

Marital Conflict as a Mediator of the Longitudinal Connections between Maternal Emotional Distress and Early Adolescent Maladjustment

Elizabeth H. Blodgett Salafia · Dawn M. Gondoli ·
Amber M. Grundy

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Abstract In this study, we examined the longitudinal relations among maternal emotional distress, marital conflict, and early adolescent externalizing behaviors and internalizing symptoms during the transition to adolescence. 3 years of self-report data were collected from 136 married mothers and their children, beginning when the children were in 5th grade. Structural equations modeling with latent variables were conducted to examine the nature and directionality of paths between constructs. For mothers, results indicated that marital conflict mediated the relation between prior maternal emotional distress and subsequent early adolescent externalizing behaviors and internalizing symptoms. For early adolescents, a mediating pattern was seen only for externalizing behaviors. In testing the reverse pattern of effects for mothers, marital conflict mediated the relation between prior early adolescent externalizing behaviors and subsequent maternal emotional distress whereas only an indirect pattern of effects existed for internalizing symptoms. Thus, we identified dynamic patterns of familial relations that accounted for the diminished well-being of both early adolescents and their mothers, suggesting that prevention and intervention work during the transition to adolescence should focus on multiple components of family functioning.

Keywords Maternal emotional distress · Marital conflict · Externalizing and internalizing · Adolescence · Mediation

Introduction

A substantial body of theoretical and empirical work indicates that maternal emotional distress and child externalizing and internalizing problems are associated

E. H. Blodgett Salafia (✉) · D. M. Gondoli · A. M. Grundy
Department of Psychology, University of Notre Dame, 118 Haggar Hall,
Notre Dame, IN 46556, USA
e-mail: eblodget@nd.edu

(e.g., Downey and Coyne 1990; Elgar et al. 2004; McCombs Thomas et al. 1995). Family process models often reflect the premise that maternal distress leads to child problems, and research has been directed to understanding this causal connection. However, theory also states that children's characteristics can influence parental and family functioning (e.g., Belsky 1984; Grych 2002; Rutter 1994). More specifically, scholars have theorized that children's externalizing and internalizing problems are likely to covary with and may predict maternal emotional distress and disrupted family process (Elgar et al. 2004; Patterson et al. 1990). Thus, we examine two process-oriented models, one with maternal emotional distress leading to early adolescent maladjustment and one with early adolescent maladjustment leading to maternal emotional distress.

Although maternal emotional distress may affect children directly, it is also possible that this connection may be indirect and mediated by difficulties in functioning within various family systems. For example, family process models have suggested that maternal emotional distress may affect children by first leading to problems in the marital subsystem (Cummings and Davies 1994b; Downey and Coyne 1990; Elgar et al. 2004; Goodman and Gotlib 1999). A number of empirical studies have provided initial support for marital conflict as a mediator. First, separate studies have indicated that maternal emotional distress is associated with marital conflict (for reviews, see Beach and Fincham 1998; Beach et al. 1994) and that marital conflict is associated with greater externalizing and internalizing problems among children (for reviews, see Cummings and Davies 1994a; Grych and Fincham 1990). In theorizing about the day-to-day processes underlying such associations, scholars have noted that maternal emotional distress has been linked with problematic intra- and interpersonal characteristics (e.g., negative mood states, low self-worth, criticism, and blame) which promote negative conflict between spouses (Beach et al. 1994; Cummings and Davies 1994b; Davila and Bradbury 1998). In turn, negative marital conflict is likely to undermine children's sense of security and impair their regulation of behavior and affect, reflected ultimately in externalizing behaviors and internalizing symptoms (Cummings and Davies 1994a; Grych and Fincham 1990; Zimet and Jacob 2001).

More recently, mediation models explicitly linking maternal emotional distress, marital functioning, and child maladjustment have also been examined (e.g., Cummings et al. 2005; Davies et al. 1999; Du Rocher Schudlich and Cummings 2003; Johnson et al. 2001). In a cross-sectional study, Cummings and colleagues (2005) found that children's exposure to marital conflict partially mediated the relation between maternal depression and kindergarten children's externalizing and internalizing problems. Another cross-sectional study from this research program indicated that negative marital conflict partially mediated the connection between maternal depression and internalizing problems among children aged 8–16 years (Du Rocher Schudlich and Cummings 2003). There are only two relevant longitudinal studies available. First, Davies and colleagues (1999) examined relations among maternal depression, marital dissatisfaction, and 15–17-year-old adolescents' externalizing behaviors. Results indicated that mediation occurred with maternal depression at Time 1 leading to marital dissatisfaction at Time 2, in turn predicting increases in adolescents' self-reported behavioral problems at Time 3. In

another study of late adolescents, Johnson and colleagues (2001) found that the link between prior maternal psychological disorders and subsequent adolescent externalizing and internalizing problems was mediated by maladaptive parenting behaviors which included heightened levels of interparental conflict.

Although the literature indicates that the connection between maternal emotional distress and child adjustment problems may be at least partially mediated by marital conflict and related difficulties (e.g., marital dissatisfaction), virtually all relevant extant research is cross-sectional. Cross-sectional mediation models represent but do not explicitly test relations over time. Furthermore, alternative directions of effects that are supported by prior theoretical and empirical literature cannot be examined with cross-sectional data. Therefore, our first aim was to test a longitudinal mediation model in which maternal emotional distress led to marital conflict, which in turn led to externalizing and internalizing problems among children during the transition to adolescence.

Our second aim was to test an alternative model in which early adolescent externalizing and internalizing problems led to marital conflict, which in turn led to maternal emotional distress. This model was driven by prior theory which indicates that children's adjustment difficulties may influence parental and family functioning (e.g., Belsky 1984; Grych 2002; Rutter 1994). Interestingly, although Davies and colleagues (1999) obtained longitudinal data, they did not investigate the complete reverse ordering of effects; that is, they did not examine whether adolescent behavior problems at Time 1 were associated with maternal depression at Time 3, and if marital dissatisfaction at Time 2 served as a mediator of this association.

An emerging body of empirical work provides justification for such a mediated-effects model. In regard to the requisite direct effects, longitudinal studies indicate that prior behavioral and emotional problems among children are associated with increases in maternal emotional distress (e.g., Elgar et al. 2003; Forgatch et al. 1996; Ge et al. 1995). In regard to potential mediating linkages, behavioral and emotional problems among children have been associated with increases in conflict and negativity between parents over time (Jenkins et al. 2005; O'Connor and Insabella 1999; Vandervalk et al. 2007). To account for these relations, scholars have theorized that difficult children may provoke marital conflict because such children disrupt daily functioning, increase family stress, and foster negative affect and cognition about the family, including negative feelings and beliefs about the spouse and the marriage (Grych 2002; Jenkins et al. 2005; Zimet and Jacob 2001). In turn, women who report greater conflict and negativity within their marriages also report higher levels of emotional distress, both concurrently and longitudinally (Beach and O'Leary 1993; Fincham et al. 1997), suggesting that a mediation framework may be appropriate.

In the only relevant mediation study in this area to date, Garnstein and Sheeber (2004) examined longitudinal connections between 3- and 6-year-old children's externalizing behaviors and overall family functioning and maternal depression. Overall family functioning was measured with items assessing whole-family stress, cohesion, and day-to-day management. Results indicated that the relation between child externalizing behaviors at Time 1 and increases in maternal depression at Time 3 was mediated by mothers' reports of decreased family functioning at Time 2. Although these researchers demonstrated that disrupted family functioning can

mediate the effects of child behavioral problems on maternal well-being, it is important to articulate the specific areas of family functioning that may underlie such relations, including functioning within the marital relationship.

In the present study, we seek to build upon theory-driven family process models and extend prior cross-sectional research suggesting that marital conflict may mediate the relation between prior maternal emotional distress and subsequent child maladjustment (e.g., Cummings et al. 2005; Du Rocher Schudlich and Cummings 2003). In addition, we seek to examine the reverse pattern of effects such that child maladjustment leads to marital conflict, which in turn predicts maternal distress. We tested two process-oriented hypotheses: (1) marital conflict at Time 2 will mediate the relation between maternal emotional distress at Time 1 and early adolescent externalizing behaviors and internalizing symptoms at Time 3, and (2) marital conflict at Time 2 will mediate the relation between early adolescent externalizing behaviors and internalizing symptoms at Time 1 and maternal emotional distress at Time 3. Although researchers have investigated the linkages between maternal distress and child maladjustment during early childhood (e.g., Cummings et al. 2005; Garnstein and Sheeber 2004) or later adolescence (e.g., Davies et al. 1999), a noticeable gap in research occurs between the ages of 10 and 14 years. Therefore, we investigated these relations specifically during the transition to adolescence. This is a particularly important period to study because of the many changes that commonly occur within adolescents and their families, such as the formation of a mature identity and increased autonomy from parents (Holmbeck et al. 1995; Silverberg and Gondoli 1996; Steinberg 2001).

Family process models also identify a number of potential moderators of the relation between maternal emotional distress and child maladjustment, including gender of the child (Goodman and Gotlib 1999). For example, boys may be more vulnerable in early and middle childhood while girls become more vulnerable in adolescence (Cummings and Davies 1999). It is less certain, however, what happens during the transition to adolescence. Similarly, boys are more likely to exhibit externalizing problems as a result of exposure to maternal distress while girls tend to develop internalizing symptoms (Cummings and Davies 1994a). Thus, we investigated the potential role of gender as a moderator in the longitudinal relations between maternal distress and early adolescent maladjustment during the transition to adolescence.

Method

Participants

The data were collected as part of a longitudinal project approved by the university's Institutional Review Board to examine maternal and child well-being during the transition to adolescence. During the first year of the study, initial contact letters were distributed by primary schools in a medium-sized, Midwestern city. The letters briefly described the study and instructed mothers of 4th-graders to contact the research office if interested in participating.

To ensure that families had the same degree of experience with the adolescent transition, mother-child dyads were eligible if the 4th-grader was the oldest child in the family (i.e., all families were making this transition for the first time in their ontogeny). In addition, dyads were eligible if the mother was currently married to the 4th-grader's father and had never been divorced. Studies have repeatedly demonstrated that recently separated or divorced mothers experience dramatic increases in stressors and associated decreases in psychological well-being (e.g., Forgatch et al. 1988; Hetherington 1989). Temporary perturbations in family functioning, such as exacerbated interparental conflict and disrupted parenting, are also common during marital transitions (Forgatch et al. 1996). Our aim was not to compare stably married families to those undergoing marital transition, nor did we intend to examine phases of adjustment following marital transition. Therefore, we examined adjustment among dyads in which mothers remained married during the study period. One hundred and eighty-two dyads met our two criteria and were invited to participate. Of these dyads, 13 (7%) declined participation after hearing more about the study, and four (2%) repeatedly cancelled their laboratory appointments and were unresponsive to contact by the researchers. Thus, 165 dyads (91%) participated in the first year of data collection. However, due to attrition over the course of the study (e.g., relocation and refusal to continue participation) as well as our exclusion of data following marital separation or divorce, a total of 136 dyads' data were available for analysis in the present study.

The data of interest to the present study were collected from both mothers and their children while they progressed through 5th, 6th, and 7th grades because all measures were administered during these years. This sample consisted of 61 boys and 75 girls who were between the ages of 10 and 12 years at the 5th grade assessment ($M = 10.65$, $SD = .50$). Most of the sample identified themselves as European American (94.9%); many fewer identified themselves as African American (2.2%), Latina/o (1.5%), Asian American (.7%), or "other," including combinations of races (0.7%). At the 5th grade assessment, the mothers had been married an average of 14.4 years ($SD = 3.84$), and there was an average of 2.5 children in the families ($SD = .95$). The families tended to be well-educated and middle-class: mothers had completed, on average, 3 years of education after receiving their high school diplomas, 75% of the mothers worked full- or part-time jobs outside the home, and the families' annual household incomes ranged from \$10,800 to \$400,000, with a mean income of \$86,471 ($SD = \$59,505$). According to *t*-test, analysis of variance, and chi-square procedures, the 136 mother-child dyads in the present study did not differ significantly on any of the demographic variables from the 29 dyads that discontinued participation or whose data were excluded from analysis (all $p > .05$).

Procedure

Once annually, mothers and their children visited a university research laboratory for approximately 2 h. During each visit, mothers and children separately and independently completed self-report questionnaires. In accord with the university's

Institutional Review Board, all participants completed written consent and assent forms prior to their questionnaires. In compensation for their participation, the dyads were paid \$30.00 in the first year of the study, \$40.00 in the second year, \$50.00 in the third year, and \$60.00 in the fourth year.

Measures

All of the measures used in this study were taken from questionnaires administered when the early adolescents were in the 5th, 6th, and 7th grades.

Maternal Emotional Distress

Maternal emotional distress was assessed with measures of depression, mid-life concerns, and psychological distress. Depression was assessed with the Center for Epidemiological Studies Depression Scale (CES-D), a 20-item scale that focuses on depressed mood in the past 7 days (Radloff 1977). Mothers were asked to rate how frequently they experienced symptoms using a 4-point scale, with higher scores indicating greater depressive symptomatology. Internal reliability (Cronbach's alpha) ranged from .82 to .85.

Maternal mid-life concerns were measured with a 10-item scale designed to assess the degree to which mothers were experiencing a period of negative re-evaluation of their life situations, their life choices, and themselves (Silverberg and Steinberg 1990). Mothers responded to each item using a 5-point scale, with higher scores indicating more intense mid-life concerns. Internal reliability was estimated at .89.

Maternal psychological distress was assessed with the 90-item Symptom Checklist-Revised (SCL-90-R), which measures a number of psychological symptoms including depression and anxiety (Derogatis 1994). Mothers were asked to indicate the degree of discomfort caused by a list of problems during the past week on a 5-point scale, with higher scores indicating greater distress. Internal reliability ranged from .94 to .95.

Marital Conflict

Measures of marital conflict assessed maternal reports of overt negative conflict, disagreement over important marital and family issues, and conflict regarding co-parenting. Overt negative conflict was assessed with the O'Leary Porter Scale (OPS), a 10-item scale that measures children's exposure to interparental conflict (Porter and O'Leary 1980). Mothers responded to each item using a 5-point scale, with higher scores indicating greater overt negative conflict in the presence of a child. Internal reliability was estimated at .86.

Marital disagreement was assessed with the 15-item consensus subscale of the Dyadic Adjustment Scale (DAS), which contains items over which spouses may disagree (e.g., finances, recreation, religion, household tasks, career; Spanier 1976). Mothers were asked to indicate the approximate extent of consensus or disagreement between themselves and their spouses using a 5-point scale. For the present

study, items were scored such that higher scores indicated lower consensus or more disagreement. Internal reliability was estimated at .91.

Conflict over co-parenting was assessed with a 4-item subscale of the Co-Parental Interaction Scale (CPI), which assesses the frequency of conflict between spouses over parenting issues (Ahrons and Wallisch 1987). Mothers were responded using a 5-point scale, with higher scores indicating greater conflict. Internal reliability was estimated at .90.

Early Adolescent Externalizing Behaviors

Early adolescent externalizing behaviors were assessed with maternal and early adolescent reports of aggression and delinquency. For early adolescents, both aggression and delinquency were measured with subscales from the Youth Self-Report (YSR), which consists of 20 items for aggression and 12 items for delinquency (Achenbach 1991a). Mothers reported on early adolescent aggression and delinquency using the corresponding Aggression and Delinquency subscales of the Child Behavior Checklist (CBCL; Achenbach 1991b). Participants were asked to indicate how often a given behavior was true of the early adolescent using a 3-point scale, with higher scores indicating higher levels of aggression or delinquency. For the aggression subscale, internal reliability ranged from .83 to .85 for both reporters. For the delinquency subscale, reliability ranged from .39 to .68 for both reporters. Our reliabilities for the delinquency subscale are similar to those reported in other studies (e.g., Wiesner and Windle 2004). We expected moderate reliability values for the delinquency subscale because it contains items that assess low-base-rate events and behaviors that do not necessarily occur in clusters, particularly within a non-referred sample of early adolescents. Because of such item patterns, some authors do not calculate internal reliability for delinquency measures (for discussion, see Huizinga and Elliott 1986; see also Wiesner and Windle 2004).

Early Adolescent Internalizing Symptoms

Assessment of early adolescent internalizing symptoms included maternal and early adolescent reports of depression and anxiety. Early adolescents reported on depression using the Child Depression Inventory (CDI; Kovacs 1985); mothers completed the corresponding parent form of the CDI (Cole et al. 1997). For this study, the 27-item scale was reduced to 26 items assessing depressive symptoms over a 2-week period after eliminating a controversial suicide item. From three sentences listed in order of increasing severity (scaled from 0 to 2), participants were asked to select the statement that best described the early adolescent. Higher scores indicated greater depressive symptomatology. Internal reliability ranged from .73 to .84 for both reporters.

Early adolescent-reported anxiety was assessed with the 28-item anxiety subscale of the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds and Richmond 1978); mothers completed the corresponding parent form of the

RCMAS (Cole et al. 1997). Participants were asked to indicate whether a given statement described the early adolescent using a 3-point scale, with higher scores indicating greater anxiety. Internal reliability ranged from .83 to .90 for both reporters.

Results

Descriptive Statistics

All means, standard deviations, and intercorrelations for the study variables were calculated and are reported in Table 1. Moderate to strong intercorrelations between the proposed indicators provided support for the formation of latent constructs from multiple indicators for maternal emotional distress, marital conflict, externalizing behaviors, and internalizing symptoms. In addition, correlations among indicators of different latent constructs were often significant, thereby lending preliminary support for the proposed mediational paths.

Model Testing

As a first step, measurement models were constructed and tested. Because there were significant correlations between maternal and early adolescent reports of early adolescent maladjustment, we initially examined measurement models with both reports included together to indicate externalizing behaviors and internalizing symptoms. However, model fit was poor, and maternal and early adolescent reports had factor loadings of varying strength when combined into single factors. As a result, we constructed and tested separate measurement models for mothers and early adolescents. These models fit well according to chi-square values and alternative fit statistics, and produced significant factor loadings for all manifest variables on their respective latent constructs.

Model testing continued for each hypothesized model with examination of direct effects, full, and mediation models in sequence (Baron and Kenny 1986). In the case that a direct effect was not found, models of indirect effects were still investigated. Next, separate models which included autoregressive pathways to control for prior levels of maternal distress or early adolescent maladjustment were examined for each hypothesized model. Lastly, because there has been some evidence that relations between maternal distress and child maladjustment may differ for boys and girls, multigroup analyses were performed in order to test the potential moderating effects of early adolescent gender.

The Mplus 4.0 program was used to estimate relations among the study variables, test the significance of the indirect effect, and derive model fit (Muthén and Muthén 2006). Model fit was assessed with the chi square statistic, the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). Models that provided a good fit to the data had non-significant ($p > .05$) chi-square values,

Table 1 Means, standard deviations, and intercorrelations of study variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Maternal variables</i>														
1. T1 maternal depression	—	.59*	.75*	.57*	.50*	.60*	.36*	.22*	.40*	.32*	.31*	.19*	.31*	.21*
2. T1 maternal mid-life concerns	—	.53*	.48*	.80*	.48*	.43*	.32*	.44*	.28*	.29*	.25*	.25*	.35*	.30*
3. T1 maternal distress	—	—	.41*	.43*	.68*	.36*	.25*	.38*	.41*	.35*	.26*	.25*	.25*	.31*
4. T3 maternal depression	—	—	.55*	.69*	.31*	.22*	.40*	.28*	.28*	.27*	.27*	.33*	.35*	.091
5. T3 maternal mid-life concerns	—	—	.53*	.42*	.34*	.48*	.22*	.25*	.25*	.22*	.22*	.41*	.41*	.24*
6. T3 maternal distress	—	—	.36*	.20*	.41*	.35*	.23*	.38*	.38*	.38*	.38*	.27*	.27*	.16
7. T2 overt marital conflict	—	—	.46*	.73*	.37*	.13	.33*	.33*	.33*	.33*	.33*	.25*	.25*	.30*
8. T2 marital disagreement	—	—	.46*	.32*	.091	.091	.29*	.29*	.29*	.29*	.29*	.12	.12	.23*
9. T2 co-parent conflict	—	—	.31*	.14	.31*	.14	.31*	.31*	.31*	.31*	.31*	.27*	.27*	.27*
10. T1 early adolescent aggression	—	—	.54*	.78*	.78*	.78*	.42*	.42*	.42*	.42*	.42*	.45*	.45*	—
11. T1 early adolescent delinquency	—	—	.31*	.31*	.31*	.31*	.50*	.50*	.50*	.50*	.50*	.32*	.32*	—
12. T3 early adolescent aggression	—	—	—	—	—	—	—	—	—	—	—	.38*	.38*	—
13. T3 early adolescent delinquency	—	—	—	—	—	—	—	—	—	—	—	.22*	.22*	—
14. T1 early adolescent depression	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15. T1 early adolescent anxiety	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16. T3 early adolescent depression	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17. T3 early adolescent anxiety	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>Early adolescent variables</i>														
18. T1 early adolescent aggression	—	—	—	—	—	—	—	—	—	—	—	—	—	—
19. T1 early adolescent delinquency	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20. T3 early adolescent aggression	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 1 continued

Variable	15	16	17	18	19	20	21	22	23	24	25	M	SD
21. T3 early adolescent delinquency													
22. T1 early adolescent depression	.25*	.22*	.19*	.073	.084	.20*	.12	.15	.13	.086	.13	26.01	6.13
23. T1 early adolescent anxiety	.32*	.27*	.11	.10	.17*	.032	.17	-.009	.014	.018	.13	13.12	6.64
24. T3 early adolescent depression													
25. T3 early adolescent anxiety													
<i>Maternal variables</i>													
1. T1 maternal depression	.25*	.22*	.19*	.073	.084	.20*	.12	.15	.13	.086	.13	26.01	6.13
2. T1 maternal mid-life concerns	.32*	.27*	.11	.10	.17*	.032	.17	-.009	.014	.018	.13	13.12	6.64
3. T1 maternal distress	.34*	.27*	.12	.14	.12	.040	.16	.054	.012	.075	.24	.22	
4. T3 maternal depression	.17*	.20*	.19*	.12	.10	.33*	.13	.023	.026	.045	.061	25.87	5.52
5. T3 maternal mid-life concerns	.30*	.24*	.31*	.044	.061	.23*	.15	.042	-.037	.052	.045	13.28	6.13
6. T3 maternal distress	.30*	.22*	.26*	.084	.13	.24*	.068	.034	.013	.001	.049	.23	.20
7. T2 overt marital conflict	.39*	.24*	.30*	.14	.12	.26*	.17*	.11	.067	.15	.24*	20.43	5.63
8. T2 marital disagreement	.30*	.28*	.30*	.006	-.006	.081	.11	.048	-.035	.078	.025	32.58	9.34
9. T2 co-parent conflict	.33*	.23*	.30*	.092	.052	.15	.12	.023	-.027	.044	.12	8.93	2.85
10. T1 early adolescent aggression	.54*	.39*	.42*	.31*	.37*	.32*	.21*	.17*	.16	.26*	.25*	6.03	4.81
11. T1 early adolescent delinquency	.35*	.29*	.27*	.30*	.39*	.34*	.36*	.22*	.19*	.35*	.21*	1.00	1.31
12. T3 early adolescent aggression	.49*	.51*	.42*	.29*	.31*	.35*	.20*	.088	.090	.20*	.19*	5.74	4.99
13. T3 early adolescent delinquency	.32*	.26*	.34*	.18*	.27*	.31*	.38*	.085	.049	.19*	.080	.93	1.19
14. T1 early adolescent depression	.71*	.67*	.61*	.29*	.37*	.28*	.24*	.31*	.29*	.39*	.38*	3.38	3.12
15. T1 early adolescent anxiety	—	.55*	.72*	.25*	.26*	.31*	.29*	.23*	.26*	.40*	.41*	35.63	5.47
16. T3 early adolescent depression	—	—	.79*	.18*	.22*	.24*	.28*	.32*	.25*	.45*	.40*	3.76	3.70
17. T3 early adolescent anxiety	—	—	—	.20*	.17*	.26*	.26*	.21*	.22*	.34*	.32*	34.99	5.82

Table 1 continued

Variable	15	16	17	18	19	20	21	22	23	24	25	M	SD
<i>Early adolescent variables</i>													
18. T1 early adolescent aggression	—	.55*	.58*	.35*	.50*	.58*	.36*	.45*	.576	.4.61			
19. T1 early adolescent delinquency		—	.28*	.37*	.43*	.39*	.26*	.26*		1.24	1.55		
20. T3 early adolescent aggression			—	.53*	.31*	.34*	.55*	.57*		7.76	4.83		
21. T3 early adolescent delinquency				—	.29*	.22*	.54*	.38*		2.28	2.32		
22. T1 early adolescent depression					—	.69*	.44*	.41*		3.60	3.83		
23. T1 early adolescent anxiety						—	.36*	.55*		38.15	8.07		
24. T3 early adolescent depression							—	.79*		3.75	4.45		
25. T3 early adolescent anxiety								—		38.46	8.32		

Note: * $p < .05$

CFIs greater than .95, and RMSEAs less than .06 (Hu and Bentler 1999). Path coefficients reported in the figures were standardized.

First Hypothesized Model: Maternal Emotional Distress—Marital Conflict—Early Adolescent Maladjustment

The first hypothesized model tested marital conflict at Time 2 as a mediator of the relation between maternal emotional distress at Time 1 and early adolescent externalizing behaviors and internalizing symptoms at Time 3. Results are presented separately for mothers and early adolescents.

Maternal Reports

When maternal reports were used for all constructs, results indicated that there were direct effects between maternal emotional distress at Time 1 and early adolescent externalizing behaviors ($\beta = .46$) and internalizing symptoms ($\beta = .28$) at Time 3. These direct effects were reduced to values that were no longer significant when marital conflict at Time 2 was added to the full model ($\beta = .22$ and $\beta = .10$, respectively). A complete mediation model was next examined (see Fig. 1). Model fit was good and all path coefficients were significant and in the expected directions. In addition, both of the indirect effects were significant. Thus, higher levels of maternal emotional distress at Time 1 were associated with higher levels of marital conflict at Time 2, which in turn predicted higher levels of early adolescent externalizing behaviors and internalizing symptoms at Time 3. A chi-square difference test between the full and mediation models indicated that the direct paths

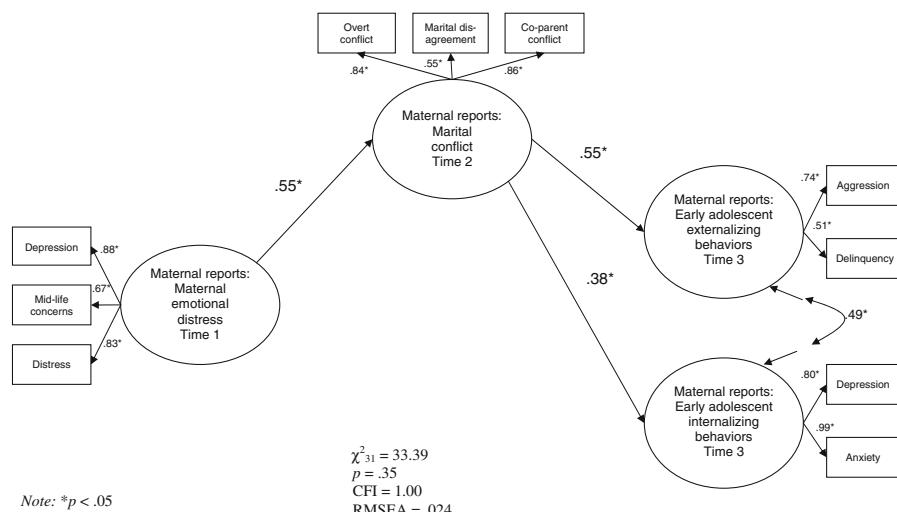


Fig. 1 First hypothesized mediation model using maternal reports, with marital conflict at Time 2 as a mediator of the relation between maternal emotional distress at Time 1 and early adolescent externalizing behaviors and internalizing symptoms at Time 3

Table 2 Summary of unstandardized and standardized path coefficients for hypothesized models

Parameter estimate	Unstandardized	Standardized
<i>First hypothesized model</i>		
Maternal reports, direct effects		
Maternal emotional distress → Early adolescent externalizing	.30* (.15)	.46* (.22)
Maternal emotional distress → Early adolescent internalizing	.15* (.057)	.28* (.10)
Maternal reports, indirect effects		
Maternal emotional distress → Marital conflict	.48*	.55*
Marital conflict → Early adolescent externalizing	.43*	.55*
Marital conflict → Early adolescent internalizing	.24*	.38*
Early adolescent reports, direct effects		
Maternal emotional distress → Early adolescent externalizing	.15* (.067)	.23* (.096)
Maternal emotional distress → Early adolescent internalizing	.068	.093
Early adolescent reports, indirect effects		
Maternal emotional distress → Marital conflict	.48*	.54*
Marital conflict → Early adolescent externalizing	.23*	.29*
Marital conflict → Early adolescent internalizing	.13	.16
<i>Second hypothesized model</i>		
Maternal reports, direct effects		
Early adolescent externalizing → Maternal emotional distress	.44* (.28)	.41* (.26)
Early adolescent internalizing → Maternal emotional distress	.093	.049
Maternal reports, indirect effects		
Early adolescent externalizing → Marital conflict	.27**	.26**
Early adolescent internalizing → Marital conflict	.61*	.31*
Marital conflict → Maternal emotional distress	.56*	.58*

Note: Direct effect in full model appears in parentheses; * $p < .05$; ** $p < .10$

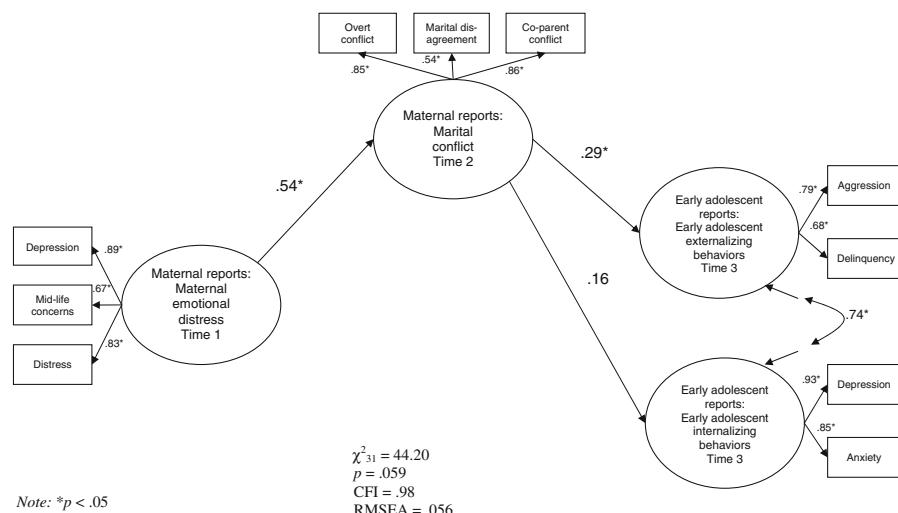
included in the full model were not significantly different from zero and were therefore unnecessary, a result which was consistent with mediation. See Table 2 for a summary of unstandardized and standardized path coefficients, and see Table 3 for a summary of all fit statistics.

Early Adolescent Reports

When considering early adolescent reports of their own maladjustment, there was a significant direct effect between maternal emotional distress at Time 1 and early adolescent externalizing behaviors at Time 3 ($\beta = .23$). However, maternal emotional distress and internalizing symptoms were not significantly associated ($\beta = .093$). Subsequently, full and mediation models were examined to determine whether mediation occurred when considering externalizing behaviors and whether an indirect pattern of relations existed for internalizing symptoms. In the full model, the direct effect between maternal emotional distress and early adolescent externalizing behaviors was reduced to a value that was no longer significant ($\beta = .096$). In the mediation/indirect effects model (see Fig. 2), model fit was good

Table 3 Summary of model fit statistics for hypothesized models

Model	χ^2 (df)	p	CFI	RMSEA	χ^2_{diff} (df)
<i>First hypothesized model</i>					
Maternal reports					
Direct effects model	17.06 (11)	.10	.98	.062	
Full model	30.92 (29)	.37	1.00	.022	
Mediation model	33.39 (31)	.35	1.00	.024	
Full versus mediation model					2.42 (2)
Early adolescent reports					
Direct effects model	19.66 (11)	.050	.98	.076	
Full model	43.42 (29)	.042	.98	.060	
Mediation/indirect effects model	44.20 (31)	.059	.98	.056	
Full versus mediation model					.78 (2)
<i>Second hypothesized model</i>					
Maternal reports					
Direct effects model	16.70 (11)	.12	.98	.062	
Full model	42.42 (29)	.052	.98	.058	
Mediation/indirect effects model	46.75 (31)	.035	.97	.061	
Full versus mediation model					4.33 (2)

**Fig. 2** First hypothesized mediation/indirect effects model using early adolescent reports, with marital conflict at Time 2 as a mediator of the relation between maternal emotional distress at Time 1 and early adolescent externalizing behaviors and internalizing symptoms at Time 3

and all path coefficients were significant and in the expected directions, with the exception of the coefficient linking marital conflict and early adolescent internalizing symptoms. The indirect effect for externalizing behaviors was also significant,

and a chi-square difference test confirmed that mediation had occurred for externalizing behaviors (see Tables 2 and 3).

Second Hypothesized Model: Early Adolescent Maladjustment—Marital Conflict—Maternal Emotional Distress

The second hypothesized model tested the reverse ordering of effects. That is, we examined marital conflict at Time 2 as a mediator of the relation between early adolescent externalizing behaviors and internalizing symptoms at Time 1 and maternal emotional distress at Time 3. Results are presented separately for mothers and early adolescents.

Maternal Reports

When maternal reports were used for all constructs, there was a significant direct effect between early adolescent externalizing behaviors at Time 1 and maternal emotional distress at Time 3 ($\beta = .41$) but no significant direct effect between internalizing symptoms and maternal emotional distress ($\beta = .049$). Full and mediation models were performed to determine whether mediation occurred when considering externalizing behaviors and whether an indirect pattern of relations existed for internalizing symptoms. In the full model, the direct effect between early adolescent externalizing behaviors and maternal emotional distress was reduced to a value that was no longer significant when marital conflict at Time 2 was included ($\beta = .26$). In the mediation/indirect effects model (see Fig. 3), model fit was good, all path coefficients were significant and in the expected directions, and both of the indirect effects were also significant. Thus higher levels of early adolescent

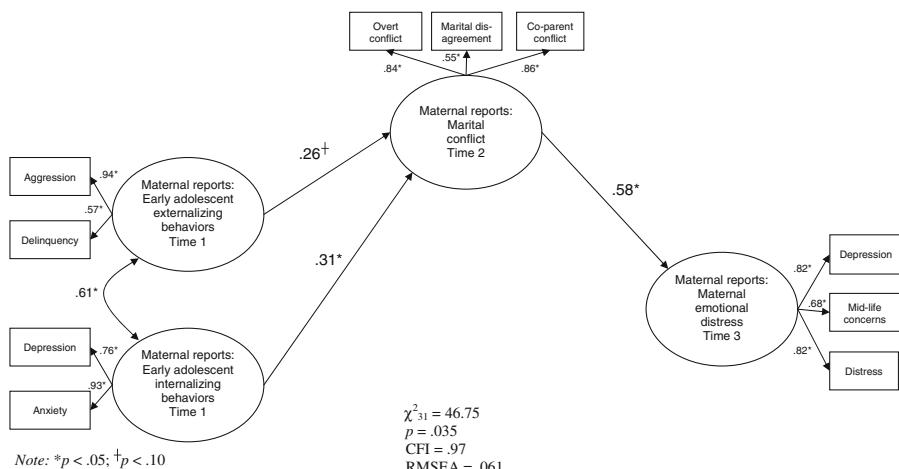


Fig. 3 Second hypothesized mediation/indirect effects model using maternal reports, with marital conflict at Time 2 as a mediator of the relation between early adolescent externalizing behaviors and internalizing symptoms at Time 1 and maternal emotional distress at Time 3

externalizing behaviors and internalizing symptoms at Time 1 were associated with higher levels of marital conflict at Time 2, which in turn predicted higher levels of maternal emotional distress at Time 3. A chi-square difference test indicated that the direct paths included in the full model were not significantly different from zero and were therefore unnecessary, a result which was consistent with mediation for externalizing behaviors (see Tables 2 and 3). Although no mediation was evident for internalizing symptoms, a pattern of indirect relations existed.

Early Adolescent Reports

When considering early adolescent reports of their own maladjustment, there were no significant direct effects between either externalizing behaviors or internalizing symptoms at Time 1 and maternal emotional distress at Time 3. An indirect effects model was examined and revealed that there were also no significant relations between early adolescent externalizing behaviors or internalizing symptoms at Time 1 and marital conflict at Time 2. Thus, no direct or indirect patterns of relations existed among the study constructs when using early adolescent reports of maladjustment as a predictor variable.

Models Including Autoregressive Pathways

To provide additional tests of relations over time, models that included autoregressive paths were examined for each hypothesis (Cole and Maxwell 2003). When testing models that used maternal reports for all constructs, we found that the significant path coefficients previously obtained in our static direct effects and mediation models often became non-significant. This appeared to be the result of high stability in the dependent constructs between Time 1 and Time 3 (e.g., $\beta = .93$ for externalizing behaviors, $\beta = .79$ for internalizing symptoms, and $\beta = .77$ for maternal emotional distress). These values are similar to those found in other longitudinal studies of child maladjustment (e.g., Cummings et al. 2006; Harold et al. 2004) and maternal distress (e.g., Davies et al. 1999). Likewise, in the present study, once the autoregressive paths were included, there was little rank-order change in the dependent constructs that could be accounted for by the prior independent and mediator constructs.

We found different results, however, when considering the first hypothesized model using early adolescent reports of their own maladjustment. Although stability over time in early adolescent-reported externalizing behaviors and internalizing symptoms was substantial ($\beta = .65$ and $\beta = .63$, respectively), these values were not nearly as high as the stability in constructs observed when utilizing maternal reports. Evaluation of the autoregressive direct effects model revealed that prior maternal emotional distress was associated with increases in early adolescent externalizing behaviors ($\beta = .16$). This path was reduced to non-significance when marital conflict was considered ($\beta = .052$). Further, in the autoregressive mediation model, all expected path coefficients were still significant. Thus, when controlling for prior levels of maladjustment, we found that higher levels of maternal emotional

distress at Time 1 led to higher levels of marital conflict at Time 2, which in turn predicted *increases* in early adolescent externalizing behaviors at Time 3.

Multigroup Analyses with Early Adolescent Gender as a Moderator

We next examined the potential moderating effects of early adolescent gender in the relations among constructs for each hypothesized model using multigroup analysis. Gender as a moderator was tested in multigroup analysis by comparing fully constrained models to free-to-vary models and examining model fit (Maruyama 1998). In each fully constrained model, the values of the mediating path coefficients were set to be equal between boys and girls whereas the free-to-vary model allowed the paths to vary between genders. Gender differences existed if the model fit of the free-to-vary model was significantly better than that of the fully constrained model. For all mediation models considered in the present study, we discovered no significant differences in model fit between any of the fully constrained models and the free-to-vary models (all $p > .05$). Thus, there was no evidence that early adolescent gender served as a moderator. These results are consistent with findings from a similar study with 15–17-year-old adolescents (e.g., Davies et al. 1999).

Discussion

In this study, we examined marital conflict as a mediator of the longitudinal connections between mothers' emotional distress and early adolescents' maladjustment during the transition to adolescence. In regard to our first model, the most robust findings concerned early adolescent externalizing behaviors. We found that the positive direct relation between prior maternal emotional distress and subsequent early adolescent externalizing behaviors was mediated by marital conflict, whether maternal or early adolescent reports of externalizing behaviors were considered. In fact, this pattern of relations was evident even when controlling for prior levels of early adolescent-reported externalizing behaviors. We also found that marital conflict mediated the relation between maternal emotional distress and mothers' reports of early adolescent internalizing symptoms. Thus, the results for our first hypothesized model were largely consistent with previous cross-sectional studies of marital conflict as a mediator (e.g., Cummings et al. 2005; Du Rocher Schudlich and Cummings 2003). Although papers often describe theoretical models illustrating such associations over time (e.g., Cummings and Davies 1994b; Downey and Coyne 1990; Elgar et al. 2004; Goodman and Gotlib 1999), our study appears to be the first empirical work to examine this specific mediation model longitudinally. We suggest that future research focus on longitudinal replication and process-oriented extensions of our findings, rather than on repeated cross-sectional mediation analyses or examination of the separate associations in this model.

One particularly unique contribution of our study was the examination of a second model that focused on whether prior early adolescent adjustment problems predicted subsequent maternal emotional distress and whether this connection was

also mediated by marital conflict. We note that our study is the first to investigate this specific pattern of relations despite long-standing calls in the literature to do so (Fincham et al. 1994). When maternal reports for all constructs were considered, we found that externalizing behaviors were directly associated with greater maternal emotional distress and that marital conflict indeed mediated this relation. Although there was no significant direct relation between early adolescent internalizing symptoms and subsequent maternal distress, marital conflict served as an indirect link connecting the two constructs. Consistent with our hypotheses, the early adolescent's problems became associated with the mother's problems through the mechanism of marital conflict, at least when maternal reports were considered.

Disruptive children are likely to undermine the family climate by making day-to-day management difficult, fostering negative emotions and attributions, and by being sources of chronic and acute stress (Grych 2002; Patterson et al. 1990; Zimet and Jacob 2001). Studies have indicated that children's behavioral and emotional problems predict increases in conflict between parents over time (Jenkins et al. 2005; O'Connor and Insabella 1999; Vandervalk et al. 2007). In turn, women with greater conflict and negativity in their marriages tend to exhibit symptoms of depression (Beach and O'Leary 1993; Fincham et al. 1997). Our results are consistent with these prior findings and suggest that even within non-clinical, maritally intact families with relatively high resources, mothers' perceptions of behavioral and emotional problems in their children are predictive of difficulties in the marital subsystem and the deterioration of maternal well-being. Therefore, further longitudinal study of these relations in both community and clinical samples would be fruitful.

We did not find support for the second hypothesized model when considering early adolescent reports of their maladjustment. Previous studies have found associations between prior child adjustment problems and subsequent maternal emotional distress when using maternal reports for all variables (e.g., Elgar et al. 2003; Garnstein and Sheeber 2004). However, research using children's reports of their prior externalizing and internalizing problems to predict subsequent mother-reported distress has been limited, even when the opportunity to do so has apparently existed (e.g., Davies et al. 1999). In one exception, Burt and colleagues (2005) found that the effects of maternal depression on child psychopathology were substantially smaller when considering multiple informants as opposed to a single reporter. Future studies should continue to examine relations between children's perceptions of maladjustment and parental reports of marital conflict and personal distress, so that we may learn more about the assessment of these constructs and their potential interrelations within different types of samples. It may remain relatively difficult to find significant associations between the ratings of different family members, especially when attempting to link one family member's reports of behavior to another member's reports of internalized distress. It may also be that in order to predict general maternal emotional distress from child problems, the assessment of child problems needs to go through the filter of maternal perceptions.

It is important to note that because of the high rank-order stability in maternal reports, we were unable to detect significant relations in either hypothesized model when including autoregressive effects on mother-reported constructs. The stability

we detected in maternal reports was similar to those found in other longitudinal studies of maternal distress and child maladjustment (e.g., Cummings et al. 2006; Davies et al. 1999; Harold et al. 2004). For instance, Harold and colleagues found that previously significant direct and indirect effects between variables were no longer significant when the stability of child externalizing and internalizing behaviors was considered. Although the mothers in our sample may have reported increases or decreases in emotional distress or their children's problems, they tended to maintain their relative positions on these perceptions over time. Additionally, we note that our analyses were limited by a relatively small sample size, which ultimately restricts the power necessary to examine complex models with autoregressive pathways.

A limitation of our data should be noted. The sample consisted of primarily European American, middle-class, married mothers and their firstborn children. A more diverse sample representing different levels of risk status would allow broader generalizations of our findings. However, our findings are perhaps more compelling because we were able to link maternal emotional distress, marital conflict, and early adolescent adjustment problems in a relatively low-risk community sample. In addition, scholars have noted that much can be learned about psychopathology by studying low-risk samples (Cummings et al. 2000; Sroufe 1990). Thus, it remains essential to examine patterns of relations among families in a non-clinical range.

We also had two measurement limitations in our study. First, we relied solely on maternal reports of emotional distress and marital conflict. Our decision to focus on mothers makes our study comparable to prior studies in this area which have commonly focused solely on women's perceptions (e.g., Davies et al. 1999; Garnstein and Sheeber 2004; Jenkins et al. 2005; McCombs Thomas et al. 1995). Research has suggested that the connection between emotional distress and marital conflict is particularly salient among women (Fincham et al. 1997), and therefore it remains appropriate to examine maternal reports. However, fathers have often been neglected in research despite findings that they may play an important role in children's development of psychopathology (Cassano et al. 2006; Phares 1992; Phares and Compas 1992; Phares et al. 2005). Therefore, future studies should more thoroughly examine the role of fathers in addition to mothers. Second, we examined only one mediator in the relation between maternal and child functioning. Maladaptive parenting variables such as control, poor discipline, and neglect may also function as mediators of connections between maternal and child well-being (e.g., Bifulco et al. 2002; Conger et al. 1995; Ge et al. 1994; Johnson et al. 2001) and should be further examined in longitudinal efforts. Future studies should also focus on parent–child relations since parent–child conflict rises during the transition to adolescence (Collins and Laursen 2004).

Despite these limitations, the present study makes several contributions. First, we investigated all study constructs as latent variables. This allowed us to more broadly conceptualize problem behaviors by considering combinations of symptoms of distress and maladjustment. For instance, maternal emotional distress was examined as a combination of several psychological symptoms. In prior studies of mediation, researchers have focused solely on depression rather than general emotional distress in mothers (e.g., Cummings et al. 2005; Davies et al. 1999; Du Rocher Schudlich

and Cummings 2003; Garnstein and Sheeber 2004; Johnson et al. 2001). Whereas these studies have suggested that maternal depression is associated with marital and child problems, the present study suggests that more general and sub-clinical maternal emotional distress is also related to marital conflict and early adolescent maladjustment.

Second, we obtained maternal and early adolescent reports of early adolescent maladjustment. Thus, we were able to create separate models for mothers and early adolescents, which in turn allowed us to detect reporter differences in the structural models. This is in contrast to prior research which has often focused solely on one type of reporter of child maladjustment, whether parents (e.g., Cummings et al. 2005; Garnstein and Sheeber 2004) or children themselves (e.g., Davies et al. 1999). Despite the lack of prior research examining multiple reporters, it remains important to use independent informants in the testing of mediational chains (Burt et al. 2005).

Third, our study focused on family relations during a relatively understudied period: the transition to adolescence. Although researchers have investigated the linkages between maternal distress and child maladjustment during early childhood (e.g., Cummings et al. 2005; Garnstein and Sheeber 2004) or later adolescence (e.g., Davies et al. 1999; Johnson et al. 2001), a noticeable gap in research occurs between the ages of 10 and 14 years. This is an important period in which to study family relations, however, because of the behavioral and emotional challenges and reorganizations that commonly occur (Cox and Paley 1997; Holmbeck et al. 1995; Silverberg and Steinberg 1990; Steinberg 2001). Clearly, maternal emotional distress and marital conflict are likely to interfere with a healthy transition to adolescence for all family members. Furthermore, researchers have suggested that transitional periods, including the transition to adolescence, may leave children with heightened vulnerabilities to maternal emotional distress and marital conflict (Cummings and Davies 1994b; Easterbrooks and Emde 1988; Gelfand and Teti 1990). Future research on connections between parental emotional distress, marital functioning, and child adjustment should consider such relations over key transitions in family and individual development.

This study has broad implications for the family as a unit. Typically, when children have behavioral or emotional problems, researchers and clinicians turn first to problems in parental functioning. Findings from our first hypothesized model support the idea that maternal emotional distress is an important predictor of child maladjustment and that marital conflict can account for this relation. In addition, results from our second hypothesized model suggest that child maladjustment is an important predictor of maternal emotional distress and marital conflict and should thus be considered when women exhibit symptoms of distress. Put together, our research suggests that even within relatively low-risk samples, both maternal and child problems can impair the marriage. In turn, disrupted marital process diminishes maternal and child well-being. Thus, researchers and clinicians should be aware of the role that different family members' maladjustment and marital conflict play in overall family relations, seeking to address these multiple risk factors in an integrative fashion in their prevention and intervention work.

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