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Intergenerational Transmission of Relationship Aggression: A Prospective Longitudinal Study

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Abstract

The present study examined whether physical and verbal aggression in the family of origin were associated with similar patterns of aggression in young adult couples. Hypotheses were tested using a sample of 213 focal individuals who were followed from adolescence to adulthood. Results suggested that aggression in the family when focal participants were adolescents predicted aggression with romantic partners when participants were adults. The association between interparental aggression and later aggression in adult romantic unions was partially mediated through parents' aggression to focal participants when they were adolescents. Both physical and verbal aggression revealed the same pattern of findings. All together, these findings are consistent with a developmental-interactional perspective (Capaldi & Gorman-Smith, 2003) concerning the developmental origins of aggression in intimate relationships.

Keywords

aggression; intergenerational transmission; observed behavior

The intergenerational transmission of aggression directed toward intimate partners has been documented for the past three decades (e.g., Kalmuss, 1984; Kwong, Bartholomew, Henderson, & Trinke, 2003; Straus, Gelles, & Steinmetz, 1980). The majority of the findings indicated that aggression and violence in the family of origin is associated with aggression and violence in the family of destination (see Stith et al., 2000). In terms of underlying mechanisms, the recently proposed developmental-interactional perspective (e.g., Capaldi & Gorman-Smith, 2003) highlights the possibility that parental behavior to children

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in the family of origin contributes to the expression of aggressive behaviors toward romantic partners in adulthood. The present study uses a multi-method approach including observational data to evaluate key predictions from the developmental-interactional model drawing on data from a prospective longitudinal study covering nearly 20 years. In particular, we evaluate whether the intergenerational transmission of relationship aggression is mediated through parental aggression toward the focal individual during adolescence.

The Developmental-Interactional Perspective

Research concerning the intergenerational transmission of partner violence has been increasingly focused on testing the mechanisms linking aggression in the family of origin and aggression in the family of destination. Various theories have been proposed and examined, such as emotional security and social learning models (see Davies, Harold, Goeke-Morey, & Cummings, 2002; El-Sheikh, Kouros, Erath, Cummings, Keller, & Staton, 2009). In particular, the developmental-interactional model of romantic-partner directed aggression (e.g., Capaldi & Gorman-Smith, 2003) proposes that social learning processes in the family of origin contribute to the development of an interpersonal style conducive to aggression in intimate unions. Children may learn to behave aggressively to romantic partners by watching their parents interact with each other. That is, interparental aggression may be observed and then modeled in youth's later marriages and close relationships (Straus et al., 1980). Further, children may be affected by the way their parents interact directly with them (Stith et al., 2000). That is, parents may train interpersonal behavior through their interactions with their children (Conger, Cui, Bryant, & Elder, 2000). This socialization perspective suggests that parents' aggression toward their children shapes children's subsequent behavior in close relationships (Capaldi & Clark, 1998; Simons, Wu, Johnson, & Conger, 1995).

It is important to note that interparental aggression and parent-child aggression likely co-occur in families (Slep & O'Leary, 2005). A key proposition of many models linking family processes with developmental outcomes is that parents' behavior toward children is the more proximal influences on children's developmental outcomes relative to the influence of the inter-parental interactions (e.g., Cui & Conger, 2008). Indeed, the developmental-interactional model makes the specific prediction that the "direct treatment of the child by the parent is viewed as more central [than observational learning]" (Capaldi & Gorman-Smith, 2003, p. 248). Capaldi and Clark (1998) suggested and found that parents' behavior toward their children was more influential than simply witnessing aggression between parents.

Furthermore, we propose that aggressive interparental interactions may increase the chances of parental aggression to children. Indeed, the spillover hypothesis proposes that negativity and hostility from marital aggression may spill over into the parent-child relationship such that parents in aggressive marital relationships are likely to use verbally critical and physical forms of punishment (e.g., yelling, threatening, spanking, hitting) to control their children (see Krishnakumar & Buehler, 2000). Focusing on competent behavior rather than aggression in marriages and relationships, Conger et al. (2000) demonstrated that the effect of parents' positive marital interactions on young adults' positive behavior (high warmth, low hostility) toward a partner was mediated through parenting behavior. Thus, aggressive marital interactions may contribute to parent-child aggression, which in turn may lead to youth aggression in romantic relationships.

Overview of the Present Study

The goal of the present study was to examine the intergenerational transmission of aggression. Based on the developmental-interactional perspective and previous work, we proposed that interparental aggression would predict youth aggression in adult romantic relationships. Further, we hypothesized that parental aggression toward youth would largely mediate the association between exposure to interparental aggression and subsequent aggression in young adult romantic relationships.

The present study helped address several methodological limitations of previous studies. One limitation of previous studies is the use of retrospective accounts of aggressive behavior in the family of origin (with notable exceptions such as work by Capaldi and her colleagues, e.g., Andrews, Foster, Capaldi, & Hops, 2000; Capaldi & Clark, 1998; Capaldi & Crosby, 1997). For example, in Stith et al.'s (2000) meta-analysis of intergenerational transmission of spouse abuse, all the studies used to calculate effect sizes were based on retrospective data. To address the problem of retrospective recall, the present study used a prospective longitudinal research design. Specifically, interparental aggression, parental aggression to the focal adolescents, and couple aggression exhibited by the young focal adults were all measured prospectively over a period of nearly 20 years. Each variable of interest was assessed at multiple time points to increase the reliability of the measures (Conger et al., 2000; Cui & Conger, 2008).

A second potential limitation of previous studies is the over-reliance on self-reported aggression measures. Concerns associated with self-reported aggression measures include underreporting due to social desirability (see Archer, 1999), discrepancies between couples' self reports (Szinovacz & Egley, 1995), and the potential for inflating the associations between constructs (e.g., parental aggression and subsequent partner aggression) due to shared method biases (Lorenz, Conger, Simons, Whitbeck, & Elder, 1991). To address these concerns in the present study we used measures based on multiple informants, including trained observers' ratings. In particular, observers' ratings have been shown to provide reliable estimates of hostile behaviors (Cui, Lorenz, Conger, Melby, & Bryant, 2005). In addition to observer ratings, we also used other-informant report (e.g., father report of mother aggression) to take advantage of the multiple informant method. No self report was included in the present study.

A third strength of this study is that we included measures of both physical and verbal aggression, and tested the models separately. Most previous studies have focused on physical aggression and overlooked the importance of verbal aggression. Studies examining both verbal and physical aggression have suggested that verbal and physical aggression tend to co-occur and that verbal aggression has an equal, if not more, devastating effect on relationships (Kwong et al., 2003). Therefore, this study examined verbal and physical aggression separately to extend our understanding of the possible transmission of both verbal and physical aggression across generations.

Fourth, we examined issues related to the gender of the focal participant. Findings from previous studies have showed inconsistent results in terms of mean-level gender differences in relationship aggression: some studies suggested that females have a higher level of aggression in marriage and relationships (e.g., Steinmetz, 1977; Straus et al., 1980), some suggested males (e.g., Bergman, 1992), and some suggested no gender differences (e.g., Marshall & Rose, 1988). In addition to the inconsistency on mean-level gender differences, there are conflicting indications as to whether the intergenerational transmission of relationship aggression differs by gender (Kalmuss, 1984; Kwong et al., 2003). For example, some studies have identified an association between family-of-origin aggression and

subsequent relationship aggression for females, but not for males (e.g., Mihalic & Elliot, 1997), whereas others have found the association for males, but not females (e.g., O'Keefe, 1997). These findings are further complicated by the behavior of interest, either acting aggressively or being the recipient of aggression (Archer, 1999; Marshall & Rose, 1988). In the present study, we will evaluate both mean-level gender differences as well as testing if gender moderates the associations in question.

Finally, we included several control variables in the analyses. Parents' education was included because previous studies have demonstrated an association between SES and aggression (McLaughlin, Leonard, & Senchak, 1992). Relationship status was included because earlier research suggests more conflict in cohabiting compared to marital relationships (Conger, Conger, & Martin, 2010). Finally, duration of the romantic relationship was included because it seems to be associated with increased aggressive behavior (Capaldi, Shortt, & Crosby, 2003).

Method

Participants and Procedures

The Iowa Youth and Families Project (IYFP)—This study used data from the Iowa Youth and Families Project (IYFP). The first wave of data was collected in 1989 from 451 families from north central Iowa. Details regarding this project can be found in Conger and Conger (2002). Briefly, families were eligible to participate in the study if they had a target adolescent who was in 7th grade and was living with both of his or her biological parents and with a sibling within 4 years of his or her age. Families were recruited through both public and private schools in the eight counties participating in the study. Of the eligible families, 78% agreed to be interviewed. The 7th grade target adolescents ranged in age from 12 to 14 years (M age = 12.61) and 52.33% of them were girls.

Families in the IYFP were interviewed annually from 1989 to 1992. During home visits, family members were asked to complete a set of questionnaires focusing on the characteristics of individual family members, aspects of family relationships, and other characteristics. In addition, family members were videotaped as they engaged in several structured interaction tasks. Task 1 (parent-child discussion) involved all four family members and lasted 30 minutes. During this task family members discussed general questions about family life, such as approaches to parenting, performance in school, household chores, and important family events. Task 2 (problem solving interaction) lasted 15 minutes and also involved all four family members. For this task, participants were instructed to discuss and try to resolve an issue that they identified as being problematic (e.g., conflict over money, family time together, discipline, etc.). Task 3 involved only the siblings and data from this task are not considered here. Task 4 (marital interaction) involved only the married couple (in other words, the parents) and lasted 25 minutes. The couple was asked to discuss their relationship and disagreements.

The Family Transitions Project (FTP)—In 1994, the participants in the IYFP continued in another project, the Family Transitions Project (FTP). The same target youth participated in the FTP as investigators followed their transition into adulthood which included the development of romantic relationships and entry into marriage or cohabitation. The last wave of data collection occurred in 2007 when target youth were an average of 32 years old. Similar to the interview procedures in the IYFP, every other year target youth and their partners completed a series of questionnaires and were videotaped in a structured interaction task similar to the marital task completed by their parents more than 10 years earlier. Specifically, the couples participated in a discussion task (Task 5), which lasted 25

minutes. Targets and their romantic partners were instructed to discuss their similarities, differences, and relationships.

In both the IYFP and the FTP, the behaviors recorded by the videotapes were rated by trained observers. Different observers rated each task and different observers were used during each year of the study. Trained observers coded the videotapes using the Iowa Interaction Rating Scales, a global rating system assessing behavioral exchanges based on a 9-point scale ranging from 1, *the behavior is not at all characteristic of the person being rated* to 9, *the behavior is mostly characteristic of the person being rated* (Melby & Conger, 2001). Observers received 200 hours of training and passed extensive written and viewing tests. A separate, independent coder was used to provide reliability information for approximately 20% of the tasks. These rating procedures were the same for each year of the study.

The overall retention rate was about 90% over the whole study period. Of the 451 original target youth, 213 of them participated with the same romantic partner in 2003, 2005, and 2007. We focus on this group of couples in order to maximize the reliability of our estimate of aggressive behavior and to have the same number of data points that were available for interparental aggression. As a result, the final sample included 213 couples who were either married or in a marriage-like cohabiting relationship. Of the 213 couples in the final sample, 187 had complete data on all variables of interest across all waves. The missing cases were largely due to unavailability of data for a specific wave of data collection rather than from families dropping out of the study entirely. For that reason, rather than deleting cases with any missing data, the present analyses used Full Information Maximum Likelihood (FIML) estimation procedures to test predicted relationships among theoretical constructs (Allison, 2003). As a result, the final sample included all 213 target youth, their parents, and their spouses/partners.

Measures

Basic descriptive statistics, inter-wave correlations, and reliability information for the study variables are provided in Table 1.

Interparental verbal aggression (1989, 1990, & 1991)—*Interparental verbal aggression* was measured with three indicators: *observer report* of father and mother, *mother report* of father, and *father report* of mother. *Observer report* was measured using Task 2 (problem solving interaction) and Task 4 (marital interaction) in 1989, 1990, and 1991 (early to middle adolescence). On a one (low) to nine (high) scale, observers rated the degree to which mother and father engaged in verbal attacks. Verbal attack was defined as personalized and unqualified disapproval of another interactor's (spouse's) personal characteristics, and criticism of a global and enduring nature. In that sense, a verbal attack according to the scoring system is demeaning and abusive. Such verbal aggression includes interrogating, accusing, blaming, insulting, putting down, discounting, threatening, and name-calling. For example, one spouse might say to the other things like "who wants to be with you?" to make the other feel unimportant. Observer report of father to mother and mother to father verbal aggression from both tasks were summed together.

Mother report of father verbal aggression included items asking the mother how often during the past month the father shouted or yelled at her, insulted or swore at her, called her bad names, and threatened to hurt her. Responses to each item ranged from 1 = *always* to 7 = *never*. After being reverse coded, the items were summed together. *Father report* of mother verbal aggression was measured in the same way. Finally, for each indicator (observer, father, and mother reports), scores from the three waves were summed together.

Interparental physical aggression (1989, 1990, & 1991)—Similarly, *interparental physical aggression* was also measured with three indicators: *observer report* of father and mother, *mother report* of father, and *father report* of mother. Observers rated mothers and fathers on physical attack using Task 2 and Task 4 from all three waves. Physical attack is defined as aversive physical contact, such as hitting, pinching, pushing, grabbing, etc. Observers used the nine-point rating described earlier. *Mother report* of father physical aggression included items asking the mother how often during the past month the father got into a fight with her or hit, pushed, grabbed, or shoved her. The items ranged from 1 = *always* to 7 = *never*. After being reverse coded, the items were summed together. *Father report* of mother physical aggression was measured the same way as was mother report of father. Finally, for each indicator (observer, father, and mother reports), scores from three waves were summed together.

Parent verbal aggression to adolescent (1992 & 1994)—*Parent verbal aggression to adolescent* was measured with three indicators: *observer report* of father and mother to adolescent, *target adolescent report* of mother to him/her, and *target adolescent report* of father to him/her. For *observer report* of parent verbal aggression to target, the verbal attack measure from Task 1 (parent-child discussion) was used based on observer ratings in both 1992 and 1994. Scores for father to target and mother to target verbal aggression were summed together to create a composite score for parents' verbal aggression to adolescent. *Target youth report of mother* verbal aggression included items asking the target youth how often during the past month his/her mother shouted or yelled, insulted or swore at him/her, called him/her bad names, or threatened to hurt him/her. Responses to the items ranged from 1 = *always* to 7 = *never*. After being reverse coded, the items were summed together. *Target youth report of father* verbal aggression to him/her was measured the same way as for mother. Finally, for each measure, scores from the two waves of data collection were summed together.

Parent physical aggression to adolescent (1992 & 1994)—Similarly, *parent physical aggression to adolescent* was measured with three indicators: *observer report* of parents to adolescent, *target adolescent report* of mother to him/her, and *target adolescent report* of father to him/her. For *observer report* of parent physical aggression to target, observers rated physical attack by parents toward the target during Task 1 in both 1992 and 1994. Scores for father to target and mother to target physical aggression were summed together to create a composite score for parents' physical aggression to adolescents. *Target youth report of mother* physical aggression included items asking the target youth how often during the past month his/her mother got into a fight with him/her, or hit, pushed, grabbed or shoved him/her. Responses ranged from 1 = *always* to 7 = *never*. After being reverse coded, the items were summed together. *Target youth report of father* physical aggression to him/her was measured the same way as for mother. Finally, for each indicator, scores from the two waves were summed together.

Youth verbal aggression to spouse/partner (2003, 2005, & 2007)—*Youth verbal aggression to spouse/partner* included two indicators: *observer report* of youth verbal aggression and *spouse/partner report* of youth verbal aggression. *Observer report* of youth verbal aggression (verbal attack) was measured using Task 5 in 2003, 2005, and 2007. *Spouse/partner report* of youth verbal aggression included items asking the spouse/partner how often during the past month the target youth shouted, yelled, insulted or swore at him/her, called him/her bad names, or threatened to hurt him/her. The items ranged from 1 = *always* to 7 = *never*. After being reverse coded, the items were summed together. Finally, for each indicator, scores from three waves were summed together.

Youth physical aggression to spouse/partner (2003, 2005, & 2007)—Similarly, *youth physical aggression to spouse/partner* included two indicators: *observer report* of youth physical aggression and *spouse/partner report* of youth physical aggression. *Observer ratings of physical attack* by target and partner were generated from Task 5 in 2003, 2005, and 2007. *Spouse/partner report* of youth physical aggression included items asking the spouse/partner how often during the past month the target youth got into a fight with him/her, or hit, pushed, grabbed or shoved him/her. The items ranged from 1 = *always* to 7 = *never*. After being reverse coded, the items were summed together. Finally, for each indicator, scores from three waves were summed together.

Spouse/partner verbal and physical aggression—*Spouse/partner verbal aggression* included *observer report* of spouse/partner verbal aggression and *target youth report* of spouse/partner verbal aggression. *Spouse/partner physical aggression* included *observer report* of spouse/partner physical aggression and *target youth report* of spouse/partner physical aggression. These constructs were created exactly the same way as the target constructs.

Control variables—*Parents' education* was assessed by combining the years of completed education for mothers and fathers in 1989. *Target youth gender* (0 = *female*, 1 = *male*) was also assessed in 1989. *Marital status* was a dichotomous variable that assessed whether the target youth was married or cohabiting in 2003 (0 = *cohabiting*, 1 = *married*). *Relationship duration* in years was assessed in the same wave.

Results

Before estimating the final models, we tested separate models for fathers' aggression and mothers' aggression. Fathers' aggression and mothers' aggression were substantially correlated (e.g., $r = .61$ between mother report of father and father report of mother physical aggression) and the pattern of findings was similar for mothers and fathers. As a result, fathers' and mothers' aggression were combined together as described in the measurement section and used in subsequent analyses.

In addition, we dichotomized the aggression variables to examine the prevalence rates for aggression in this sample. For example, for the measure of mother reports of father's verbal aggression to her, the percentage who reported to have demonstrated such behavior at least once (i.e., excluded those who reported "never") ranged from 6% (threaten to hurt in 1990) to 67% (shout or yell in 1991). These numbers were comparable to those in earlier national surveys on couple aggression in families (e.g., Straus & Gelles, 1986). For another example, the percentage of parents observed to have demonstrated at least some degree of aggression to their adolescent (i.e., excluded those being rated as "not at all characteristics") ranged from 20% (father to adolescent in 1992) to 34% (mother to adolescent in 1994). These percentages are remarkably high given that they occurred during a videotaped discussion task in the home. Thus, the rates of both physical and verbal aggression as determined either by observer or family member reports were rather substantial and worthy of further consideration in tests of study hypotheses.

Correlations

Correlations among all the study variables are reported in Table 2. For both verbal and physical aggression, the correlations between interparental aggression and youth and spouse/partner aggression were statistically significant (e.g., correlations between interparental aggression and target to spouse/partner verbal and physical aggression were $r = .39$ and $r = .69$, respectively). Similarly, the correlations between interparental aggression and parental

aggression to the adolescent were also significant ($r = .50$ for verbal; $r = .47$ for physical). Further, parental verbal and physical aggression to adolescents were significantly correlated with young adults' verbal and physical aggression in romantic relationships. With these preliminary findings in mind, we now turn to a more formal test of study hypotheses.

Structural Equation Models

Figure 1 provides the results for testing the association of verbal aggression between parents and adult targets and their romantic partner, and the mediating effect of parental aggression to target youth. Control variables were included in the model. The model fit was acceptable according to existing conventions typically used in psychological studies (e.g., Kline, 2005): Chi-square = 77.52 with 56 degrees of freedom, RMSEA = .04 (90% CI: .014 to .064), and CFI = .96. Factor loadings (not shown) for all indicators were positive and statistically significant, ranging from .34 (observer rating of parental verbal aggression to youth) to .91 (target youth report of partner verbal aggression). The path from interparental verbal aggression to parents' verbal aggression to adolescents was significant ($\beta = .50, p < .01$). Further, the paths from parent verbal aggression to adolescents to target verbal aggression in young adulthood ($\beta = .36, p < .01$) and to spouse/partner verbal aggression ($\beta = .47, p < .01$) were also significant. The direct path from interparental verbal aggression to target verbal aggression was still significant ($\beta = .18, p < .05$) but noticeably reduced from the corresponding zero-order correlation for latent variables ($r = .39, p < .01$ in Table 2). The direct path from interparental verbal aggression to spouse/partner verbal aggression was no longer significant ($\beta = .09$; as compared with $r = .35, p < .01$ in Table 2). Formal tests of the mediating effect from interparental aggression to target youth and spouse/partner verbal aggression through parent aggression to adolescents (.18 for target and .24 for spouse/partner) showed significant mediating effects ($p < .05$ for both target and spouse/partner). Furthermore, for spouse/partner verbal aggression, the chi-square difference between models with and without the direct path from interparental aggression to spouse/partner aggression was not significant ($\Delta\chi^2_{(1)} = .84$), suggesting evidence of full mediation.

Figure 2 provides the results for physical aggression. The model fit was acceptable: Chi-square = 100.21 with 56 degrees of freedom, RMSEA = .06 (90% CI: .041 to .080), and CFI = .90. Factor loadings (not shown) for all indicators were positive and statistically significant, ranging from .34 (observer rating of parental physical aggression to youth) to .84 (target youth report of mother physical aggression to him/her). Overall, the findings were very similar to the findings for verbal aggression in Figure 1. The one slight difference was that the mediating effect of parental physical aggression to adolescent on youth aggression to spouse/partner was weaker than in verbal aggression model: the path from parent aggression to target was significant ($\beta = .32, p < .05$) but the reduction in coefficients between interparental aggression and target aggression was less substantial ($\beta = .55, p < .01$ as compared to $r = .69, p < .01$ in Table 2, formal mediation test $p = .05$). As in the verbal aggression model, the association between interparental aggression and subsequent spouse/partner aggression was fully mediated (direct path $\beta = .09$; as compared with $r = .36, p < .01$ in Table 2; formal test suggesting mediating effect $p < .01$; the chi-square difference between models with and without the direct path from interparental aggression to spouse/partner aggression: $\Delta\chi^2_{(1)} = .29$, ns).

Regarding control variables, targets in cohabitating relationships were more likely to exhibit physical aggression than those in marital relationships. Female targets were more likely to show aggression than males, especially physical aggression. Finally, gender was tested as a potential moderator in both models. Specifically, we ran each model with male and female samples simultaneously while constraining each pair of the corresponding paths to be equal. Chi-square difference tests suggested no evidence for gender differences.

Discussion

Drawing on the developmental-interactional model (e.g., Capaldi & Gorman-Smith, 2003), we hypothesized that verbal and physical aggression in the family of origin during adolescence would be related to the subsequent expression of relationship aggression in young adulthood. Moreover, we hypothesized that most of the intergenerational transmission of relationship aggression would be substantially mediated through parental aggression toward youth. We found support for the hypotheses: aggression in the family of origin was associated with both higher levels of youth aggression toward their spouse/partner and higher levels of spouse/partner aggression toward the target youth. Further, the association between interparental aggression and youth aggression was partially mediated through parental aggression toward the youth, whereas the association between interparental aggression and spouse/partner aggression was fully mediated through parental aggression toward the youth. Results hold for both verbal and physical aggression, suggesting similar intergenerational transmission processes for verbal and physical aggression (Kwong et al., 2003). We now turn to a more detailed discussion of the major findings.

In general, the findings provide key support for several tenets of the developmental-interactional model with respect to the intergenerational transmission of aggression and for the importance of the direct socialization of interpersonal aggression in the family of origin. Several studies have suggested that parental behavior toward the youth is more predictive of youth aggression than exposure to interparental aggression (Capaldi & Clark, 1998; Simons et al., 1995). In the present study, we found that parental aggression to youth partially mediated the association between interparental aggression and youth aggression. This suggests that aggression might spillover from parent-parent relationships into parent-child relationships.

At the same time, however, it is also important to note that the findings only suggested partial mediation in predicting later youth aggressive behavior with a romantic partner, especially for physical aggression. The direct association between interparental aggression and youth aggression did not completely disappear even after adding parental aggression to youth to the prediction equations. Such a finding indicates that interparental aggression may still have a significant influence on youth aggression toward a romantic partner beyond the impact of parent to child aggression. Taken together, the finding of partial mediation suggests that both witnessing and experiencing parental aggression in the family of origin are associated with later aggressive behaviors in intimate unions. As noted earlier, interparental aggression and parent-child aggression often co-occur in families and they were strongly associated in this sample. Thus, these findings suggest that both observational learning and socialization mechanisms might play a role in the intergenerational transmission of aggression in intimate unions.

In addition, the present study also demonstrated a significant association between aggression in the family of origin and spouse/partner aggression toward the target youth. This finding suggests that young adults who were exposed to high levels of relationship aggression in the family of origin are not only more likely to exhibit such behavior themselves; they also are more likely to have a spouse/partner who is more aggressive. At least two potential mechanisms might explain this link. On one hand, aggressive individuals may evoke and reinforce aggressive behaviors in romantic partners through continued reciprocal interactional processes (Elder, 1998). On the other hand, it is also possible that young adults exposed to aggression in the family of origin might choose a partner similar to their family members. That is, they may find these behaviors to be normative and be more likely to select an aggressive partner than an individual without a history of family aggression (Ehrensaft et al., 2003).

Unlike the partial mediation of the association between interparental aggression and youth aggression, the mediation analyses indicated that the impact of interparental aggression on spouse/partner aggression was completely mediated through parental aggression to the youth during adolescence. In other words, compared with witnessing interparental aggression, being exposed to parental aggression is more directly associated with being a victim of spouse/partner aggression (see Ehrensaft et al., 2003). Other studies have reported similar findings that youth with childhood experiences of aggression from parents are more likely to gravitate to aggressive partners (Marshall & Rose, 1988). Overall, these findings demonstrate that both witnessing and experiencing aggression in the family of origin may affect relationship aggression among young adults in terms of the behavior of both members of the young adult romantic union.

Regarding gender effects, the present study suggested that females showed a higher level of aggression in marriage and relationships than males. Such findings are consistent with some earlier studies suggesting that females are more aggressive than males in marriages and relationships (e.g., Steinmetz, 1977; Straus et al., 1980). However, these findings must be interpreted with care. Indeed, these results should not overshadow important gender differences with respect to the physical and psychological consequences of aggression, a topic we did not evaluate. Men, on average, might be able to inflict more damage than women when they become aggressive and violent. Beyond mean-level differences, however, we found no evidence for a gender difference in terms of the association between aggression in family of origin and aggression in young adults' romantic relationships. This finding suggests that sons and daughters who have witnessed and/or experienced aggression in the family of origin are equally likely to be the perpetrator as well as the victim of aggression in their own romantic unions (Kalmuss, 1984; Kwong et al., 2003).

In sum, the present study made several important contributions to the literature by demonstrating an observable link between aggression in the family of origin and aggression in the family of destination. The present results also highlight the salience of parent to child aggression and for both women and men. The results are generally consistent with the developmental-transactional model. Also important, we have significant confidence in these findings because they addressed several of the methodological limitations present in much of the earlier research on these issues. Specifically, the study used a prospective longitudinal design over a 20 year study period and used observational ratings and other informant report of aggression rather than self-reported aggression. Studies using multiple informant measurement methods and prospectively covering such spans of time are both rare and valuable for documenting the intergenerational legacy of aggression in intimate unions.

This study, however, also had limitations. First, the sample was limited in terms of ethnic and racial diversity, geographic location (rural Iowa), and family structure (all adolescent children lived with their biological parents). Future research using more diverse samples is needed. Second, the sample in this study included only those youth who were with the same spouse/partner across the last three waves of data collection. This limited our focus to only individuals in established relationships. This could affect the variability of aggression and interpretation of the findings (see Fritz & Slep, 2009). On one hand, aggressive behavior is relatively rare, therefore following those in on-going relationships across time allowed us to maximize our ability to detect instances of aggression. On the other hand, it is also likely that those with extremely aggressive behavior may have ended their relationship relatively quickly and, therefore, they would be excluded from the sample. Future studies are needed to explore youth in various stages and types of relationships to capture the diversity of the relationships. Third, aggression level is generally low in the families in our sample with few highly violent families. Nonetheless, the prevalence rate in this study is comparable to those in national surveys (e.g., Strau & Gelles, 1986), therefore increasing our confidence that

these findings are fairly representative of community samples in general. However, such findings may not be generalized to high risk families (Capaldi & Clark, 1998).

Fourth, instead of examining effects of fathers and mothers separately, we combined fathers and mothers due to their statistical dependence and the focus on interparental interactions. Although supplementary analyses provided little evidence that gender moderated the effects in question, future studies should further test gender specific models to potentially uncover subtle differences. Fifth, this study examined target youth aggression and spouse/partner aggression simultaneously as outcomes and did not look at the association between the two and over time. On one hand, it is likely that aggressive individuals evoke aggressive responses from partners (e.g., a path from target aggression to partner aggression). On the other hand, it is also possible that aggressive individuals may self-select into relationships with aggressive partners. Thus, the ordering of these variables is ambiguous and future research is needed to further explore such competing processes. Finally, the present study focused on intergenerational continuities in aggression and did not examine other risk factors and potential mediating or moderating mechanisms (e.g., conduct problems and antisocial behavior, see Capaldi & Clark, 1998; Ehrensaft et al., 2003; autonomic nervous system responses, see El-Sheikh et al., 2009). These other potential mediators require consideration in future studies. .

Despite these limitations, the present study contributes to the literature by examining the intergenerational transmission of aggression using a prospective design over 20 years and multiple-informant data. The findings point to a robust connection between experiences in the family of origin and future verbal and physical aggression in marriages and other romantic relationships. Indeed, these results underscore the possibility that experiences in the family of origin are linked to how individuals approach subsequent romantic relationships. Preventive services for partner aggression and violence remain largely underdeveloped (Ehrensaft et al., 2003) and empirically informed partner violence prevention programs are predicated on the identification of major modifiable risk factors. The present study suggested that behaviors in the family of origin might serve as useful targets for preventing aggression and violence in future close relationships. Accordingly, efforts aimed at promoting supportive and non-aggressive parenting, positive parent-child relationships and strengthening marriages may have subsequent intergenerational consequences. More broadly, educators and human service professionals working with individuals who are aggressive in relationships should explore the possibility that these behaviors are partially rooted in earlier developmental experiences. Understanding such connections may assist in reducing current aggressive behaviors between intimates.

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References

- Allison PD. Missing data techniques for structural equation modeling. *Journal of Abnormal Psychology*. 2003; 112:545–557. [PubMed: 14674868]
- Archer J. Assessment of the reliability of the Conflict Tactics Scales: A meta-analytic review. *Journal of Interpersonal Violence*. 1999; 14:1263–1289.

- Andrews JA, Foster SL, Capaldi D, Hops H. Adolescent and family predictors of physical aggression, communication, and satisfaction in young adult couples: A prospective analysis. *Journal of Consulting and Clinical Psychology*. 2000; 68:195–208. [PubMed: 10780119]
- Bergman L. Dating violence among high school students. *Social Work*. 1992; 37:21–27.
- Capaldi DM, Clark S. Prospective family predictors of aggression toward female partners for at-risk young men. *Developmental Psychology*. 1998; 34:1175–1188. [PubMed: 9823503]
- Capaldi DM, Crosby L. Observed and reported psychological and physical aggression in young, at-risk couples. *Social Development*. 1997; 6:184–206.
- Capaldi, DM.; Gorman-Smith, D. The development of aggression in young male/female couples. In: Florsheim, P., editor. *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications*. Mahwah, NJ: Erlbaum; 2003. p. 243–278.
- Capaldi DM, Shortt JW, Crosby L. Physical and psychological aggression in at-risk young couples: Stability and change in young adulthood. *Merrill-Palmer Quarterly*. 2003; 49:1–27.
- Conger RD, Conger KJ. Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family*. 2002; 64:361–373.
- Conger RD, Conger KJ, Martin MJ. Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family*. 2010; 72:685–704. [PubMed: 20676350]
- Conger RD, Cui M, Bryant CM, Elder GH Jr. Competence in early adult romantic relationships: A developmental perspective on family influences. *Journal of Personality and Social Psychology*. 2000; 79:224–237. [PubMed: 10948976]
- Cui M, Conger RD. Parenting behavior as mediator and moderator of the association between marital problems and adolescent maladjustment. *Journal of Research on Adolescence*. 2008; 18:261–284.
- Cui M, Lorenz FO, Conger RD, Melby JN, Bryant CM. Observer, self, and partner reports of hostile behaviors in romantic relationships. *Journal of Marriage and Family*. 2005; 67:1169–1181.
- Davies PT, Harold GT, Goke-Morey MC, Cummings EM. Child emotional security and interparental conflict. *Monographs of the Society for Research in Child Development*. 2002; 67(3)
- Ehrensaft MK, Cohen P, Brown J, Smailes E, Chen H, Johnson JG. Intergenerational transmission of partner violence: A 20-year prospective study. *Journal of Consulting and Clinical Psychology*. 2003; 71:741–753. [PubMed: 12924679]
- Elder, GH, Jr. The life course and human development. In: Lerner, RM., editor. *Handbook of Child Psychology*. Vol. 1. New York: Wiley; 1998. p. 939–991.
- El-Sheikh M, Kouros CD, Erath S, Keller P, Cummings EM, Staton L. Marital conflict and children's externalizing behavior: Interaction between parasympathetic and sympathetic nervous system activity. *Monographs of the Society for Research in Child Development*. 2009; 74(1)
- Fritz PAT, Slep AMS. Stability of physical and psychology adolescent dating aggression across time and partners. *Journal of Clinical Child and Adolescent Psychology*. 2009; 38:303–314. [PubMed: 19437292]
- Kalmuss D. The intergenerational transmission of marital aggression. *Journal of Marriage and the Family*. 1984; 46:11–19.
- Kline, RB. *Principles and practice of structural equation modeling*. 2. New York, NY: The Guilford Press; 2005.
- Krishnakumar A, Buehler C. Interparental conflict and parenting behaviors: A meta-analytic review. *Family Relations*. 2000; 49:25–44.
- Kwong MJ, Bartholomew K, Henderson AJZ, Trinke SJ. The intergenerational transmission of relationship violence. *Journal of Family Psychology*. 2003; 17:288–301. [PubMed: 14562454]
- Lorenz FO, Conger RD, Simons RL, Whitbeck LB, Elder GH. Economic pressure and marital quality: An illustration of method variance problems in the causal modeling of family process. *Journal of Marriage and the Family*. 1991; 53:375–388.
- Marshall LL, Rose P. Family of origin violence and courtship abuse. *Journal of Counseling and Development*. 1988; 66:414–418.
- McLaughlin IG, Leonard KE, Senchak M. Prevalence and distribution of premarital aggression among couples applying for a marriage license. *Journal of Family Violence*. 1992; 7:309–319.

- Melby, JN.; Conger, RD. The Iowa Family Interaction Rating Scales: Instrument summary. In: Kerig, PK.; Lindahl, KM., editors. *Family observational coding systems: Resources for systematic research*. New Jersey: Erlbaum; 2001. p. 33-57.
- Mihalic SW, Elliot D. A social learning theory model of marital violence. *Journal of Family Violence*. 1997; 12:21-47.
- O'Keefe M. Predictors of dating violence among high school students. *Journal of Interpersonal Violence*. 1997; 12:546-568.
- Simons RL, Wu C, Johnson C, Conger RD. A test of various perspectives on the intergenerational transmission of domestic violence. *Criminology*. 1995; 33:141-172.
- Slep AM, O'Leary SG. Parent and partner violence in families with young children: Rates, patterns, and connections. *Journal of Consulting and Clinical Psychology*. 2005; 73:435-444. [PubMed: 15982141]
- Steinmetz, S. Wife beating, husband beating: A comparison of the use of physical violence to resolve marital fights. In: Roy, M., editor. *Battered women*. New York: Van Nostrand Reinhold; 1977. p. 33
- Stith SM, Rosen KH, Middleton KA, Busch AL, Lundeberg K, Carlton RP. The intergenerational transmission of spouse abuse: A meta-analysis. *Journal of Marriage and Family*. 2000; 62:640-654.
- Straus, MA.; Geller, RJ.; Steinmetz, SK. *Behind closed doors: Violence in the American family*. Garden City, NY: Anchor Press/Doubleday; 1980.
- Straus MA, Gelles RJ. Societal change and change in family violence from 1975 to 1985 as revealed by two national surveys. *Journal of Marriage and the Family*. 1986; 48:465-479.
- Szinovacz ME, Egley LC. Comparing one-partner and couple data on sensitive marital behaviors: The case of marital violence. *Journal of Marriage and the Family*. 1995; 57:995-1010.

Figure 1.

Verbal aggression model. $\chi^2_{(56)} = 77.52$, RMSEA = .04, 90% CI (.014, .064). CFI = .96. $^{**}p < .01$, $^*p < .05$, one-tailed.

Figure 2.

Physical aggression model. $\chi^2_{(56)} = 100.21$, RMSEA = .06, 90% CI (.041, .080). CFI = .90.

** $p < .01$, * $p < .05$, one-tailed.

Table 1

Descriptive Statistics for Study Variables (N = 213)

Measures	M (or n)	SD	Range	α (# items)	r	ICC
Interparental Verbal Aggression (1989, 1990, 1991)						
Observer report of parents	12.49	2.92	4–26	.45 (12)	.04–.16	.28–.85
Father report of mother	19.09	8.13	2–52	.91 (12)	.60–.72	
Mother report of father	17.59	8.30	2–52	.93 (12)	.68–.78	
Interparental Physical Aggression (1989, 1990, 1991)						
Observer report of parents	13.14	3.89	4–40	.58 (12)	.18–.27	.25–.91
Father report of mother	10.27	3.61	2–21	.75 (6)	.44–.65	
Mother report of father	10.22	3.61	2–25	.79 (6)	.60–.72	
Parent to Adolescent Verbal Aggression (1992 Adolescent Verbal Aggression (1994)						
Observer report of parents	9.59	3.59	2–24	.58 (4)	.23	.40–.53
Target report of mother	15.45	6.74	4–49	.86 (9)	.50	
Target report of father	15.14	6.77	4–45	.86 (9)	.45	
Parent to Adolescent Physical Aggression (1992 Adolescent Physical Aggression (1994)						
Observer report of parents	9.53	3.59	2–32	.47 (4)	.19	.61–.85
Target report of mother	5.16	2.22	1–13	.55 (3)	.34	
Target report of father	4.72	2.02	1–13	.48 (3)	.25	
Target to Spouse/Partner Verbal Aggression (2003, 2005, 2007)						
Observer report of target	4.84	2.28	2–14	.46 (3)	.19–.28	.51–.64
Spouse/Partner report of target	19.01	7.78	5–49	.92 (12)	.66–.71	
Target to Spouse/Partner Physical Aggression (2003, 2005, 2007)						
Observer report of target	4.13	2.23	1–18	.33 (3)	.18–.35	.81–.96
Spouse/Partner report of target	3.53	1.35	1–13	.66 (3)	.31–.54	
Spouse/Partner to Target Verbal Aggression (2003, 2005, 2007)						
Observer report of spouse/partner	4.51	2.52	2–16	.68 (3)	.18–.45	.62–.77
Target report of spouse/partner	18.51	7.59	11–55	.92 (12)	.57–.75	

Measures	M (or n)	SD	Range	α (# items)	r	ICC
Spouse/Partner to Target Physical Aggression (2003, 2005, 2007)						
Observer report of spouse/partner	3.96	1.87	1–13	.48 (3)	.19–.42	.56–.81
Target report of spouse/partner	3.39	1.13	2–10	.78 (3)	.44–.66	
Control variables						
Parents' education	26.77	3.30	17–38			
Target Youth gender (n's)						
Females	119					
Males	94					
Marital Status (n's)						
Married	183					
Cohabiting	30					
Relationship Duration (in yrs)	3.41	2.33	1–9			

Note. Column “r” represents the range of correlations across waves (only one correlation between 2 waves), all r's significant at $p < .01$ except for .04. Column “ICC” represents the range of ICCs between observers (only for observed variables). Verbal and physical aggression are not directly comparable due to different number of items. Observer report and other informant report are not directly comparable due to different items and coding schemes.

Table 2

Correlations among Variables in the Structural Equation Models

	1	2	3	4	5	6	7	8
1. Interparental Aggression	-	.47**	.69**	.36**	.04	-.08	.13	.05
2. Parent Aggression to Adolescent	.50**	-	.52**	.75**	-.13	.08	.01	.08
3. Target Aggression to Spouse/Partner	.39**	.44**	-	.05	-.30*	-.48**	-.28*	-.04
4. Spouse/Partner Aggression to Target	.35**	.56**	.96**	-	-.20	.62**	-.03	-.17
5. Parents' Education	.02	-.09	-.19*	-.17	-	.07	.05	-.02
6. Youth Gender	-.01	.15	-.12	.19*	.07	-	-.05	-.10
7. Marital Status	.12	.00	-.03	.01	.05	-.05	-	.29**
8. Relationship Duration	-.02	.10	.03	-.01	-.02	-.10	.29**	-

Note. Verbal aggression below diagonal and physical aggression above diagonal.

N = 213. Youth gender: 0 = *female*, 1 = *male*. Marital Status: 0 = *cohabiting*, 1 = *married*.

**
p < .01,

*
p < .05. Two-tailed test.