

# Interparental Conflict and Academic Achievement: An Examination of Mediating and Moderating Factors

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**Abstract** Using a risk and resiliency theoretical framework, the association between interparental conflict and academic achievement was examined. The sample consisted of 2,297 6th grade youth with a mean age of 11.92. Participants were mostly European American (81.8%) and 52% were girls. Results demonstrated that interparental conflict is a risk factor for lower academic achievement, suggesting that family interactions play a significant role in how youth perform in the academic setting. Youth self-blame acted as a significant mediator, providing some explanation for how interparental conflict affects academic achievement. Maternal acceptance and monitoring knowledge partially buffered the association between interparental conflict and youth self-blame. Additionally, the positive association between interparental conflict and perceived threat was stronger for youth who perceived relationships with mothers as more supportive, connected, and involved. Results from this study underscore the need for continued focus on the link between family and school environments with respect to youth developmental outcomes.

**Keywords** Academic achievement · Interparental conflict · Parenting · Perceived threat · Self-blame

Academic achievement is important during late childhood and early adolescence because accomplishment, or relative lack thereof, during this developmental transition is a precursor to future academic and occupational endeavors (Elder and Conger 2000; Masten and Coatsworth 1998). Youth who demonstrate higher academic achievement also are more likely to report lower drug use and decreased propensities for school drop out (Connell et al. 1995; Hawkins et al. 1992). Although family socialization influences remain critically important during late childhood and early adolescence (Clarke-Stewart 2006), relatively little is known about how specific family interaction risks, particularly parents' marital functioning, shape youths' academic functioning. Thus, research examining the link between interparental conflict and youth academic achievement provides an important contribution to existing literature.

The purpose of this study was to test a family process risk and resiliency model which hypothesized that interparental conflict places youth at risk for academic difficulties, and that this risk influence can be explained, in part, by youths' appraisals of perceived threat and self-blame. We also examined the buffering effects of two maternal parenting practices, acceptance and monitoring knowledge, and the exacerbating effects of youth gender. This model was derived from a risk and resilience perspective and tested using structural equation modeling with a sample of 2,297 youth enrolled in 13 middle schools in a Southeastern county of the United States.

## Theoretical and Empirical Foundation

Consistent with a risk and resiliency perspective, youth are more likely to experience maladaptive outcomes when they are exposed to salient risk factors (Luthar and Cicchetti

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2000). Defined as factors that increase the likelihood for negative outcomes, risk factors also function as stressors and increase the potential for individuals to react to risk exposure with stress responses (Garmezy 1981). However, exposure to protective factors that buffer children from negative outcomes associated with specific risk increases the potential for youth resilience. The existence of adaptive outcomes despite the existence of pervasive risk, or resilience, is considered a major tenet of the risk and resilience theoretical framework (Luthar et al. 2000).

Characterized as a risk factor, interparental conflict that is hostile, intense, and unresolved has been associated with maladaptive outcomes such as increased youth problem behaviors and diminished closeness in parent-child and sibling relationships (Buehler et al. 1997; Grych et al. 2004). Previous research concentrated on academic outcomes has suggested that adolescents who experience interparental conflict are more likely to demonstrate lower academic achievement (Long et al. 1987; Unger et al. 2000), although not all studies have found significant effects (Harold et al. 2007). Thus, interparental conflict can be considered a stressor, wherein youth who experience higher levels of interparental conflict are more likely to also experience negative outcomes. However, acknowledging the link between an interparental conflict stressor and specific maladaptive outcomes does not explain how interparental conflict is associated with negative youth outcomes.

Lazarus (1999) highlighted the importance of evaluating subjective appraisals of stressful situations as a means of explicating generative mechanisms responsible for associations between stressors and outcomes. Perceived threat and youth self-blame are considered primary appraisals of the interparental conflict stressor (Grych et al. 2000). Individuals engage in primary appraisals of stressful situations when they determine whether the situation has the potential to affect individual values, beliefs, goals, and commitments (Lazarus). Children might attempt to intervene during interparental conflict interactions by playing the role of mediator, peacekeeper, or confidante. As these efforts are not always effective in diffusing interparental conflict, youth might believe they are to blame for continued interparental conflict. A negative appraisal of self-blame might result as youth feel that they have failed in their commitment to put an end to interparental conflict. Children also might feel that they are responsible for displaying appropriate behaviors at all times and that interparental conflict is the result of a failure to display such behaviors. Additionally, youth might feel threatened by interparental conflict if there is a concern that conflict will lead to separation or divorce, or that conflict will escalate and become directed towards youth (Davies et al. 2002). In this manner, youth self-blame and perceived threat appraisals of interparental conflict experiences might function as generative

mechanisms explaining the association between interparental conflict and maladaptive youth outcomes.

#### Related Research on Adolescent Problem Behavior

Previous research has examined whether the manner in which youth interpret, internalize, and process interparental conflict experiences might be partly responsible for the associations between interparental conflict and adolescent problem behaviors. Cognitive appraisals of youth self-blame and perceived threat have mediated the deleterious association between interparental conflict and youth problem behaviors. Adolescents who blamed themselves and felt threatened by interparental conflict experiences were more likely to demonstrate increased internalizing and externalizing problem behaviors within cross-sectional (Gerard et al. 2005; Grych et al. 2000) and longitudinal analyses (Buehler et al. 2007; Grych et al. 2003). Additionally, self-blame has mediated the association between interparental conflict and academic attainment over time (Harold et al. 2007). Despite the existence of ample research demonstrating self-blame and perceived threat as explanatory mechanisms for the association between interparental conflict and maladaptive youth outcomes, with the exception of one study, this research has focused on youth problem behaviors rather than on academic difficulties.

#### Protective and Vulnerability Factors

Although the identification of significant stressors and mechanisms underlying associations with academic difficulties has critical importance for family and youth research and programs, one of the main tenets of a risk and resilience framework is to foster resilience. Examining the moderating effects of protective and vulnerability factors can provide insight into salient factors that foster or hinder academic resilience among youth exposed to interparental conflict. Protective factors exist when the negative effects of risk exposure are attenuated, resulting in higher competence when the factor is present compared to when the factor is absent (Luthar et al. 2000). Vulnerability factors create the opposite effect, wherein individuals exposed to these factors are more likely to experience exacerbated negative outcomes as a result of stress experiences compared to individuals who are not exposed to the vulnerability factor (Luthar and Zigler 1991).

#### *Parental Protection*

Previous research has demonstrated that parental acceptance and monitoring knowledge are protective factors in a variety of situations. For example, Gomez and McLaren

(2006) reported that youth who engaged in avoidant coping styles reported fewer feelings of anxiety and depression when they experienced higher levels of parental support. According to Tiet et al. (2001), youth were less likely to demonstrate psychiatric disorders and functional impairments despite exposure to maternal psychopathology when parents engaged in increased monitoring of youth behaviors and activities. Both acceptance and monitoring knowledge also have buffered the deleterious effects of interparental conflict on early adolescent problem behaviors (Grych et al. 2004). To our knowledge, the moderating effects of maternal parenting in the association between interparental conflict and academic difficulties have not been examined.

### *Gender Vulnerability*

Research examining overall risk and resilience among youth has suggested that boys are more vulnerable generally during childhood, whereas girls are more vulnerable to environmental risk and maladaptive outcomes during adolescence (Honig 1986). Specifically, male children tend to be more vulnerable to psychosocial trauma and physical stressors, have higher incidences of dyslexia, engage in more delinquent behavior, and are more likely to suffer from academic difficulties. However, by adolescence, girls are more susceptible to psychological stress due to changes in societal expectations, sexual pressure from peers, hormonal changes triggered by puberty, and greater propensities towards interpersonal distress (Rudolph 2002; Werner and Smith 1982). Although Davies and Lindsay (2004) highlighted inconsistent findings wherein the male vulnerability hypothesis has not received consistent support in recent research, gender differences have emerged within studies examining the manner in which youth appraise interparental conflict situations. Grych et al. (2000) reported higher mean levels of self-blame for male youth in response to interparental conflict compared to their female counterparts and also reported that self-blame acted as a significant mediator in the association between interparental conflict and internalizing problem behaviors only for sons. In a prospective research design, perceived threat acted as a significant mediator in the association between interparental conflict and both internalizing and externalizing problem behaviors only for sons (Grych et al. 2003). However, the potential for gender differences in associations among interparental conflict, youth cognitive appraisals, and academic achievement have not been examined.

### **The Current Study**

Our review of existing literature on interparental conflict revealed that most research has focused on youths' problem behaviors rather than academic difficulties. Thus, the

current study extends previous research by examining direct and indirect associations between interparental conflict and youth academic achievement. Because of the documented associations between interparental conflict and problem behaviors, as well as between academic achievement and problem behaviors (Henricsson and Rydell 2006; Luthar and Ansary 2005), youth internalizing and externalizing problems were included as control variables. Parents' marital status was included as a control variable due to previous research demonstrating mean differences in youth problem behaviors and academic achievement depending on parents' marital status (Lansford et al. 2006). Based on previous research documenting racial differences in the intensity and content of interparental conflict (McLoyd et al. 2001), racial differences in the association between interparental conflict and youth problem behaviors (Bueher et al. 1998), and racial disparities in academic achievement (National Center for Educational Statistics 2000), youth race also was included as a control variable. Finally, a measure of family economic well-being was included as an additional control variable in this study to account for documented differences in academic achievement based on socioeconomic status (Frederickson and Petrides 2008).

We theorized about the association between interparental conflict and academic achievement using the psychological stress perspective (Lazarus 1999). However, identification of stressful stimuli associated with academic difficulties does not explain the mechanisms underlying the relation between youth exposure to interparental conflict and lower academic achievement. Thus, we examined the conflict appraisals of youth self-blame and perceived threat as potential mediators. We anticipated that youth self-blame and perceived threat would act as generative mechanisms to provide explanations for some of the association between interparental conflict and academic achievement. To determine the potential for youth to experience academic resilience despite interparental conflict experiences, protective factors of maternal acceptance and monitoring knowledge were examined. Acceptance and monitoring knowledge are characterized as protective factors because we anticipated that the harmful associations among interparental conflict, conflict appraisals, and academic achievement will be attenuated for youth who report higher levels of maternal acceptance or monitoring knowledge. We also examined youth gender as a vulnerability factor. Based on our review of risk and resilience literature and because the current study examines youth during late childhood (mean age 11.92), we expected to find stronger mediating effects for boys (i.e., moderated mediation).

We examined four hypotheses. First, we hypothesized a negative association between interparental conflict and

academic achievement. Second, we hypothesized that the association between interparental conflict and academic achievement is mediated partially by youth cognitive appraisals of self-blame and perceived threat. Third, we hypothesized that maternal acceptance and monitoring knowledge buffer the effects of interparental conflict and conflict appraisals on academic achievement. Finally, although we expected that indirect associations between interparental conflict and academic achievement are significant for both sons and daughters, we hypothesized that the paths are stronger for boys. All hypotheses were tested controlling for youth problem behaviors, parents' marital status, youth race, and family economic well-being.

## Methods

### Sampling Procedures

Sixth grade youth from 13 middle schools in a geographically-diverse Southeastern county were invited to participate in the study during the 2001 school year. Children in sixth grade were selected because they are beginning the transition from childhood into adolescence. Ninety-six percent of the teachers participated. Youth received a letter during homeroom inviting their participation. Two additional invitations were mailed directly to parents. The consent form was returned by 71% of the youth/parent(s), and 80% of these youth received parental permission to complete a questionnaire on family life during school hours.

### Sample Characteristics

The sample consisted of 2,297 youth with a mean age of 11.92 ( $SD = .73$ ). There were approximately equal proportions of male and female participants. The majority of youth indicated their race/ethnicity as White (81.8%), with the remainder indicating Black or African American (9.3%), Indian (.5%), Asian (1.2%), Hawaiian (.6%), Hispanic (1.6%), biracial (3.4%), and other (1.6%). This sample was representative of the race/ethnicity characteristics in the county, where 88% of the population identified as White or European American, 8.7% Black or African American, 1.2% Asian, 1.3% biracial, and less than 1% in each category of Indian, Hawaiian, and other (U.S. Census Bureau 2000, Table P6 of SF3).

Approximately 60% of the youth in the sample reported that their parents were married in their first marriage, 14% reported that their parents were divorced, 5% reported that their parents were separated, and 16% reported that at least one of their parents were remarried (55.6% married, 11.4% divorced, and 1.6% separated in

the county; U.S. Census Bureau 2000, Table P18 in SF3). As a measure of socioeconomic status, we assessed youth perception of family economic well-being. Approximately 63% believed that their family possessed about the same amount of money as other families, 22% perceived that their family had a little more money than others, 8% perceived that their family had a little less money than others, and the remainder perceived that their family had much more money (5%) or much less money (2%) than others. According to county statistics, 12.6% of the population in the county lived in poverty (U.S. Census Bureau 2000, Table P87 in SF3), which corresponded closely with the number of youth who reported family economic strain (10%).

## Measures

### Academic Achievement

For each participant, end-of-year grades were obtained from school records in five subjects (reading, language arts, math, social studies, and science). Grades ranged from A to F and were coded from 1 (*F*) to 5 (*A*) where a higher code indicated higher academic achievement. Cronbach's alpha was .94.

### Interparental Conflict

Three measures provided data on youth perceptions of interparental conflict. Five items measured interparental hostility, and four items measured interparental conflict intensity (Gerard et al. 2005). A sample item for hostility is "When your mom and dad disagree, how often do they call each other names?" and a sample item for conflict intensity is "When my parents disagree one of them (or both) gets madder and madder." Response options for hostility items and three of the intensity items ranged from 1 (*never*) to 5 (*always*). Because response options differed in the conflict intensity measure for one item, all items for conflict intensity were standardized and averaged. Youth perceptions of resolution following interparental conflict were assessed with five items taken from the Children's Perception of Interparental Conflict scale (CPIC; Grych et al. 1992), four items from the Multidimensional Assessment of Interparental Conflict Scale (MAIC; Tschann et al. 1999), and one item written for this study. Sample items for perceptions of resolution included: "Even after my parents stop arguing they stay mad at each other," and "When an argument between my parents is over I think my parents are just pretending everything is okay." Response options ranged from 1 (*false*) to 3 (*true*) for the CPIC, and from 1 (*almost never*) to 5 (*almost always*) for the MAIC. As an additional item, youth also were asked: "Which statement

best tells about most of your mom and dad's disagreements?" Response options ranged from 1 (*most of their disagreements don't get solved*) to 3 (*most of their disagreements get completely solved*). This item was reverse coded. Items for conflict resolution were standardized and averaged.

A higher-order latent variable was created for interparental conflict with manifest indicators of interparental hostility, interparental conflict intensity, and interparental conflict resolution. Within a structural equation modeling approach, factor loadings can be used as estimates of the reliability for each indicator (measure) of a latent construct (Melby et al. 1995). Significant and high factor loadings for interparental hostility (.86), conflict intensity (.68), and conflict resolution (.78) demonstrated adequate reliability for the interparental conflict latent construct. Construct validity for this variable has been demonstrated through previous research using measures of interparental conflict hostility, intensity, and resolution as indicators of interparental conflict variables. These interparental conflict variables demonstrated significant positive associations with self-blame, perceived threat, and youth problem behaviors (Grych et al. 2000; Gerard et al. 2005).

#### Youth Self-blame

Participant appraisals of self-blame were assessed using the five-item self-blame subscale of the CPIC. Sample items included: "It's usually my fault when my parents argue," and "Even if they don't say it, I know I'm to blame when my parents have arguments." Response options ranged from 1 (*false*) to 3 (*true*). Cronbach's alpha was .64. Construct validity for this measure has been demonstrated by Grych et al. (1992) by providing evidence of associations with interparental hostility and with adolescent problem behaviors.

#### Youth Perceived Threat

Participant appraisals of perceived threat were assessed with six items from the CPIC and two items from the conflict resolution subscale of the MAIC. Sample items included: "When my parents argue I worry about what will happen to me," and "When an argument between my parents is over I worry that one of my parents will get mad at me." Response options ranged from 1 (*false*) to 3 (*true*) for the CPIC, and from 1 (*almost never*) to 5 (*almost always*) for the MAIC. Items were standardized and averaged. Cronbach's alpha was .84. Associations between interparental hostility and adolescent problem behaviors demonstrated by Grych et al. (1992) provided evidence of construct validity for this measure of perceived threat.

#### Maternal Acceptance

Youth completed the acceptance subscale (10 items) of the Children's Report of Parental Behavior Inventory (CRPBI; Schaefer 1965). Sample items included: "My mother is a person who gives me a lot of care and attention," and "My mother is a person who believes in showing her love for me." Response options ranged from 1 (*not like her*) to 3 (*a lot like her*). Items were summed, and Cronbach's alpha was .88. This is an established measure of acceptance and has been validated within the U.S. and internationally (Barber et al. 2005).

#### Maternal Monitoring Knowledge

The construct of *maternal monitoring knowledge* is defined as the actions of mothers who monitor youth activities to gain knowledge about youth extracurricular and peer interactions (Barber et al. 2005; Laird et al. 2003). Youth perceptions of the amount of knowledge their parents possess about adolescent daily activities were assessed with a five-item scale (Brown et al. 1993). Sample items included: "How much does your mother really know about who your friends are?" and "How much does your mother really know about what you do with your free time?" Response options ranged from 1 (*doesn't know*) to 3 (*knows a lot*). Items were summed, and Cronbach's alpha was .80. Construct validity for this measure has been demonstrated by Laird and colleagues through evidence of associations with externalizing problem behaviors.

#### Control Variables

Participants completed the Child Behavior Checklist-Youth Self-Report (CBCL; Achenbach 1991) to provide data on youth internalizing (24 items) and externalizing (30 items) problem behaviors. Sample items for internalizing behaviors included: "I feel worthless or inferior," and "I am secretive or keep things to myself." Sample items for externalizing behaviors included: "I try to get a lot of attention," and "I show off or clown." Items were based on a likert scale ranging from zero (*not true*) to 2 (*very true or often true*). Cronbach's alpha was .89 for internalizing problems and .86 for externalizing problems. This measure of problem behaviors is an established measure and has been validated across a variety of youth samples (Achenbach). Participants also responded to one item that identified their race, one item that identified the marital status of their mothers, one item that identified the marital status of their fathers, and one item that assessed youth perceptions of family economic well-being (likert scale ranging from *we are a lot poorer than most* to *we are a lot richer than most*). Youth race, mother marital status, and father marital status

were included as dichotomous variables in the final models. Youth race was coded one for *White* and zero for *other*. Parent marital status was coded one for *married* and zero for *other*. Youth reports of family economic well-being were included as a continuous manifest variable.

**Analytic Strategy**

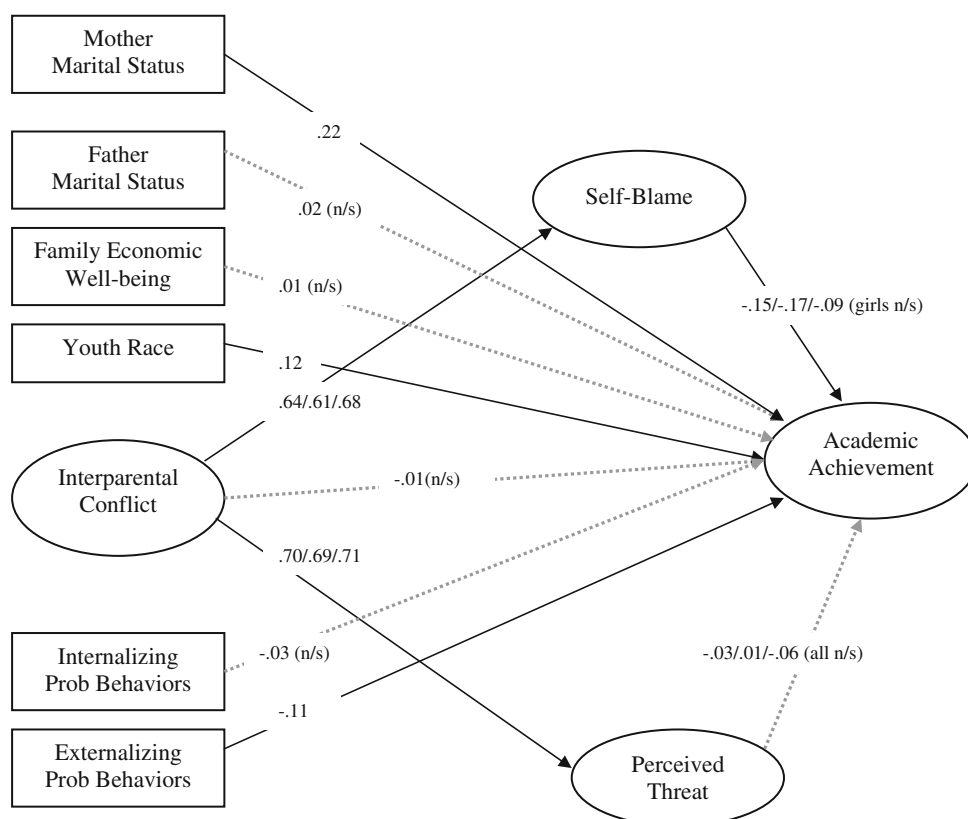
Missing data analyses demonstrated that less than three percent of the overall sample contained missing data. There was no systematic missing pattern and data were determined to be missing at random (MAR, Acocck 2005). Single imputation methods addressed the minor amounts of missing data for variables of interest using the EM method in SPSS. Study hypotheses were tested using structural equation modeling (AMOS 6) which allows measurement error to be modeled, decreasing the potential for study results to be confounded by random error (Hoyle 1995). Confirmatory factor analyses were completed for all variables in preliminary analyses. Items with factor loadings less than .33 were eliminated from subsequent analyses. Model fit was assessed based on the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). The baseline model (Fig. 1) had a good fit to the underlying data, evidenced by a CFI fit statistic of .95, and a RMSEA of .05 (Browne and Cudeck 1993; Hu and Bentler 1999). The significance level for all analyses in this

study was set at  $p < .01$  to decrease the potential for type I errors and to allow for more robust hypothesis testing.

Interparental conflict was included as a latent variable with three manifest indicators of interparental hostility, conflict intensity, and unresolved conflict. Self-blame, perceived threat, and academic achievement were included as latent variables with their associated indicators as described above. Youth problem behaviors were included as two manifest variables, one for internalizing problems and one for externalizing behaviors. There were three correlated error terms in the final model. Within the perceived threat scale, one item asked youth, “When an argument between my parents is over I feel that I have to be careful so one of my parents doesn’t get mad at me” and another item asked, “When an argument between my parents is over I worry that one of my parents will get mad at me.” A third item asked, “When my parents argue I’m afraid they will yell at me.” Due to the similar content of these items, error terms were correlated among all three items.

Consistent with recent recommendations for mediation analyses (Fritz and MacKinnon 2007; Grant et al. 2006), self-blame and perceived threat were examined as potential mediators according to several criteria. Path coefficients were examined for paths from interparental conflict to self-blame and perceived threat, and from self-blame and perceived threat to academic achievement. Additionally, the path from interparental conflict to academic achievement

**Fig. 1** Final model including standardized parameter estimates for the full sample, followed by estimates for sons, then daughters. Parameter estimates significant at  $p < .001$  unless noted



was examined for attenuation when self-blame and perceived threat variables were included in the model. Finally, the Sobel test statistic provided an estimate for each indirect pathway.

Moderation effects for parenting variables were tested by including product terms as predictor variables in the baseline model. An interparental conflict summary variable was created by averaging the hostility, intensity, and resolution subscales. After centering, interparental conflict was multiplied by maternal acceptance and monitoring knowledge to create two product terms. To examine potential parenting moderating effects for the direct association between interparental conflict and academic achievement, parameter estimates were examined for paths from interparental conflict/parenting product terms to academic achievement with product terms added to the model one at a time. Significant parameter estimates for these associations suggested a parenting moderator effect for the relationship between interparental conflict and academic achievement.

Parenting moderation for indirect associations between interparental conflict and academic achievement, through self-blame and perceived threat, was examined in two steps. First, parameter estimates were examined for paths from interparental conflict/parenting product terms to self-blame and perceived threat. Again, product terms were added to the model one at a time. Significant parameter estimates for these associations suggested a parenting moderator effect for the relationships between interparental conflict and self-blame or perceived threat. As a second step, additional product terms were created to examine potential moderating effects for associations between self-blame and perceived threat with academic achievement. Self-blame and perceived threat summary variables were created based on averages of items associated with each scale. After centering, both self-blame and perceived threat were multiplied by maternal acceptance and monitoring knowledge to create four additional product terms. Significant parameter estimates for the association between self-blame/parenting product terms and academic achievement suggested parenting moderation effects for the relationship between self-blame and academic achievement. Similarly, significant parameter estimates for the association between perceived threat/parenting product terms and academic achievement suggested parenting moderation effects for the relationship between perceived threat and academic achievement.

Multi-group structural equation modeling analyses were used to determine whether indirect effects were more salient for boys than for girls. Measurement equivalence across youth gender was examined first, followed by analyses testing for invariance in indirect structural paths. Examination of gender differences in structural parameters was only allowed to proceed once measurement invariance

across gender had been demonstrated. An unconstrained model was then compared to a model where indirect associations among interparental conflict, self-blame, perceived threat, and academic achievement were constrained across gender. Significant changes in chi-square across the two models provided evidence of gender differences in the mediating pathways (Byrne 2004).

## Results

### Preliminary Analyses

Before proceeding to hypothesis testing, we examined the relationship among interparental conflict, self-blame, and perceived threat to assess possible multicollinearity. We examined the amount of shared variance between interparental conflict and self-blame ( $r^2 = .21$ ) and between interparental conflict and perceived threat ( $r^2 = .37$ ), as well as results from multicollinearity diagnostics to ensure that youth reports of interparental conflict could be considered as a distinct construct from youth appraisals of self-blame and perceived threat. To ensure that multicollinearity between constructs does not introduce bias, variable inflation factor (VIF) statistics should be relatively low and typically less than 10 (O'Brien 2007). Results from these diagnostic procedures demonstrated VIF statistics ranging from 1.03 to 2.98, and suggested that results from this study were not likely confounded by multicollinearity.

Descriptive statistics and correlations are displayed in Table 1. Correlations were moderate to strong in magnitude and were in the expected directions. Four types of models were examined to test the study hypotheses. First, a model demonstrating the association between interparental conflict and academic achievement, controlling for youth problem behaviors, parents' marital status, youth race, and family economic well-being was examined. The second model included self-blame and perceived threat variables to test for mediation effects (Fig. 1). Next, manifest product terms were added to the model (one at a time) to test for maternal parenting interaction effects. Finally, a model including interparental conflict, academic achievement, mediation variables, and control variables was examined across youth gender to test for gender moderating effects.

### Main Effects of Interparental Conflict and Appraisal Mediation Models

As hypothesized, there was a significant association between interparental conflict and academic achievement ( $\beta = -.11, p < .01$ ), such that youth who reported higher levels of hostile, intense, and unresolved interparental

**Table 1** Descriptive statistics and correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Interparental conflict	1.00											
2. Self-blame	.46	1.00										
3. Perceived threat	.61	.49	1.00									
4. Academic achievement	-.23	-.21	-.21	1.00								
5. Maternal acceptance	-.34	-.30	-.21	.27	1.00							
6. Maternal knowledge	-.32	-.28	-.22	.28	.52	1.00						
7. Internalizing prob. behs.	.45	.43	.52	-.33	-.29	-.29	1.00					
8. Externalizing prob. behs.	.40	.40	.37	-.25	-.29	-.36	.59	1.00				
9. Youth race <sup>a</sup>	-.14	-.08	-.08	.18	.14	.15	-.14	-.10	1.00			
10. Economic well-being	-.12	-.07	-.07	.07	.14	.13	-.14	-.10	.03(n/s)	1.00		
11. Mother marital status <sup>b</sup>	-.28	-.09	-.12	.29	.17	.19	-.16	-.15	.15	.13	1.00	
12. Father marital status <sup>b</sup>	-.28	-.09	-.11	.25	.16	.18	-.16	-.14	.12	.12	.81	1.00
Mean	.96	1.20	-.002 <sup>c</sup>	3.93	2.64	2.71	12.50	10.58	.82	3.19	.57	.57
SD	.54	.31	.70	1.02	.43	.41	8.58	6.95	.39	.73	.49	.50
Range	2.97	2.00	2.82	4.00	2.00	2.00	56.00	52.00	1.00	4.00	1.00	1.00

<sup>a</sup> Youth race coded where 1 = White. <sup>b</sup> Parent marital status coded where 1 = married. <sup>c</sup> Scales were standardized

Note: All correlations significant at  $p < .01$  except where noted

conflict were more likely to have lower grades. The unstandardized estimate was  $-.17$  ( $SE = .05$ ), indicating a .17 decrease of an average letter grade for each unit increase of interparental conflict. Adding self-blame and perceived threat into the model resulted in significant associations between interparental conflict and self-blame ( $\beta = .64, p < .001$ ) and between interparental conflict and perceived threat ( $\beta = .70, p < .001$ ). Self-blame also was associated negatively and uniquely with academic achievement ( $\beta = -.15, p < .001$ ). The association between interparental conflict and academic achievement became nonsignificant ( $\beta = -.01, p = .91$ ) when youth appraisals of interparental conflict were included in the model. Given the significant path from interparental conflict to self-blame, and the significant path from self-blame to academic achievement, results suggested that self-blame functions as a mediator in the association between interparental conflict and academic achievement. The Sobel test statistic also was significant, and provided evidence that the association between interparental conflict and academic achievement was mediated by youths' self-blame ( $z = -3.89, p < .001$ ).

### Moderating Effects

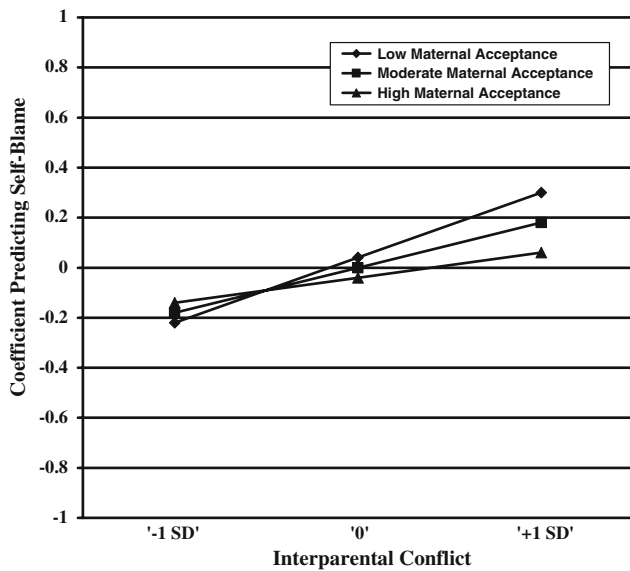
#### Parental Protection

Mothers' parenting moderated the association between interparental conflict and self-blame. Specifically, the product terms for maternal acceptance ( $\beta = -.13, p < .001$ ) and monitoring knowledge ( $\beta = -.10, p < .001$ ) with

interparental conflict were associated significantly with self-blame, suggesting that the association between interparental conflict and self-blame varies based on levels of maternal acceptance and monitoring knowledge. To examine the specific nature of the interaction effects, additional analyses were conducted based on recommendations forwarded by Aiken and West (1  $SD$  above and 1  $SD$  below the mean of moderating variables; 1991). Interparental conflict was associated positively with self-blame regardless of parenting levels, however, higher levels of maternal acceptance and monitoring knowledge partially protected youth exposed to interparental conflict. Mean levels of self-blame associated with interparental conflict were lower for youth who reported higher levels of maternal acceptance or monitoring knowledge, indicating that maternal acceptance and monitoring knowledge acted as partial buffers against the negative effects of interparental conflict. Youth blamed themselves less for interparental conflict when they also experienced higher levels of maternal acceptance or monitoring knowledge. Figure 2 provides an example of the interaction effects with maternal acceptance.

#### Amplifying Effects

Maternal acceptance and monitoring knowledge also moderated associations between interparental conflict and perceived threat. However, results demonstrated that parenting did not provide protection in these associations, but acted instead as amplifying factors. The product terms for maternal acceptance ( $\beta = .09, p < .001$ ) and monitoring knowledge ( $\beta = .12, p < .001$ ) with interparental conflict



**Fig. 2** Self-blame at three levels of interparental conflict and maternal acceptance

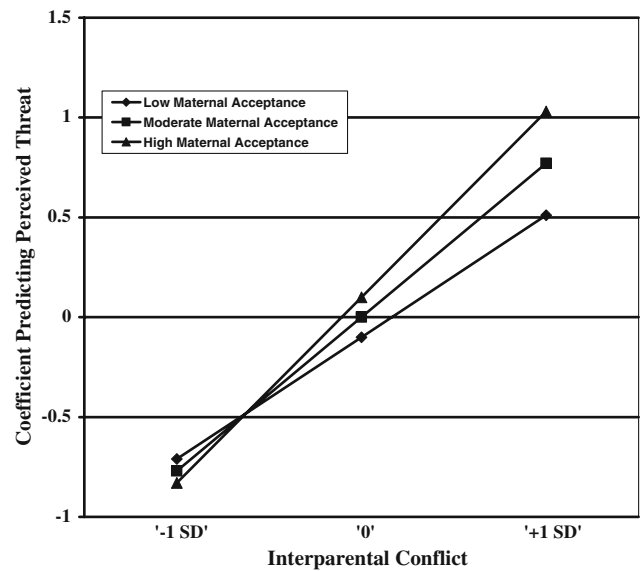
were associated significantly with perceived threat. Examining these interaction effects at three levels of maternal acceptance and monitoring knowledge (based on 1 SD above, the mean, and 1 SD below the mean) demonstrated that interparental conflict affects perceived threat the most for youth who report higher levels of maternal acceptance and monitoring knowledge. These findings suggest that interparental conflict is most threatening and detrimental for youth who report feeling close and connected to their mothers (high acceptance and high monitoring knowledge) compared to youth who report low levels of acceptance and monitoring knowledge in mother-child relationships. Figure 3 provides a graphic example of the interaction effects with maternal acceptance.

*Youth Gender*

Multi-group analyses examining potential gender differences in the indirect associations among interparental conflict, self-blame, perceived threat, and academic achievement did not demonstrate a significant change in chi-square across the two models [ $\Delta\chi^2(5, N = 2,297) = 8.02, p = .16$ ]. These findings indicated that the indirect pathways did not differ for male and female youth.

Potential Impact of Shared Method Bias

Although academic achievement data was obtained from school records, all other study variables were measured by youth self-report. Thus, the potential exists for shared method bias as a threat to validity inferences regarding the associations among interparental conflict, self-blame,



**Fig. 3** Perceived threat at three levels of interparental conflict and maternal acceptance

perceived threat, and parenting variables. To determine the plausibility of these threats, correlated uniqueness models examined shared method variance through correlations of unique error variances for constructs measured with the same method (Conway 2004). Results of these analyses demonstrated correlations ranging from .00 to .16, suggesting that minimal covariation exists between error terms of constructs measured by the same method. These findings suggested that reported associations among interparental conflict, self-blame, perceived threat, and parenting variables were minimally inflated by shared method bias (Kenny and Kashy 1992).

**Discussion**

Given the importance of academic achievement for current and future youth development (Elder and Conger 2000), and the documented association between family conflict and academic difficulties (Unger et al. 2000), existing literature demonstrates a need for research that continues to examine processes that might be responsible for maladaptive youth academic outcomes associated with family interactions. This study provided three major contributions to existing research. First, scant research has examined the association between interparental conflict, conflict appraisals, and academic achievement. Second, we are aware of no research that has examined parenting as a moderator of the association between interparental conflict and academic achievement. Finally, the current study used a process-oriented risk and resiliency model by examining both mediating and moderating effects for the association

between interparental conflict and youth academic achievement. Results from this type of research can inform parents, educators, and individuals working with youth and families in academic settings by demonstrating the mechanisms through which academic resilience can be fostered amongst youth despite continued exposure to stressful family environments.

#### Interparental Conflict as a Risk Factor for Youth Academic Endeavors

Consistent with previous research (Unger et al. 2000) and study hypotheses, youth who reported higher levels of interparental conflict were more likely to demonstrate lower academic achievement. These effects existed above and beyond the impact of youth problem behaviors, and suggest that interparental conflict is stressful for youth during late childhood. These conflict experiences in the home environment then increase the potential for youth to exhibit stress responses and decreases their potential to excel in academic endeavors. Given that academic success during the formative years is linked to similar types of success during adulthood, youth who experience salient family risk factors for lower academic achievement, such as high interparental conflict, are at-risk for future difficulties in a variety of domains (Roisman et al. 2004).

#### Identification of an Explanatory Mechanism

To determine the factors that might explain how interparental conflict is associated with academic difficulties for individuals during late childhood, indirect effects through cognitive appraisals of self-blame and perceived threat were examined. Consistent with our expectations, and previous research (Grych et al. 2000), youth who reported higher levels of interparental conflict were more likely to engage in negative cognitive appraisals. Specifically, when youth interpret interparental conflict situations as stressful, they are more likely to blame themselves and feel threatened by such experiences. Although perceived threat was not linked to academic difficulties in these data, youth who blamed themselves more for interparental conflict situations were more likely to demonstrate lower academic achievement. Thus, cognitive appraisals of self-blame for interparental conflict provide one explanation for why interparental conflict affects academic endeavors. These results provide additional insight into how stressful situations in the family environment affect youth functioning in the school environment and suggest that the manner in which youth appraise negative interactions from the home environment has specific implications for current and future academic and occupational endeavors. Given we controlled for youths' externalizing and internalizing

problems, this finding is particularly salient because the self-blame attribution was not attributable to conduct problems associated with interparental distress nor to youths' feelings of self-derogation. Rather, the attribution of self-blame for parents' marital conflict might be impairing academic accomplishments through emotional dysregulation and excessive rumination about family troubles. Previous research has demonstrated the overlapping effects of cognitive and emotional responses to interparental conflict (Buehler et al. 2007), but the current study focused solely on cognitive responses. Future research should continue to examine both cognitive and emotional responses to interparental conflict, including the manner in which these two types of responses might work together to impact family influences on academic functioning.

#### Moderating Effects of Maternal Acceptance and Monitoring Knowledge

Identification of specific risk and explanatory factors for academic difficulties is informative for researchers, practitioners, and adults interacting with youth in academic settings, but youth might benefit the most from research identifying protective factors that can buffer them from academic difficulties associated with the risk factors. In this study, we examined the potential for maternal acceptance and monitoring knowledge to act as protective factors for direct and indirect associations between interparental conflict and academic achievement. Results demonstrate that youth who reported higher levels of maternal acceptance and monitoring knowledge were less likely to blame themselves for interparental conflict experiences. In this manner, maternal acceptance and monitoring knowledge partially buffered youth from engaging in the negative appraisal of self-blame for interparental conflict. These results suggest that mother-child relationships characterized by high levels of emotional closeness, support, and communication might help youth cope in a more adaptive manner with interparental conflict situations. According to Call and Mortimer (2001), parent-child relationships characterized as supportive, comforting, and engaging can be considered as an arena of comfort for youth. These relationships provide children with a sense of familiarity, comfort, and respite in times of stress and increase the potential for youth to cope with environmental risk factors. An important consideration of findings from this study is that both the risk factor (interparental conflict) and the protective factors (mother-child relationships) are aspects of the children's family environments. Thus, results suggest that parent-child relationships can provide protection for youth exposed to stressors even within the family environment.

Although maternal acceptance and monitoring knowledge also moderated associations between interparental conflict and perceived threat, hypothesized protective effects in these associations were not supported. Instead, results demonstrate that youth who reported higher levels of maternal acceptance and monitoring knowledge in parent-child relationships were more likely to feel threatened by interparental conflict. These findings suggest that maternal acceptance and monitoring knowledge amplify the negative associations between interparental conflict and perceived threat. Youth who experience higher levels of emotional closeness, support, and open communication within mother-child relationships might perceive interparental conflict situations as more threatening than if relationships with their mothers were more distant. Children who report more distant relationships with their mothers might feel more removed from family dynamics and thus interpret interparental conflict as less detrimental to youth goals and objectives. Although these results contradicted the study hypotheses, recent research examining youth triangulation in marital conflict situations suggests that the association between interparental conflict and parent-child closeness is complex and requires additional research. According to Grych et al. (2004), youth who reported feeling closer to their parents were more likely to also report feeling triangulated, or involved in interparental conflict, suggesting an association between parent-child relationships and perceptions of interparental conflict situations. Additional research is needed to continue exploring how parent-child closeness interacts with interparental conflict experiences and how these family dynamics influence cognitive appraisals and developmental youth outcomes.

#### Gender Effects

Based on previous research, we anticipated that cognitive appraisals would demonstrate stronger indirect effects for sons than for daughters. Contrary to the hypotheses, results demonstrate a lack of gender differences in indirect effects in this sample of youth. Although previous research has examined gender differences in how cognitive appraisals mediate associations between interparental conflict and youth problem behaviors (Grych et al. 2000, 2003), we are not aware of any studies that have examined gender differences in the association between interparental conflict and youth academic achievement. Results from the current study serve as an important contribution to existing research, but future studies must continue to examine gender differences in how interparental conflict is associated with academic outcomes to determine how these processes might differ for male and female youth.

#### Study Limitations

Despite the contributions results from this study provide to existing research, limitations of the research design should be considered. The design of this study was cross-sectional in nature, and thus causality cannot be inferred from study results and the potential for reverse causal patterns could not be tested. Additionally, the cross-sectional nature of the design did not allow us to examine how associations among interparental conflict, youth cognitive appraisals, academic achievement, and parenting behaviors might change over time as youth progress from childhood into adolescence. Future research should continue to examine the relationship between interparental conflict and academic outcomes using prospective designs. Additionally, the sample used for this study consisted of approximately 20 percent ethnic minority youth, but contained a majority of youth identified as White/European American. Given that academic achievement is important for all youth regardless of ethnicity, and that previous research indicates potential ethnic differences in associations between interparental conflict and youth developmental outcomes (Bueher et al. 1998; McLoyd et al. 2001), associations among interparental conflict and academic achievement should be examined with larger samples of ethnic minority children and parents in future research.

#### Conclusion

Despite the limitations, results from the current study contribute to the paucity of existing research examining how conflict in the family environment is associated with developmental outcomes in the academic environment. Overall, findings herein suggest that negative cognitive appraisals, specifically youth self-blame, provide some explanation for why interparental conflict is associated negatively with academic achievement. Although these results require replication, they suggest a need for school counselors, family psychologists, and other professionals working with youth at-risk for lower academic achievement to teach children more adaptive coping mechanisms for interparental conflict exposure. Additionally, results from this study suggest that parents who display higher levels of acceptance in parent-child relationships are providing some level of protection for exposure to interparental conflict and helping to ensure that children succeed in academics despite stress from the home environment.

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