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Importance of Gender and Attitudes about Violence in the Relationship between Exposure to Interparental Violence and the Perpetration of Teen Dating Violence

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Abstract

Objective—Mounting evidence has demonstrated a link between exposure to family of origin violence and the perpetration of teen dating violence (TDV). However, only recently have mechanisms underlying this relationship been investigated and very few studies have differentiated between exposure to father-to-mother and mother-to-father violence.

Methods—The current study used structural equation modeling on a large ethnically diverse school-based sample of male and female adolescents ($n = 917$) to address these gaps in the literature.

Results—For adolescent girls, there was an association between exposure to interparental violence (father-to-mother and mother-to-father) and TDV perpetration (physical violence and psychological abuse). For adolescent boys, only an association between mother-to-father violence was related to their TDV perpetration. Further, for both girls and boys, the relationship between mother-to-father violence and perpetration of TDV was fully mediated by attitudes accepting of violence.

Conclusion—These results suggest that attending to gender and targeting adolescents' attitudes about violence may be viable approaches to preventing TDV.

Keywords

Teen dating violence; Interparental violence; adolescents; gender

Teen dating violence (TDV) is a major public health problem. It is generally reported that 10% to 20% of adolescents have experienced severe physical dating violence (Eaton et al.,

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2008; Silverman, Raj, Mucci, & Hathaway, 2001), and substantially higher rates have been found in regional and at-risk samples (Hickman, Jaycox, & Aranoff, 2004; Watson, Cascardi, Avery-Leaf, & O'Leary, 2001). For example, in a sample of middle and high school students, Holt and Espelage (2005) found that 32% of females and 43% of males had been physically victimized by a dating partner.

Adolescents with a history of TDV, compared to those without, generally show higher rates of depression, anxiety, suicidal ideation, substance use, posttraumatic stress symptoms, risky sexual behavior, and disordered eating behaviors (Ackard & Neumark-Sztainer, 2002; Coker et al., 2000; Silverman et al., 2001; Temple & Freeman, 2011; Wolitzky-Taylor et al., 2008). They are also more likely to perform poorly in school and experience difficulties in future relationships (Smith, White, & Holland, 2003). Retrospective studies indicate that violence in adolescence may predict violence in adulthood (Murphy & O'Leary, 1989; O'Leary, Malone, & Tyree, 1994). For example, one study found that victims of adolescent dating violence were 3 times more likely to be victimized in college, relative to students who were not victimized as adolescents (Smith et al., 2003).

Considering the widespread prevalence and severe consequences of TDV, it is imperative that effective prevention programs targeting at-risk youth and salient risk factors are designed and implemented to prevent the occurrence (and recurrence) of this form of violence. One factor that has consistently been related to violence in general, and TDV specifically, is being exposed to violence in one's family of origin (Carr & VanDeusen, 2002; Ehrensaft et al., 2003; Maxwell & Maxwell, 2003; Miller et al., 2011; Roberts, Gilman, Fitzmaurice, Decker, & Koenen, 2010; Stith et al., 2000). Notably, the relationship between exposure to interparental violence and subsequent experiences with violence holds even after accounting for the influence of child abuse (Ireland & Smith, 2009; Novaco & Taylor, 2008), psychological problems such as conduct disorder (Ehrensaft et al., 2003), parental substance use (Henning, Leitenberg, Coffey, Bennett, & Jankowski, 1997), and income (Bensley, Van Eenwyk, & Simmons, 2003). What makes this link even more alarming is the number of youth exposed to violence between their parents. Estimates suggests that upwards of 30% of US children and adolescents (or approximately 15 million) are exposed to interparental violence, with many or most of these children exposed to severe physical violence (McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006; Smith-Slep & O'Leary, 2005; Zinzow et al., 2009).

From a social learning perspective, the consistent finding that children exposed to interparental violence are more likely than non-exposed children to experience violence should not be surprising. Social learning theory has been extensively applied to aggression and posits that children learn to behave aggressively when presented with violent models (Ireland & Smith, 2009; Novaco & Taylor, 2008)—especially when these models are admired, respected, perceived as competent, and have substantial power (Akers, 2000; Bandura, 1977; Sims, Dodd, & Tehada, 2008); all of these characteristics are commonly descriptive of parents. In addition to learning aggressive behavior, youth from violent households may see violence as a viable option for resolving conflicts or as a normal part of intimate relationships (Henning et al., 1997).

Although a strong case can be made for these influences, we also know that many youth exposed to interparental violence will not perpetrate violence against a partner. Thus, it is likely that other (mediating) factors play a role in whether youth with violent parents are violent themselves. For example, it may be that youth exposed to interparental violence develop relatively accepting and justifying attitudes about violence, which may then increase the likelihood of youth perpetrating violence in their own intimate relationships (Kinsfogel & Grych, 2004; Reitzel-Jaffe & Wolfe, 2001; Riggs & O'Leary, 1996). In fact,

accumulating evidence supports the assertion that acceptance of violence may be a key factor in explaining the relationship between witnessing interparental violence and violence perpetration (Clarey, Hokoda, & Ulloa, 2010). In a sample of adolescents exposed to interparental violence, O'Keefe (1997) found that an acceptable attitude about violence was one factor that differentiated boys and girls who did and did not perpetrate dating violence. However, relatively little is known about the importance of the gender of the violent/victimized parent or the gender of the exposed youth. If an acceptance of partner violence does play a role in the relationship between exposure to interparental violence and perpetration of TDV, it is possible that different associations may be evident depending on the gender of the adolescent witness and perpetrating parent.

Although several studies have found that witnessing interparental violence influences young boys' aggressive behavior and attitudes about violence, this same relationship has not been consistently observed with young girls (Bookwala, Frieze, Smith, & Ryan, 1992; Edleson, 1999; Kinsfogel & Grych, 2004; Mihalic & Elliott, 1997; O'Keefe, 1997; Tontodonato & Crew, 1992). Although the evidence is equivocal (Fergusson & Horwood, 1998), many have argued that girls who witness interparental violence exhibit internalized problems while boy witnesses exhibit externalized problems (Margolin & Gordis, 2004; McFarlane, Groff, O'Brien, & Watson, 2003; Roustit et al., 2009). A notable exception is a study by Foshee, Bauman, and Linder (1999) who found that acceptance of dating violence mediated the relationship between interparental violence and perpetration of TDV for females but not for males. However, they asked their participants to only consider parent-to-parent violence and did not differentiate between mother-to-father and father-to-mother violence. It may be that youth are influenced more and perceive violence as more acceptable when it is perpetrated by their same-gendered parent (Bandura, 1977; Crick & Dodge, 1994; Clarey et al., 2010; Jankowski, Leitenberg, Henning, & Coffey, 1999). However, a study that asked adults about current violence and exposure to family of origin violence did not find support for a gender specific model (Kwong, Bartholomew, Henderson, & Trinke, 2003). Instead, it was found that exposure to any parental violence, regardless of gender, was predictive of intimate partner physical violence and psychological abuse. Interestingly, witnessing father-to-mother violence was less important in predicting partner violence than was experiencing other forms of parental violence. In fact, some research suggests that exposure to mother-to-father violence, and not father-to-mother violence, predicts dating aggression among male and female adolescents (Malik, Sorenson, & Aneshensel, 1997; Moretti, Obsuth, Odgers, & Reebye, 2006). For a variety of reasons (e.g., less severe and consequential), it is possible that mother-to-father violence is perceived as more acceptable than male violence (Price & Byers, 1999; Sears et al., 2006), and thus more influential on subsequent behavior.

Current study

The primary purpose of the current study was to extend understanding of the relationship between exposure to interparental violence and TDV perpetration among a large school-based sample of ethnically diverse adolescents. While we expect any exposure to interparental violence to predict TDV perpetration for boys and girls, limited existing research prevented us from making specific hypotheses about the distinct effects of exposure to father-to-mother and mother-to-father violence. However, we did hypothesize that acceptance of partner violence, as a commonly cited consequence of family of origin violence and risk factor for TDV, would mediate the relationship between interparental violence and TDV perpetration. We further extend the literature by examining whether exposure to interparental violence was related to boys' and girls' perpetration of *psychological* abuse and whether this relationship was mediated by attitudes about violence. The inclusion of psychological abuse is noteworthy given its cooccurrence with physical violence, and accumulating evidence that it is as or more harmful than physical violence

(Follingstad, Rutledge, Berg, Hause, & Polek, 1990; Taft; Murphy, King, Ddeyn, & Musser, 2005).

By addressing many of the concerns noted by previous researchers, the current study will enhance our understanding of the intergenerational transmission of violence. Specifically, we differentiate the impact of mother-to-father and father-to-mother violence (Clarey et al., 2010), assess adolescents as opposed to young children (Lavoie et al., 2002; Mahoney, Donnelly, Boxer, & Lewis, 2003), include an ethnically diverse sample of boys and girls (Foster & Brooks-Gunn, 2009), use a school-based sample as opposed to a shelter or clinic-based sample (McDonald, Jouriles, Tart, & Minze, 2009; Roberts et al., 2010; Wolfe et al., 2009), and consider the role of psychological abuse in the intergenerational transmission of violence (Kwong et al., 2003).

Method

Participants and Procedure

The current data are from the first wave (spring 2010) of a school-based longitudinal study on teen dating violence. Participants included adolescents attending one of seven high schools in four Houston-area school districts. Of the 1,702 Freshman and Sophomore students present on the days of recruitment, 1,215 returned parent permission forms (71%), of which 1,119 received parental permission to participate (66% of those recruited; 92% of those who returned their permission forms), and 1,049 completed the survey (62% of those recruited; 94% of those who received parental permission). The small percentage of those who received parent permission but did not participate is the result of adolescents not assenting to participate, not being able to be pulled from class, and being absent on both the original assessment day and the make-up day. Seven surveys were discarded due to severely inconsistent or incomplete responding. For the present study we limited our analyses to the 917 adolescents (88% of sample) who reported a history of dating (i.e., endorsed the item, "I have begun dating, going out with someone, or had a boyfriend/girlfriend"). Most participants were between the ages of 14 and 16 ($M = 15.1$; $SD = .79$) and in either 9th or 10th grade. Fifty-six percent were female and most were African American (30%), White (30%), or Hispanic (32%). Nearly half of the adolescents reported living with both biological parents (46.5%),

To ensure a representative sample of adolescents, recruitment occurred during school hours in courses with mandated attendance, including English (4 schools), World Geography (1 school), and Health (2 schools). All students in the selected classes were eligible to participate. A multi-stage approach was used to obtain explicit written parental permission. Research staff attended each class two times prior to the assessment to describe the purpose of the study, general design, and answer any questions. Detailed information about the study along with a parental permission form was sent home with the students for their parents to review, sign, and return. Materials were sent home in both English and Spanish. Students who returned a parent permission form, regardless of whether or not they were granted parental permission to participate, received a \$5 gift card to a local retailer.

Students who obtained written and informed parental/guardian permission completed their assent on the day of the assessment (prior to actual data collection). Assessments occurred during school hours. Participants were "pulled" from the class from which they were recruited, escorted to a room on campus, and completed the survey. Participants were given another \$5 gift card for taking the survey. This study received approval from the Institutional Review Board of UTMB Health.

Measures

The *Conflict in Adolescent Dating and Relationship Inventory* (CADRI; Wolfe, Scott et al., 2001) measured physical (4 items; i.e., I threw something at him/her. I kicked, hit, or punched him/her, I slapped him/her or pulled his/her hair, and I pushed, shoved, or shook him/her) and psychological (10 items, e.g., I spoke to him/her in a hostile or mean tone of voice, I insulted him/her with put-downs, I ridiculed or made fun of him/her in front of others) TDV perpetration. Sexual TDV was not included in the model due to low internal consistency among the items. Drawing from empirical literature on adolescent and adult abuse and from existing adult measures of partner abuse, the CADRI was developed to fill the gap in measures of conflict and dating violence among adolescent populations. For the present study, participants indicated whether or not they perpetrated each act during a conflict or argument with their boyfriend/girlfriend (ex-boyfriend/ex-girlfriend) in the past year (yes/no format). Analyses were conducted using the total, continuous score for each subscale. In addition, the CADRI assesses the context of dating relationships, including length (*How long have you been dating/going out?*) and importance (*How important is this relationship to you?*) of the relationship. The CADRI has demonstrated acceptable to strong reliability and validity (Wolfe et al., 2001). Alphas for the current study were .77 for physical TDV and .79 for psychological TDV.

The *Acceptance of Couple Violence* (ACV; Foshee et al., 1996) scale is an 11-item measure that assesses participants' acceptance of dating violence (i.e., attitudes), including the acceptance of male-to-female violence (3 items; e.g., A girl who makes her boyfriend jealous on purpose deserves to be hit) and female-to-male violence (3 items; e.g., Boys sometimes deserve to be hit by girls they date). Items were rated on a 4-point scale (*1 = strongly disagree; 4 = strongly agree*) with subscale scores calculated by taking the mean of all items on the subscale. Higher scores correspond to greater acceptance of male-to-female and female-to-male violence. The ACV was developed for adolescents, and has shown adequate internal consistency and sensitivity to changes over time (Foshee et al., 2005). Alphas for the current study were .70 for acceptance of male-to-female violence and .76 for acceptance of female-to-male violence.

To assess youths' exposure to interparental violence, they were asked how often they witnessed violence from mother-to-father (1 question) and from father-to-mother (1 question) in their lifetime. Participants were provided with a range of moderate to severe violent acts (e.g., pushed, grabbed, or shoved; slammed against wall; choked) and asked to report the number of times they have witnessed violence using one of the following options: never, once or twice, 3–20 times, and more than 20 times. Total scores were obtained by dichotomizing mother-to-father and father-to-mother violence (e.g., witnessed and did not witness).

Data Analytic Strategy

Statistical analyses were conducted using two programs. First, correlations, means, and standard deviations were estimated using SPSS 18.0. Next, Structural Equation Modeling (SEM) using Mplus Version 5.0 was conducted to examine the proposed mediation model of interparental violence, acceptability of violence, and physical and psychological TDV perpetration. Consistent with the broader literature on SEM, path models were estimated using full information maximum likelihood estimation (FIMLE), which does not exclude observations with missing data and uses all available data to estimate parameters (Kline, 2005). Compared to pairwise and listwise deletion, FIMLE has been shown to be less biased and more efficient for handling missing data (Arbuckle, 1996). Robust maximum likelihood estimation, in addition to FIMLE, was used due to study variables being non-normally distributed, as this estimate employs maximum likelihood parameter estimates with standard

errors and a chi-square statistic that are all robust to issues of non-normality. In addition, the bias-corrected bootstrap method was used to test the significance of mediated paths. As described by MacKinnon, Lockwood, and Williams (2004), this method provides a more optimal balance between Type I and Type II error when compared to other methods for testing mediated paths (e.g., Sobell's Z). Specifically, 500 bootstrap samples and 95% bias-corrected confidence intervals (CIs) were used to estimate the significance of the mediated paths.

We also calculated the percentage of the total effect from exposure to interparental violence to TDV perpetration that was accounted for by acceptability of violence (% IE; MacKinnon & Dwyer, 1993). This was done by dividing the estimated indirect effect for acceptability of violence (male or female), as well as the sum of all indirect effects, by the regression parameter representing the association between interparental violence and TDV perpetration without acceptability of violence in the model.

The fit of each model was evaluated using the chi-square statistic (χ^2), comparative fit index (CFI), and the root mean squared error of approximation (RMSEA). The chi-square fit index, the most conventional method of determining overall fit in SEM, determines the discrepancy between the sample and the fitted covariance matrices. The chi-square fit index is estimated by dividing the chi-square estimate by the degrees of freedom. Chi-square values of less than 2.0 are indicative of good model fit (Hu & Bentler, 1999; Kline, 2005). The CFI contrasts the estimated model's fit to that of the null, or "independence" model, with a value of .95 or higher indicative of good model fit (Hu & Bentler, 1999). Lastly, the RMSEA is an indicator of model error per degrees of freedom, with values less than .08 indicating that the model fit the data well (Hu & Bentler, 1999). Relative to other model fit indices, the CFI and RMSEA have greater ability to identify misspecified models and are extensively used (Hu & Bentler, 1999).

We were also interested in whether the path model was different for males and females. Thus, after evaluation of the path model, we examined whether any structural path varied as a function of gender using the multiple group model approach (Muthén & Muthén, 2006). The multiple group model approach involved two steps. First, an unrestricted model where structural paths were free to vary across gender was estimated. Second, a model where the structural paths among variables were constrained to be equal across gender was estimated. A chi-square difference test ($\Delta\chi^2$) was then estimated to determine whether constraining paths across gender resulted in a significant decrement in model chi-square (Muthén & Muthén, 2006). If results show that constraining the paths to be equal across gender resulted in a significant decrement to the model chi-square it can then be assumed that associations among variables varied among males and females.

Results

Descriptive Statistics

From the total sample of students who indicated they had begun dating, 47.5% ($n = 436$) indicated that they were currently dating someone at the time of the study, whereas the remaining students indicated that they were not currently dating someone but had previously been in a dating relationship. Of note, males and females were not significantly different from each other on any of the demographic variables (i.e., age, grade, race, parental education, living situation).

Table 1 presents correlations, means, and standard deviations among study variables. For males and females, physical TDV was positively and significantly associated with psychological TDV, mother-to-father violence, acceptability of female violence, and

relationship length. For females only, physical TDV was positively associated with father-to-mother violence. For both males and females, psychological TDV was positively and significantly associated with all study variables. For both males and females, mother-to-father violence was positively associated with acceptability of male and female violence. For females only, father-to-mother violence was positively associated with acceptability of male violence.

Females reported perpetrating more physical TDV than their male counterparts, $t(905) = 6.851, p < .001$, and more psychological TDV, $t(902) = 7.603, p < .001$. From the total sample, 28.8% of females reported perpetrating physical TDV and 87.7% psychological TDV. For males, 12.2% reported perpetrating physical TDV and 73.9% psychological TDV. In addition, among students currently in a dating relationship, females reported being in a current dating relationship for a longer period of time than males $t(434) = 2.123, p < .05$. On average, females reported being in a dating relationship that had lasted between 3–6 months, whereas males had been in a relationship for 1–3 months.

Path Model

We next examined the associations between father-to-mother, mother-to-father, acceptability of male and female violence, and the perpetration of physical and psychological TDV for the total sample. To provide a more conservative test of possible mediational paths from interparental violence to TDV perpetration, mediated by acceptability of violence, we also included direct paths from interparental violence to TDV perpetration. As displayed in Figure 1, this model provided a good fit to the data, $\chi^2 = 3.07$, $DF = 2, p = .21$, $CFI = .99$, $RMSEA = .02$. Specifically, mother-to-father violence was significantly associated with increased acceptability of male and female violence. Acceptability of female violence was associated with increased perpetration of physical and psychological TDV. Father-to-mother violence was directly associated with increased perpetration of psychological TDV. In addition, relationship length was positively and significantly associated with physical and psychological TDV perpetration. Examination of the indirect paths from interparental violence to TDV showed that the association between mother-to-father violence and physical perpetration was fully mediated by acceptability of female violence ($B = .05$, 95% $CI = .01$ to $.09$; % $IE = 14.1$). In addition, the association between mother-to-father violence and psychological perpetration was fully mediated by acceptability of female violence ($B = .10$, 95% $CI = .04$ to $.20$; % $IE = 14.7$).

Multiple Group Model

To determine whether any of the structural paths and indirect effects varied as a function of gender, a multiple group model approach was employed where paths were first free to vary across gender and then constrained to be equal across gender. The chi-square difference test, $\Delta\chi^2(12) = 51.003, p < .001$, showed that paths did indeed vary by gender (for females, $R^2 = .02$ for acceptance of male violence, $.03$ for acceptance of female violence, $.16$ for physical violence perpetration, $.20$ for psychological abuse perpetration; for males, $R^2 = .02$ for acceptance of male violence, $.03$ for acceptance of female violence, $.14$ for physical violence perpetration, $.22$ for psychological abuse perpetration). Results should be interpreted in light of these low to moderate effect sizes.

For females, mother-to-father violence was significantly and positively associated with acceptability of female violence ($\beta = .16, p < .01$). Acceptability of female violence was positively and significantly associated with physical ($\beta = .34, p < .001$) and psychological ($\beta = .29, p < .001$) TDV perpetration. Father-to-mother violence was associated with increased psychological TDV perpetration ($\beta = .16, p < .001$). Further, length of females dating relationships was associated with physical ($\beta = .16, p < .01$) and psychological ($\beta = .31, p$

< .001) TDV perpetration. Examination of the indirect effects showed that the relationship between mother-to-father violence and physical TDV perpetration was fully mediated by acceptability of female violence ($B = .08$, 95% CI = .02 to .17; % IE = 13.5). In addition, the relationship between mother-to-father violence and psychological TDV perpetration was fully mediated by acceptability of female violence ($B = .17$, 95% CI = .05 to .33; % IE = 24.3).

For males, results showed that mother-to-father violence was positively related to acceptability of male ($\beta = .17$, $p < .05$) and female ($\beta = .19$, $p < .05$) violence. Acceptability of male violence was positively associated with physical TDV perpetration ($\beta = .23$, $p < .01$). Length of males dating relationship was associated with physical ($\beta = .28$, $p < .001$) and psychological TDV perpetration ($\beta = .41$, $p < .001$). Examination of the indirect effects showed that the association between mother-to-father violence and physical TDV perpetration was fully mediated by acceptability of male violence ($B = .03$, 95% CI = .01 to .09; % IE = 24.0).

Discussion

Consistent with existing research and social learning theory, our findings support the assertion that exposure to interparental violence is associated with physical and psychological teen dating violence (TDV) perpetration. Exposure to mother-to-father violence, regardless of the gender of the teen, seemed especially important in predicting TDV perpetration. We extend the limited existing research (Malik et al., 1997; Moretti et al., 2006) by demonstrating that the relationship between exposure to mother-to-father violence and TDV perpetration was fully explained by the acceptance of female violence (for girls) and the acceptance of male violence (for boys). Considering mothers are typically the primary caregivers in the home, it is possible that their actions are particularly influential in what youth attend to, normalize, and model. It could also be that the presence of mother-to-father violence is indicative of a more violent household, where aggression is “normal”, tolerated, and accepted. Alternatively, it may be that witnessing one’s mother perpetrate violence violates traditional gender-stereotyped beliefs about aggression, and in order to resolve this internal conflict, the youth adopts beliefs accepting of violence.

Path model results demonstrated that exposure to father-to-mother violence was only associated with psychological TDV perpetration, and only for girls. Most studies that purport a relationship between family violence exposure and violence perpetration among males only measured paternal violence (e.g., Ronfeldt, Kimberling, & Arias, 1998) or did not distinguish between mother-to-father and father-to-mother violence (e.g., White & Smith, 2009). Studies that do distinguish between mother and father perpetrated violence generally find that exposure to maternal violence is a more important predictor of TDV than is exposure to paternal violence. For example, in a small sample of Canadian youth with behavior problems, Moretti and colleagues (2006) found that exposure to mother-to-father violence, but not father-to-mother violence, predicted teens’ perpetration of dating violence. Malik et al. (1997) reported similar findings in a study of Los Angeles area high school students, with exposure to mother-to-father violence being especially predictive of boys’ perpetration of TDV. Perhaps female violence is less severe and perceived as more acceptable than male violence (Price & Byers, 1999; Sears et al., 2006), and males may be quicker to accommodate their views on violence when exposed to mother-to-father violence. Because violent relationships are often characterized by mutual violence (Archer, 2000; Temple, Weston, & Marshall, 2005; 2010), additional research is needed to disentangle the differences between exposure to father-to-mother, mother-to-father, and mutual violence.

As expected, psychological abuse was highly correlated with physical violence for both male and female adolescents, and the pattern of findings was similar across both forms of abuse. In addition to further establishing the interrelatedness of physical and psychological TDV, current findings indicate that exposure to interparental *physical* violence may influence the perpetration of psychological abuse. Consistent with a study by Kwong and colleagues (2003), these findings support a general model of intergenerational transmission of violence, as opposed to a role-specific model. Alternatively, it could be that children exposed to interparental physical violence are also exposed to psychological abuse, which is then learned and modeled. Future research should examine exposure to multiple forms of interparental violence including psychological abuse and subsequent perpetration of different forms of TDV.

Implications

While additional research that differentiates between father-to-mother and mother-to-father violence is needed, results from the current study carry important implications for the primary, secondary, and tertiary prevention of TDV and the intergenerational transmission of violence. Through this and other studies (Clarey et al., 2010; Reitzel-Jaffe & Wolfe, 2001; White & Smith, 2009), it is clear that youth exposed to interparental violence (including, perhaps especially, mother-to-father violence) are at risk of perpetrating TDV, and that attitudes accepting of violence may partially explain this link. From a primary prevention standpoint, universal programs directed to younger children could address modifiable risk and protective factors such as healthy relationship skills, nonviolent conflict resolution strategies, and gender-specific attitudes about interpersonal violence and psychological abuse. Given that current findings were derived from a school-based, as opposed to a clinical-based, sample gives credence to the design and implementation of universal prevention programs (Wolfe et al., 2009).

With respect to secondary prevention, youth exposed to interparental violence should be identified—through shelters, emergency rooms, and other settings where family violence is overrepresented—as these youth may be an ideal audience for the implementation of an intervention program (Ehrensaft et al., 2003). Indeed, research has shown that young adult women who experienced childhood maltreatment were not at increased risk of dating violence in college so long as they did not also experience dating violence in adolescence (Smith et al., 2003). Thus, secondary prevention programs targeting children exposed to interparental violence may not only prevent teen dating violence but also subsequent adult domestic violence. Such programs could challenge the idea that violence, whether male-to-female or female-to-male, is a normal or acceptable part of relationships. Ideally, efforts could also be made to address the violence between their parents so that exposed youth can observe their parents replace their destructive behavior with more appropriate conflict-resolving methods (Noonan & Charles, 2009).

Finally, to inform the treatment of known perpetrators of TDV, exposure to interparental violence and their attitudes regarding partner violence should be assessed. Since exposure to interparental violence is not itself a modifiable risk factor, treatment could focus on helping exposed youth process this traumatic experience and on challenging positive attitudes about the use of violence in interpersonal relationships that may have developed. However, research has shown that changing attitudes about violence does not necessarily result in behavior change (Cornelius & Resseguie, 2007; Shorey, Cornelius, & Bell, 2008). Thus, while intervention programs should focus on changing attitudes about violence, this should be accomplished in concert with targeting other risk factors such as substance use and peer norms. In addition, given a recent finding that most children ask their parents about interparental conflict, prevention programs could focus on improving parent-child communication (McDonald, Jouriles, Rosenfield, & Leahy, 2012).

Over three decades of research have illustrated the enormous health, societal, and economic costs of male-to-female partner violence. However, the high rate of female-to-male TDV found in this and other studies (Foshee et al., 1999; Kinsfogel & Grych, 2004; O'Keefe, 1998), along with the importance of witnessing mother-to-father violence emphasize the need to attend to and address female violence. To be clear, this should not come at the expense of programs designed to address male violence, as girls and women continue to be the ones that sustain the most mental and physical harm from partner violence (Foshee et al., 1996; Mulford & Giordano, 2008; Temple et al., 2005, 2010). Instead, aggression perpetrated by both partners must be the focus of attention in programs that attempt to understand and address family violence (Capaldi, Kim, & Shortt, 2007; Stuart, Temple, & Moore, 2007). To improve the efficacy of these interventions, programs may need to be tailored to the unique needs of each gender.

Limitations

As with any study, our findings must be considered in light of several limitations. First, we did not assess child abuse and thus our model did not account for its effects. While sustaining child abuse is an incredibly important component of family-of-origin violence and including it in the models may have increased the variance in TDV accounted for, the structural models identified in the present research are still useful and advance knowledge in the area. Indeed, the literature is replete with studies showing that witnessing interparental violence is at least as predictive of subsequent aggression as child abuse (Ireland & Smith, 2009; White & Smith, 2009). Second, the cross-sectional nature of this study limits our ability to draw conclusions about the long-term relationships among the relevant variables. This is an important limitation given Wolfe, Wekerle, Scott, Straatman, & Grasley (2004) finding that although attitudes about violence were correlated to TDV cross-sectionally, they did not predict TDV over time. Third, the use of self-report and reliance on a single source necessarily limits the generalizability of the findings. Fourth, while substantial efforts were made to capture a representative sample of students, our data cannot be generalized to high-risk adolescents in alternative school or youth who have dropped out of school. Fifth, we did not adjust our alpha level in the analyses (i.e., a bonferroni correction), which may have inflated the risk of Type I error. Sixth, the low to moderate amount of variance observed in predicting perpetration in the present study suggests the need for additional research that aims to include other factors that may account for the perpetration of TDV. Finally, our measure of interparental violence was limited to *frequency* of violence, and did not distinguish between moderate and severe acts of violence. It is possible that exposure to one severe instance of violence (e.g., slammed against the wall) is more traumatic than exposure to multiple instance of moderate violence (e.g., pushed). Future studies should include a more comprehensive measure of exposure to interparental violence that includes adolescents' perceptions of severity.

Conclusion

The current study demonstrated that acceptance of partner violence helped explain the relationship between exposure to interparental violence (particularly mother-to-father violence) and perpetration of physical and psychological TDV in a sample of ethnically diverse high school students. By improving our understanding of the mechanisms by which interparental violence exposure exerts its effects on TDV perpetration, we can refine our approach to intervention. Indeed, our findings highlight the importance of focusing attention on attitudes supportive of partner violence among at-risk youth exposed to family of origin aggression.

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Figure 1. Proposed Mediation Model Across Gender. $\chi^2(2) = 3.07$, $p = .21$, CFI = .99, RMSEA = .02. Note: * $p < .05$, ** $p < .01$, *** $p < .001$. R^2 = amount of variance predicting acceptability of male and female violence, physical TDV perpetration, and psychological TDV perpetration, respectively. Standardized estimates are reported. D1-D4 = Disturbances for each dependent variable.

Table 1
Bivariate Correlations, Descriptive Statistics, and Differences between Males and Females among Study Variables

	1.	2.	3.	4.	5.	6.	7.
Males (n = 404)							
1. Physical TDV	---	.36***	.13**	.08	.13*	.23***	.34***
2. Psychological TDV		---	.17**	.15**	.10*	.11*	.46***
3. Mother-to-Father Violence			---	.53***	.16**	.13*	.07
4. Father-to-Mother Violence				---	.03	.01	.00
5. Acceptability of Female Violence					---	.55**	.16*
6. Acceptability of Male Violence						---	.05
7. Relationship Length							---
Females (n = 513)							
1. Physical TDV	---	.48***	.14**	.12*	.36***	.23***	.18*
2. Psychological TDV		---	.15**	.20***	.25***	.11**	.30***
3. Mother-to-Father Violence			---	.51***	.16***	.11*	-.04
4. Father-to-Mother Violence				---	.08	.10*	.02
5. Acceptability of Female Violence					---	.56***	.07
6. Acceptability of Male Violence						---	.12*
7. Relationship Length							---
Males							
<i>M</i>	.19	2.7	.38	.46	1.57	1.23	2.70
<i>SD</i>	.58	2.5	.69	.78	.67	.43	1.40
Females							
<i>M</i>	.59***	4.0***	.44	.51	1.56	1.23	3.0*
<i>SD</i>	1.10	2.6	.71	.82	.68	.43	1.43

Note: Possible score ranges for each variable are as follows: Physical TDV (0–4), Psychological TDV (0–10), Mother-to-Father Violence (0–1), Father-to-Mother Violence (0–1), Acceptability of Female Violence (0–4), and Acceptability of Male Violence (0–4)

* $p < .05$

** $p < .01$

100 > *d*

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