1990). Emery (1981) found stronger correlations between mothers' marital ratings and their

own judgments of disturbance in their children than between mothers' marital ratings and teachers' child adjustment scores. Child behavior, however, may be most affected in the setting where the marital discord is present. Thus, independent measures of marital discord and child problems in the same setting (i.e., the home) is important to obtain. Davies et al (1998) points out that lack of direct observation is also a serious methodological limitation in most research. To overcome these problems, the present study used family members' reports (i.e., father's report, mother's report, target adolescent's report, and sibling's report) as well as trained observers' ratings to measure most of the constructs.

Third, in testing mediating and/or moderating effects, besides controlling for adolescent outcome at an earlier time, the present study also controls for parents' education and family per capita income to assure that socioeconomic status does not explain the relationships among the constructs in the analyses.

## CHAPTER THREE.

### METHODS

#### Sample

This study used data from the Iowa Youth and Families Project (IYFP). The data were first collected in the early months of 1989 from 451 families in an eight-county area in north central Iowa. Because there are very few minority families in this rural area, all participants were of European descent. Details regarding the initial study can be found in Conger and Elder (1994). Briefly, families were eligible to participate in the study if they had a target adolescent who was in seventh grade and was living with both of his or her biological parents and with a sibling within 4 years of his or her age. Families were recruited through both public and private schools in the eight counties participating in the study. Of the eligible families, 78% agreed to be interviewed. Family median income from all sources for the past year (1988) was \$33,700. The median education for fathers and mothers was 13 years, and their median ages were 39 (fathers) and 37 (mothers) years. The average number of family members was 4.95. The seventh-grade target adolescents ranged in age from 12 to 14 years ( $M$  age = 12.61). Questionnaires were completed by family members and interactions among family members were videotaped each year as they engaged in four different interaction tasks. A total of four waves of data were collected (1989, 1990, 1991, 1992) and the procedures were the same for each assessment. In 1994, the IYFP continued and became part of the Family Transitions Project. The 1994 assessment followed the same format as the earlier waves of data collection. The overall retention rate for the target adolescents in the study was over 90% from 1989 to 1994.

Of the 451 target adolescents in the IYFP at the beginning of the study, 424 of them remained in 1994. If only those cases with complete information on all measures at each wave of data collection were used, the study would lose a significant number of cases. The missing cases were largely due to unavailability of data for a specific wave of data collection rather than dropping out of the study. Results of comparisons between the target adolescents with incomplete data and those with complete data showed no significant differences. As a result, rather than deleting cases with missing data, the present study used Full Information Maximum Likelihood (FIML) to test the hypotheses. FIML (Little & Rubin, 1987; Rubin, 1976; Schafer, 1997) is a computational method which computes ML estimates and standard errors for structural equation modeling (SEM) from data with missing values. It provides an efficient estimation of statistical parameters from incomplete data, and thus allows retention of the complete sample for all analyses. Parameter estimates from FIML provide less biased information than ad hoc procedures such as listwise deletion, pairwise deletion or imputation of means (Schafer, 1997). With the availability of computer programs to obtain FIML such as Amos (Arbuckle & Wothke, 1999), Mplus (Muthèn, 2001), and LISREL (Jöreskog & Sörbom, 2001), FIML is easy to incorporate in typical forms of data analyses with community samples. FIML was used in this study and as a result the sample contained all 451 target adolescents.

#### Procedures

During each year of data collection, interviewers visited each family in their home for approximately two hours on each of two occasions per year. During the first visit, each of the four family members completed a set of questionnaires focusing on individual family member characteristics and family economic circumstances. During the second visit to the

home, which occurred within two weeks of the first, the family members were videotaped as they engaged in several structured interaction tasks. A trained interviewer began the session by asking each individual to complete independently a short questionnaire designed to identify issues of concern that led to disagreements within the family (e.g., chores, recreation, money, etc.). The family members were then asked to gather around a table and were given a set of cards with questions to read and discuss.

The first task (Task 1), a parent-child discussion, involved all four family members and lasted 30 minutes. The cards for the first task asked general questions about family life such as approaches to parenting, performance in school, household chores, and important family events. After explaining the procedures, the interviewer left the room and the family members discussed among themselves each of the items listed on the cards and continued talking until the interviewer returned. The video camera recorded the family's interaction during the discussion of the issues raised by the task cards. After the first task was completed, the interviewer returned, stopped the discussion, and described the second task which proceeded in a similar fashion.

The second task (Task 2), a problem-solving interaction, lasted 15 minutes and also involved all four family members. For this task, participants were instructed to discuss and try to resolve an issue that they identified as being problematic (e.g., conflict over money, family time together, discipline, etc.). The issue for discussion was determined by the questionnaire that all family members completed before the beginning of Task 1. The specific topic for discussion involved a current disagreement that all family members agreed generated the greatest amount of conflict in family interactions.

The third task (Task 3) involved only the siblings and was 15 minutes in length. Since the present analysis did not include this task, it is not described here. The fourth task (Task 4), a marital interaction, involved only the married couple (in other words, the parents) and lasted 25 minutes. The couple was asked to discuss the history and current status of their relationship and areas of agreement and disagreement between them (e.g., parenting, finances, and their plans for the future). Different observers rated each task and different observers were used during each year of the study. That is, the observer who coded Task 1 did not code Task 2, 3, or 4, and that procedure was followed for each task. In addition, an observer rated a specific family only for one wave of data collection and no others. Thus, observers had no prior knowledge of the family whose interactions they were rating.

Trained observers coded the videotapes using the Iowa Interaction Rating Scales, a global rating system assessing behavioral exchanges based on a 9-point scale ranging from 1, *the behavior is not at all characteristic of the person being rated* to 9, *the behavior is mostly characteristic of the person being rated* (Melby & Conger, 2001). Observers received 200 hours of training and had to pass extensive written and viewing tests. A separate, independent coder was used to provide reliability information for approximately 20% of the tasks.

### Measures

The measures described below were used to test the mediating and/or moderating hypotheses. Testing changes across years involves taking repeated measures across waves, and will be discussed later. A complete description of the study measures is provided in Appendix A. Means, standard deviations, and the ranges of the study measures are provided in Appendix B. To reduce method variance bias, the present study used family members'

reports (i.e., father's report, mother's report, target adolescent's report, and sibling's report) and trained observers' ratings to measure most of the constructs.

General marital distress. The general marital distress construct was based on information from parents' reports in 1990 (wave 2) and 1991 (wave 3). The construct included 3 indicators: marital dissatisfaction, marital unhappiness, and marital instability. Each indicator was obtained by averaging scores of both parents across the two waves. Marital dissatisfaction was assessed by asking each parent, "All in all, how satisfied are you with your marriage?". Response categories ranged along a five-point continuum with 1 = *completely satisfied* and 5 = *not at all satisfied*. The alpha coefficient was .82 for the construct indicator. Marital unhappiness was assessed by asking each parent, "All in all, how happy are you with your marital relationship?". The scores ranged from 0 = *extremely unhappy* to 5 = *extremely happy*. The scores were reverse coded such that a high score indicated a high level of marital unhappiness. The alpha coefficient for the indicator was .76. A five-item index created by Booth, Johnson, and Edwards (1983) was used to assess marital instability. Each parent was asked to answer 5 questions regarding his/her thoughts of ending his/her marriage, such as "Have you ever thought your marriage might be in trouble?", and "Has the thought of getting a divorce or separation crossed your mind?". Each of the 5 items ranged from 1 = *not in the last year* to 4 = *yes, within the last 3 months*. These items were summed together and then averaged across spouses and years (alpha = .91).

Overt marital conflict. The overt marital conflict construct was also based on information from 1990 and 1991. In order to assess the degree of openness of the conflict, parents' reports, target adolescents' reports, and trained observers' reports were used as 3 indicators. Parents' reports of overt marital conflict include fathers' and mothers' reports of

each other's hostile behavior. Fathers and mothers each reported on 15 items asking how often their spouse acted in some hostile ways toward them during the past month, such as getting angry at them, criticizing them, shouting or yelling at them, and hitting, pushing, grabbing, or shoving them. Each item ranged from 1 = *always* to 7 = *never*. After being reverse coded, a high score indicates a high level of hostility. These 15 items were added together for fathers and mothers, and the mean score was generated to create a parents' report. The alpha coefficient was .97.

The second indicator, target adolescents' report of overt marital conflict, included 1 item asking target adolescents how often their parents argue or disagree with each other. The response ranged from 1 = *often* to 4 = *never*. After being recoded, the scores were averaged across two waves to create a measure of target report of parents' overt marital conflict. The alpha coefficient was .70.

The last indicator is observers' reports of overt marital conflict, assessed by observers' ratings of father's hostility toward mother and mother's hostility toward father in both the problem-solving (Task 2) and marital (Task 4) interactions. It included observer reports of parents' hostility, antisocial behavior, and angry coercion for father to mother and mother to father in each wave. As indicated before, each observational rating ranged from 1 to 9, with a high score indicating a high level of conflict. Hostility included parents' behaviors that are angry, critical, disapproving, or rejecting of each other's behaviors, actions, appearance, or personal characteristics. Antisocial behavior involved actions characterized as self-centered, defiant, insensitive, or immature. Angry coercion included parents' attempts to change each other's actions or thoughts in a hostile, threatening, or blaming manner. The items in both tasks for father toward mother and mother toward father

were added together and averaged between parents and across 1990 and 1991 to create a parents' score. The alpha coefficient was .88 and the median interobserver reliability was .62.

Conflict over child-rearing. Like the general marital distress and overt marital conflict constructs, conflict over child-rearing was also assessed in 1990 and 1991. The construct consisted of 3 indicators: parents' report of their disagreement over disciplining their children, over punishing their children, and children's report of their parents' disagreement over punishing them. Parents' reports of conflict over discipline was assessed by asking each parent, "How often do you and your spouse disagree or get upset about discipline/raising children?". Response categories ranged from 0 = *never* to 4 = *all the time*. The alpha coefficient was .77. Parents' reports of conflict over punishing was assessed by asking each parent, "How often do you and your spouse disagree about punishing your child?". Responses ranged from 1 = *always* to 5 = *never*. These items were reverse coded such that a high score indicated a high level of conflict over punishing the child. The alpha coefficient was .74. Children's reports of conflict over punishing was assessed by asking both the target adolescents and their siblings the same question asked of their parents about punishing their children, as described above. The alpha coefficient was .80.

Inconsistent/harsh parenting. The inconsistent/harsh parenting construct was assessed in 1992 (wave 4), one year after the marital measures were completed. It included 3 indicators: inconsistent parenting, harsh parenting, and hostility. Each indicator included reports from parents, target adolescents, and observers. For inconsistent parenting, mothers and fathers each reported on 3 items asking them "once a punishment has been decided, how often can he or she get out of it", "how often do you punish the target child for something one time, and then at other times not punish him or her for the same thing", and "when you

punish the target child, how often does the kind of punishment you use depend on your mood”. Each item ranged from 1 = *always* to 5 = *never*. After being recoded, the items were summed together and averaged across fathers and mothers. Target adolescents also answered the same items about their fathers and mothers. Observers rated each parent on inconsistent discipline on a 9-point scale (1 = *low inconsistent discipline*, 9 = *high inconsistent discipline*) during the family parent-child interaction (Task 1) and this rating was averaged across mother and father. Finally, the scores from the three reporters were standardized and then summed together to create the indicator of inconsistent discipline. The alpha coefficient was .74.

The second indicator for inconsistent/harsh parenting is harsh parenting, which also included parents’, target adolescents’, and observers’ reports. Mothers and fathers reported on 4 items asking them about their harsh discipline, such as “how often do you spank or slap the target child when he or she does something wrong”, and “when the target child does something wrong, how often do you tell him or her to get out or lock him or her out of the house”. Each item ranged from 1 = *always* to 5 = *never*. After being recoded, the items were summed together and averaged across fathers and mothers. Target adolescents also answered the same items about their fathers and mothers. Observers rated each parent on harsh discipline on a 9-point scale (1 = *low harsh discipline*, 9 = *high harsh discipline*) during the family parent-child interaction (Task 1) and these ratings were averaged across mother and father. Finally, the scores from the three reporters were standardized and then summed together to create the indicator of harsh discipline. The alpha coefficient was .78.

The last indicator for inconsistent/harsh parenting is hostile parenting, which also included parents’, target adolescents’, and observers’ reports. Mothers and fathers reported

on 5 items asking them about their hostility toward their target adolescents, such as “during the past month when you and your target child have spent time together, how often did you get angry at him/her”. Each item ranged from 1 = *always* to 7 = *never*. After being recoded, the items were summed together and averaged across fathers and mothers. Target adolescents also answered the same items about their fathers and mothers. Observers rated each parent on 3 9-point scales (hostility, antisocial behavior, and angry coercion) during the family parent-child interaction (Task 1) and these ratings were averaged across mother and father. Finally, the scores from the three reporters were standardized and then summed together to create the indicator of harsh discipline. The alpha coefficient was .89.

Adolescents’ feelings of insecurity. Measures for this construct also were administered in 1992, one year after the marital measures were completed. The construct was assessed by using target adolescents’ self-reports. It included 3 indicators. Adolescent’s emotional insecurity was assessed by asking the target adolescents about their feelings about their father and mother. The target adolescent was asked about his or her dad on 2 items, “How often does your dad make you feel he is there for you when you really need him”, and “How often does your dad make you feel he really cares about you.” The same questions were answered by the target adolescent about his/her mom. The responses ranged from 1 = *always* to 5 = *never*. The scores for fathers and mothers were each summed and averaged to create an index of the target adolescent’s emotional insecurity. The alpha coefficient was .83. Adolescents’ feelings of alienation from their parents were assessed by asking the target adolescent questions such as whether they really enjoy spending time with their mothers and fathers. The responses ranged from 1 = *strongly agree*, to 5 = *strongly disagree*. There were 4 items for each parent. They were summed together and averaged across mothers and

fathers. The alpha coefficient was .83. Adolescent's representation of their relationship with their parents was assessed by asking the target adolescent how happy and how satisfied they were with their mothers and fathers. The response ranged from 1 = *very satisfied* or *happy*, to 4 = *very dissatisfied* or *unhappy*. The 2 items were added together for both fathers and mothers and then averaged. The alpha coefficient was .82.

Adolescent poor emotional well-being. Measures for the adolescent poor emotional well-being construct were assessed in 1994, 2 years after the parenting and emotional insecurity measures were obtained. Indicators for this construct also were assessed in 1989 and were used to evaluate the analytic model in Figure 1. Adolescents' self-reports were used. The construct included 3 indicators. Low mastery was based on the seven item Pearlin measure (Pearlin, Lieberman, Menaghan, & Mullan, 1981). The target adolescent self-reported on both positively and negatively worded items that assessed their sense of control, such as "There is really no way I can solve some of the problems I have", "I have little control over the things that happen to me", and "I can do just about anything I really set my mind to", etc. The response categories ranged from 1 = *strongly agree* to 5 = *strongly disagree*. Negatively worded items were reverse coded so that a high score on the index indicated a low sense of mastery. The 7 items were summed together. The alpha coefficient was .82.

Low self-esteem was evaluated using the 10 item Rosenberg (1965) measure. The target adolescents self-reported how strongly they felt the items described them. Items were worded both positively and negatively, and example items include, "I feel that I have a number of good qualities", "All in all, I am inclined to feel that I'm a failure", and "On the whole, I am satisfied with myself". Response categories ranged from 1 = *strongly agree* to 5

= *strongly disagree*. Items that were negatively worded were reverse coded and then all items were summed so that a high score reflected low self-esteem. The alpha coefficient was .90.

Low positive affect consisted of 6 adolescent self-reported items that assessed the adolescent's positive view of life during the past month. Sample items include, "Have you generally enjoyed the things you do?", "Were you a happy person?", and "Has living been a wonderful adventure for you?". All of the items were positively worded, and the response categories ranged from 1 = *all of the time* to 6 = *none of the time*. The items were summed together. The alpha coefficient was .89.

Adolescent externalizing problems. Measures for the adolescent externalizing problems construct were also assessed in 1989 and 1994. It included 3 indicators: adolescent self-reported delinquency, substance use, and sibling report of the target adolescent's antisocial behavior. The sibling's report of target adolescent's antisocial behavior used 4 items concerning the target adolescent's behavior from his/her sibling's view. The sibling was asked to describe whether his/her brother or sister in the study (the target adolescent) "always gets into trouble", "sometimes breaks the law", "gets into a lot of fights", and whether "people sometimes think he or she is a bad kid". Responses range from 1 = *strongly agree* to 5 = *strongly disagree*. The items were reverse coded and then added together. The alpha coefficient was .86.

Adolescent self-reported delinquent behavior was based on the Elliott scale (Elliott, Huizinga, & Ageton, 1985) and consisted of 29 items. The items asked the target adolescent how often during the past 12 months he/she has engaged in a variety of deviant activities, such as taking something worth \$25 or more that didn't belong to him/her, taking a car or other vehicle without the owner's permission just to drive around, throwing objects such as

rocks or bottles at people to hurt or scare them, going to court or been placed on probation for something he/she did. Response categories ranged from 1 = *never* to 5 = *6 or more times*. Since the majority of the sample had not been involved in some of these activities or engaged in a behavior only once, the distribution of these items was highly skewed. As a result, the responses to the items were recoded as 0 = *never* and 1 = *at least once*. The 29 items were then summed together. The alpha coefficient was .82.

The last indicator of adolescent externalizing problems is adolescent self-reported substance use. A 12-item checklist was used asking the adolescent how often during the past 12 months they had used alcohol, tobacco or other drugs such as marijuana. Response categories for these items ranged from 1 = *never* to 6 = *every day*. Having the same distribution problem as the delinquency items, the responses were also dichotomized as 0 = *never* and 1 = *at least once*. The 12 items were then added together. The alpha coefficient was .84.

Adolescent internalizing problems. Measures for the adolescent internalizing problems construct were obtained from adolescent's self report also in 1989 and 1994. It included 3 indicators: anxiety, depression, and hostility. Anxiety consisted of 10 target adolescent self-reported items from the anxiety subscale of the SCL-90-R (Derogatis, 1983). The items asked the adolescent how much during the past week he/she was distressed or bothered by several problems or complaints, such as nervousness or shakiness inside, suddenly scared for no reason, feeling tense or keyed up, etc. Response categories ranged from 1 = *not at all* to 5 = *extremely*. The items were added together to form an index of anxiety symptoms. The alpha coefficient was .89.

Depression was a 12-item target adolescent self-reported index of depressive symptoms taken from the depression subscale of the SCL-90-R (Derogatis, 1983). The items asked the adolescent how much he/she was distressed or bothered by several complaints during the past week, including things like feeling low in energy or slowed down, feeling lonely, crying easily, feeling hopeless about the future. Response categories ranged from 1 = *not at all* to 5 = *extremely*. The items were added together to form an index of depressive symptoms. The alpha coefficient was .91.

Hostility was a 6-item target adolescent self-reported index of hostility (Derogatis, 1983). The items asked the adolescent how much he/she was distressed or bothered by several complaints during the past week, such as feeling easily annoyed or irritated, temper outbursts that he or she could not control, and having urges to beat, injure, or harm someone. Response categories ranged from 1 = *not at all* to 5 = *extremely*. The items were added together to form an index of hostility symptoms. The alpha coefficient was .83.

Socioeconomic status. Parents' education was assessed by taking the average years of completed education for mothers and fathers in 1989. Family per capita income was also assessed in 1989. Because the distribution of income was highly skewed, it was categorized into quintiles from low to high per capita income. These measures were used as control variables in the analyses. Adolescent gender (0 = girls , 1 = boys) was also included in the model.

#### Evaluating Change across Time

For testing hypotheses on changes in marital conflict and adolescent problems (see Figure 2), repeated measures on marital conflict and adolescent problems were taken. Specifically, measures for marital conflict (i.e., measures for overt marital conflict, conflict

over child-rearing, and general marital distress) were taken in 1989, 1990, 1991, and 1992. Similarly, repeated measures for adolescent adjustment problems (i.e., measures for poor emotional well-being, externalizing problems, and internalizing problems) were taken in 1990, 1991, 1992, and 1994. According to Karney and Bradbury (1995), testing changes across waves would require measures of the same concept to be exactly the same across years to insure that the resulting changes are due to actual changes in behavior rather than changes in measurements. In this study, since several measures were not available in a specific wave of data collection and some measures changed slightly across waves, detailed descriptions of the rules for constructing the measures and testing the model will be discussed later when findings from the growth models are presented.

## CHAPTER FOUR.

### RESULTS

Before estimating the final models, differences between mothers and fathers were tested. The results indicated no significant differences in parameter estimates between fathers and mothers. Therefore, their scores were averaged and the parents' indicators as described in the measurement section were used in subsequent analyses. As mentioned before, the present study used FIML to produce less biased estimates compared to those from ad hoc procedures. However, from the time the study began to 1990, there are 20 parents who divorced. These families were first excluded from the whole sample and FIML was used on the remaining 431 families. Results from these 431 families showed same pattern as those from the full 451 families. Also, listwise deletion was tested and the results indicated similar pattern. Therefore, the following reports were based on results from FIML on all 451 families.

#### Various Aspects of Marital Conflict and Adolescent Adjustment Problems

The purpose of this section is to test the first hypothesis, whether overt marital conflict and conflict over child-rearing are related to later adolescent poor emotional well-being, externalizing problems, and internalizing problems; and whether the effect of overt marital conflict and conflict over child-rearing on adolescents is stronger than that of general marital distress. We begin by examining simple bivariate correlations among latent constructs. From the hypothesis, it is expected that overt marital conflict and conflict over child-rearing each correlates significantly with each domain of adolescent outcomes. Also, the correlations between these two aspects of marital conflict and adolescent outcomes should be bigger than those between general marital distress and adolescent outcomes. The

correlations will also reveal whether marital problems relate differently to different domains of adolescent outcomes. Table 1 provides the correlations of interest. The AMOS software package (Arbuckle, 1997) generated these correlations using Full Information Maximum Likelihood estimation.

The first line of three correlations in the shaded portion of Table 1 provide the correlations between the 3 different types of marital problems and adolescent poor emotional well-being. The correlations with overt marital conflict, conflict over child-rearing, and general marital distress were .20, .19, and .11, respectively. These three correlations revealed two important findings. First, all three correlations were statistically significant ( $p < .05$ ). Second, the correlations between overt marital conflict, conflict over child-rearing and adolescent poor emotional well-being were of similar magnitude and were almost twice as large as the correlation between general marital distress and adolescent poor emotional well-being. However, significance tests revealed that the differences were not statistically significant for any pair of the three correlations. This result suggests that all three aspects of marital problems are related to later emotional well-being, and that the relationships are essentially the same for all three aspects of marital problems.

A similar, but weaker pattern was shown for adolescent internalizing problems (Table 1). The correlations between adolescent internalizing problems and marital conflict were significant ( $r = .13$ ,  $p < .05$  for overt marital conflict;  $r = .12$ ,  $p < .05$  for conflict over child-rearing) and higher than that between adolescent internalizing problems and general marital distress ( $r = .08$ , n.s.). But the significance tests revealed that the differences were not statistically significant for any pair of the three correlations. For adolescent externalizing

Table 1. Correlations among latent constructs and control variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Parents' education	1													
2 Family per capita income	.36**	1												
3 Target adolescent gender	-.03	-.00	1											
4 General marital distress	-.03	-.03	-.04	1										
5 Overt marital conflict	-.11*	-.08	-.06	.86**	1									
6 Conflict over child-rearing	-.06	-.02	.02	.50**	.74**	1								
7 Poor parenting	-.26**	-.12*	.01	.25**	.45**	.48**	1							
8 Target feelings of insecurity	-.14*	-.04	-.06	.24**	.32**	.29**	.57**	1						
9 Target poor well-being (1994)	-.12*	-.01	-.06	.11*	.20**	.19**	.29**	.36**	1					
10 Target externalizing (1994)	-.16**	-.02	.31**	.11*	.10+	.16**	.26**	.15*	.08	1				
11 Target internalizing (1994)	-.06	.01	-.16**	.08	.13*	.12*	.18**	.20**	.60**	.11*	1			
12 Target poor well-being (1989)	-.10+	-.12*	-.03	.21**	.30**	.30**	.25**	.36**	.40**	.05	.26**	1		
13 Target externalizing (1989)	-.13*	-.03	.31**	.20**	.20**	.24**	.17**	.23**	.02	.45**	.07	.24**	1	
14 Target internalizing (1989)	-.08+	.03	-.03	.20**	.23**	.20**	.18**	.24**	.21**	.04	.23**	.60**	.46**	1

Note. N = 451. +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Two-tailed tests.

Target adolescent gender: 0 = *girl*, 1 = *boy*.

problems, the correlations for overt marital conflict ( $r = .10$ ,  $p < .10$ ) and general marital distress ( $r = .11$ ,  $p < .05$ ) were of similar magnitude, whereas the correlation for conflict over child-rearing was a little higher ( $r = .16$ ,  $p < .01$ ). Again, significance tests revealed that the differences were not statistically significant for any pair of the three correlations.

Taken together, the comparisons of the correlations among the latent variables revealed that, first, marital problems had a modest but significant direct association with adolescent problems. This result supports the hypothesis that marital problems are related to later adolescent adjustment problems. Second, the relationships are essentially the same for the three aspects of marital problems and later adolescent adjustment. Therefore, there is little support for the hypothesis that the association between the two aspects of marital conflict and adolescent adjustment is stronger than the association between general marital distress and adolescent adjustment. Looking across different domains of adolescent outcomes, the correlations between marital problems and adolescent poor emotional well-being were larger than the correlations between marital problems and the other two types of adolescent outcomes. The correlations between marital problems and adolescent internalizing problems were the smallest.

#### Changes in Marital Problems and Adolescent Adjustment Problems

The purpose of this section is to test the second hypothesis, whether change in marital conflict will influence change in adolescent problems. To serve this purpose, latent growth curve analyses were used. For these analyses we used measures of marital problems from 1989, 1990, 1991, and 1992, whereas measures for adolescent problems were from 1990, 1991, 1992, and 1994. Sequenced in this fashion the measures are in the correct temporal order for the proposed causal relations. From the second hypothesis, it is expected that

increases in marital problems from 1989 to 1992 should predict increases in adolescent problems from 1990 to 1994. As described in the measurement section, each latent construct included multiple indicators (means and standard deviations for these indicator variables are provided in Appendix A). For example, the latent construct “overt marital conflict” included three indicators: parent reports, target adolescent reports, and observer reports. Most of the multiple indicators for each latent construct were based on different scales. However, multiple indicators based on different scales cannot be standardized and summed together to create a composite score in latent growth analyses (Karney & Bradbury, 1995), since the mean scores would be zero across time and therefore cannot be compared over time. As a result, each indicator variable should be tested separately. For that reason growth curves for parent report, target adolescent report, and observer report of overt marital conflict were considered separately.

However, if each indicator was evaluated separately, this would have generated 81 models: 9 (3 indicator variables each for overt marital conflict, conflict over child rearing, and general marital distress) by 9 (3 indicator variables each for poor emotional well-being, externalizing problems, and internalizing problems). To make things more complicated, some items or scales of some variables changed slightly across the waves. In latent growth curve analyses, measures need to be exactly the same across years of data collection. Otherwise, it is not clear whether the changes are due to change in measurement or actual change in behavior.

In order to meet the measurement requirements of latent growth curve analyses and also to minimize the number of models, a set of rules and pretests were initiated. First, if there were any changes in measures across years, such as changes of scales, changes of

number of items, or a scale not being available from a particular wave of data, the indicator would be eliminated from further analyses. As a result, only those variables with exactly the same measures across all four waves of data collection were used for growth curve analyses. Second, whenever different reporters reported on the same items for a measure with the same response categories, their scores were combined across reporters, thereby reducing the number of variables. Finally, after eliminating and combining variables, univariate growth curves for each of the remaining variables were estimated. The reason to do univariate analyses first is that significant variance in a variable must exist for it to predict or be predicted by another variable. If there is no variance in the variable, there is nothing to be explained, and therefore no further tests are needed (Karney & Bradbury, 1995).

As a result of these procedures, target adolescent report of overt marital conflict was eliminated from further analyses because the scale for the variable changed across years (i.e., the item ranged from 1 to 4 in 1989, 1990, and 1991, but ranged from 1 to 5 in 1992). Target adolescent's report of substance use was also eliminated from further analyses, since this indicator had quite different numbers of items across 4 years (same number of items in 1990, 1991, and 1992, but very different in 1994). Even though adolescent self-report of delinquent behavior has different numbers of items across 1990 to 1994, the majority of items are the same with only several more items in 1992 and 1994 than in 1990 and 1991. As a result, the repeated measures were constructed based on those same items. Therefore, adolescent self-report of delinquent behavior was included in further latent growth analysis. For parents' report of disagreement over punishing their children and children's report of parents' disagreement over punishing them, the items were exactly the same. The two variables were combined to create a single parent/child report.

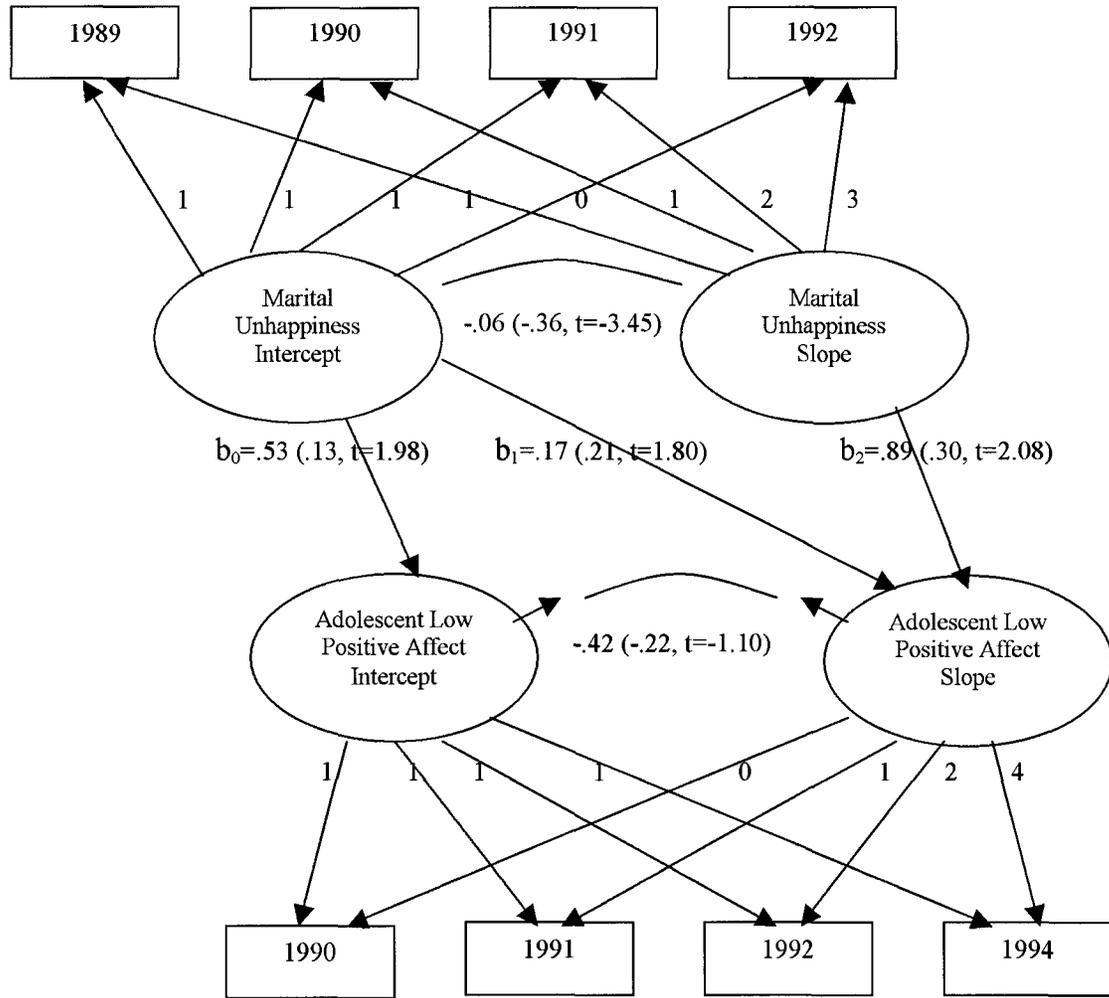
After eliminating adolescent report of overt marital conflict and substance use, and combining parent and child report of disagreement over punishing the child, univariate growth curves were tested on each of the remaining variables. Both linear and quadratic slopes were tested for each variable. Appendix C shows the results of the univariate growth curves for the remaining variables. Since all of the growth curves had significant variances in either intercept or slope (linear and/or quadratic) terms, or both, none of these remaining variables were eliminated from further analyses. As a result, Table 2 listed all these remaining variables that had significant variance in intercepts and/or slopes and that were used for estimating growth curves. These variables included: parent report marital unhappiness, marital dissatisfaction, marital instability; parent report overt marital conflict, observer report overt marital conflict; parent report conflict over discipline, parent/child report conflict over punishment; target report low mastery, low self-esteem, low positive affect; sibling report target adolescent's antisocial behavior, target report delinquency; target report anxiety, depression, and hostility. Because delinquency was skewed for most of the 4 waves, a log transformation was taken.

In latent growth curves, the hypothesis proposes that both the initial level (intercept) and change (slope) in marital problems will predict change in adolescent problems. The relation between initial levels of marital conflict and adolescent problems is of less interest but also is estimated. Each possible pair of marital and adolescent problems was tested. Quadratic slope terms were originally included in the models, but since none of the quadratic slopes significantly predicted other terms or being predicted by other terms, these quadratic slopes were eliminated and only linear slopes were remained. The results are illustrated in

Figure 3 by using an example of parent report of marital unhappiness and adolescent report of low positive affect.

Table 2. Variables used in latent growth curve analysis.

		Variables
Marital Problems	General marital distress	Parent report marital unhappiness
		Parent report marital dissatisfaction
		Parent report marital instability
	Overt marital conflict	Parent report overt marital conflict Observer report overt marital conflict
	Conflict over child-rearing	Parent report conflict over discipline Parent/child report conflict over punishment
Adolescent Outcomes	Poor emotional well-being	Target report low mastery
		Target report low self-esteem
		Target report low positive affect
	Externalizing problems	Sibling report target's antisocial behavior Target report delinquency
	Internalizing problems	Target report anxiety Target report depression Target report hostility



Unstandardized coefficients outside parentheses  
 Standardized coefficients and t values inside parentheses  
 $\chi^2_{(23)} = 53.41$  CFI = 1.00  
 RMSEA = .05 (LO90% = .04, HI90% = .07) Pclose = .33  
 CN(.05) = 297 (.01) = 351

Figure 3. Latent growth curve on parent report of marital unhappiness and adolescent report of low positive affect.

The results for the relation between parent report of marital unhappiness and adolescent report of low positive affect are provided in Figure 3. The intercept of marital unhappiness (the initial level) predicted an increase in adolescent low positive affect from 1990 to 1994 ( $b = .17$ ,  $t = 1.80$ , significant at .05 level one-tailed test). This interaction between marital unhappiness and time suggests that high initial level of parents' marital unhappiness exacerbates the increasing of adolescent low positive affect over years, as compared to low initial level of marital unhappiness. Also, the increase in marital unhappiness from 1989 to 1992 predicted a significant increase in adolescent low positive affect from 1990 to 1994 ( $b = .89$ ,  $t = 2.08$ ). The initial level of marital unhappiness also was related to the initial level of adolescent low positive affect ( $b = .53$ ,  $t = 1.98$ ), consistent with the earlier correlational findings. The results indicate that both the initial level and increases in marital unhappiness over time contributed to increases in adolescent low positive affect. The model provided a reasonable fit with the data.

In a similar manner, all other possible pairs of predictor and outcome variables were tested. Of all 56 models, 19 models indicated significant effects of either initial level or change in marital problems on change in adolescent problems. These models are summarized in Table 3. For the models not reported here, neither the initial levels nor the changes in marital problems predicted changes in adolescent problems. However, in most cases, the initial levels of marital conflict were significantly related to the initial levels of adolescent problems. Again, these results were consistent with the earlier correlational findings.

Table 3. Summary of latent growth curve results and major fit indexes.

Model		b <sub>0</sub>	b <sub>1</sub>	b <sub>2</sub>	$\chi^2_{(df)}$	RMSEA	Pc
Adolescent	Marital unhappiness→low positive affect	.53 (.13*)	.17 (.21*)	.89 (.30*)	53.41 (23)	.05	.33
Poor Emotional	Marital dissatisfaction→low positive affect	.57 (.11)	.23 (.20*)	.66 (.17)	54.03 (23)	.06	.32
Well Being	Marital instability→low positive affect (+)	.11 (.06)	.13 (.23*)	-.07 (-.06)	15.00 (8)	.04	.56
Adolescent Externalizing Problems	Overt marital conflict→antisocial behavior	.04 (.14**)	-.01 (-.09)	.07 (.25*)	45.09 (23)	.05	.60
	Marital unhappiness→antisocial behavior	.43 (.16**)	.04 (.06)	.65 (.28**)	69.09 (23)	.07	.06
	Marital dissatisfaction→antisocial behavior	.57 (.15**)	-.07 (-.09)	1.01 (.34**)	52.14 (23)	.05	.37
	Marital instability→antisocial behavior (+)	.26 (.21**)	-.03 (-.09)	.17 (.26*)	7.04 (8)	.00	.95
	Overt marital conflict→delinquency	.00 (.03)	.00 (.03)	.02 (.37**)	53.50 (23)	.05	.33
	Marital unhappiness→delinquency	.08 (.14*)	.02 (.05)	.19 (.44**)	53.08 (23)	.05	.34
	Marital dissatisfaction→delinquency	.05 (.07)	.01 (.04)	.22 (.36**)	69.42 (23)	.07	.06
	Marital instability→delinquency (+)	.04 (.13*)	.01 (.11)	.05 (.33**)	11.05 (8)	.03	.79
Adolescent	Over marital conflict→anxiety	.04 (.07)	-.01 (-.07)	.16 (.30**)	39.45 (23)	.04	.77
	Marital unhappiness→anxiety	.42 (.09)	.05 (.05)	1.25 (.30**)	49.26 (23)	.05	.46
	Marital dissatisfaction→anxiety	.36 (.06)	-.09 (-.06)	1.44 (.27**)	48.79 (23)	.05	.47

Table 3. (continued)

Model		b <sub>0</sub>	b <sub>1</sub>	b <sub>2</sub>	$\chi^2_{(df)}$	RMSEA	Pc
Internalizing	Overt marital conflict→depression	.08 (.12*)	-.01 (-.08)	.16 (.28*)	43.79 (23)	.05	.64
	Problems						
	Marital dissatisfaction→depression	.77 (.10)	-.06 (-.04)	1.24 (.21*)	55.65 (23)	.06	.27
	Overt marital conflict→hostility	.06 (.17**)	-.02 (-.20*)	.11 (.32**)	53.58 (23)	.05	.33
	Marital unhappiness→hostility	.45 (.14*)	-.03 (-.05)	.60 (.23*)	61.34 (23)	.06	.15
	Marital dissatisfaction→hostility	.41 (.09)	-.11 (-.11)	1.05 (.30**)	60.24 (23)	.06	.17

Note. b<sub>0</sub>, b<sub>1</sub>, and b<sub>2</sub> represent coefficients as shown in Figure 3 (unstandardized coefficients outside parentheses, standardized coefficients inside parentheses).

\* p < .05, \*\* p < .01, one-tailed test.

(+): used only Wave B, C, & D for marital instability and C, D, & F1 for adolescent outcomes, because using 3 waves of marital instability produced same pattern of results but better model fit compared to using all 4 waves of data.

As shown in Table 3, adolescent reports of low mastery, low self-esteem, and low positive affect were tested separately for adolescent poor emotional well-being. None of the marital variables predicted changes in adolescent low mastery and low self-esteem. However, three variables reflecting general marital distress (i.e., parent report of marital unhappiness, dissatisfaction, and instability) predicted change in adolescent low positive affect. In particular, the initial level and increases in marital unhappiness predicted increases in adolescent low positive affect (Table 3, also see Figure 3). In addition, the initial levels of marital dissatisfaction and instability predicted increases in adolescent low positive affect ( $b = .23, p < .05$ ;  $b = .13, p < .05$ ; respectively, in Table 3).

Sibling report of adolescent antisocial behavior and target adolescent self-report delinquency were tested separately for adolescent externalizing problems. Increases in parent report of overt marital conflict across the years predicted increases in sibling's report of target adolescent antisocial behavior ( $b = .07, p < .05$ ) and target self report delinquency ( $b = .02, p < .01$ ). The increases in all 3 variables of general marital distress (parent report of marital unhappiness, dissatisfaction, and instability) predicted increases in adolescent's antisocial behavior and delinquency. Interestingly, these results demonstrate that when change in the marriage is used to predict change in externalizing problems, indicators of general marital distress play as important a role as overt marital conflict.

Target adolescent self reports of anxiety, depression, and hostility were tested separately for adolescent internalizing problems. Increases in parent report of overt marital conflict across the years predicted increases in target report of anxiety ( $b = .16, p < .01$ ), depression ( $b = .16, p < .05$ ), and hostility ( $b = .11, p < .01$ ). Increases in marital unhappiness also predicted increases in adolescent anxiety ( $b = 1.25, p < .01$ ) and hostility ( $b = .60, p <$

.05). Increases in marital dissatisfaction predicted increases in adolescent anxiety ( $b = 1.44$ ,  $p < .01$ ), depression ( $b = 1.24$ ,  $p < .05$ ), and hostility ( $b = 1.05$ ,  $p < .01$ ). These results indicate that changes in general marital distress are as harmful for adolescent adjustment over time as overt marital conflict. However, change in conflict over child-rearing did not predict change in adolescent adjustment problems.

### Mediating Mechanisms

The results for the correlational and latent growth curve analyses demonstrated that level and change in the various domains of marital problems were directly related to level and change in adolescent adjustment. In the next set of analyses we focus on explaining how marital problems during early adolescence (1990-1991) might lead to increases in adolescent adjustment problems from early to late adolescence (1989-1994).

Structural Equation Modeling (SEM) was used to test the mediating hypotheses. The hypotheses predict that marital conflict will have an impact on poor parenting behavior or adolescent feelings of insecurity, and parenting or adolescent feelings will then have a significant influence on adolescent adjustment. We hypothesize that once parenting or adolescent feelings are added into the model, the direct relation from marital conflict to adolescent outcomes will no longer be statistically significant.

It would be interesting to assess the mediational model with overt marital conflict, conflict over child-rearing, and general marital distress all included as separate predictors in the analyses. However, as can be seen from Table 1, overt marital conflict, conflict over child rearing, and general marital distress were highly correlated with one another, with correlations ranging from .50 to .86. With this degree of multicollinearity, the three constructs cannot be used as separate predictors in the same model. For that reason, each aspect of

marital problems (i.e., overt marital conflict, conflict over child-rearing, and general marital distress) was tested in a separate analysis.

The results showed that the three aspects of marital problems generated similar coefficients in testing the mediating models. Therefore, the indicators for each of the 3 latent constructs for marital problems were standardized and then summed together to create a composite score. These composite scores were then used as 3 separate indicators for a secondary factor called marital problems. This general construct was used in the next set of analyses.

Also, it would be interesting to assess the mediating model with both poor parenting behavior and adolescent feelings of insecurity as potential mediators in the same model. However, since poor parenting behavior and adolescent feelings of insecurity are highly correlated with each other ( $r = .57, p < .01$  in Table 1), the two constructs were tested in separate models. Control variables (i.e. parents' education, family per capita income, and adolescent gender) were added and tested for their effects. Results of fully recursive models showed same pattern as the ones with non-significant paths from control variables deleted. For reason of parsimony, the following results were based on trimmed models with only significant paths from the control variables included.

#### Marital Problems and Adolescent Poor Emotional Well-being

Poor parenting behavior. Figure 4 provides the factor loadings and standardized path coefficients for testing the mediating effect of poor parenting behavior on adolescent poor emotional well-being. Marital problems in 1990 and 1991, as a secondary factor, predicted poor parenting behavior in 1992 ( $b = .45, p < .01$ ). Poor parenting behavior in 1992, in turn, predicted adolescent poor emotional well-being 2 years later ( $b = .19, p < .01$ ). This

mediational effect was tested after controlling for earlier adolescent poor emotional well-being; therefore, parenting predicted change in emotional well-being over time. Adolescent poor emotional well-being in 1989 also was significantly related to their later poor emotional well-being ( $b = .36, p < .01$ ), suggesting continuity in this attribute. Parents' education was significantly and negatively related to poor parenting behavior ( $b = -.20, p < .01$ ). An additional test of the significance of the mediating effect (Kenny, Kashy, & Bolger, 1998) yielded a z score of 3.01, indicating that the mediating effect was indeed significant. That is, the indirect relationship between marital problems and change in emotional well-being was statistically significant. Once parenting was added to the model, there was no direct relationship between marital problems and change in emotional well-being.

All the factor loadings in Figure 4 were statistically significant, ranging from .63 to .97. The Chi-square was 138.29 with 75 degrees of freedom. The Comparative Fit Index (CFI) was 1.00. A fully recursive model was also estimated as a possible alternative to the theoretical model. The estimations did not produce a better fit with data nor did it demonstrate any direct effects from marital problems to later adolescent poor emotional well-being. These findings provided additional support for the hypothesis that poor parenting behavior mediates the relation between marital problems and adolescent poor emotional well-being.

With respect to adolescent gender differences, the data were further divided into two groups, boys and girls, and the path coefficients were compared between the group of boys and the group of girls by estimating each group separately and comparing their  $\chi^2$  goodness of fit values. The differences in  $\chi^2$  indicate whether the differences in the path coefficients for boys and girls are significant or not. For example, to compare the path from marital problems

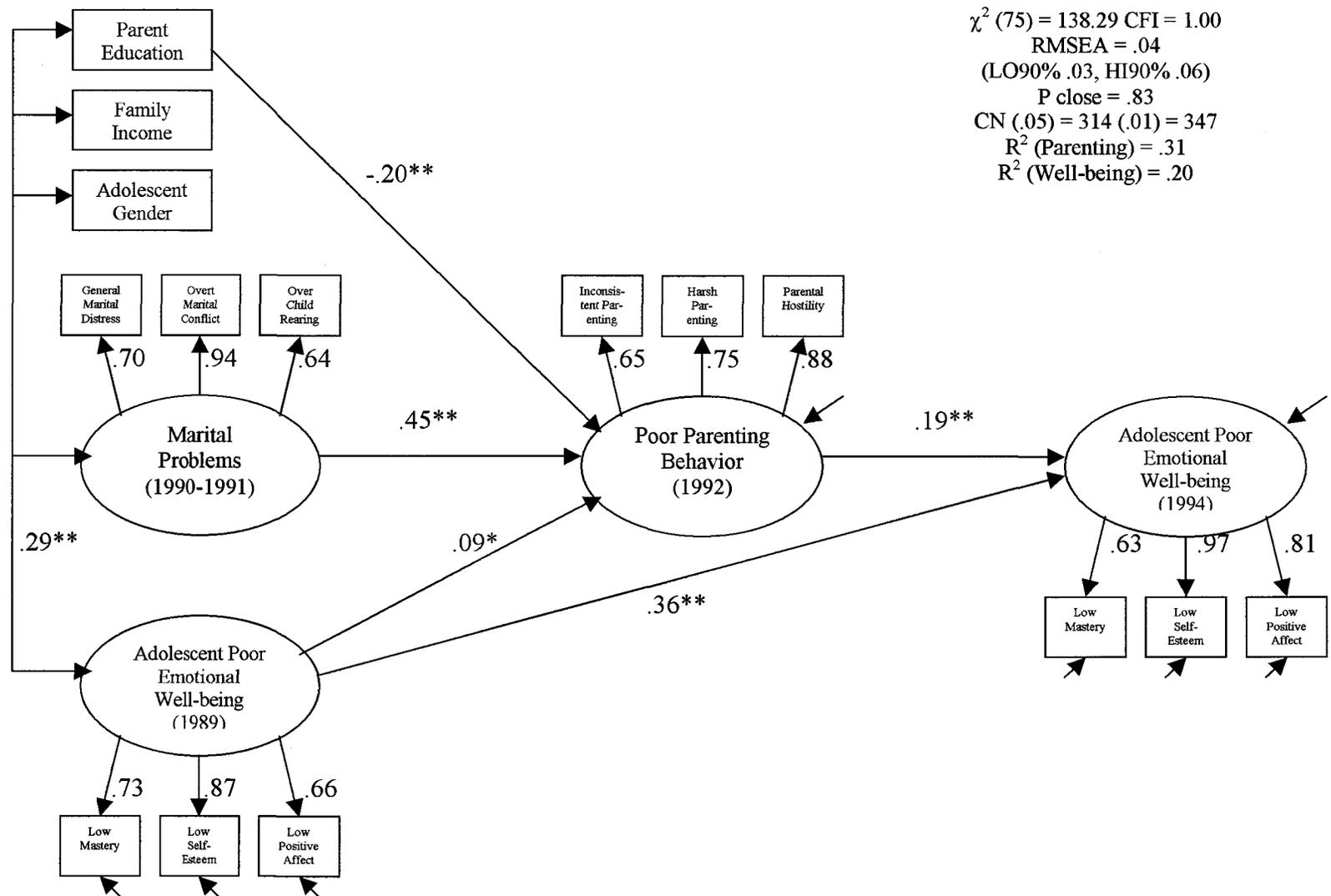


Figure 4. Testing mediating effect of poor parenting on adolescent poor emotional well-being.

to poor parenting behavior, first, two models, one for boys and one for girls, were estimated separately without any constraints, and this yielded a  $\chi^2$  goodness of fit value. Then, the model was re-estimated and the path from marital problems to poor parenting for the two groups of boys and girls was restricted to be equal, and this yielded another  $\chi^2$  goodness of fit value. The two models were the same except that in the former model the path from marital conflict to poor parenting was estimated for boys and girls separately whereas in the latter model this path is constrained to be equal across boys and girls. As a result, the difference in  $\chi^2$  with 1 degree of freedom between the two models was due to the difference between boys and girls on the path from marital problems to adolescent problems. A  $\chi^2$  goodness of fit change with 1 degree of freedom for this test yielded a value of .01, not significant. This indicated that it made no difference to estimate the model separately for boys and girls. Therefore there was no adolescent gender difference with respect to the path from marital problems to poor parenting. Similarly, each pair of path coefficients was compared between boys and girls, and the resulting changes in  $\chi^2$  were not statistically significant. None of the path coefficients showed any significant adolescent gender differences in this model.

Adolescent feelings of insecurity. Figure 5 provides the factor loadings and standardized path coefficients for testing the mediating effect of adolescent feelings of insecurity on adolescent poor emotional well-being. Procedures for estimating the model were the same as in Figure 4. Marital problems predicted adolescent feelings of insecurity ( $b = .26, p < .01$ ). Adolescent feelings of insecurity, in turn, predicted change in adolescent poor emotional well-being 2 years later ( $b = .25, p < .01$ ). Adolescent poor emotional well-being in 1989 was significantly related to their later feelings of insecurity ( $b = .28, p < .01$ ) and poor emotional well-being ( $b = .31, p < .01$ ). None of the control variables had any

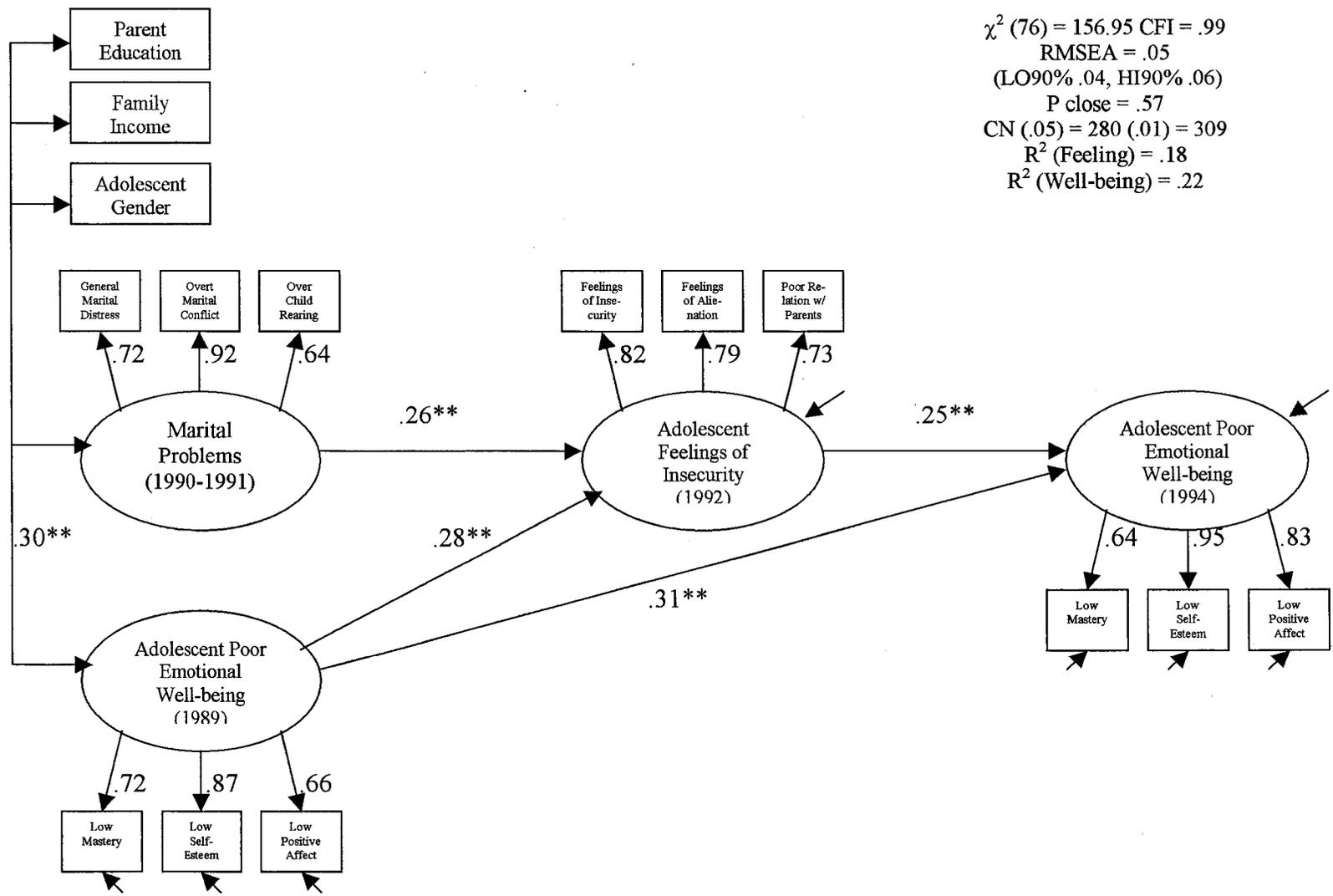


Figure 5. Testing mediating effect of adolescent feelings of insecurity on poor emotional well-being.

significant effect on adolescent feelings or later emotional well-being. An additional test of the significance of the mediating effect yielded a z score of 2.94, indicating that the mediating effect was indeed significant.

All the factor loadings were statistically significant. The Chi-square was 156.95 with 76 degrees of freedom. The CFI was .99. A fully recursive model was also estimated as a possible alternative to the theoretical model. The analyses did not produce a better fit with data nor did they demonstrate any direct effects from marital problems to later adolescent poor emotional well-being. The findings provided additional support for the mediating model that adolescent feelings of insecurity mediated the relation between marital problems and adolescent poor emotional well-being. With respect to adolescent gender differences, none of the  $\chi^2$  changes were significant, indicating that there were no adolescent gender differences in this model.

#### Marital Problems and Adolescent Externalizing Problems

Poor parenting behavior. Figure 6 provides the factor loadings and standardized path coefficients for testing the mediating effect of poor parenting behavior on adolescent externalizing problems. Marital problems predicted poor parenting behavior ( $b = .47, p < .01$ ). Poor parenting behavior, in turn, predicted change in adolescent externalizing problems ( $b = .19, p < .01$ ). Adolescent externalizing problems in 1989 were significantly related to their later externalizing problems ( $b = .35, p < .01$ ). Parents' education was predictive of their parenting behavior ( $b = -.21, p < .01$ ). Also, adolescent gender had a main effect on externalizing problems ( $b = .21, p < .01$ ), with boys demonstrating more externalizing problems than girls. An additional test of the significance of the mediating effect yielded a z score of 3.22, indicating that the mediating effect was indeed significant.

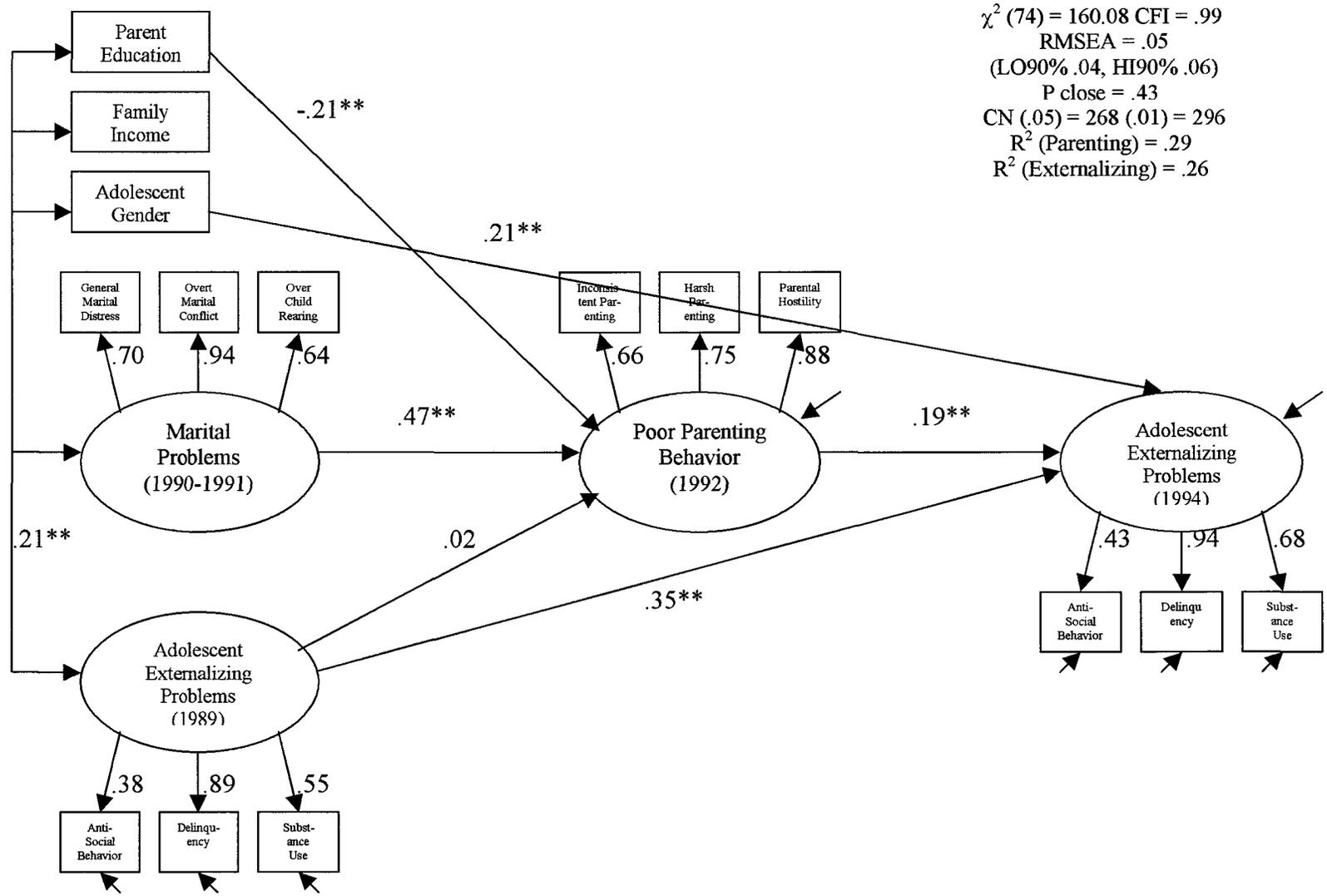


Figure 6. Testing mediating effect of poor parenting on adolescent externalizing problems.

All the factor loadings were statistically significant. The Chi-square was 160.08 with 74 degrees of freedom. The CFI was .99. A fully recursive model was also estimated as a possible alternative to the theoretical model. The estimations did not produce a better fit with the data nor did they demonstrate any direct effects from marital problems to later adolescent externalizing problems. The findings provided additional support for the mediating model that poor parenting behavior mediated the relation between marital problems and adolescent externalizing problems. With respect to adolescent gender differences, none of the  $\chi^2$  changes were significant, indicating that there was no adolescent gender differences in this model.

Adolescent feelings of insecurity. Figure 7 provides the factor loadings and standardized path coefficients for testing the mediating effect of adolescent feelings of insecurity on adolescent externalizing problems. Marital problems predicted adolescent feelings of insecurity ( $b = .31, p < .01$ ). However, adolescent feelings of insecurity did not predict adolescent externalizing problems ( $b = .08, ns$ ). Adolescent externalizing problems in 1989 were significantly related to their later feelings of insecurity ( $b = .12, p < .05$ ) and externalizing problems ( $b = .37, p < .01$ ). Adolescent gender had a significant effect on externalizing problems ( $b = .20, p < .01$ ).

All the factor loadings were statistically significant. The Chi-square was 167.15 with 75 degrees of freedom. The CFI was .99. A fully recursive model was also estimated as a possible alternative to the theoretical model. The estimations did not produce a better fit with data nor did it demonstrate any direct effects from marital problems to later adolescent externalizing problems. None of the  $\chi^2$  changes for two gender groups were significant, indicating that there were no adolescent gender differences in this model. The findings

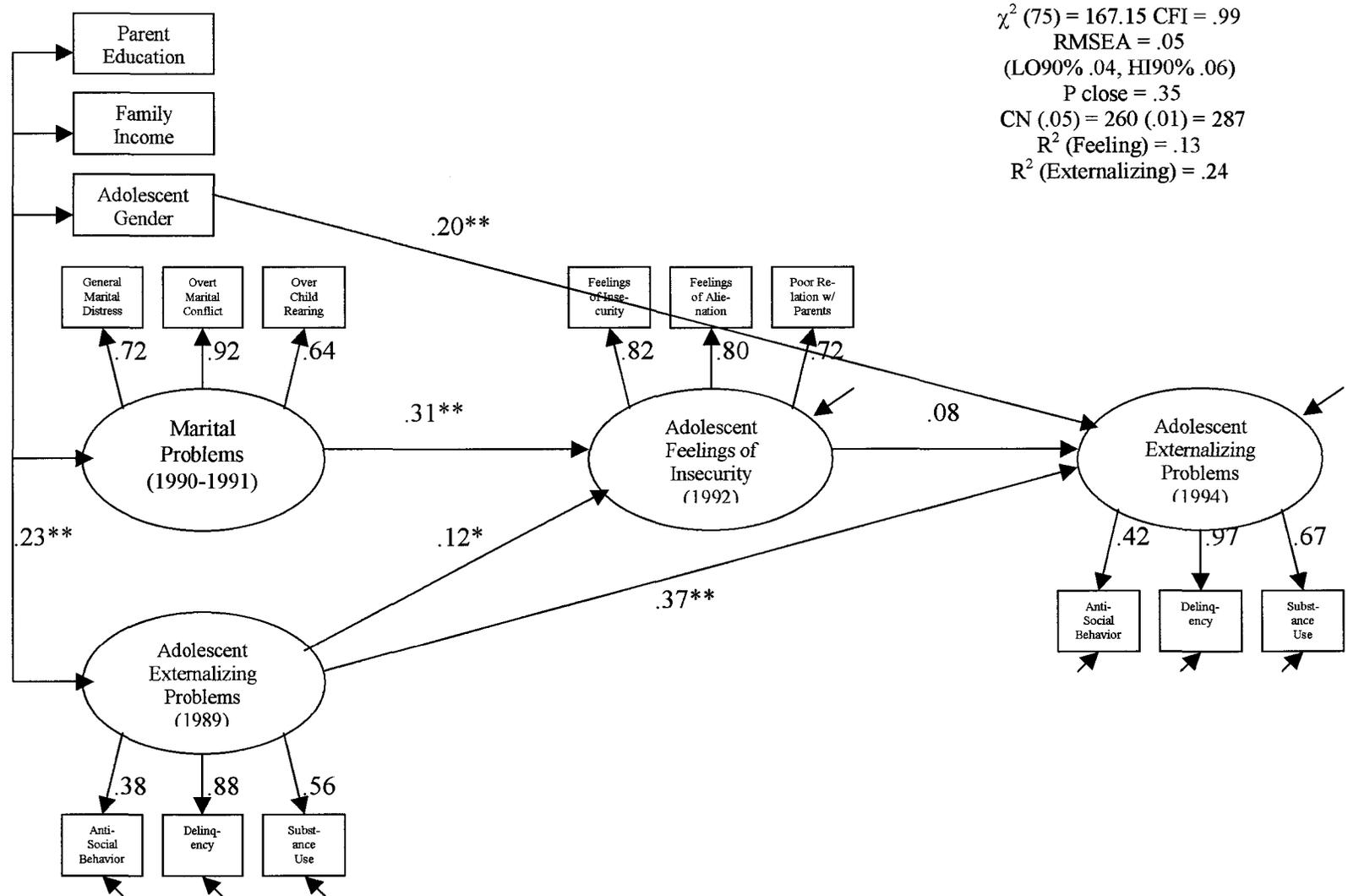


Figure 7. Testing mediating effect of adolescent feelings of insecurity on externalizing problems.

suggested that adolescent feelings of insecurity did not mediate the relation between marital problems and adolescent later externalizing problems.

#### Marital Problems and Adolescent Internalizing Problems

Poor parenting behavior. Figure 8 provides the factor loadings and standardized path coefficients for testing the mediating effect of poor parenting behavior on adolescent internalizing problems. Procedures for estimating the model were the same as above. Marital problems predicted poor parenting behavior ( $b = .47, p < .01$ ). Poor parenting behavior, in turn, predicted change in adolescent internalizing problems ( $b = .14, p < .01$ ). Adolescent internalizing problems in 1989 were significantly related to their later internalizing problems ( $b = .20, p < .01$ ). Parents' education was predictive of their parenting behavior ( $b = -.21, p < .01$ ). Also, Adolescent gender had a main effect on internalizing problems ( $b = -.13, p < .01$ ), with girls demonstrating more internalizing problems than boys. An additional test of the significance of the mediating effect yielded a z score of 2.35, indicating that the mediating effect was indeed significant.

All the factor loadings were statistically significant. The Chi-square was 174.09 with 74 degrees of freedom. The CFI was .99. A fully recursive model was also estimated as a possible alternative to the theoretical model. The estimations did not produce a better fit with data nor did they demonstrate any direct effects from marital problems to later adolescent internalizing problems. The findings provided additional support for the mediating model that poor parenting behavior mediated the relation between marital problems and adolescent internalizing problems. With respect to adolescent gender differences, none of the  $\chi^2$  changes were significant, indicating that there were no adolescent gender differences in this model.

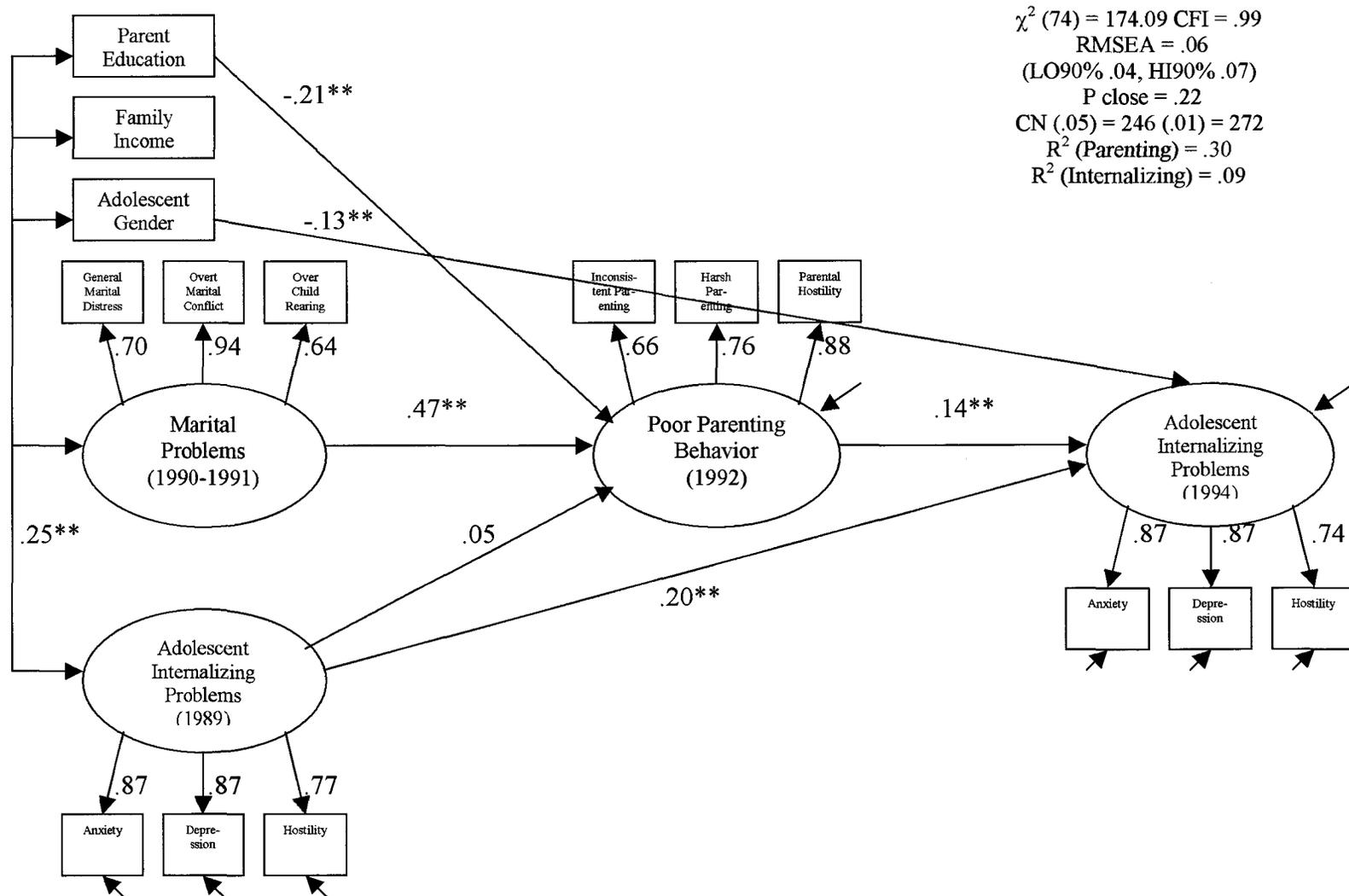


Figure 8. Testing mediating effect of poor parenting on adolescent internalizing problems.

Adolescent feelings of insecurity. Figure 9 provides the factor loadings and standardized path coefficients for testing the mediating effect of adolescent feelings of insecurity on adolescent internalizing problems. Marital problems predicted adolescent feelings of insecurity ( $b = .30, p < .01$ ). Adolescent feelings of insecurity, in turn, predicted change in adolescent internalizing problems ( $b = .15, p < .01$ ). Adolescent internalizing problems in 1989 were significantly related to their feelings of insecurity ( $b = .16, p < .01$ ) and their later internalizing problems ( $b = .19, p < .01$ ). Adolescent gender had a significant effect on internalizing problems ( $b = -.13, p < .01$ ).

All the factor loadings were statistically significant. The Chi-square was 189.89 with 75 degrees of freedom. The CFI was .99. A fully recursive model was also estimated as a possible alternative to the theoretical model. The estimations did not produce a better fit with data nor did they demonstrate any direct effects from marital problems to later adolescent internalizing problems. None of the  $\chi^2$  changes for two gender groups were significant, indicating that there were no adolescent gender differences in this model. The findings suggested that adolescent feelings of insecurity mediated the relation between marital problems and adolescent later internalizing problems.

#### Moderating Mechanisms

To test for moderating effects, regression analyses in SPSS were used and the following steps were followed. First, for each latent construct, the indicators were standardized and then summed together. Second, regression models were run in SPSS with both the main effects of marital conflict and parenting or adolescent feelings of insecurity and the interaction between the two as independent variables. To be comparable with the mediating models, control variables were entered into the analyses, and different adolescent

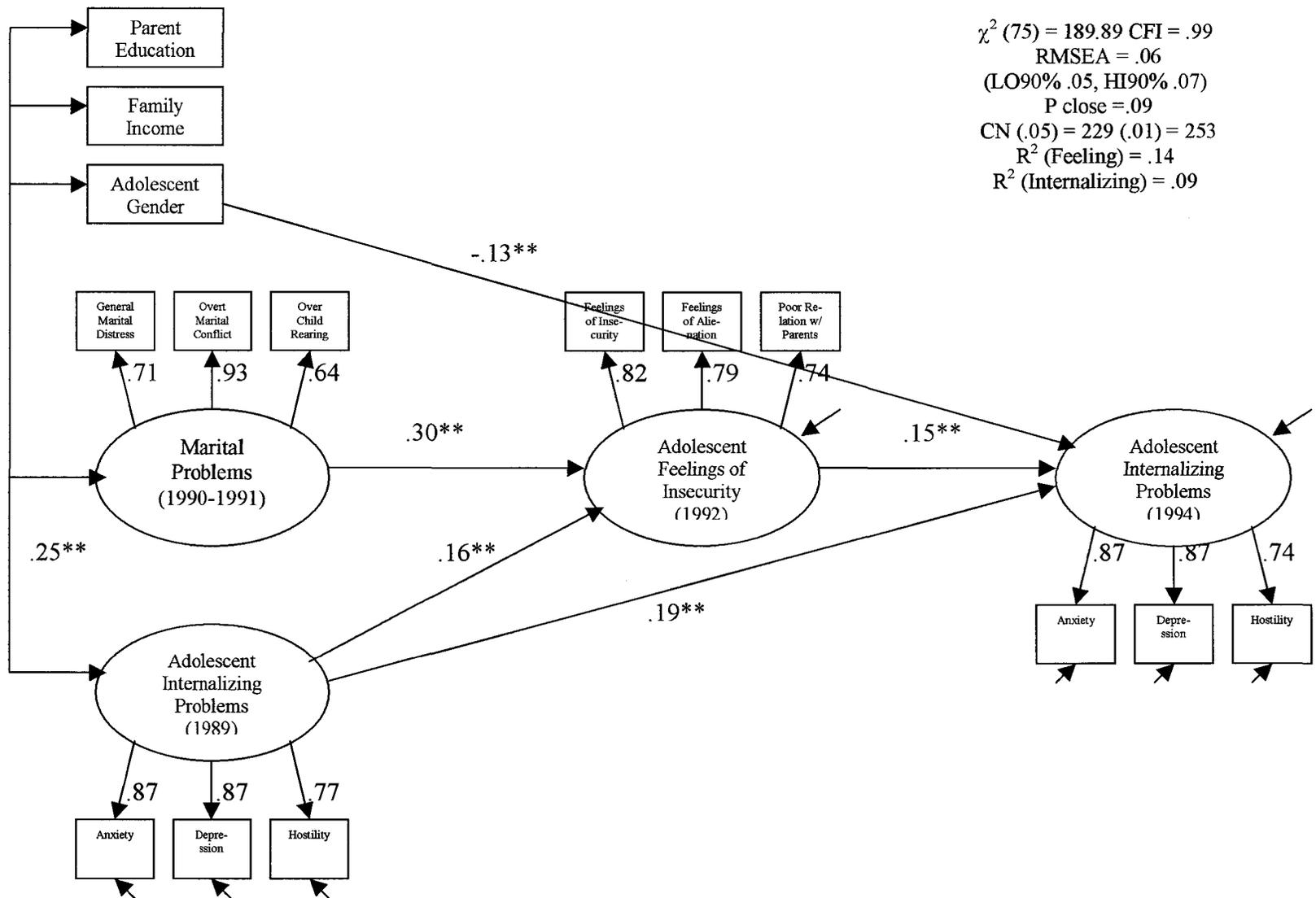


Figure 9. Testing mediating effect of adolescent feelings of insecurity on internalizing problems.

outcomes and different potential moderators (i.e., poor parenting or adolescent feelings of insecurity) were tested separately. As before, overt marital conflict, conflict over child-rearing, and general marital distress were first tested separately to see if they operate the same and can be combined as a super factor. However, general marital distress differed from overt marital conflict and conflict over child-rearing in one case. Therefore, separate results for overt marital conflict, conflict over child-rearing, and general marital distress were generated. Of all the 18 interaction effects tested, only the interaction between general marital distress and poor parenting in predicting adolescent poor emotional well-being was significant. Because only 1 out of 18 interaction effects was significant, close to what would have happened by chance, the results supported the conclusion that in general parenting behavior and adolescent feelings of insecurity do not moderate the relation between marital conflict and adolescent adjustment.

## CHAPTER FIVE.

## DISCUSSION

## Conclusions from Hypotheses Testing

What are the Specific Aspects of Marital Problems that Lead to Adolescent Maladjustment?

We hypothesized that overt marital conflict and conflict over child-rearing, the two specific aspects of marital conflict, would each be significantly related to later adolescent adjustment problems. Results from simple bivariate correlational analyses supported this hypothesis: Overt marital conflict and conflict over child-rearing in 1990 and 1991 correlated significantly with adolescent poor emotional well-being, externalizing problems, and internalizing problems in 1994.

We also hypothesized that the effects of marital conflict (overt marital conflict and conflict over child-rearing) on adolescent maladjustment would be greater than that of general marital distress. Results indicate that even though the magnitudes of the correlations between marital conflict and adolescent adjustment problems are stronger than those between general marital distress and adolescent adjustment problems, the comparisons of these correlations revealed no statistically significant differences. Therefore, we conclude that we find little support for this hypothesis and that the effects of marital conflict and general marital distress on adolescent adjustment are essentially the same in this study sample. This finding suggests the importance of both marital conflict and marital distress for adolescent adjustment.

How does Change in Marital Problems Influence Change in Adolescent Problems?

We hypothesized that level and change in marital problems from 1989 to 1992 would predict change in adolescent problems from 1990 to 1994. Results from latent growth curve

analyses revealed several important findings to support this hypothesis. Parents' report of their level of general marital distress in 1989 predicted increases in adolescent self-report of low positive affect; parents' report of increasing general marital distress and overt marital conflict from 1989 to 1992 predicted increases from 1990 to 1994 in sibling report of adolescent antisocial behavior, target adolescent self-report of delinquency, and self-report of internalizing problems (i.e., anxiety, depression, and hostility). These results indicate that changes in general marital distress are as harmful as changes in overt marital conflict in terms of generating risk for adolescent adjustment problems over time. However, conflict over child-rearing over time did not predict changes in adolescent adjustment problems.

#### Do Poor Parenting and Adolescent Feelings of Insecurity Mediate the Influence of Marital Problems on Adolescent Problems?

We hypothesized that poor parenting practices and adolescent feelings of insecurity would mediate the influence of marital problems on adolescent adjustment problems. In general, results from SEM provided support for this hypothesis: Poor parenting behavior mediated the influence of marital problems on adolescent poor emotional well-being, externalizing problems, and internalizing problems; adolescent feelings of insecurity mediated the influence of marital problems on adolescent poor emotional well-being and internalizing problems. Adolescent feelings of insecurity did not mediate the relation between marital problems and adolescent externalizing problems.

#### Do Poor Parenting and Adolescent Feelings of Insecurity Moderate the Influence of Marital Problems on Adolescent Problems?

We hypothesized that poor parenting practices and adolescent feelings of insecurity would moderate the influence of marital problems on adolescent adjustment problems.

Results of tests for statistical interaction effects revealed no significant findings that would have happened beyond chance. Therefore, the moderating hypothesis is not supported by the present study.

#### What about Adolescent Gender?

Consistent with earlier findings, adolescent girls in this study were more likely than adolescent boys to develop internalizing problems but adolescent boys were more likely than adolescent girls to develop externalizing problems. In terms of mediating or moderating effects of poor parenting behavior and adolescent feelings of insecurity on adolescent outcomes, no adolescent gender differences were found. This finding does not support some of the earlier findings that adolescent gender plays a role in the mediating or moderating process. However, as Davies et al (1998) suggested, most of the studies demonstrating these gender differences were based on samples of children, and that the effects do not necessarily sustain in adolescent years, as demonstrated in the present study.

#### Implications

An important question is, “What implications do these findings have?”. One implication concerns the treatment of adolescents for emotional and behavioral problems. Given the significant effects of the various aspects of marital problems and the effects over time, clinicians need to be reminded that effective therapy for children and adolescents may involve a careful examination of the marital relation. If therapists concentrate their efforts only on behaviors in the parent-child dyads, the findings presented here would suggest that an important component of family life is being ignored. Dadds, Schwartz, and Sanders (1987) found evidence to support this idea. They found that among families with low marital discord, marital therapy had little effect on the treatment of child conduct disorders, but

among families with high levels of marital discord, marital therapy combined with child management training resulted in significant reductions in child conflict problems compared to maritally distressed families who only received the child management training.

The findings from the present study also have important theoretical implications. Some family researchers have proposed that marital problems lead to adolescent adjustment problems indirectly through poor parenting behavior and adolescent feelings of insecurity (a mediating process) (e.g., Conger et al., 1992, 1993; Davies & Cummings, 1998; Fauber et al., 1990), whereas some others have proposed that poor parenting intensifies the relation between marital conflict and adolescent adjustment problems (a moderating process) (e.g., Frosch & Mangelsdorf, 2001; Ingoldsby et al., 1999). The present study found support for the mediating hypothesis but not for the moderating hypothesis: Once poor parenting behavior and adolescent feelings of insecurity were considered, the original significant direct relation between marital conflict and adolescent adjustment was no longer statistically significant; however, the statistical interaction between marital problems and poor parenting behavior and/or adolescent feelings of insecurity did not have a significant effect on adolescent adjustment outcomes.

Also important, the present findings suggest that marital unhappiness and dissatisfaction may play an important role in undermining competent child and adolescent development. This result is contrary to most recent research and needs to be replicated in future studies. However, the results here are quite powerful, especially when change in marital distress is used to predict change in adolescent adjustment. To our knowledge these findings are the first to demonstrate that increases in marital problems lead to increases in

adolescent maladjustment. These results suggest an especially powerful role for the parental relationship in adolescent development and they need to become the focus of future research.

#### Strengths of the Present Study

The present study extended earlier research in several ways. First, rather than examining an overall relation between marital problems and adolescent adjustment, the present study focused on specific aspects of marital problems that lead to adolescent maladjustment. Fincham (1994) suggested that researchers should “get down to specifics” when studying marital problems, since marital problems can take on many forms and not all of them may have the same effect on adolescent adjustment. The present study supported both the cognitive contextual framework (Grych & Fincham, 1990) and the emotional security hypothesis (Davies & Cummings, 1994) that overt marital conflict and conflict over child-rearing have significant effects on later adolescent adjustment. However, the study also found that general marital distress has an equally important effect on adolescent adjustment. This result is less consistent with these conceptual frameworks.

Second, even though several studies have provided evidence that marital conflict influences child adjustment problems, as previously noted, little has been done to examine change in marital conflict and its effect on adolescent adjustment problems over time. Studying change is important in that both marital functioning and adolescent development are not static, and they should be studied over the years to determine their degree of mutual influence (Cummings et al., 2001). With a longitudinal design and repeated measures across time, the present study advanced earlier work and found that change in overt marital conflict and general marital distress predicted increases in various adolescent adjustment problems.

Third, the present study examined both the mediating hypothesis and the moderating hypothesis. Earlier studies have showed evidence for either mediating or moderating processes in the connection between marriage and child development, but the results are not always consistent. To determine whether poor parenting behavior and adolescent feelings of emotional insecurity are mediating or moderating the relation between marital problems and adolescent adjustment is theoretically important. The present study found strong support for the mediating but not for the moderating processes.

Finally, the present study also examined several issues of interest. For example, the present study examined the influence of marital conflict on three separate adolescent outcomes. Adolescent gender differences, parents' gender differences, as well as a variety of factors of interest also were considered in the analyses. The findings demonstrated that, even after taking gender and family socioeconomic status into account, marital distress and marital conflict had the predicted association with adolescent adjustment problems.

Besides theoretical issues, the present study also addressed several important methodological concerns that existed in previous studies. First, the present study used a prospective, longitudinal design. When testing mediating and moderating hypotheses, marital problems were measured in 1990 and 1991, poor parenting behavior and adolescent feelings of emotional security were measured in 1992, and adolescent outcomes were measured in 1994. With this design the study provides more convincing evidence regarding the causal relationships among constructs. Also, repeated measures made latent growth curve analyses possible. To study changes in both the marriage and adolescent maladjustment over time, measures of marital problems were used from 1989, 1990, 1991, and 1992; and measures of adolescent adjustment were used from 1990, 1991, 1992, and 1994. Four waves of data

collection for each of the constructs provided more information and more accurate estimation of change processes (Rogosa, Brandt, & Zimowski, 1982).

Second, the present study used multiple informants for generating measures of constructs. Previous research has concluded that use of a single informant introduces systematic biases in estimates of associations among constructs (Bank, Dishion, Skinner, & Patterson, 1990; Lorenz, Conger, Simons, Whitbeck, & Elder, 1991). Even though cross-respondent correspondences may be lower than those produced by a single informant, the differences in reporters' perspectives can be meaningful and increase our understanding of the construct (Deal, 1995; Furman, Jones, Buhrmester, & Adler, 1989). The advantage of using multiple informants in multiple indicators is that even though one indicator can be either far away or close to a construct's true location, several indicators together are more likely to yield a better approximation to the centroid or "true score" than any single indicator (Little, Lindenberger, & Nesselroade, 1999). To reduce shared method variance, the present study used parents' report, target adolescents' report, sibling report, and observer report on most of the constructs.

Third, when testing the mediating and moderating hypotheses, the present study controlled adolescent adjustment at an earlier time point. Adolescent outcomes were assessed in 1994, and also in 1989. This way, the analyses distinguished the effects of marital problems from continuities in adolescent behavior. This strategy allows inferences about change in adolescent adjustment over time. That is, we can conclude from the results that marital problems affect change in adolescent adjustment through parenting or adolescent feelings of insecurity. The present study also controlled for adolescent gender, parents'

education and family per capita income to ensure that the relation between marital problems and adolescent adjustment is not an artifact.

#### Limitations of the Present Study

This study, however, has its own limitations in terms of ethnicity, geographic location, and structure in the family of origin. Future research is needed to test the generalizability of the findings to other ethnic groups, urban adolescents, and other types of families, such as those with stepparents. Earlier replications of other findings from this panel study with urban (e.g., Conger, Patterson, & Ge, 1995) and minority (e.g., Conger et al., 2002) families and adolescents, however, increase confidence that the present results will generalize to other populations.

#### Suggestions for Future Research

Future research is needed to extend the present study in the following areas. First, the nature of marital conflict, such as whether the conflict is constructive or destructive, needs consideration. Cummings et al (2001) suggest that the distinction between constructive (e.g., mutually respectful, emotionally-modulated conflicts) and destructive (e.g., physical aggression, intense conflicts) is critical. They propose that parents who engage in constructive conflict behaviors should have little negative effect on children's functioning, and that it is destructive conflict that should have the most negative effect on children. Future research should examine this topic and assess children and adolescents' reactions to marital conflict behaviors that vary in their constructive or destructive dimensions. Second, another critical issue relates to how conflict and how the type of resolution is resolved is related to children and adolescents' outcome (Cummings, et al., 2001). Cummings et al (2001) propose

that if parents resolve their conflict through calm discussion, children may benefit from their parents' problem-solving. Future research is needed to examine not only the conflict itself, but also the consequence of the conflict and its effect on children's adjustment. Third, more factors are needed to be considered in the mediating process other than poor parenting behavior and adolescent feelings of insecurity, such as warm/supportive parenting behavior, parent-child relationships, adolescent perceived family support, and difficult temperament. Finally, more factors are needed to be considered in the moderating process. The present study did not support the moderating hypothesis for poor parenting behavior and adolescent feelings of insecurity. Other factors may play an important role in moderating the relation between marital problems and adolescent maladjustment.

## APPENDIX A. MEASURES USED IN THE STUDY

General Marital Distress (1989 (Wave A), 1990 (B), 1991 (C), & 1992 (D))

Marital unhappiness (father report and mother report)

The numbers represent different degrees of happiness in your marital relationship. Indicate how happy you are, all things considered, with your marital relationship.

- 0 = extremely unhappy
- 1 = fairly unhappy
- 2 = a little unhappy
- 3 = happy
- 4 = very happy
- 5 = extremely happy

Marital dissatisfaction (father report and mother report)

All in all, how satisfied are you with your marriage?

- 1 = completely satisfied
- 2 = very satisfied
- 3 = somewhat satisfied
- 4 = not very satisfied
- 5 = not at all satisfied

Marital instability (father report and mother report)

Sometimes couples experience serious problems in their marriage and have thoughts of ending their marriage.

- 1 = not in the last year\*
- 2 = yes, within the last year\*
- 3 = yes, within the last 6 months\*
- 4 = yes, within the last 3 months

Have you or your wife (husband) ever seriously suggested the idea of divorce?

Have you discussed divorce or separation from your wife (husband) with a close friend?

Even people who get along quite well with their spouse sometimes wonder whether their marriage is working out. Have you ever thought your marriage might be in trouble?

Did you and your wife (husband) talk about consulting an attorney about a possible divorce or separation?

Has the thought of getting a divorce or separation crossed your mind?

\* In Wave A, at the beginning of data collection, the couples were asked whether they have “never” experience the above things or “yes, prior to the last 3 years”, or “yes, within the last 3 years”.

### Overt Marital Conflict (Wave A, B, C, & D)

#### Parents’ report of overt marital conflict (father report and mother report)

Pleas think about times during the past month when you and your wife (husband) have spent time talking or doing things together. With those times in mind, please circle the number which tells how often your wife (husband) acted in the following ways toward you during the past month.

- 1 = always
- 2 = almost always
- 3 = fairly often
- 4 = about half of the time
- 5 = not too often
- 6 = almost never
- 7 = never

Get angry at you?

Criticize you or your ideas?

Shout or yell at you because she (he) was mad at you?

Ignore you when you tried to talk to her (him)?

Threaten to do something that would upset you if you didn’t do what she (he) wanted?

Try to make you feel guilty?

Say you made her (him) unhappy last year?

Get into a fight or argument with you?

Hit, push, grab or shove you?

Argue with you whenever you disagreed about something?

Cry, whine or nag to get her (his) way?

Not do things you asked her (him) to do?

Insult or swear at you?\*

Call you bad names?\*

Threaten to hurt you by hitting you with her (his) fist, an object or something else?\*

\* These three items were not available in Wave A, therefore they were deleted for the rest of the waves in latent growth curve analysis.

#### Target adolescents’ report of parents’ overt marital conflict\*

Thinking about your parents, how often would you say they argue or disagree with each other?

- 1 = often
- 2 = sometimes
- 3 = rarely
- 4 = never

\* Wave A, B, and C used the above 1-4 scale, Wave D used a 1-5 scale. This measure was not included in latent growth curve analysis.

#### Observers' report of couples' overt marital conflict

Ratings: 1 = not at all characteristic to 9 = mainly characteristic

#### Task 2 and Task 4

Hostility (father toward mother and mother toward father): This scale measures the degree to which the focal displays hostile, angry,, critical, disapproving, and/or rejecting behavior toward another interactor's behavior, appearance or state. The following behaviors are taken into account: nonverbal communication, such as facial expressions and body posture; emotional expressions, such as irritable, sarcastic, or curt tones of voice or shouting; and the content of the statements themselves.

Antisocial behavior (father toward mother and mother toward father): This scale measures the degree to which the focal actively resists, defies, or is inconsiderate of others by being noncompliant, insensitive, or obnoxious. The antisocial person is characteristically self-centered, egocentric, tends to "act out" in inappropriate ways, and demonstrates a lack of age-appropriate behaviors.

Angry coercion (father toward mother and mother toward father): This scale assesses the degree to which the focal achieves goals, attempts to control or change the behavior or opinions of another interactor, or attempts to get another interactor to do what the focal wants in an angry, hostile manner with a specific objective in mind.

#### Conflict over Child-rearing (Wave A, B, C, & D)

#### Parents' report of conflict over discipline (father report and mother report)

How often you and your spouse disagree or get upset about discipline/raising children.

- 0 = never
- 1 = hardly ever

2 = only sometimes

3 = quite often

4 = all the time

Parents' report of conflict over punishing (father report and mother report)

How often do you and your spouse disagree about punishing the target child?

1 = always

2 = almost always

3 = about half of the time

4 = almost never

5 = never

Children's report of conflict over punishing (target report and sibling report)

How often does your dad (mom) disagree with your mom (dad) about how or when to punish you?

1 = always

2 = almost always

3 = about half the time

4 = almost never

5 = never

Inconsistent/harsh Parenting (Wave D)

Inconsistent parenting (parents' report, target report, observer report)

Parents' report of inconsistent parenting (father report and mother report)

Indicate how often each of the following things occur:

1 = always

2 = almost always

3 = about half the time

4 = almost never

5 = never

Once a punishment has been decided, how often can the target child get out of it?

How often do you punish the target child for something at one time, and then at other times not punish him/her for the same thing?

When you punish the target child, how much does the kind of punishment you use depend on your mood?

Target adolescent's report of inconsistent parenting  
Indicate how often each of the following things occur:

- 1 = always
- 2 = almost always
- 3 = about half the time
- 4 = almost never
- 5 = never

Once your dad (mom) decides on a punishment, how often can you get out of it?  
How often does your dad (mom) punish you for something at one time, and then at other times not punish you for the same thing?

When your dad (mom) is punishing you, how much does the kind of punishment you get depend on his (her) mood?

Observers' report of inconsistent parenting  
Ratings: 1 = not at all characteristic to 9 = mainly characteristic  
Task 1, father and mother

Inconsistent discipline: The scale measures the degree of parental inconsistency and lack of follow-through in maintaining and adhering to rules and standards of conducts for the child's behavior.

Harsh parenting (parents' report, target report, observer report)

Parents' report of harsh parenting (father report and mother report)  
Indicate how often each of the following things occur:

- 1 = always
- 2 = almost always
- 3 = about half the time
- 4 = almost never
- 5 = never

When the target child does something wrong, how often do you lose your temper and yell at him or her?

How often do you spank or slap the target child when he or she does something wrong?

When punishing the target child, how often do you hit him or her with a belt, paddle, or something else?

When the target child does something wrong, how often do you tell him or her to get out or lock him or her out of the house?

Target adolescents' report of harsh parenting

Indicate how often each of the following things occur:

- 1 = always
- 2 = almost always
- 3 = about half the time
- 4 = almost never
- 5 = never

When you do something wrong, how often does your dad (mom) lose his (her) temper and yell at you?

When you do something wrong, how often does your dad (mom) spank or slap you?

When punishing you, how often does your dad (mom) hit you with a belt, paddle, or something else?

When you do something wrong, how often does your dad (mom) tell you to get out or lock you out of the house?

Observers' report of harsh parenting

Ratings: 1 = not at all characteristic to 9 = mainly characteristic

Task 1, father and mother

Harsh discipline: The scale measures the extent to which the parents responds to the child's "misbehavior" or violation of specific parental standards through the use of punitive or severe disciplinary techniques, either verbal, e.g., yelling and creaming, or physical, e.g., hitting or lurching.

Hostile parenting (parents' report, target report, observer report)

Parents' report of hostile parenting

During the past month, when you and the target child have spent time talking or doing things together, how often did you:

- 1 = always
- 2 = almost always
- 3 = fairly often
- 4 = about half the time
- 5 = not too often
- 6 = almost never
- 7 = never

Get angry at him/her?

Criticize him/her or his/her ideas?

Shout or yell at him/her because you were mad at him/her?

Argue with him/her whenever you disagreed about something?

Hit, push, grab, or shove him/her?

Target adolescents' report of hostile parenting

During the past month, when you and your dad (mom) have spent time talking or doing things together, how often did your dad (mom):

- 1 = always
- 2 = almost always
- 3 = fairly often
- 4 = about half the time
- 5 = not too often
- 6 = almost never
- 7 = never

Get angry at you?

Criticize you or your ideas?

Shout or yell at you because he/she was mad at you?

Argue with you whenever you disagreed about something?

Hit, push, grab, or shove you?

Observers' report of harsh parenting

Ratings: 1 = not at all characteristic to 9 = mainly characteristic

Task 1, father and mother

Hostility (father toward mother and mother toward father): This scale measures the degree to which the focal displays hostile, angry,, critical, disapproving, and/or rejecting behavior toward another interactor's behavior, appearance or state. The following behaviors are taken into account: nonverbal communication, such as facial expressions and body posture; emotional expressions, such as irritable, sarcastic, or curt tones of voice or shouting; and the content of the statements themselves.

Antisocial behavior (father toward mother and mother toward father): This scale measures the degree to which the focal actively resists, defies, or is inconsiderate of others by being noncompliant, insensitive, or obnoxious. The antisocial person is characteristically self-centered, egocentric, tends to "act out" in inappropriate ways, and demonstrates a lack of age-appropriate behaviors.

Angry coercion (father toward mother and mother toward father): This scale assesses the degree to which the focal achieves goals, attempts to control or change the behavior or opinions of another interactor, or attempts to get another interactor to do what the focal wants in an angry, hostile manner with a specific objective in mind.

Adolescents' Feelings of Insecurity (Wave D)

Adolescent's emotional insecurity (adolescent self-report)

How often does your dad (mom):

- 1 = always
- 2 = often
- 3 = sometimes
- 4 = rarely
- 5 = never

Make you feel he (she) is there for you when you really need him (her)?  
 Make you feel he (she) really cares about you?

Adolescents' feelings of alienation from their parents (adolescent self-report)

How much do you agree or disagree with each of the following statements?

- 1 = strongly agree
- 2 = agree
- 3 = neutral or mixed
- 4 = disagree
- 5 = strongly disagree

When I grow up, I'd like to be like my father (mother)  
 I have a lot of respect for my father (mother)  
 My father (mother) is the kind of person other people respect  
 I really enjoy spending time with my father (mother)

Adolescents' representation of their relationship with their parents (adolescent self-report)

How happy are you with the way things are between you and your dad (mom)?

- 1 = very happy
- 2 = fairly happy
- 3 = fairly unhappy
- 4 = very unhappy

How satisfied are you with your relationship with your dad (mom)?

- 1 = very satisfied
- 2 = fairly satisfied
- 3 = fairly dissatisfied
- 4 = very dissatisfied

Adolescent Poor Emotional Well-being (Wave A, B, C, D, & F1 (1994))

Low mastery (adolescent self-report)

How strongly do you agree or disagree with these statements about yourself?

- 1 = strongly agree
- 2 = agree
- 3 = neutral/mixed
- 4 = disagree
- 5 = strongly disagree

There is really no way I can solve some of the problems I have.  
 Sometimes I feel that I am being pushed around in life.  
 I have little control over the things that happen to me.  
 I can do just about anything I really set my mind to.  
 I often feel helpless in dealing with the problems of life.  
 What happens to me in the future mostly depends on me.  
 There is little I can do to change many of the important things in my life.

Low self-esteem (adolescent self-report)

How strongly do you agree or disagree with these statements about yourself?

- 1 = strongly agree
- 2 = agree
- 3 = neutral/mixed
- 4 = disagree
- 5 = strongly disagree

I feel that I am a person of worth, at least on an equal level with others.  
 I feel that I have a number of good qualities.  
 All in all, I am inclined to feel that I am a failure.  
 I am able to do things as well as most other people.  
 I feel I do not have much to be proud of.  
 I take a positive attitude toward myself.  
 On the whole, I am satisfied with myself.  
 I certainly feel useless at times.  
 I wish I could have more respect for myself.  
 At times I think I am no good at all.

Low positive affect (adolescent self-report)

We would like to find out something about how you have viewed your life in general during the past month. During the past month, how much of the time...

- 1 = all of the time
- 2 = most of the time
- 3 = a good bit of the time
- 4 = some of the time
- 5 = a little of the time
- 6 = none of the time

Have you generally enjoyed the things you do.  
 Have you felt that the future looks hopeful and promising.  
 Has your daily life been full of things that were interesting to you.  
 Did you feel relaxed and free of tension.  
 Were you a happy person.  
 Has living been a wonderful adventure for you.

Adolescent Externalizing Problems (Wave A, B, C, D, & F1 (1994))

Sibling report of target antisocial behavior

Please indicate how much you agree or disagree that the following statements describe your brother or sister in the study

- 1 = strongly agree
- 2 = agree
- 3 = neutral or mixed
- 4 = disagree
- 5 = strongly disagree

He or she always gets into trouble.  
 He or she sometimes breaks the law.  
 He or she gets into a lot of fights.  
 People sometimes think he or she is a "bad" kid.

Target self-report delinquency behavior

The following is a list of behaviors related to laws and rules. We'd like to know whether you've done any of these things during the past 12 months. This is personal and confidential. No one will know how you answered these questions. Please be honest in answering them. During the past 12 months, have you...

- 1 = never

- 2 = once
- 3 = 2-3 times
- 4 = 4-5 times
- 5 = 6 or more times

- Run away from home.
- Taken something worth less than \$25 that didn't belong to you.
- Taken something worth \$25 or more that didn't belong to you.
- Bought alcohol or had someone buy alcohol for you.
- Cut classes, or stayed away from school without permission.
- Bought tobacco or had someone buy tobacco for you.
- Beat up someone or fought someone physically because they made you angry (other than just playing around).
- Gone to court or been placed on probation for something you did,
- Been placed in juvenile detention or jail.
- Snatched someone's purse or wallet without hurting them.
- Bought alcohol (beer, wine, liquor, etc.) for someone "under age".
- Driven a car when drunk.
- Been drunk in a public place.
- Purposely damaged or destroyed property that did not belong to you.
- Broken into or tried to break into a building for fun or to look around.
- Taken a car or other vehicle without the owner's permission, just to drive around.
- Broken into or tried to break into a building to steal or damage something.
- Thrown objects such as rocks or bottles at people to hurt or scare them.
- Attacked someone with a weapon, trying to seriously hurt them.
- Sold illegal drugs such as pot, grass, hash, LSD, cocaine, or other drugs.
- Used a weapon, force or strong-arm methods to get money or something from someone.
- Been picked up by the police for something you did.
- Set fire to a building or fired or something like that just for fun.
- Sneaked into a movie, ballgame or something like that without paying.
- Gotten into trouble for driving a car without a license.
- Gotten a ticket for speeding in a car.
- Gotten a ticket for drunk driving.\*
- Gotten a ticket for other traffic violations.\*
- Used force or strong-arm methods to get someone to do something they didn't want to do.\*

\* These items were assessed only in F1, but not in Wave A, B, C, and D. Therefore these items were deleted in latent growth curve analysis.

Target self-report substance use\*

During the past 12 months, how often did you...

- 1 = never

- 2 = less than 1 time a week
- 3 = 1-2 times a week
- 4 = 3-4 times a week
- 5 = 5-6 times a week
- 6 = every day

Smoke or chew tobacco.

Drink beer, wine, or wine coolers.

Drink hard liquor such as bourdon, vodka, whisky, or gin.

Have 3 or 4 drinks in a row (A drink of a glass of wine, a wine cooler, a bottle of beer, a shot glass of liquor or a mixed drink).

Have 5 or more drinks in a row (A drink of a glass of wine, a wine cooler, a bottle of beer, a shot glass of liquor or a mixed drink).

Smoke marijuana.

Use some other illegal drug.

Get drunk.

Get "high" on marijuana.

Get "high" on some other illegal drug.

Use prescription drugs for fun or to get "high" without a doctor's prescription.

Use gasoline, glue, or other inhalants to get high ("rush", solvents, etc.).

\* The above items were assessed in F1. Other waves were a little different. Therefore, this measure was not used in latent growth analysis.

Adolescent Internalizing Problems (Wave A, B, C, D, & F1 (1994))

Target self-report anxiety

During the past week, including today, how much were you distressed or bothered by...

- 1 = not at all
- 2 = a little bit
- 3 = a moderate amount
- 4 = quite a bit
- 5 = extremely

Nervousness or shakiness inside.

Trembling.

Suddenly scared for no reason.

Feeling fearful.

Heart pounding or racing.

Feeling tense or keyed up.

Spells of terror or panic.

Feeling so restless you couldn't sit still.

The feeling that something bad is going to happen to you.  
Thoughts and images of a frightening nature.

Target self-report depression

During the past week, including today, how much were you distressed or bothered by...

- 1 = not at all
- 2 = a little bit
- 3 = a moderate amount
- 4 = quite a bit
- 5 = extremely

Feeling low in energy or slowed down.  
Thoughts of ending your life.  
Crying easily.  
Feelings of being trapped or caught.  
Blaming yourself for things.  
Feeling lonely.  
Feeling blue.  
Worrying too much about things.  
Feeling no interest in things.  
Feeling hopeless about the future.  
Feeling everything is an effort.  
Feeling of worthlessness.

Target self-report hostility

During the past week, including today, how much were you distressed or bothered by...

- 1 = not at all
- 2 = a little bit
- 3 = a moderate amount
- 4 = quite a bit
- 5 = extremely

Feeling easily annoyed or irritated.  
Temper outbursts that you could not control.  
Having urges to beat, injure, or harm someone.  
Having urges to break or smash things.  
Getting into frequent arguments.  
Shouting or throwing things.

## Other variables

### Parents' education (Wave A)

This variable was assessed by asking both the father and the mother the "highest grade of education completed or enrolled currently" ...

- 00 = no grade completed
- 12 = high school graduate or GED
- 13 = 1 year of college, vocational, or technique training
- 14 = 2 years of college, associate degree
- 15 = 3 years of college
- 16 = B.S., B.A.
- 17 = Bachelor's +
- 18 = M.S., M.A.
- 19 = masters +
- 20 = Ph.D., J.D., D.D.S., M.D., D.V.M., etc.

### Family per capita income (Wave A)

This variable was assessed by dividing family income by family size.

### Adolescent Gender (Wave A)

- 0 = female
- 1 = male

APPENDIX B. MEANS, STANDARD DEVIATIONS, AND  
RANGES FOR STUDY MEASURES

Measure	Wave	Mean	Std. Dev.	Min.	Max.
<b>General Marital Distress</b>					
Marital dissatisfaction	1989	1.94	.62	1.00	4.50
	1990	2.02	.71	1.00	5.00
	1991	2.06	.78	1.00	5.00
	1992	2.13	.81	1.00	5.00
Marital unhappiness	1989	1.18	.84	.00	4.50
	1990	1.24	.91	.00	5.00
	1991	1.43	1.07	.00	5.00
	1992	1.49	1.01	.00	5.00
Marital instability	1989	7.60	2.60	5.00	19.50
	1990	6.10	2.28	5.00	20.00
	1991	6.25	2.35	5.00	20.00
	1992	6.11	2.17	5.00	18.50
<b>Overt Marital Conflict</b>					
Parents' report	1989	25.21	7.77	12.50	60.00
	1990	24.99	8.00	12.00	57.00
	1991	25.40	8.80	12.00	66.00
	1992	25.57	9.55	12.50	77.00
Target adolescents' report	1989	---	---	---	---
	1990	2.35	.72	1.00	4.00

## APPENDIX B. (continued)

Measure	Wave	Mean	Std. Dev.	Min.	Max.
Observers' report	1991	2.34	.70	1.00	4.00
	1992	---	---	---	---
	1989	13.36	4.22	6.00	30.00
	1990	12.88	4.71	6.00	31.00
	1991	13.60	5.53	6.00	38.00
	1992	16.22	7.25	6.00	43.50
<b>Conflict over Child-rearing</b>					
Parent's report over discipline	1989	1.76	.64	.00	3.50
	1990	1.69	.60	.00	3.50
	1991	1.71	.64	.00	4.00
	1992	1.66	.64	.00	4.00
Parents' report over punishing	1989	2.08	.53	1.00	4.50
	1990	2.15	.52	1.00	4.50
	1991	2.13	.57	1.00	4.50
	1992	2.12	.63	1.00	5.00
Children's report over punishing	1989	2.06	.60	1.00	4.25
	1990	1.97	.64	1.00	4.50
	1991	2.01	.70	1.00	5.00
	1992	2.05	.65	1.00	4.25
<b>Poor Parenting Behavior</b>					

## APPENDIX B. (continued)

Measure	Wave	Mean	Std. Dev.	Min.	Max.
Inconsistent parenting	1992	.00	2.18	-6.70	6.13
Harsh parenting	1992	.00	2.14	-4.53	7.99
Hostile parenting	1992	.00	2.22	-5.09	7.88
<b>Target Feelings of Insecurity</b>					
Emotional insecurity	1992	7.98	3.07	4.00	17.00
Feelings of alienation	1992	16.52	4.66	8.00	29.00
(Poor) relationship with parents	1992	6.35	2.18	4.00	16.00
<b>Target Poor Emotional Well-being</b>					
Low mastery	1989	15.97	4.13	7.00	31.00
	1990	14.95	4.04	7.00	26.00
	1991	14.64	4.23	7.00	27.00
	1992	14.66	4.23	7.00	27.00
	1994	14.82	4.45	7.00	30.00
Low self-esteem	1989	20.50	6.19	10.00	47.00
	1990	19.51	5.78	10.00	38.00
	1991	19.78	6.42	10.00	41.00
	1992	20.28	6.80	10.00	44.00
	1994	20.73	6.59	10.00	47.00
Low positive affect	1989	12.79	4.55	6.00	31.00
	1990	12.54	4.41	6.00	28.00

## APPENDIX B. (continued)

Measure	Wave	Mean	Std. Dev.	Min.	Max.
	1991	13.40	4.91	6.00	32.00
	1992	13.55	4.73	6.00	32.00
	1994	15.32	5.15	6.00	33.00
<b>Target Externalizing Problems</b>					
Sibling report antisocial behavior	1989	7.05	2.96	4.00	19.00
	1990	7.02	2.85	4.00	20.00
	1991	7.07	2.99	4.00	17.00
	1992	7.05	2.90	4.00	20.00
	1994	7.28	3.14	4.00	17.00
Self report delinquent behavior	1989	.99	1.47	.00	10.00
	1990	.96	1.59	.00	11.00
	1991	1.30	2.03	.00	13.00
	1992	2.18	2.86	.00	21.00
	1994	3.80	3.64	.00	24.00
Self report substance use	1989	.93	1.32	.00	6.00
	1990	---	---	---	---
	1991	---	---	---	---
	1992	---	---	---	---
	1994	2.93	2.59	.00	10.00
<b>Target Internalizing Problems</b>					

## APPENDIX B. (continued)

Measure	Wave	Mean	Std. Dev.	Min.	Max.
Self-report anxiety	1989	15.00	5.08	10.00	36.00
	1990	13.86	4.60	10.00	45.00
	1991	13.95	4.60	10.00	39.00
	1992	13.64	5.12	10.00	50.00
	1994	13.85	5.03	10.00	41.00
Self report depression	1989	19.43	7.08	12.00	52.00
	1990	17.84	5.79	12.00	42.00
	1991	17.99	6.33	12.00	46.00
	1992	18.60	7.27	12.00	60.00
	1994	19.47	7.60	12.00	55.00
Self report hostility	1989	9.57	3.88	6.00	30.00
	1990	9.00	3.33	6.00	26.00
	1991	8.85	3.35	6.00	28.00
	1992	8.93	3.72	6.00	30.00
	1994	9.25	3.56	6.00	27.00
<b>Control Variables</b>					
Parents' Education	1989	13.38	1.62	8.50	19.00
Family Per Capita Income	1989	3.00	1.42	1.00	5.00
Adolescent Gender	1989	.48	.50	.00	1.00

Note: "---" values not computed since not used by the present study.

APPENDIX C. RESULTS OF UNIVARIATE GROWTH CURVES

Model	Intercept		Linear Slope		Quadratic Slope		$\chi^2$ (df)	RMSEA	Pc
	Mean	Var.	Mean	Var.	Mean	Var.			
Parent rep. marital unhappiness	1.17**	.44**	.09*	.06	.01	.02*	4.31 (1)	.09	.16
Parent rep. marital dissatisfaction	1.94**	.26**	.07**	.05	-.01	.02**	.46 (1)	.00	.69
Parent rep. marital instability <sup>a,b</sup>	6.13**	3.81**	.04	.86**			2.25 (1)	.05	.34
Parent rep. overt marital conflict <sup>a</sup>	25.10**	48.16**	.10	2.70**			15.85 (5)	.07	.17
Observer rep. overt marital conflict	13.39**	11.89**	-1.20**	6.75	.70**	.45	.01 (1)	.00	.97
Parent rep. conflict over discipline <sup>a</sup>	1.74**	.27**	-.02*	.02**			8.63 (5)	.04	.58
Parent/child rep. conflict over punishment <sup>a</sup>	2.07**	.15**	.00	.01**			6.01 (5)	.02	.78
Target rep. low mastery	14.97**	12.02**	-.29	7.11**	.06	.34**	.01 (1)	.00	.96
Target rep. low self-esteem	19.54**	26.56**	.46	12.96**	-.04	.77**	.08 (1)	.00	.87
Target rep. low positive affect	12.63**	13.14**	.41	8.30**	.07	.47**	5.28 (1)	.10	.11
Sibling rep. target's antisocial behavior	7.02**	5.75**	.01	3.14**	.02	.12**	.04 (1)	.00	.91
Target rep. delinquency	.45**	.27**	.11**	.15**	.01	.01**	.17 (1)	.00	.81
Target rep. anxiety <sup>a</sup>	13.93**	13.74**	-.03	.82**			12.75 (5)	.06	.32
Target rep. depression <sup>a</sup>	17.85**	21.33**	.41**	.93*			14.90 (5)	.07	.20

Target rep. hostility	8.99**	6.43**	-.14	3.24*	.05	.17*	.09 (1)	.00	.87
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Note. \*  $p < .05$ , \*\*  $p < .01$ , two-tailed test.

<sup>a</sup> Neither linear slope nor quadratic slope had significant variance when both slope terms were included, therefore quadratic slope was deleted from each of these models and the results above were based on the models with only linear slopes.

<sup>b</sup> Used only Wave B, C, & D for marital instability, because using 3 waves of marital instability produced same pattern of results but better model fit compared to using all 4 waves of data.

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