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Marital Psychological and Physical Aggression and Children's Mental and Physical Health: Direct, Mediated, and Moderated Effects

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Abstract

Relations between marital aggression (psychological and physical) and children's health were examined. Children's emotional insecurity was assessed as a mediator of these relations, with distinctions made between marital aggression against mothers and fathers and ethnicity (African American or European American), socioeconomic status, and child gender examined as moderators of effects. Participants were 251 community-recruited families, with multiple reporters of each construct. Aggression against either parent yielded similar effects for children. Children's emotional insecurity mediated the relation between marital aggression and children's internalizing, externalizing, and posttraumatic stress disorder symptoms. No differences were found in these pathways for African American and European American families or as a function of socioeconomic status or child gender.

Keywords

marital aggression; emotional security theory; child health; child adjustment; PTSD

Children's exposure to marital aggression is a recognized public health problem (National Institutes of Health [NIH], 2003, PAR-03-096), and the examination of the effects of such aggression on child functioning is a significant societal concern. *Marital conflict* is broadly defined as any difference of opinion, whether minor or major and whether primarily positive or negative. Marital conflict can take many forms, including displays of both positive and negative emotions and constructive (e.g., problem-solving) and destructive (e.g., physical assault) tactics. Thus, *marital aggression*, characterized by physical and/or psychological abuse, is at the negative extreme of a continuum of marital conflict (Cummings, 1998). *Marital psychological/verbal aggression* refers to threats, insults, and throwing objects and is

considered by some to be psychological abuse, whereas *marital physical violence* indicates physical assault on a partner's body (Jouriles, Norwood, & McDonald, 1996). Marital psychological/verbal and physical aggression is prevalent in U.S. families (NIH, 2003, PAR-03-096) and is associated with adverse child outcomes in externalizing (Jouriles, Murphy, & O'Leary, 1989), internalizing (Marks, Glaser, Glass, & Horne, 2001), and posttraumatic stress disorder domains (Kilpatrick & Williams, 1997).

High levels of spousal physical violence typically co-occur with psychological abuse (Stets, 1990), with psychological abuse almost always preceding physical violence in the relationship (O'Leary, Malone, Tyree, 1994). Furthermore, marital psychological abuse may account for additional unique variance in child functioning after controlling for the effects of physical aggression (Jouriles et al., 1996), highlighting the importance of examining multiple aspects of marital aggression.

This study addresses not only the sequelae of marital physical violence on child functioning but also the effects of the more prevalent psychological and emotional marital abuse (Marshall, 1992). Moving beyond the examination of the effects of marital aggression and violence on child witnesses in battered women shelters and clinical settings, this study focuses on a community sample. Improving the generalizability of findings, studying a community sample may better elucidate the relationship between marital aggression and child outcomes in everyday settings, likely reducing some of the confounds associated with studying families who seek either clinical treatment or shelters (e.g., living in a shelter).

Consistent with a recognized need in the literature, our study examined physical and psychological aggression toward the mother and father to further delineate the effects on children (McCloskey, Figueredo, & Koss, 1995). Studies of domestic violence have focused on aggression directed at the mother, but aggression against the father may also undermine children's adjustment. Although witnessing aggression against the mother is more distressing for children than witnessing aggression against the father, children are also very upset when the father is a victim of aggression (Goeke-Morey, Cummings, Harold, & Shelton, 2003). Moreover, interparental aggression is likely to be reciprocal as conflict escalates within relationships (Fincham & Bradbury, 1987), such that children are likely to be exposed to both aggression against the father and aggression against the mother. Fathers are frequently overlooked in studies of the impact of aggression between parents on children's development, but aggression against fathers may also constitute an important element of the social ecology of interparental aggression from the child's perspective. The present study contributes to the scant research comparing the impact on children of aggression against fathers as well as mothers.

Most studies that examined the sequelae of exposure to marital aggression have narrowly focused on child behavioral and social outcomes (Cummings & Davies, 2002), although the scope needs to be broadened to include multiple domains. For example, less is known about the relations between marital aggression and children's physical health. Although this is the case, there is some evidence that verbal and physical marital conflict are associated with increased levels of child total health problems, chronic and acute health difficulties, digestive problems, fatigue (El-Sheikh, Harger, & Whitson, 2001), reduced physical growth (Montgomery, Bartley, & Wilkinson, 1997), and headaches and abdominal pains (Stiles, 2002).

Although marital aggression is a risk factor for child witnesses, there is great variability in child outcomes associated with marital conflict, and not all children exposed to marital aggression experience negative consequences (e.g., Hughes & Luke, 1998). This heterogeneity in child functioning in the context of marital aggression reinforces the need for research

addressing possible processes linking and moderators of family and child development (NIH, 2003, PAR-03-096). An important goal for future research is to understand precisely how, when, and why interparental conflict is associated with individual differences in children's mental and physical health difficulties (Cummings & Davies, 2002).

A promising model for the processes mediating the impact of marital conflict on children is the emotional security theory (EST; Davies & Cummings, 1994). Support has accumulated for EST as an explanatory model for relations between marital conflict and child adjustment, including demonstrations of the cogency of EST in relation to other theories of the impact of marital conflict on children (e.g., Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006; Davies, Harold, Goeke-Morey, & Cummings, 2002). EST posits that children have a set goal of wanting to feel secure in their family, which is derived from the marital relationship. Threats to children's emotional security (e.g., destructive marital conflict) motivate and organize children's emotional and behavioral responses and their internal representations of the marital relationship. Although these responses may be adaptive in the short term, allowing children to maintain or regain a sense of emotional security, these responses may develop into patterns of behavior or thinking that are maladaptive in other settings or over time. According to EST, children's emotional, behavioral, and cognitive responses mediate the effect of marital conflict on children's adjustment. A useful analogy is to think of emotional security as a bridge between the child and the world. When destructive conflict erodes the bridge, children may become hesitant to move forward and may lack confidence, or they may move forward in a dysregulated way, unable to provide appropriate footing within themselves or in interaction with others, increasing risk for problematic outcomes.

This article extends the assessment of EST as an explanatory mechanism to the study of interparental psychological and physical aggression. Although EST has been shown to account for the effects of mild marital conflict on children, it is uncertain whether emotional security plays a role in the impact of more extreme forms of interparental aggression on children, including distinguishing aggression against fathers and mothers. Another new direction is the inclusion of a wider range of child outcomes, including posttraumatic stress disorder (PTSD) symptoms and physical health. It is notable that although there are some overlapping symptoms (e.g., depression, anxiety), PTSD is distinct from global internalizing problems, including symptoms occurring in the context of traumatic events, such as intrusive thoughts, fear, dissociation, and emotional numbing (Briere, 1996). This study further explicates the link between child functioning and marital aggression by examining multiple domains of child adjustment, including externalizing, internalizing, PTSD symptoms, and physical health.

Emotional security issues may be less relevant to children in the context of the more extreme threat to their physical and mental health associated with aggression between the parents and therefore may or may not be relevant to understanding more extreme or nonpsychological outcomes (e.g., PTSD symptoms, physical health). That is, another possibility is that there will be only direct relations between exposure to aggression and child adjustment. At the same time, we hypothesize that emotional security concerns are especially heightened in the context of interparental aggression, advancing the possibility of emotional security serving as an explanatory mechanism for children's PTSD symptoms and physical health outcomes as well as children's internalizing and externalizing problems. In this context, we expect that heightened threat and challenge to stress and coping processes, including depletion of resources from latent worries and concerns about security, will undermine physical as well as psychological functioning (Cummings, 1998).

Finally, little is known about the role of emotional security as an explanatory mechanism for African American (AA) families. Given differences in family contexts in AA families, one

cannot assume emotional security will remain an important mediator (Deater-Deckard, Dodge, Bates, & Pettit, 1996). That is, ethnicity may possibly moderate emotional security as a mediator of relations between interparental aggression and child outcomes. More generally, associations between ethnicity and outcomes in children from high conflict homes are underinvestigated, yet important to elucidate. For example, not much is known about the effects of marital conflict on European American (EA) in comparison to AA children, and a review of longitudinal research on marriages and conflict (Karney & Bradbury, 1995) found only a small percentage of the study samples included both AAs and EAs. Further, studies focusing on ethnic differences in marital conflict have reported inconsistent findings (McLoyd, Harper, & Copeland, 2001), with some reporting increased incidence in AA compared to EA families (Gelles, 1993) while others report no such difference when socioeconomic status (SES) is taken into account (Vogel & Marshall, 2001). However, there are a few indications for ethnicity-related effects in children's reactions to conflict (Bradley & Corwyn, 2000). Ethnicity and associated cultural practices are likely to affect aspects of family functioning and their relations to child development (Deater-Deckard et al., 1996). Our sample included a large percentage of AAs, which allowed for assessment of exploratory questions of ethnicity-related effects in the magnitude and nature of pathways between family and child functioning.

Poverty and low SES have a great impact on children's adjustment (Pungello, Kupersmidt, Burchinal, & Patterson, 1996). SES has been a frequently studied variable in health research, and although a number of factors have been proposed as mechanisms in the link between poor health and low SES, the exact mechanisms are still poorly understood (Adler et al., 1994). Further, many of the studies that examined the effects of marital violence on children have examined working and lower SES families. However, as indicated in a study that used a large community sample of families with school-age children, relations between marital functioning and child problems are stronger in lower SES than in higher SES families (Jouriles, Bourg, & Farris, 1991). SES-related factors may be associated with marital aggression (McCloskey, 1996), and there is a recognized need in the literature to examine the effects of marital violence on child witnesses in not only lower but also middle and upper class families. The health disparity view (e.g., Carter-Pokras & Baquet, 2002) is that specific populations, including ethnic minorities as well as those of lower SES, may have an increased burden of adverse conditions (Healthy People 2010, 2006). This study encompassed a wide range of SES backgrounds to more fully understand the role this factor plays in the marital aggression-child adjustment link.

The present study builds on the literature through the examination of direct, mediated and moderated effects of marital aggression toward mothers and fathers on multiple domains of child adjustment. Although there may be direct effects of exposure to aggression toward parents on children, another possibility is that child emotional insecurity in the marital relationship mediates the effects of marital aggression on children's mental and physical health. Further, the present investigation extends the assessment of ethnicity and SES by exploring whether they moderate relations between marital aggression, children's emotional insecurity, and their health (i.e., moderated mediation effects). Moderated mediation indicates that a variable (emotional insecurity in this study) serves as a mediator only (or especially strongly) under certain conditions (e.g., membership in a particular group; Muller, Judd, & Yzerbyt, 2005). In an attempt to unconfound the frequently reported association between ethnicity and SES, we recruited AA and EA children across a wide SES range.

Method

Participants

Two hundred and fifty-one families participated in the study. Child participants (123 boys, 128 girls) were in the second or third grade and had a mean age of 8.23 years ($SD = 0.73$). Families

were recruited through three elementary school systems in Alabama. Families were eligible to participate if children were in second or third grade, two parents were present in the home, and families had been living together for at least 2 years. Exclusion criteria included chronic physical illness, ADHD, learning disability, and mental retardation. Letters inviting families to participate were sent home with children via their schools, and interested families contacted our lab. Of the families who contacted the laboratory and qualified for the study, 37% participated, 18% declined participation, and 45% were interested but were not included because the desired subsample sizes corresponding with their designation had already been filled (either in relation to gender, SES, or ethnicity). Thirty-four percent of the sample was African American ($n = 89$), and the remainder was European American ($n = 162$). All of the parents were married or had been living together for a substantial amount of time ($M = 10$ years, $SD = 5.67$). Due to misunderstandings, we included 10 families who had been together for less than 2 years ($M = 13.18$ months, $SD = 3.34$), but they were still included in analyses. Although together for less than our somewhat arbitrary criterion for family stability, these families had all also been living together for substantial periods of time (8.5 to 18 months). Most families (73%) had both biological parents participate, 24% included the child's biological mom and a stepfather or mother's live-in boyfriend, and the remaining 3% included the child's biological father and a stepmother.

On the basis of Hollingshead's (1975) criteria, participants represented the entire range of SES levels (1 to 5) with a mean of 3.21 ($SD = 0.91$). We oversampled to include EA and AA children across a wide SES range. In terms of SES representation among AA and EA families, respectively, 32% and 21% were in either Level 1 or 2 (semiskilled workers), 38% and 32% were in Level 3 (skilled workers), and 30% and 47% were in either Level 4 or 5 (professionals). Families received monetary compensation for their time and effort; mothers and fathers received \$30 each for completing questionnaires, and children received \$140 for completing the lab session, including procedures not included in this article.

Procedure

The present study is part of a larger investigation assessing the effects of marital violence on children's development, and only the procedures pertinent to the present study will be presented. Children, mothers, and fathers came to the university laboratory to complete the measures described below. The majority of the sessions were conducted after school hours, but some families came into the laboratory on weekends and holidays. The study was conducted with the approval of the institutional review board for the protection of human subjects, and participants provided informed assent and consent. Due to the sensitivity of the questions, each parent was placed in a separate room to ensure the confidentiality of their responses. Children also completed measures in a separate room with the help of an experimenter. To reduce potential confounds associated with reading abilities, all child-report measures were administered via interview.

Measures

Marital aggression—Due to research suggesting a bias in selfreports of marital aggression (e.g., Ehrensaft & Vivian, 1996), mothers' and fathers' reports on their spouses' behavior on all aggression measures were used. Mothers and fathers completed the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), which assesses the intensity and frequency of conflict within the marital relationship. Parents rated how often their spouse used a list of conflict strategies during the past year on a scale ranging from 0 (*this has never happened*) to 6 (*more than 20 times in the past year*). The current study used the Physical Aggression and the Psychological Aggression scales. Items for the Physical and Psychological Aggression scales were summed, respectively, to create the two subscale scores. The CTS2 is

well-established and frequently used in the literature. Cronbach's alphas with this sample indicated good internal consistency and ranged between .86 and .90.

Mothers and fathers completed the Severity of Violence against Men/Women Scales (SVAMS & SVAWS; Marshall, 1992), which were developed to broaden the scope of instruments used to assess abusiveness. The SVAWS consists of 46 behaviors commonly reported in the family violence literature, and the SVAMS is a reworded equivalent. Spouses report on how often their spouse engaged in a list of behaviors during marital arguments on a scale ranging from 0 (*never*) to 5 (*a great many times*). The two subscales used were Total Threats of Violence and Total Acts of Violence. The Sexual Aggression subscale was not used in analyses. This measure has good internal consistency when used with a community sample (Marshall, 1992). Cronbach's alphas for mothers' reports of total threats of violence and total acts of violence on the SVAWS were .83 and .80, respectively. Cronbach's alphas for fathers' reports of total threats of violence and total acts of violence on the SVAMS were .85 and .82, respectively.

Mothers and fathers also completed the Subtle and Overt Psychological Abuse of Women and Men Scale (SOPAS; Marshall, 2001), a 35-item scale that assesses psychological abuse. Participants rated how often their spouse had used a list of behaviors in either a loving, joking, or serious manner on a scale ranging from 0 (*never*) to 6 (*a great many times*). Items are summed to create a total psychological aggression score. This scale has been found to be highly correlated with other measurements of the same construct (Jones, Davidson, Bogat, Levendosky, & von Eye, 2005). Cronbach's alphas in this sample for mothers' and fathers' reports on the SOPAS were .97 and .96, respectively.

Emotional insecurity—Parents and children provided reports of children's emotional insecurity. Specifically, the three component processes of emotional insecurity were indexed, including emotional and behavioral reactivity and destructive internal representations of the marital relationship (Davies & Cummings, 1994). Parents completed the Security in the Marital Subsystem—Parent Report Inventory (SIMS-PR; Davies, Forman, Rasi, & Stevens, 2002), in which they rated how well a list of responses described their children's reactions to witnessing interparental arguments in the past year on a scale ranging from 1 (*not at all*) to 5 (*a whole lot like him/her*). The Emotional Reactivity (10 items; e.g., "Still seems upset after we argue") and Behavioral Dysregulation (5 items; e.g., "Yells at family members") scales were used. Cronbach's alphas for mothers' and fathers' reports were .58 and .87, respectively, for the Emotional Reactivity scale and .69 and .77, respectively, for the Behavioral Dysregulation scale. There were no significant differences between mothers' and fathers' reports of their child on either of these scales, and a composite was created for each subscale by summing mothers' and fathers' reports.

Children completed the Security in the Interparental Subsystem Scale (SIS; Davies, Forman, et al., 2002) via experimenter interview. Children rated their perceptions of events that occurred during the past year on a 4-point scale, ranging from 1 (*not at all true for me*) to 4 (*very true for me*). The Destructive Internal Representations of the Interparental Relationship scale was used. A sample item from this subscale is "When my parents have an argument I know it's because they don't know how to get along." In the current sample, Cronbach's alpha for the Destructive Representations subscale was .65. Parent-reported emotional reactivity and behavioral dysregulation and child-reported destructive family representations were used as indicators to create a theoretically driven latent construct of emotional insecurity. With regard to choice of sources about the dimensions of emotional security, parents are known to be reliable reporters of children's overt behavior (i.e., emotional reactivity, behavioral dysregulation), whereas children are likely the best source of information about their own internal representations of family.

Children's adjustment—Mothers and fathers completed the Personality Inventory for Children (2nd ed.; PIC-2; Lachar & Gruber, 2001), a 275-item questionnaire measuring child adjustment. Parents rated whether statements are true or false when applied to their child. The Delinquency and Impulsivity/Distractibility scales, which are indicators of externalizing problems, were used in analyses. Mothers or fathers reported 17% ($n = 43$) of the children to have scores indicative of a clinical or borderline clinical range for externalizing problems. In the present sample the internal consistency was .83 and .84 for mothers' and fathers' reports, respectively. Mothers' and fathers' reports were significantly correlated for both the Delinquency ($r = .45, p < .01$) and Impulsivity/Distractibility ($r = .36, p < .01$) subscales; therefore a composite of mothers' and fathers' subscale scores were created. *T* scores for these composite subscales of Delinquency and Impulsivity/Distractibility were used as indicators of an externalizing problems latent construct in analyses.

Parents also completed the Child Health Questionnaire (CHQ; Landgraf, Abetz, & Ware, 1999) to rate their child's health during the past 4 weeks using a Likert-type scale. The Physical Functioning (6 items), Physical Role Limitations (2 items), and General Health (1 item) subscales were used in the current study. Specifically, these three subscales were summed to create a physical health scale. Mothers' and fathers' reports were correlated ($r = .51, p < .01$) and were summed to create one parent-reported physical health variable. The coefficient alpha in this sample was .70 for the composite based on summing mothers' and fathers' items.

The Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), a 37-item questionnaire that assesses general levels of anxiety, was administered via interview to the children. Children rated (yes/no) whether statements are true about them, and items were summed to create a total score. This measure has well-established psychometric properties for the examination of anxiety symptoms. In the current sample, the internal consistency of this measure was .91.

The Children's Depression Inventory (CDI; Kovacs, 1985) was administered via interview. The CDI is a well-established measure and consists of 27 items, each containing three statements. Children chose the statement that best described their feelings during the past 2 weeks (e.g., "I am sad once in a while," "I am sad many times," "I am sad all the time"). Statements are assigned a value from 0 to 2, with higher values representing greater depressive symptoms. Scores on each item are summed to create a total score. Cronbach's alpha was .95 in this sample. For analyses, a latent construct of children's internalizing problems was created with the raw scores on the RCMAS and CDI used as indicators.

The Trauma Symptoms Checklist for Children (TSCC; Briere, 1996) is a 44-item questionnaire that assesses numerous symptom domains related to children's responses to indeterminate (i.e., nonspecified) traumatic events and was administered via interview. Children rated how often they think, feel, or do each item on a scale ranging from 0 (*never*) to 3 (*almost all of the time*). The measure consists of six subscales measuring anxiety, depression, anger, posttraumatic stress disorder, and dissociation. The TSCC has been intensively tested with normative and clinical samples and has been found to have high internal consistency. This measure is significantly correlated with other commonly used measures in this area (Lanktree & Briere, 1995). In this sample, Cronbach's alphas for subscales were acceptable: Anxiety = .79, Depression = .81, Anger = .82, Posttraumatic Stress = .81, and Dissociation = .76. *T*-scores for these scales were used as indicators of a PTSD symptoms latent construct in analyses.

Results

Structural equation modeling was employed to examine emotional insecurity as a mediator of the link between marital aggression and child functioning. Analyses were conducted using

analysis of moment structures (AMOS 4.0; Arbuckle & Wothke, 1999) computer software, which utilizes full information maximum likelihood estimation to handle missing data. Additionally, full information maximum likelihood estimation is robust against violations of normality (Bollen, 1989). For each model, the traditional chisquare statistic is reported; however, this test statistic has been criticized for being biased toward indicating poor fit in the context of large sample sizes (Bentler & Bonnet, 1980). Therefore, multiple fit indexes are reported to assess the fit of the hypothesized models to the sample data. Specifically, we report the relative chi-square index (χ^2/df), where scores below 2 suggest a close fit and scores below 3 suggest an acceptable fit between the model and sample data (Bollen, 1989). Values above .90 for both the normed fit index (NFI; Bentler & Bonnet, 1980) and the comparative fit index (CFI; Bentler, 1990) indicate acceptable model fit. The root-mean-square error of approximation (RMSEA; Browne & Cudeck, 1993) is another commonly used fit index, in which a score of zero indicates a perfect fit, values below .05 suggest a good fit, and values below .08 suggest acceptable fit of the model to the data.

We examined mediation by testing the significance of the indirect path using bootstrap methodology, as recommended by (Shrout and Bolger 2002). This approach consists of directly testing the indirect effect by estimating the confidence interval of the indirect effect through bootstrapping. Using the sample data set, observations are randomly drawn with replacement to create a new data set of the same size. This procedure is repeated to create additional data sets (e.g., 500). Indirect effects can be calculated for each of these bootstrap samples, and a confidence interval for the estimate of the indirect effect can be calculated (see Efron & Tibshirani, 1998). Confidence intervals that include zero suggest that the indirect effect is not significant. Compared to the causal steps approach to testing mediation (e.g., Baron & Kenny, 1986), bootstrap methodology directly tests the indirect effect, is more statistically powerful, does not rely on distributional assumptions, and is more appropriate when examining developmental processes (McCartney, Burchinal, & Bub, 2006).

Means, standard deviations, and ranges are presented in Table 1. According to either parent's report, 34% of families endorsed at least one physical aggression toward the mother item on the CTS2, and 41% of families endorsed at least one physical aggression toward the father item on the CTS2. All analyses controlled for children's age, gender, ethnicity, and SES. Intercorrelations among all latent constructs and the manifest variables for children's physical health, age, gender, ethnicity, and SES are presented in Table 2. The fit of an overall measurement model that included all latent and manifest variables provided a good fit to the sample data ($\chi^2/df = 2.11$, NFI = .96, CFI = .98, RMSEA = .07) supporting the latent variables created for each construct. It is notable that marital aggression against both the mother and father were positively correlated with emotional insecurity, and emotional insecurity was positively correlated with child-reported PTSD symptoms and parent-reported externalizing problems. Additionally, aggression against the mother was negatively correlated with children's physical health.

Emotional Insecurity as a Mediator of the Link Between Marital Aggression Against the Father and Mother and Children's Outcomes

Controlling for child age, gender, ethnicity, and SES, children's emotional insecurity mediated the link between aggression against the father and aggression against the mother and children's reports of internalizing problems (see Figure 1). This model was an acceptable fit to the data, $\chi^2(141) = 380.85$, $p < .01$, $\chi^2/df = 2.70$, NFI = .95, CFI = .97, RMSEA = .08, $R^2 = .18$. Controlling for aggression against the other parent, higher levels of aggression against the father ($\beta = .28$, $p < .01$) and higher levels of aggression against the mother ($\beta = .51$, $p < .01$) were positively related to emotional insecurity, which was associated with higher levels of internalizing problems ($\beta = .45$, $p < .05$). The indirect effect of emotional insecurity accounted

for 48.1% of the total effect of aggression against the father on child internalizing problems and 56.4% of the total effect of aggression against the mother on child internalizing problems. The effect of aggression against the mother on children's emotional insecurity was not significantly stronger than the effect of aggression against the father on children's emotional insecurity, $\chi^2(1) = 0.16$, suggesting that aggression against either parent is equally threatening to children's emotional security. The confidence intervals for the indirect effect of marital aggression against the father (95% confidence interval [CI]: -0.03, 1.28) and marital aggression against the mother (95% CI: -0.02, 1.41) on child-reported internalizing problems based on 500 bootstrap samples, however, did include zero, suggesting that this finding be interpreted with caution.

A similar pattern was found for child reports of PTSD symptoms. Aggression against the father ($\beta = .28, p < .01$) and aggression against the mother ($\beta = .50, p < .01$) were positively related to children's emotional insecurity, which predicted higher levels of PTSD symptoms ($\beta = .51, p < .05$). This model was a good fit to the data, $\chi^2(197) = 458.83, p < .01, \chi^2/df = 2.33, NFI = .95, CFI = .97, RMSEA = .07, R^2 = .18$. The proportion of the total effect of marital aggression on child PTSD symptoms accounted for by this indirect effect was 60.5% and 57.7% for aggression against fathers and mothers, respectively. The confidence intervals for the indirect effect of marital aggression against the father or the mother on child-reported PTSD based on 500 bootstrap samples did not include zero (father: 95% CI: 0.01, 2.49; mother: 95% CI: 0.002, 2.16) indicating these are significant indirect effects.

The structural equation model examining parent-reported externalizing problems indicated that emotional security mediated the link between marital aggression against either the father or mother and children's externalizing behavioral problems. This model was an acceptable fit to the data, $\chi^2(141) = 385.55, p < .01, \chi^2/df = 2.73, NFI = .96, CFI = .97, RMSEA = .08, R^2 = .33$. Controlling for aggression against the other parent, higher levels of aggression against the father ($\beta = .22, p < .05$) and higher levels of aggression against the mother ($\beta = .61, p < .01$) were associated with greater emotional insecurity, which was associated with greater externalizing problems ($\beta = .63, p < .05$). The indirect effect of emotional insecurity accounted for 47.2% of the total effect of aggression against the father on child externalizing problems and 82.3% of the total effect of aggression against the mother on child externalizing problems. The confidence intervals for the indirect effect of marital aggression against the father or marital aggression against the mother on parent-reported externalizing problems based on 500 bootstrap samples did not include zero (father: 95% CI: 0.004, 2.34; mother: 95% CI: 0.02, 2.59), indicating these are significant indirect effects.

Emotional security was also examined as a mediator of the effect of aggression against the father and mother and child physical health. This model was an acceptable fit to the data, $\chi^2(124) = 333.72, p < .01, \chi^2/df = 2.69, NFI = .96, CFI = .97, RMSEA = .08, R^2 = .28$; however, in examining the paths, there were no significant direct or indirect effects of either aggression against the mother or father on children's physical health.

Moderated Mediation Models

Multigroup analyses were conducted to test whether there were ethnic differences in the mediational effect of emotional insecurity in the link between marital aggression and child outcomes. Child age, gender, and SES were controlled for in all analyses. As a first step, invariance in factor loadings was examined (Chan, 1998). A model in which factor loadings for the measurement model were freely estimated across groups (i.e., AA and EA families) was compared to a model in which factor loadings were constrained to be equal across groups. A nonsignificant chi-square statistic would indicate that there is measurement invariance in the factor loadings (Bollen, 1989). No significant differences were found in the factor loadings for the latent constructs of aggression against the father, emotional insecurity, and all child

outcomes for AA and EA families; thus, factor loadings were constrained to be equal to allow for a more parsimonious model. For the latent construct of aggression against the mother, however, the chi-square statistic was significant, $\chi^2(4) = 30.2$, indicating the factor loadings for this construct varied between EA and AA families. Specifically, examination of the individual factor loadings revealed that the factor loading for mothers' reports of physical aggression on the CTS2 was not invariant across both groups. Therefore, this factor loading was not constrained to be equal across the two groups.

Next, to test for moderated mediation, we compared the fit of two competing models: one in which the indirect paths from marital aggression to emotional insecurity and from emotional insecurity to child outcomes were constrained to be equal among EA and AA participants versus a model in which the paths were allowed to differ. A significant chi-square difference statistic would indicate ethnic differences in the indirect paths; that is, there is a significant difference among AA and EA families in terms of the mediational model being tested. Regarding tests of moderated mediation, no differences were found between EA and AA families for any of the mediational models (see Table 3). However, given that we did not have complete measurement invariance for the construct of marital aggression against the mother, these results should be interpreted with caution.

A median split (e.g., Jouriles et al., 1991) was used to create a low-SES (raw SES score < 36; $M = 29.29$) and high-SES (raw SES score ≥ 36 ; $M = 45.44$) group. At the same time, raw SES scores were controlled to account for variability within each group. Evidence for measurement invariance for SES groups and for boys and girls was found. Constraining factor loadings to be equivalent across groups, multigroup analyses tested for moderated mediation based on child gender or SES. No gender- or SES-related differences were found in any of the mediational models (see Table 3).

Discussion

The findings extended past research by showing emotional security is a viable explanatory mechanism for the influence of marital aggression against the mother or father on multiple dimensions of child adjustment, broadening the implication that marital aggression adversely impacts children's functioning. It is notable that marital aggression against either the mother or the father were distinguished and that the unique and combined impact of aggression against both mothers and fathers was examined. Finally, a relatively large sample of AA and EA families participated, lending confidence to the results and suggesting similar mediation models for the impact of marital aggression on EA and AA children.

The findings extend EST by showing that marital aggression against the father as well as that against the mother has negative implications for children's emotional security and adjustment outcomes. Much of the emphasis in the past concerning negative child outcomes has been on children's exposure to aggression against the mother, which is again shown to be a risk factor for child problems. Although one may argue that aggression between marital partners is often reciprocal and that this contributes to the common relations (almost certainly the case), it nonetheless remains that aggression against the mother and father were measured separately, based on multiple different instruments and a cross-reporter method, and examined controlling for aggression against the other parent. The findings suggest that children are disturbed by marital aggression against either parent; both types of aggression are causes for concern when one is evaluating the implication of domestic violence from the child's perspective.

In the context of the domestic violence literature, it is also interesting that emotional security mediated effects on PTSD symptoms. PTSD is a commonly demonstrated outcome of domestic violence; this finding thus suggests the viability of EST in this new domain of study of domestic

disturbance and associated child outcomes. Some in the domestic violence literature have argued that the processes that hold for the effects of marital conflict on children do not necessarily hold when considering violence (e.g., Jouriles et al., 1998). In this study, EST emerged as a potentially viable process model for the effects of marital aggression on children, including prediction of PTSD symptoms and internalizing and externalizing problems, which supports the conceptualization of marital aggression as a negative extreme of marital conflict, as opposed to the view that marital aggression is somehow a qualitatively distinct type of domestic discord with qualitatively different implications for process explanations about child outcomes (Cummings, 1998). At least, our results suggest that EST does hold, such that some of the same processes in this instance would seem to underlie effects of more extreme, negative forms of marital conflict on children. However, it is important to note that the current study used a community sample, which may not have captured aggression at its most extreme level.

Whereas the confidence interval for the estimate of the indirect effect based on bootstrap methodology did include zero, analysis of the paths in the model suggest that child emotional insecurity may mediate relations between marital aggression and child internalizing problems. This replicates a consistent finding of past studies (e.g., Cummings et al., 2006; Davies, Harold, et al., 2002). Moreover, this finding emerged from children's reports of internalizing problems, parents' reports of the other parent's marital aggression, and both parents' and children's reports of emotional insecurity, further suggesting the robustness of this pathway. It is notable that for indirect path models, the demonstration of a direct path between marital aggression and child adjustment is neither a necessary nor a sufficient condition for testing a process-oriented model (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Conceptually, marital aggression is no less important as a predictor of child adjustment outcomes in an indirect chain of processes because, without it, the development of an unfolding series of pathogenic processes would never have occurred (Emery, Fincham, & Cummings, 1992).

Results for an indirect pathway for accounting for child externalizing problems due to emotional insecurity were also supported. Although some support has emerged for this pathway in other studies, results have been less consistent for externalizing than for internalizing problems (e.g., Cummings et al., 2006), including studies of conceptually related processes of threat and self-blame as mediators or correlates of the effects of marital conflict (Grych, Harold, & Miles, 2003; Kerig, 1998; Rogers & Holmbeck, 1997). The current study thus provides support for emotional insecurity as a mediator of the effect of marital aggression on externalizing behavior problems. No direct or indirect effects were found between marital aggression and child physical health, suggesting that perhaps other mechanisms may mediate these outcomes. For example, other processes linked with marital aggression, such as sleep problems (El-Sheikh, Buckhalt, Cummings, & Keller, 2007) and physiological reactivity and regulation (e.g., electrodermal and vagal responses; e.g., El-Sheikh, 2005; El-Sheikh & Harger, 2001), are candidates for mediating the effects on child health. However, it is important to note that children with chronic illness were excluded from the study. Future research would likely benefit from investigations of biological and physiological processes as they impact the association between marital aggression and child adaptation across various domains.

The assessment of marital aggression was strengthened by using spouses' reports of each other's behavior, rather than relying on self-reports, as well as multiple instruments for assessing marital aggression. Both marital psychological/verbal aggression and physical violence were examined. This addresses the issue of examining not only the sequelae of marital physical violence on child functioning but also the effects of the more prevalent psychological and emotional marital abuse (Marshall, 1992). Physical violence occurs in the context of broader patterns of emotional, verbal, and physical abuse, so this assessment is likely more closely related to the actual social ecology of marital aggression as it occurs in the home. Children are impacted by the social ecology of marital aggression rather than simply the

isolated and most extreme exemplars of physical hostility, only one indicator of broader patterns.

Moreover, and relatedly, the effects of marital aggression on children were examined in a community sample. Based on the recommendations of the workshop on children exposed to violence (National Institute of Child Health and Human Development, 2002), there is a need to examine the effects of marital aggression and violence on child witnesses using not only samples from battered women's shelters and clinical settings but also community samples. Including community samples in such investigations is likely to reduce confounds associated with studying families who seek either clinical treatment or shelters.

This study breaks new ground in comparing models for relations with child development in relatively large samples of AA and EA families. Very little is known about the effects of marital aggression on AA children, including whether findings are similar or different from the findings for EA children. The sample was composed of a large percentage of African Americans as well as families from a wide range of socioeconomic backgrounds. This diverse sample allowed for the examination of our research questions with groups underrepresented in studies of the impact of aggression against parents. No significant differences were found between AA and EA families for any of the mediational models. An implication of these results is that family processes, including the role of emotional security, may be highly similar for AA and EA children. In the context of the sparse research examining whether ethnicity moderates pathways of effects associated with family risk and child health, findings from this study uniquely contribute to the literature and demonstrate the applicability of emotional security processes for children of various ethnic backgrounds. Future research should delineate familial and sociocultural factors associated with ethnicity and examine moderation effects in other ethnic groups.

Notably, SES also did not moderate results. Relationships between marital aggression and child outcomes as a function of SES have rarely been examined based on such a wide range of SES backgrounds and with a relatively large sample size, including data-intensive methodologies. Although differences have been reported in correlations between marital adjustment and conduct problems based on SES (Jouriles et al., 1991), differences between lower and upper class families with emotional insecurity as a mediator between marital aggression and various domains of child outcomes were not found. The findings thus suggest relations hold across a wide range of SES conditions and are relatively robust.

Similarly, child gender was not a factor in responding. Although child gender has been investigated in many studies, the findings in this regard have typically suggested no or small differences, with inconsistent patterns of results regarding whether girls or boys are more vulnerable or affected in particular ways (Davies & Lindsay, 2001). In this context, findings concerning child gender are not surprising or notable but do extend this pattern of results, for both girls and boys, to include relations between marital aggression and the multiple child outcomes examined in this study, including emotional security as a mediator.

The implication for clinicians is that emotional insecurity about marital aggression is relevant to understanding children's outcomes, especially internalizing problems, PTSD symptoms, and externalizing symptoms. That is, the findings suggest that marital aggression affects children by undermining and threatening their goal of feeling safe and secure in the family. More specifically, assessing children's regulatory processes related to emotional security (e.g., emotional and behavioral dysregulation, cognitive representations of the family; Davies, Harold, et al., 2002) may help clinicians understand pathways by which interparental aggression affects children's adjustment, suggesting an area for targeting treatment. For example, helping children develop effective coping strategies for emotional insecurity in the

context of marital aggression may ameliorate the negative effects of exposure to marital aggression. It is notable that although this study focused on elementary-school children (i.e., second and third graders), the importance of regulatory processes related to emotional insecurity for children's adjustment may also be relevant to older children. For example, relations between marital conflict and emotional security are even stronger for adolescents compared to younger children (Cummings et al., 2006).

Several limitations merit consideration. The study was cross-sectional, which precludes making conclusions regarding directionality of effects between variables. For example, child externalizing can affect marital conflict (Jenkins, Simpson, Dunn, Rasbash, & O'Connor, 2005). An avenue for future research is delineation of the possibly bidirectional influences between marital aggression and children's adjustment (Schermerhorn, Cummings, & Davies, in press), which is best accomplished with longitudinal research. In addition to the operation of child effects on the marriage, the potential exists for other, bidirectional processes. Although the present direction for the study of marital aggression in community samples is likely to lead to greater generalizability of findings, differences in sampling criteria and criteria for maritally aggressive behaviors should be considered when comparing findings across studies. Although the number of participants who declined to participate was relatively low given the data-intensive requirements of the larger study, participation rates should be considered when evaluating these findings. For example, additional families were interested but were not included because the desired subsample sizes corresponding to their designation had already been filled (either in relation to gender, SES, or ethnicity).

Also of importance, this study measured levels of marital aggression and not necessarily children's exposure to marital aggression. Recent findings suggest that measures of marital aggression may underestimate children's exposure to highly negative marital conflict, because the most negative conflicts may occur in the presence of children (Papp, Cummings, & Goeke-Morey, 2002). Although popular belief is that parents shield their children from marital conflict, the findings from Papp et al. (2002) suggest that parents are less able to do this during escalated conflicts. Moreover, children's emotional security may be threatened by marital aggression even if they are not directly exposed to the conflict. For example, children may sense the aftermath of marital aggression by noting that parents are distressed. Future research should aim to further explore these issues to better understand the implications of various contexts of marital aggression on children (Lieberman, Van Horn, & Ozer, 2005).

Despite these limitations, the present study has broken new ground in the study of marital aggression and child adjustment, including process-oriented questions about mediators and moderators of these relations. Future research should extend these findings with longitudinal data to further establish marital aggression and emotional insecurity as risk factors for a wide range of mental and physical health problems in children.

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Figure 1.

Emotional insecurity as a mediator of the relationship between marital aggression against the father and mother and child report of internalizing problems. Standardized path coefficients are presented in the figure. Residual error variances were calculated but were omitted from the figure. A superscript f denotes a fixed path. CTS = Revised Conflict Tactics Scale; SVAM = Severity of Violence Against Men Scale; SVAW = Severity of Violence Against Women Scale; SOPAS = The Subtle and Overt Psychological Abuse Scale; SES = socioeconomic status. * $p < .05$. ** $p < .01$.

Table 1

Means, Standard Deviations, and Range of Study Variables

Variable	Reporter	M	SD	Range
Child age	Parent	8.23	0.73	6.66–11
Socioeconomic status	Parent	3.21	0.91	1–5
Physical aggression against mother: CTS2	Mother	1.51	5.04	0–53
Psychological aggression against mother: CTS2	Mother	6.82	7.58	0–41
Total acts of violence against mother: SVAW	Mother	2.00	6.70	0–80
Total threats of violence against mother: SVAW	Mother	4.62	7.31	0–49
Psychological aggression against mother: SOPAS	Mother	27.65	30.64	0–175
Physical aggression against father: CTS2	Father	1.59	4.61	0–41
Psychological aggression against father: CTS2	Father	6.03	6.11	0–32
Total acts of violence against father: SVAM	Father	1.86	4.74	0–39
Total threats of violence against father: SVAM	Father	4.36	7.79	0–56
Psychological aggression against father: SOPAS	Father	30.66	26.40	0–141
SIMS-PR: Emotional Reactivity subscale	Parent	31.26	9.73	20–74
SIMS-PR: Behavioral Dysregulation subscale	Parent	14.03	4.63	10–39
SIS: Destructive Family Representations subscale	Child	8.27	3.66	3–24
Anxiety: RCMAS	Child	11.54	6.93	0–28
Depression: CDI	Child	7.90	6.15	0–33
Anxiety: TSCC	Child	50.78	12.58	32–91
Depression: TSCC	Child	45.86	10.51	32–79
Anger: TSCC	Child	43.47	9.69	33–84
Posttraumatic stress: TSCC	Child	50.51	11.30	33–83
Dissociation composite: TSCC	Child	149.94	30.08	109–244
Physical health score: CHQ	Parent	570.14	50.01	203.33–600
PIC: Delinquency subscale	Parent	47.17	6.86	40–86
PIC: Impulsivity/Distractibility subscale	Parent	48.81	8.29	38–80

Note. *Ns* range from 242 to 250 due to missing data. CTS2 = Revised Conflict Tactics Scale; SVAW = Severity of Violence Against Women Scale; SOPAS = The Subtle and Overt Psychological Abuse of Women and Men Scale; SVAM = Severity of Violence Against Men Scale; SIMS-PR = Security in the Marital Subsystem—Parent Report Inventory; SIS = Security in the Interparental Subsystem Scale; RCMAS = Revised Child Manifest Anxiety Scale; CDI = Child Depression Inventory; TSCC = Trauma Symptom Checklist for Children (*T*-scores); CHQ = Child Health Questionnaire; PIC = Personality Inventory for Children-2 (*T*-scores).

Table 2

Intercorrelations Among Constructs Used in Analyses

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Child age ^a	—										
2. Child gender ^a	-.17**	—									
3. Ethnicity ^a	.09	-.04	—								
4. Socioeconomic status ^a	.06	-.03	.21**	—							
5. Marital aggression against the mother ^b	.10	-.06	-.16*	-.07	—						
6. Marital aggression against the father ^b	.07	-.11	-.08	.02	.30**	—					
7. Child emotional insecurity ^b	.13	.13	.03	-.05	.61**	.42**	—				
8. Internalizing problems ^b	-.14*	.14	-.16	-.04	.03	.01	.13	—			
9. Posttraumatic stress disorder symptoms ^b	-.05	-.08	.11	.00	.11	.06	.31**	.83**	—		
10. Externalizing problems ^b	.01	.15*	.10	-.12	.27**	.02	.46**	.22*	.12	—	
11. Child physical health ^a	.07	-.06	.32**	.22**	-.18*	.06	-.09	-.02	.16	.01	—

Note. *N*s range from 242 to 250 due to missing data.^aManifest variable.^bLatent variable.* $p < .05$.** $p < .01$.

Table 3

Results From Multigroup Analyses Examining Ethnicity, SES, and Child Gender as Moderators

Variable	Moderator		
	Ethnicity	SES	Child gender
Physical aggression against father			
Internalizing problems	2.62	1.62	3.58
PTSD symptoms	0.59	1.81	4.24
Externalizing problems	3.15	2.26	4.58
Physical health	0.68	0.99	1.81
Physical aggression against mother			
Internalizing problems	2.48	1.81	2.76
PTSD symptoms	0.66	1.90	4.01
Externalizing problems	0.73	1.80	2.80
Physical health	0.68	0.04	1.84

Note. All data are chi-square statistics with two degrees of freedom. SES = socioeconomic status; PTSD = posttraumatic stress disorder.