In Search of Modifiable Risk and Protective Factors for Teen Dating Violence

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Abstract

The present research explores the additive and interactive effects of anger/hostility (A/H), acceptance of violence (AoV), and constructive conflict resolution strategies (CRS) on the perpetration of physical and sexual teen dating violence (TDV). Adolescents completed surveys assessing physical and sexual TDV perpetration, A/H, AoV, and positive CRS. While the findings require replication with longitudinal data, results suggest that developing interventions to modify AoV and A/H may have the potential to prevent instances of TDV perpetration among both boys and girls. Results for CRS were mixed and necessitate further exploration. These cross-sectional data provide insight into potentially fruitful areas of exploration for the development and tailoring of prevention strategies for teens at risk for physical and sexual TDV perpetration.

In Search of Modifiable Risk and Protective Factors for Teen Dating Violence

Approximately 10% of male and 20% of female dating adolescents report some form of physical and/or sexual violence by a dating partner annually (Vagi, Olsen, Basile, Vivolo-Kantor, 2015). The potential consequences of teen dating violence (TDV) are well established and include depression, suicidal ideation, substance abuse, low self-esteem, delinquent behavior, and injury (Ackard, Eisenberg, & Neumark-Sztainer, 2007; Campbell, 2002, Exner-Cortens, Eckenrode, & Rothman, 2013; Vagi et al., 2015). Likewise, victims of TDV are at increased risk for violence in future intimate relationships (Exner-Cortens et al., 2013; Smith White & Holland, 2003). In general, the patterns of conflict and quality of relationships experienced in adolescence are linked to the quality of romantic relationships in adulthood (Bouchey & Furman, 2003; Exner-Cortens et al., 2013; Fernet, Hebert, & Paradis, 2016). Thus, developing strategies for the primary prevention of TDV in adolescence is of substantial importance. Integral to the development of such strategies is the identification of *modifiable* risk and protective factors.

Risk and Protective Factors for TDV

Fernet and colleagues (2016) note that those risk and protective factors studied in adult and marital relationships manifest themselves in a similar fashion in adolescent dating relationships. In other words, romantic relationships in adolescence likely impact the nature and quality of our intimate relationships as adults. The association of anger/hostility (A/H) to maladaptive psychological and behavioral expressions, including violence in intimate and dating relationships, is well established in the literature (Campbell, & Muncer, 2008; Feldman & Gowan, 1998; Kopper & Epperson, 1996; Norlander & Eckhardt, 2005). Those who experience A/H with greater frequency and intensity perpetrate violence against intimate partners with greater frequency and severity (Norlander & Eckhardt, 2005). Importantly, the anger-violence association may be even more salient in younger populations where mechanisms of A/H control are less developed and more maladaptive (Bookwala, Sobin, & Zdaniuk, 2005; Feldman & Gowan, 1998; Hokoda, Martin Del Campo, & Ulloa, 2012; Schumacher, Feldbau-Kohn, Slep, & Heyman, 2001; Steinberg, & Scott, 2003; Tafrate, Kassinove, & Dunedin, 2002).

Violence in intimate relationships was often seen as an expression of uncontrollable A/H at times of high conflict in a relationship (Dutton, 1995). However, an explanation of the etiology of TDV that rests solely on the emotional experience of A/H would be overly simplistic. It is unlikely that high levels of A/H alone result in aggressive behavior (Norlander & Eckhardt, 2005). Indeed, the expression of A/H takes a range of destructive to constructive forms of behavior including physical and/or verbal aggression, aggression redirected toward objects (e.g., slamming doors, pounding the table), conflict avoidance (e.g., walking away, refusing to speak to the other person), rumination, attempting to compromise, seeking social support (Campbell & Muncer, 2008; Feldman & Gowan, 1998; Kopper & Epperson, 1996; Owens et al., 2005). Thus, the experience of A/H may not by itself predispose one to being violent in intimate relationships. Rather, it is likely that attitudes and interpersonal skills impact whether an individual expresses A/H through violence or some other non-injurious form of behavior.

For example, it has long been theorized that attitudes condoning violence, also referred to as acceptance of violence (AoV), may be a prerequisite risk factor for violence in intimate relationships (Avery-Leaf, Cascardi, O'Leary, & Cano, 1997). Indeed, AoV has been shown to predict violence in adult and adolescent relationships alike (Archer, 2000; Foshee, Linder, MacDougall, & Bangdiwala, 2001). Reyes and colleagues (2016) found that AoV moderated the association of traditional gender role attitudes to the perpetration of TDV. Specifically, traditional gender role attitudes were associated with TDV perpetration only among boys who reported a high level of AoV. This finding is pertinent because traditional gender roles are associated with increased A/H activation in response to potential

relationship conflict (Eisler, Franchina, Moore, Honeycutt, & Rhatigan, 2000; Franchina, Eisler, Moore, 2001) and to Intimate Partner Violence (IPV) among men (Reidy, Berke, Gentile, & Zeichner, 2014). It follows then that the association of A/H to TDV may be moderated by AoV. That is, only those teens believing violence is an acceptable form of behavior may believe that TDV is an effective strategy to resolve A/H during relationship conflict.

Of course, violence is an ineffective conflict resolution strategy with a multitude of deleterious outcomes. Notably, there have been numerous studies of conflict resolution strategies (CRS) among adolescents; yet, there is little research directly linking CRS with violence in intimate relationships (Capaldi, Knoble, Shortt, & Kim, 2012; Fernet, Hebert et al., 2016; Owens, Daly, & Slee, 2004; Vagi et al., 2013). Moreover, research on CRS has most often focused on maladaptive strategies and has rarely assessed the effect of constructive strategies against relationship violence (Capaldi et al., 2012; Feldman & Gowan, 1998; Vagi et al., 2013). Conflict resolution skills are important at every developmental stage to navigate and maintain productive and harmonious relationships (Reese-Weber, 2000; Reese-Weber, & Bartle-Haring, 1998), but adolescence is often described as a period of high turmoil and, at times, of high conflict (Arnett, 1999; Johnson & Johnson, 1994; Laursen, & Collins, 1994). Thus, fostering the development of positive and effective CRS during this developmental period seems even more crucial for prevention purposes. That is, it is likely that youth who have greater difficulty implementing constructive CRS may be more likely to resort to aggressive tactics while angry during times of discord with dating partners, especially when these youth also hold attitudes condoning violence. In one of the only studies to look at positive CRS (Feldman & Gowan, 1998), the use of compromise was significantly and inversely associated with TDV. Compromise was also negatively related to *overt* expression of A/H in dating relationships. Positive CRS do not preclude the experience of A/H, but they may inhibit the use of violence and aggression in place of more constructive strategies (e.g., compromise, conflict avoidance) as the mode of coping with such emotions.

Thus, it seems what determines whether A/H is expressed through violence and aggression versus more constructive methods may depend on the moderating influence of AoV and positive CRS skills. That is, the presence of A/H alone may not precipitate violence, but when exacerbated by AoV and absent of positive CRS skills, youth may be more likely to use violence to cope with their A/H.

Extant Prevention Programs

Effective primary prevention of TDV has generally consisted of school-based curricula, with middle and high school students. Only a few published programs thus far have shown promise in preventing dating violence via rigorous evaluation. Common themes among these curricula for students

to reduce IPV are recognizing and defining abusive behavior, attitudes condoning violence, conflict resolution, and communication skills (e.g., Ball et al., 2012; Foshee et al., 2005; Wolfe et al., 2003). Safe Dates (Foshee et al., 2005) was shown to have prevention effects with boys and girls for both physical and sexual violence. The prevention effects were mediated by changes in AoV, gender role norms, and awareness of community services; however, the program had no effect on CRS (Foshee et al., 2005). Fourth-R likewise demonstrated prevention effects for dating violence, although only for boys (Wolfe et al., 2009). Similar to Safe Dates, this program was found to have no effect on healthy relationship skills including CRS despite preventing violence (Wolfe et al., 2003, 2009). Taylor, Stein, and Mumford (2013) examined the effectiveness of 'Shifting Boundaries,' which includes a classroom-based curriculum and a building-level intervention (i.e., school-based restraining orders, increased security in violence "hot spots", and posters to increase awareness of sexual TDV). These authors found an effect of the building-level intervention on sexual TDV perpetration and victimization for boys and girls, but no effect of the curriculum. In other words, this prevention strategy reduced opportunity but not propensity for TDV.

Of note, the effect sizes for these programs are modest relative to the degree and proportion of TDV that occurs among youth (Whitaker, Murphy, Eckhardt, Hodges, & Cowart, 2013). That is, while these programs proffer vital reductions in TDV, the burden of TDV perpetration persists. Thus, continued refinement and augmentation of prevention strategies such as the ones reviewed here is necessary. In particular, it is unclear as to whether these programs' lack of effect on CRS is indicative of a lack of association between CRS and TDV, or rather reflects a protective factor that could augment extant prevention programs if these programs were modified to adequately influence CRS.

Gender Differences

It is impossible to adequately address relationship violence without considering the long history of debate about gender symmetry versus asymmetry in IPV and TDV perpetration (Hamby, 2009; Hamby, & Turner, 2013; O'Leary & Slep, 2012). This debate has been complicated by incongruous findings between adult and adolescent populations wherein, girls may perpetrate TDV at rates commensurate to, or greater than boys, while in adult populations these differences are reversed (Archer, 2000; Cascardi & Avery-Leaf, 2015; Hamby, 2009; O'Leary & Slep, 2012; Reidy et al., 2016). Some data indicate female-perpetrated violence is less severe and commonly occurs when their male partner is violent first (Archer, 2000; Hamby, & Turner, 2013; Kernsmith & Tolman, 2011; Langhinrichsen-Rohling, 2010). However, data among high-risk adolescents suggest that boys may victims of sexual TDV and injury as much, and at times, more than girls (Cascarde & Avery-Leaf, 2015; Reidy et al., 2016).

Moreover, the motives that precipitate perpetration of these violent acts and the contexts in which such abuse occurs may be distinct for males and females (Hamby, & Turner, 2013; Langhinrichsen-Rohling, 2010; Molidor & Tolman, 1998; Stith, Green, Smith, & Ward, 2008). Indeed, evidence indicates the degree of experience and expression of A/H, AoV, and CRS, and the manner in which they operate, may differ by gender. For example, males generally endorse more AoV than their female counterparts (Simon et al., 2001; Valdez, Lilly, & Sandberg, 2012) and Foshee et al. (2001) found that AoV was predictive of TDV over an 18 month period for boys, but not for girls. However, Foshee and colleagues (2005) found that the largest mediator of prevention effects in the Safe Dates evaluation for boys and girls alike was changes in AoV. Kopper and Epperson (1996) found that males express A/H through physical and verbal aggression whereas women were more likely to use conflict avoidance strategies. However, there were no differences between genders in ruminative anger and attempts to suppress A/H (Kopper & Epperson, 1996). Similarly, Campbell and Muncer (2008) reported that men expressed A/H through explosive acts (e.g., throwing something) or direct aggression whereas women employed diffusing acts (e.g., talking to a third party). Feldman and Gowan (1998) found girls were more likely than boys to use compromise in their dating relationships but were also more likely to use "overt anger" (i.e., verbal aggression). Notably, there were no differences in the use of violence in the dating relationships among this sample. Owens and colleagues (2004) found girls reported greater use of compromise, obliging, and avoidance than boys, but comparable degrees of overt anger. Taken as a whole, there is reason to suspect at a minimum, rates and effect sizes for variables of interest in the present study, if not the manner in which they function, likely differ across genders.

The Present Study

The majority of research assessing the influence of A/H, AoV, and CRS on violence in intimate relationships tends to focus on male perpetrated violence, and in many cases is limited to adult populations. Thus, extant empirical literature fails to sufficiently explicate the role of these potential risk and protective factors in the development of TDV across genders. Moreover, a dearth of risk, and especially protective factors, that are *modifiable* have been identified for TDV (Capaldi et al., 2012; Vagi et al., 2013). The goal of the present research is to take a first step in addressing this gap by assessing the interactive effects across genders of two potential modifiable risk correlates – A/H and AoV – and the potential modifiable protective correlate - positive CRS - on violence in adolescent dating relationships using a cross-sectional sample of youth.

Based on prior research, we expected that A/H and AoV would be positively associated with TDV while CRS would be inversely associated. However, given that A/H may be expressed through a range of

destructive (i.e., violence) to constructive behaviors, we expected that the association of A/H to TDV would be moderated by both AoV and CRS. Specifically, we expected that A/H would be associated with TDV when adolescents endorsed a high degree AoV. But, we also expected that when adolescents reported a high degree of positive CRS, the association between A/H and TDV would be nil. Thus, the positive association between A/H and TDV would be identified when adolescents were high in AoV and low in positive CRS (a three-way interaction). Finally, given the aforementioned potentially disparate nature of A/H, AoV, CRS, and TDV across genders, we tested whether these path models were moderated by gender.

Methods

Participants & Procedure

One thousand, two-hundred thirty-six adolescents from six school districts in Southeast Michigan completed self-administered questionnaires in 2013. The sample was stratified by grade level (6^{th} and 9^{th}), gender, and community risk profile (low, moderate, and high) with random sampling within each stratum. Community risk was assessed using publicly available data to develop an index comprising rates of poverty, unemployment, percent minority, percent rental housing, percent female headed households, and community violence by zip code. Of the total sample, 883 students (71.4%; M_{age} =15.81; *SD* = 1.62) reported having at least one partner, either dating or casual (i.e., "hooking up"), in the past year. These 883 students represent the final analytic sample. See Table 1 for demographic information.

Passive consent procedures were employed in accordance with recommended ethical guidelines. Parents had the opportunity to refuse consent for their child's participation by returning a written form or by calling or e-mailing the research staff. Prior to survey administration, all students provided written assent and were informed of their right to withdraw from the study at any time. The Institutional Review Board for the School of Social Work at Wayne State University approved the data collection protocols.

Measures

Conflict Resolution Strategies. Students reported on their frequency of using positive CRS in a dating relationship "in the past year" via 6 items (α = .92) from the Constructive Engagement subscale of the Conflict Resolution Strategies Scale Short Form (CRSS-SF: Mariam, 2011). The indicators refer to strategies such as attempting to consider the other person's perspective (e.g., "*asked questions to understand the other person's view better*") or trying to communicate clearly and effectively (e.g., "*explained my feelings*," "*Said the other person's opinions and feelings are valued*"). Response options

ranged from 0 = “never” to 5 = “10 or more times.”

Anger/Hostility. Students reported on their frequency of anger/hostility via 7 items of the Hostility subscale of the CRSS-SF (Mariam, 2011). Items tapped those strategies that are commonly related to anger, such as yelling or arguing heatedly with a dating partner. #

*Acceptance of Dating Violence***.** The Attitudes about Aggression in Dating Situations (AADS) scale (Slep, Cascardi, Avery-Leaf, & O’Leary, 2001) was used to assess the degree to which teens perceive TDV to be acceptable. The scale consists of 12 items (α = .86) that describe a wide range of dating aggression scenarios that feature male-to-female and female-to-male violence (e.g., “*Mark calls Tina a slut in front of their friends. Tina slaps him,*” “*Peter slaps Patti when she threatens to break up with him*”). Respondents rated the degree to which they agree with the use of aggression described in each scenario. Response options ranged from Strongly Disagree (1) to Strongly Agree (4).

Physical TDV. The Safe Dates Dating Violence perpetration scale (Foshee et al., 1996) was used to measure physical dating violence perpetration. Adolescents were asked how many times they had committed a number of physical behaviors against a dating partner “in the past year.” Fifteen behaviors were listed including aggressive conflict tactics such as having “hit or slapped,” “bit,” “tried to choke,” “beat them up,” “hit them with something besides a fist,” and “assaulted them with a knife or a gun.” Response options ranged from 0 = “never” to 5 = “10 or more times.” Items were summed to create a physical dating violence perpetration score, α = .94.

Sexual TDV. Students answered four items modified from the sexual coercion subscale of the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) to indicate how many times they had perpetrated sexual violence against a dating partner “in the past year.” Questions included “made them have sex without a condom,” “insisted on sexual activity when they did not want to (but did not use force),” “used force (like hitting, holding down, or using a weapon) to make them have any sexual activity,” and “used threats to make them have any sexual activity.” Response options ranged from 0 = “never” to 5 = “10 or more times.” Items were summed to create a Sexual TDV perpetration score, α = .87.

Data Analysis

Analyses were performed with Mplus version 7.3 controlling for clustering of data within schools using maximum likelihood robust estimation (i.e., sandwich estimator). We employed a multi-group structural equation modeling approach to determine if the effects of A/H, AoV, and CRS differed across genders. To test hypotheses pertaining to the interactive effects of A/H, AoV, and CRS, all predictor

variables were centered before creating interaction terms to reduce multicollinearity. In the first phase of the analysis, we computed reduced "main effects" model containing only A/H, AoV, and CRS as predictors of TDV. We tested the equality of these reduced models across genders via a Wald χ^2 statistic with 3*df* (i.e., 1 for each predictor in the regression equation). A significant Wald χ^2 indicates that the main effects differed across gender.

We next computed the full model regression equations with the three-way interaction term of A/H, AoV, and CRS, all lower order interaction terms, and the centered predictor variables. We again tested the equality of these reduced models across genders via a Wald χ^2 statistic this time with 7*df* (i.e., 1 for each predictor in the regression equation). In these instances, we explicated the models separately by gender. When explicating the regression models, we started by testing the full model with the three-way interaction term. If this term was nonsignificant, we tested the reduced model with only the two-way product terms for the hypothesized A/H*AoV interaction and A/H*CRS interaction and conditional effects A/H, AoV, CRS. When interaction terms were significant we conducted simple slope analysis at 1 standard deviation above and below the mean as prescribed by Aiken and West (1991). Interactions were graphed using programs publically available at http://www.jeremydawson.com/slopes.htm.

When computing regression equations, we controlled for respondents' age, ethnic minority status (0 = minority, 1 = Caucasian), and community risk level. The community risk index was a school level variable representing community rates of poverty, unemployment, percent minority, percent rental housing, percent female headed households, and violence. Thus, this control level was entered as a level 2 predictor in a multilevel equation.

Results

Table 2 presents means and standard deviations for all variables by gender. Only CRS was significantly different across the genders with girls reporting more CRS than boys, β = -.18, SE = .052, $p < .001$. In reference to rates of perpetration, 33.4% of girls and 31.5% of boys reported perpetrating one or more instances of physical TDV; 5.4% of girls and 7.5% of boys perpetrated one or more instances of sexual TDV.

We began by testing the simple main effects models for physical and sexual TDV. Tests of parameter constraints indicated the models did not significantly differ by gender for physical TDV, Wald $\chi^2(6) = 6.51$, $p = .26$, or sexual TDV, $\chi^2(6) = 6.95$, $p = .4$. We therefore present results aggregated across gender. A/H and AoV were positively associated with physical and sexual TDV perpetration while CRS demonstrated a weak inverse association with physical TDV only, see Table 3.

We next tested the full moderation model with physical TDV as the main outcome. We assessed the equality of the full model containing conditional effects, two-way, and the three-way interaction term across genders. The test of parameter constraints indicated that the model significantly differed by gender, Wald $\chi^2(10) = 33.05$, $p < .001$. Therefore, we explicated the statistical models separately within each gender. For both boys and girls, the three-way interaction term predicting physical TDV was nonsignificant, see Tabe 4. We therefore tested the reduced moderation model with the hypothesized two-way interactions for A/H*AoV and A/H*CRS. We reconfirmed that this reduced moderation model differed significantly by gender, Wald $\chi^2(8) = 15.50$, $p < .005$. As such, we again explicated models separately by gender. Among boys, neither the /H*CRS nor the A/H*AoV interaction were significant, see Table 5.

Among girls, the hypothesized two-way interactions of A/H*CRS and A/H*AoV predicting physical TDV were significant in the reduced moderation model, see Table 5. However, simple slope analysis of the A/H*CRS interaction revealed that CRS was inversely associated with physical TDV perpetration. Specifically, when girls were low in positive CRS, A/H demonstrated a weak positive trend with physical TDV, β = .20, SE = .71, $p = .07$. However, when girls reported a high degree of positive CRS, A/H was positively and strongly associated with physical TDV, β = .578, SE = .42, $p < .001$, see Figure 1. Simple slope analysis of the A/H*AoV interaction indicated that among girls reporting low levels of AoV, there was a moderate significant association between A/H and physical TDV perpetration, β = .344, SE = 1.08; $p = .001$ and a large positive association among girls high on AoV, β = .570, SE = 0.93; $p < .001$, see Figure 2.

We next tested sexual TDV as the outcome. Multi-group analysis indicated the model again differed by gender, Wald $\chi^2(10) = 40.35$, $p = .000$. Among boys, the three-way interaction term was significant, see Table 4. Explication of the three-way interaction indicated, as expected, for boys high in AoV but low in positive CRS, A/H was strongly and positively associated with sexual TDV perpetration, β = .646, SE = .16, $p < .001$. However, when AoV was high and positive CRS was high, the association between A/H and sexual TDV was significantly reduced, but was still significant, β = .241, SE = .11, $p = .01$, see Figure 3. No other simple slopes were significant.

Among girls, the three-way interaction term was nonsignificant, see Table 4. Simple slope analysis of a significant A/H*CRS interaction again revealed a paradoxical effect wherein when CRS was high the association between A/H and sexual TDV was larger, β = .199, SE =.05, $p = .005$, than when CRS was low, β = -.030, SE =.09, $p = .80$, see Figure 4. Additionally, the A/H*AoV interaction was significant indicating that A/H was positively associated with sexual TDV perpetration among girls reporting high

AoV, β =.292, SE = .06, *p* = .002; but there was no association between A/H and sexual TDV among girls low on AoV, β = -.01, SE = .06, *p* = .90 see Figure 5.

Discussion

In the present research, we sought to identify and explicate the statistical association and moderation of A/H on TDV perpetration by AoV and CRS in a cross-sectional sample of adolescents. The intent of this research is to identify factors that may potentially be demonstrated as modifiable risk and protective factors in future exploration with more rigorous longitudinal deigns that increase causal speculation. Given that research has demonstrated violence is one type of outcome associated with A/H in response to relationship conflict (Campbell, & Muncer, 2008; Feldman & Gowan, 1998; Kopper & Epperson, 1996; Norlander & Eckhardt, 2005), we expected that the behavioral expression of A/H in adolescent dating relationships would be moderated by AoV and CRS. That is, youth who report experiencing high degree of A/H, would only express it as violence when they endorsed AoV and lack positive CRS skills. Additionally, given a wealth of research indicating that rates and correlates of TDV perpetration may differ by gender (Campbell, & Muncer, 2008; Feldman & Gowan, 1998; Hamby, & Turner, 2013; Feldman & Gowan, 1998; Langhinrichsen-Rohling, 2010; Molidor & Tolman, 1998; Simon et al., 2001; Stith, Green, Smith, & Ward, 2008; Valdez, Lilly, & Sandberg, 2012), we tested whether moderation models differed between boys and girls. Findings provide partial support for hypothesized outcomes.

Tests of model constraints indicate that parameter estimates differed by gender when considering both physical and sexual TDV outcomes. In other words, the interactive effects of A/H, AoV, and CRS on TDV were moderated by gender. For girls, the three-way interaction was not significant for either form of TDV; however, the interaction between A/H and AoV was significant indicating that as girls increase in the amount of AoV they endorse, they are increasingly likely to use violence as the mode to express A/H toward their dating partner.

Among girls, there is no evidence to suggest protective effects of positive CRS. In fact, there was an unexpected effect of CRS, wherein, as girls' reported frequency of positive CRS increased, the association of A/H to physical and sexual TDV perpetration increased (See Figures 1 & 4). It is hard to reconcile how or why the use of positive constructive strategies to resolve conflict would be associated with the perpetration of TDV among girls. It is possible that girls' endorsement of CRS is a consequence of social desirability (Herbert Clemow, Pbert, Ockene, & Ockene, 1995). However, social desirability should exert an effect on both positive and negative behaviors; thus, if social desirability was a factor we

should expect to see girls over-reporting CRS and under-reporting TDV leading to an exaggerated inverse correlation. Perhaps it is an issue of awareness or insight into the appropriateness of certain behaviors. For example, angry and aggressive youth may consider yelling at their dating partner and calling them names a form of "explaining" their feelings when upset. They may also lack awareness of the degree of hostility with which they express themselves. In other words, these youth may believe they are using healthy and appropriate strategies when in actuality these are hostile and ineffective strategies that are associated with aggressive tactics. Notably, Bookwala and collegues (2005) reported that women, in particular younger women, used less "calm discussion" and more "heated argument" than their male partners. Clearly these results require further exploration, but in the present sample there is no evidence that positive CRS are deterrents to TDV perpetration among adolescent girls.

When examining physical TDV perpetrated by boys, contrary to expectation, there were no significant interactive effects. A/H and AoV both were significantly and positively associated with the perpetration of physical TDV, which is consistent with prior research (Foshee et al., 2001; Norlander & Eckhardt, 2005; Reyes et al., 2016). The effect size for A/H, in particular, is large (.50). Notably, when examining sexual TDV perpetration as the outcome, the hypothesized three-way interaction was significant indicating, as hypothesized, that when boys endorse AoV and are low in CRS, A/H is strongly associated with sexual TDV perpetration (β = .65). Although the association between A/H and sexual TDV remained significant, it was greatly reduced when CRS was high (β = .24) suggesting that CRS may buffer the effect of A/H and AoV on sexual TDV perpetration.

Prevention Implications

The primary prevention of TDV has emerged as a public health focus due to the potential for persistent and severe sequelae and because adolescence is a critical developmental period relevant to onset, escalation, and persistence of relationship violence into adulthood (Ackard et al., 2007; Campbell, 2002; O'Leary & Slep, 2012; Smith et al., 2003; Vagi et al., 2015). However, the few extant programs shown to be efficacious for TDV prevention have generally proffered modest effects (Whitaker et al., 2013). A number of risk and some protective factors for IPV and TDV have been identified in the literature (Capaldi et al., 2012; Vagi et al., 2013). However, very little research has identified risk and protective factors for TDV that are *modifiable* (Vagi et al., 2013). Our results suggest potentially fruitful areas of investigation to identify those factors that may be modifiable to prevent TDV. Specifically, strategies to prevent boys' sexual violence in dating relationships should perhaps not be singularly focused on reducing those risk factors that contribute to violence; rather, prevention might also focus on developing concrete and constructive strategies to express and resolve their negative emotion. A/H

and AoV are potentially modifiable risk factors that clearly seem to contribute to violence both among boys and girls (Foshee et al., 2005; Reyes et al., 2016; Simon et al., 2001). Targeting these risk factors undoubtedly will help mitigate rates of violence in adolescent dating relationships (e.g., Foshee et al., 2005). However, modification of these factors alone likely will not obviate the threat of other potential risk factors. That is, focusing on enhancing protective factors among youth may potentially buffer against multiple risk factors for violence, whereas focusing on modifying a specific risk factor may only reduce the risk contributed by that factor. Research identifying modifiable protective factors may be fruitful in augmenting prevention effects of existing programs. For these reasons, identification of modifiable protective factors is a critical research gap that needs to be filled.

Importantly, the inverse association of CRS was identified only for boys and for sexual TDV perpetration alone. This could suggest that CRS may not truly deter TDV or that the prevention utility of positive CRS is limited at best. Indeed, the few extant TDV prevention programs demonstrating efficacy did not influence CRS and found no influence of CRS on TDV (Foshee et al., 2005; Wolfe et al., 2009). However, we argue that this restricted finding is not insignificant as adolescent girls are disproportionately victims of sexual TDV and this form of victimization may be most prevalent during this developmental period (Hamby & Turner, 2013; Smith et al., 2003; Vagi et al., 2015). Moreover, it is critical to recognize the consequences of such victimization as these girls are at greater risk for suicide and repeated victimization via both sexual and physical violence in dating relationships as young adults (Smith et al., 2003; Vagi et al., 2015). Thus, the prevention of boys' sexual TDV may be most critical during adolescence. For these reasons we suggest the present findings not be dismissed as chance findings and encourage continued research on the potential protective effects of CRS for TDV.

That being said, boys too are victims of both physical and sexual TDV by adolescent girls (Reidy et al., 2016). As such, prevention strategies focusing on girls' perpetration of TDV should not be neglected. While the present results do not support the contention that constructive CRS strategies may act as a protective factor to be augmented, they do indicate that girls' AoV likely exacerbates the consequences of their A/H and increases their propensity to resolve A/H through violent means, both physically and sexually. In fact, among five tested mediators, reductions in AoV was the most significant mediator of the prevention effects of the Safe Dates program for boys and girls (Foshee et al., 2005). And indeed, our data suggest that AoV is a pertinent risk factor for both boys and girls TDV perpetration. Thus, these data taken in conjunction with previous research suggest that focusing on strategies to ameliorate AoV and A/H may have prevention effects on TDV for all youth.

Limitations

The present findings require replication and extension. Of course, the cross-sectional nature of this data preclude the determination that CRS is protective against TDV or even that A/H and AoV are truly risk factors. Only longitudinal assessment of these risk and protective factors will ultimately allow us to understand how these factors contribute to the development or prevention of violence in dating relationships. However, they do offer a starting point to develop new, or augment existing prevention strategies. Future research should expand these findings by including assessment over multiple time periods during adolescence. In a related vein, it remains to be seen whether these potential risk and protective factors are truly modifiable in adolescence. For example, evidence suggests that maladaptive communication and conflict strategies as well as A/H in adolescent dating relationships tend to persist into adult relationships and marriages (Fernet et al., 2016). Likewise, Foshee et al. (2005) and Wolfe et al. (2003) reported no effect of the intervention on positive CRS and healthy relationships skills. Nevertheless, in a review of the literature, Johnson and Johnson (1994) concluded that CRS and peer mediation programs were effective in training youth to implement constructive versus destructive CRS. Ball and colleagues (2012) reported increases in healthy CRS in dating relationships over the course of a six month support group intervention for youth exposed to violence. Additionally, Foshee and colleagues (2005) found that the Safe Dates curriculum repeatedly reduced AoV over a four year period. Thus, preliminary evidence suggests that these factors may be fertile areas of exploration to identify modifiable risk and protective factors.

Additionally, it is unclear why CRS would have a differential effect for girls and boys. Of note, Ball et al. (2012) found that increases in positive CRS were restricted to girls and there was no evidence of changes for boys. In the present study, we found a paradoxical interactive effect of CRS for girls' perpetration of TDV. It is possible that this finding is merely statistical artifact or perhaps suggest our measure does not validly capture the construct in girls. These gender differences may explain why CRS skills proved intractable among youth in the Fourth-R and Safe Dates evaluations. It is possible that examining the moderating effect of gender may reveal effects of these interventions on CRS for one group of adolescents. Nonetheless, further research must be undertaken with great care to understand and prevent what could potentially be an iatrogenic effect if incorporated into prevention strategies for females. Finally, TDV is a multifaceted phenomenon that is likely dependent on the complex interaction of the dyad and the risk and protective factors possessed by each member of the dyad. To ultimately understand those contextual factors that give rise to violence in dating relationships we need to measure at the dyad level. This is particularly pertinent considering aggressive youth tend to seek out mutually aggressive dating partners and the majority of violent adolescent relationships are mutually

violent (O'Leary & Slep, 2012).

Despite these limitations, this is one of the first studies to offer evidence of the possible buffering effects of a potentially modifiable TDV correlate (Vagi et al., 2013). While these findings are preliminary, they offer a starting point to develop new prevention strategies and augment existing ones. Specifically, this research suggests that increasing positive conflict resolution strategies (among boys), reducing A/H and attitudes that condone violence (among boys and girls), may proffer some promise in developing strategies to prevent TDV.

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Table 1. Demographic Information for analytic sample of 883 adolescents with a history of dating in the year preceding survey.

	N*	**%**
Caucasian/White	570	64.6
Black/African-American	211	23.9
Hispanic/Latino	73	8.3
Native-American	64	7.2
Asian-American	12	1.4
Arab-American	13	1.5
Other	37	4.2
Female	457	51.8
Male	425	48.1
Did Not Respond	1	0.1
6th Grade	381	43.1
9th Grade	502	56.9
Low Risk Community	250	28.3
Moderate Risk Community	244	27.6
High Risk Community	389	44.1

Outcome	Predictor	β	S.E.	*p*

Note. * = Many students identified as multiple ethnicities; as such these numbers add up to more than 883.

Table 2. Means and Standard Deviations

Variable	Boys		Girls	
	M	S.D.	M	S.D.
A/H	10.68	8.7	11.99	8.7
AoV	22.87	6.6	22.10	6.2
CRS*	11.40	7.3	14.05	7.3
Physical TDV	3.51	8.6	2.86	7.0
Sexual TDV	0.27	1.5	0.16	0.8

Note. A/H = Anger/Hostility; AoV = Acceptance of Violence; CRS = Conflict Resolution Strategies. * = Significantly different across genders, $p < .001$.

Table 3. Results of Simple Main Effects Model Regression Analyses

Physical TDV	Risk	.882	2.08	.67
	Ethnic	-.005	.041	.90
	Age	-.001	.026	.96
	A/H	**.505**	**.046**	**.000**
	AoV	**.130**	**.046**	**.005**
	CRS	**- .066**	**.035**	**.03**
Sexual TDV	Risk	.403	.322	.21
	Ethnic	-.044	.051	.42
	Age	-.003	.052	.95
	A/H	**.185**	**.040**	**.000**
	AoV	**.149**	**.029**	**.000**
	CRS	-.020	.025	.42

Note. β = standardized regression coefficient; S.E. = standard error; *p* = significance value; Risk = Community Risk; Ethnic = Ethnic Minority Status; A/H = Anger/Hostility; AoV = Acceptance of Violence; CRS = Conflict Resolution Strategies.

Table 4. Results of Full Model Moderation Analyses

Outcome	Predictor	Boys			Predictor	Girls		
		β	S.E.	*p*		β	S.E.	*p*
Physical TDV	Risk	.827	1.77	.64	Risk	**.961**	**.333**	**.004**
	Ethnic	.020	.048	.41	Ethnic	-.027	.061	.66
	Age	-.006	.040	.88	Age	-.013	.034	.71
	A/H	**.504**	**.063**	**.000**	A/H	**.402**	**.069**	**.000**
	AoV	**.104**	**.050**	**.04**	AoV	**.081**	**.038**	**.03**
	CRS	-.042	.040	.29	CRS	.019	.079	.81
	A/H * CRS	.055	.046	.23	A/H * CRS	**.152**	**.070**	**.03**
	AoV * CRS	-.032	.051	.53	AoV * CRS	.050	.058	.38
	A/H * AoV	.121	.087	.16	A/H * AoV	**.093**	**.053**	**.04**
	A/H * AoV * CRS	.003	.074	.97	A/H * AoV * CRS	.071	.114	.54
Sexual TDV	Risk	.490	.601	.42	Risk	**.430**	**.228**	**.05**
	Ethnic	-.019	.037	.61	Ethnic	-.024	.078	.77
	Age	-.077	.051	.13	Age	.063	.072	.38
	A/H	**.240**	**.048**	**.000**	A/H	.078	.052	.13
	AoV	**.199**	**.045**	**.000**	AoV	.044	.041	.28
	CRS	**-.102**	**.037**	**.006**	CRS	.090	.052	.09
	A/H * CRS	**-.104**	**.041**	**.01**	A/H * CRS	**.079**	**.034**	**.02**
	AoV * CRS	**-.093**	**.027**	**.001**	AoV * CRS	.056	.032	.08

A/H * AoV	**.212**	**.083**	**.01**	A/H * AoV	**.095**	**.051**	**.05**
A/H * AoV * CRS	**-.144**	**.061**	**.01**	A/H * AoV * CRS	.101	.057	.08

Note. β = standardized regression coefficient; S.E. = standard error; *p* = significance value; Risk = Community Risk; Ethnic = Ethnic Minority Status; A/H = Anger/Hostility; AoV = Acceptance of Violence; CRS = Conflict Resolution Strategies; A/H*CRS = interaction term for Anger/Hostility and Conflict Resolution Strategies; AoV * CRS = interaction term for Acceptance of Violence and Conflict Resolution Strategies; A/H * AoV = interaction term for Anger/Hostility and Acceptance of Violence; A/H * AoV * CRS = interaction term for the three-way interaction among Anger/Hostility, Acceptance of Violence, and Conflict Resolution Strategies.

Table 5. Results of Reduced Model Moderation Analyses

Outcome	Predictor	Boys			Predictor	Girls		
		β	**S.E.**	***p***		**β**	**S.E.**	***p***
Physical TDV	Risk	.828	1.670	.62	Risk	.965	4.024	.81
	Ethnic	.008	.057	.86	Ethnic	-.031	.056	.59
	Age	-.005	.040	.89	Age	-.013	.034	.70
	A/H	**.505**	**0.064**	**.000**	A/H	**.396**	**.034**	**.000**
	AoV	**.113**	**.059**	**.03**	AoV	**.116**	**.050**	**.01**
	CRS	-.036	.039	.35	CRS	.042	.087	.63
	A/H * CRS	.055	0.050	.28	A/H * CRS	**.168**	**.068**	**.01**
	A/H * AoV	.110	.084	.19	A/H * AoV	**.128**	**.072**	**.04**
Sexual TDV					Risk	**.459**	**.235**	**.05**

					Ethnic	-.025	.077	.75
					Age	.061	.069	.38
A/H	--	--	--		A/H	.066	.049	.18
AoV	--	--	--		AoV	**.095**	**.036**	**.009**
CRS	--	--	--		CRS	**.114**	**.056**	**.01**
A/H * CRS	--	--	--		A/H * CRS	**.097**	**.038**	**.01**
A/H * AoV	--	--	--		A/H * AoV	**.139**	**.056**	**.01**

Note. β = standardized regression coefficient; S.E. = standard error; *p* = significance value; Risk = Community Risk; Ethnic = Ethnic Minority Status; A/H = Anger/Hostility; AoV = Acceptance of Violence; CRS = Conflict Resolution Strategies; A/H*CRS = interaction term for Anger/Hostility and Conflict Resolution Strategies; AoV * CRS = interaction term for Acceptance of Violence and Conflict Resolution Strategies; A/H * AoV = interaction term for Anger/Hostility and Acceptance of Violence; A/H * AoV * CRS = interaction term for the three-way interaction among Anger/Hostility, Acceptance of Violence, and Conflict Resolution Strategies.

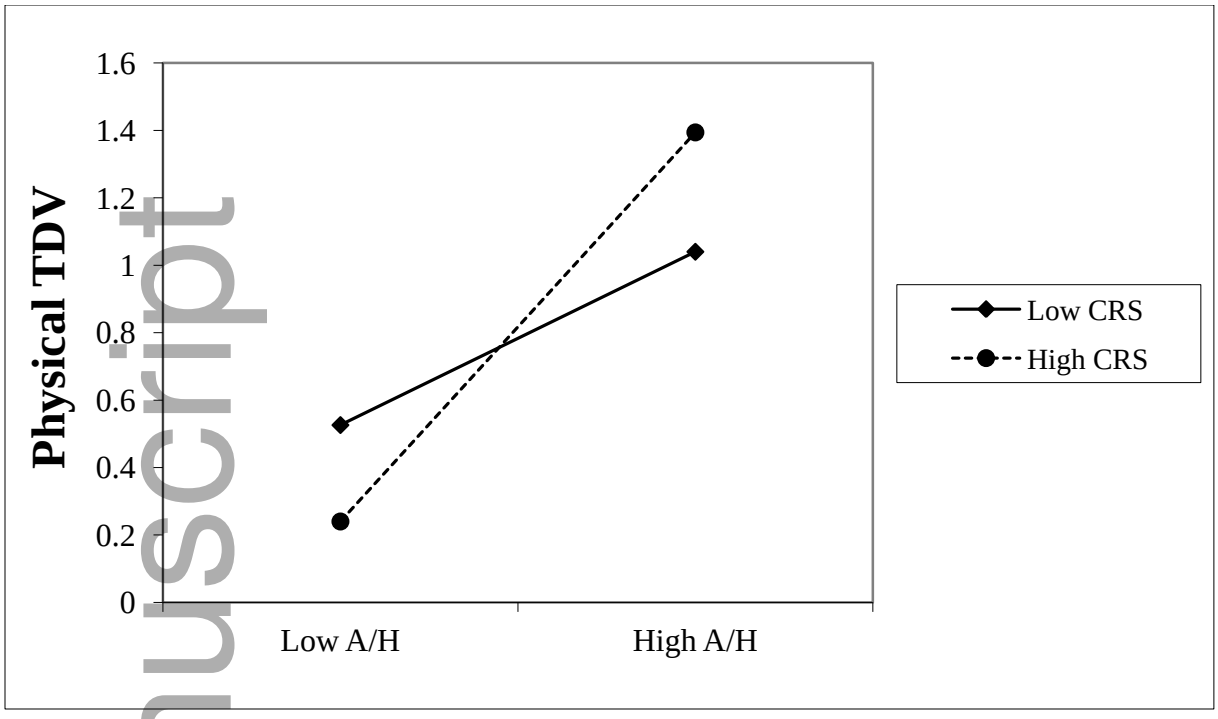

Figure 1. The interactive effects of anger/hostility and conflict resolution strategies on the perpetration of physical teen dating violence by girls. A/H = anger/hostility; AoV = acceptance of violence. High values correspond with one standard deviation above the mean and low values correspond with one standard deviation below the mean.

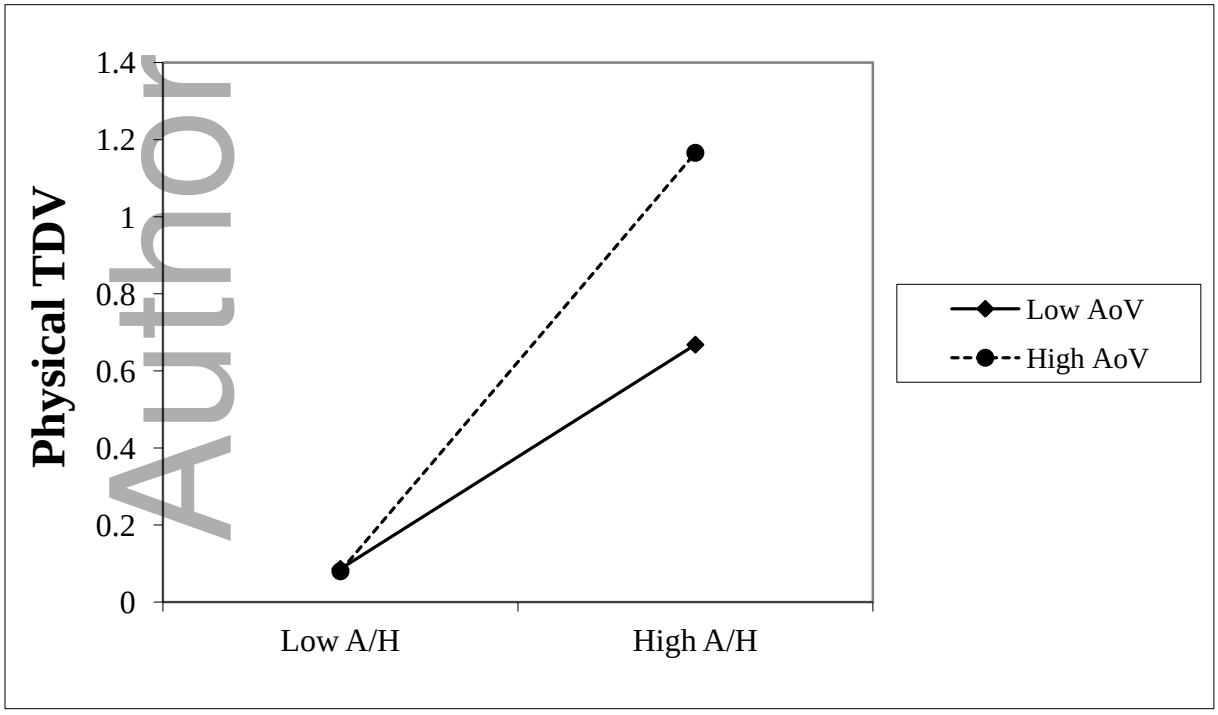

Figure 2. The interactive effects of anger/hostility and acceptance of violence on the perpetration of physical teen dating violence by girls. A/H = anger/hostility; AoV = acceptance of violence. High values correspond with one standard deviation above the mean and low values correspond with one standard deviation below the mean.

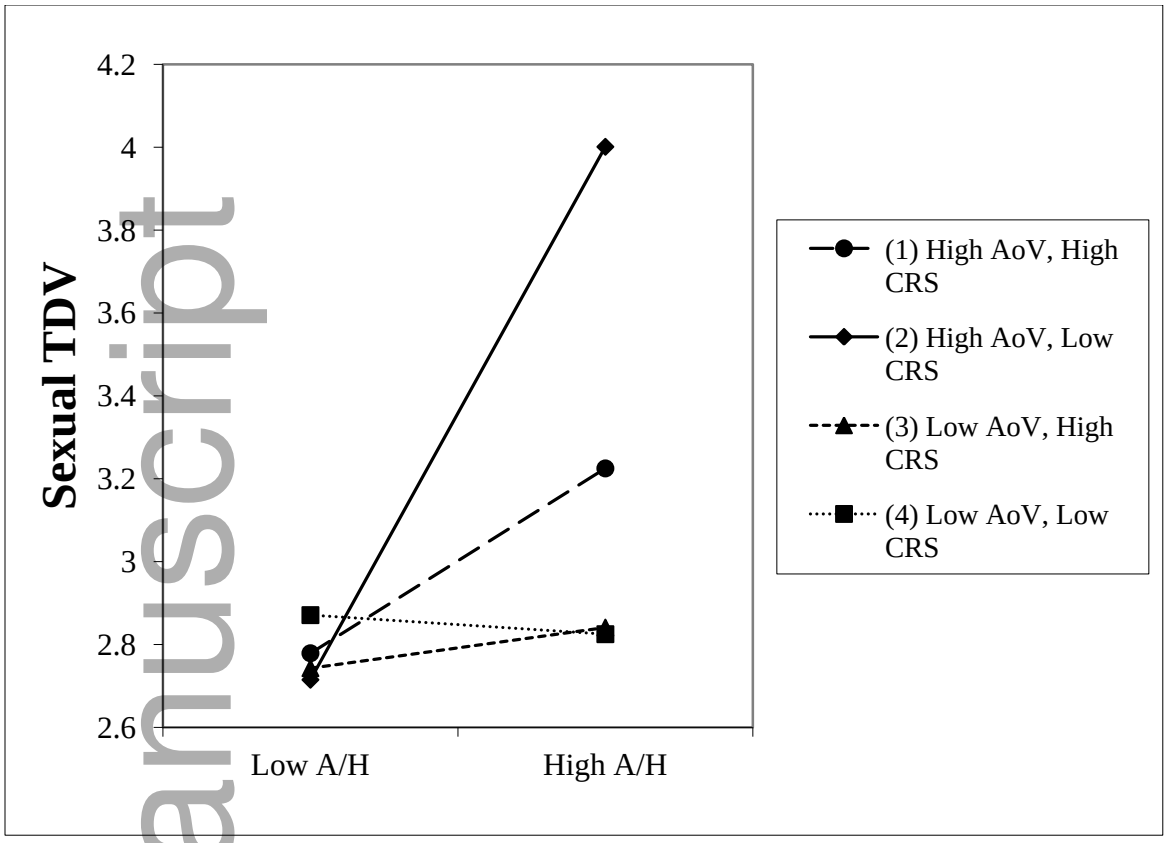

Figure 3. The interactive effects of anger/hostility, acceptance of violence, and positive conflict resolution strategies by boys. A/H = anger/hostility; Aov = acceptance of violence; CRS = conflict resolution strategies. High values correspond with one standard deviation above the mean and low values correspond with one standard deviation below the mean.

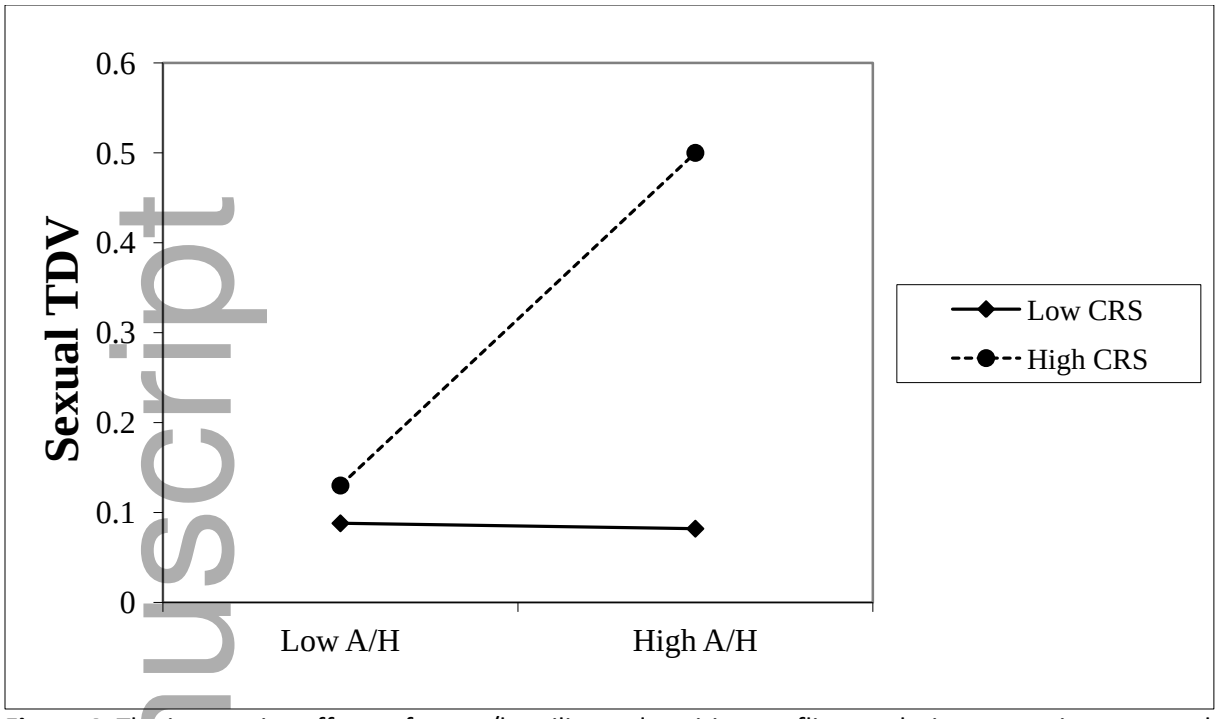

Figure 4. The interactive effects of anger/hostility and positive conflict resolution strategies on sexual TDV perpetration by girls. A/H = anger/hostility; CRS = conflict resolution strategies. High values correspond with one standard deviation above the mean and low values correspond with one standard deviation below the mean.

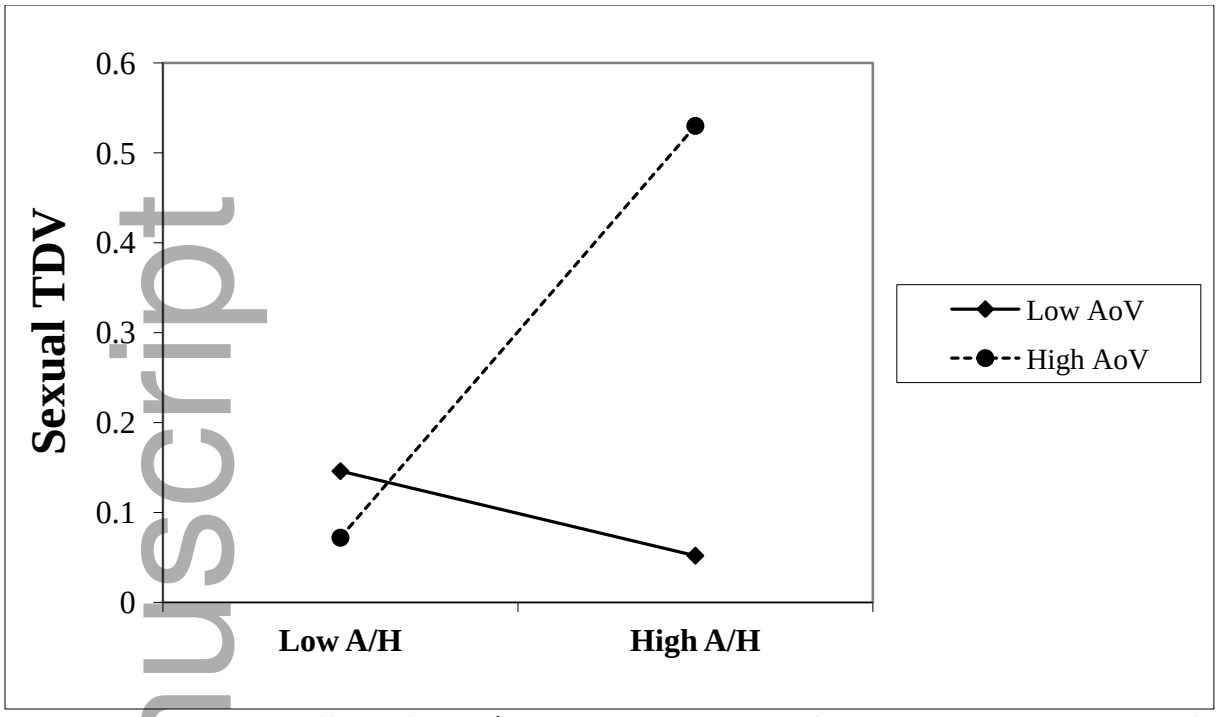

Figure 5. The interactive effects of anger/hostility and acceptance of violence on the perpetration of sexual TDV by girls. A/H = anger/hostility; AoV = acceptance of violence. High values correspond with one standard deviation above the mean and low values correspond with one standard deviation below the mean.