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## Shared Longitudinal Predictors of Physical Peer and Dating Violence

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### Abstract

**Purpose:** Peers and dates are common targets of adolescent violence. Prevention programs typically address either peer violence (PV) or dating violence (DV) but not both. However, if PV and DV share predictors, prevention strategies could target both behaviors, yielding economic and time efficiencies. Longitudinal data were examined to determine the extent to which physical PV and DV shared predictors. Guided by social learning and social control theories, both risk and protective factors were examined at multiple levels of the social ecology.

**Methods:** Adolescents in the eighth through 10th grades in three North Carolina counties completed self-administered questionnaires in school in the fall 2003 (Wave 1) and again in spring 2004 (Wave 2) ( $n = 4,227$ ). The sample was 48% male; 55% white, 33% black, and 12% of other race/ethnicity. A generalized estimating equations approach used adjusted standard errors to account for the correlation between the two violence outcomes.

**Results:** For both boys and girls, anger, family conflict, and having models of deviant behavior in the school were shared risk factors, and holding prosocial beliefs was a shared protective factor. For girls, anxiety and having models of deviant behavior in the neighborhood were additional shared risk factors. For boys, heavy alcohol use was an additional shared risk factor and parental monitoring was an additional shared protective factor.

**Conclusions:** Findings can inform the development of comprehensive cross-cutting prevention strategies at multiple levels of the social ecology designed to prevent both types of violence.

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## Keywords

Adolescent violence prevention; Peer violence; Dating violence

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Peers and dates are common targets of adolescent violence [1], and both peer violence (PV) and dating violence (DV) have negative consequences for victims and perpetrators [2,3]. Prevention of both types of violence is thus crucial. Although there are exceptions [4,5], prevention strategies typically target either PV or DV, but not both [1,2,6], reflecting a tendency to view the two types of violence as distinct [6,7]. Yet, to the extent that PV and DV share common predictors, prevention strategies could target both behaviors, yielding economic and time efficiencies [8]. The present study used longitudinal data to determine the extent to which physical PV and DV share risk and protective factors.

Numerous longitudinal studies have separately examined predictors of PV [9] and DV [10]. Yet, synthesizing results across studies to identify shared predictors is difficult because of variations in sample characteristics, the measurement of predictors, and sample sizes, with the latter resulting in varying power across studies to detect associations. Also, although DV measures anchor questions to dating partners, measures of PV typically do not exclude the possibility that dates are victims of the violence, further compromising comparisons across studies.

Although some studies have examined longitudinal predictors of both PV and DV in the same sample, they used separate models for each outcome, thereby not accounting for the correlation between violence outcomes [11–13]; numerous studies have found that PV and DV are correlated [2,12,14]. Thus, synthesizing results across the separate PV and DV models is problematic because failure to account for correlated outcomes could result in overestimation of the significance of associations [15]. Although a few adult studies have compared longitudinal predictors of crime and intimate partner violence using analytical techniques that accounted for covariation in the two outcomes [6,7,16], only one longitudinal study has examined predictors of adolescent PV and DV while accounting for correlated outcomes [17]. That study found evidence of shared predictors, but only a small number of risk factors were examined, and the study included only white boys.

The present study examined risk and protective factors for physical PV and DV perpetration that are modifiable and thus can be targeted in prevention strategies. Risk and protective factors were examined at multiple levels of the social ecology (intrapersonal, family, peer, school, and neighborhood domains), as needed for informing the prevention of complex behaviors such as PV and DV. Risk factors in the contextual domains of family, peer, school, and neighborhood were conceptualized from a social learning theory (SLT) perspective [18], and protective factors in those domains were conceptualized from a social control theory (SCT) perspective [19]. SLT posits that aggression is learned by observing the behavior of others and its positive consequences, which influence outcome expectations for using the same behaviors [18]. Risk factors examined, based on SLT, were exposure to models of aggression and other deviant behaviors in each context. SCT posits that conventional controls can constrain deviant behavior [19]. Based on SCT, the protective

factors examined were parental monitoring, peer prosocial beliefs, school bonding, and neighborhood informal social control.

Intrapersonal risk factors examined include psychological attributes (anger, anxiety, and depression) and substance use (heavy alcohol and marijuana use), which have been associated with PV [20] and DV [10] in violence outcome-specific studies. Intrapersonal protective factors examined were academic performance, which has been negatively associated with PV and DV [10,20], and holding prosocial beliefs, conceptualized from a social control perspective [19]. Analyses were conducted with a large racially diverse sample of boys and girls, using measures that distinguished the type of victim (a peer vs. a date) and an analytical approach that accounted for the correlation between PV and DV outcomes. Analyses examined whether the shared predictors of these two types of violence varied by the sex of the adolescent because the co-occurrence [2] and etiology [10,21] of the two types of violence have been found to differ for boys and girls.

## Methods

### Study overview

Adolescents in the eighth, ninth, and 10th grades in the public schools in three nonmetropolitan counties in North Carolina completed self-administered questionnaires in school in the fall 2003 (Wave 1 [W1]; n = 5,016; 79% of those eligible) and again in spring 2004 (Wave 2 [W2]; n = 4,262; 85% of those who completed the first assessment). Primary reasons for nonparticipation were parental refusal and school absence. Students were eligible if they could complete the survey in English and were not in self-contained special education classes. Parents had the opportunity to refuse consent for their child's participation by returning a written form or by calling a toll-free telephone number. Before survey administration, assent was obtained from adolescents whose parents had consented. The Institutional Review Board for the School of Public Health at the University of North Carolina at Chapel Hill approved the data collection protocols.

### Measures

**Physical dating violence perpetration.**—The DV outcome was measured at both waves using a short version of the Safe Dates Physical Dating Abuse Perpetration Scale [22]. Adolescents were asked, “During the past 3 months, how many times did you do each of the following things to someone you were dating or on a date with? Don't count it if you did it in self-defense or play.” Six behavioral items were listed: “pushed, grabbed, shoved, or kicked,” “slapped or scratched,” “physically twisted their arm,” “hit them with a fist or something else hard,” “beat them up,” and “assaulted them with a knife or gun.” Response categories ranged from zero (0) to 10 times or more (5). At each wave, scores were summed (average alpha = .94) and then dichotomized such that 0 indicated no perpetrated DV and 1 indicated at least one act of DV perpetrated in the previous 3 months.

**Physical peer violence perpetration.**—PV perpetration was assessed at both waves with the same six items listed for DV but with the question “During the past 3 months, about how many times have you done each of the following things to someone about the same age

as you that you were not dating?” At each wave, the scores were summed (average alpha = .89) and dichotomized as with the DV measure.

**Risk and protective factors.**—Table 1 summarizes risk and protective factor measurement. All measures were self-report, except for the three peer context variables that were assessed using sociometric methods. Adolescents identified up to five friends using a social network identification number from a student roster. Because respondents’ friends in school were included in data collection, the friends’ reports of their own behaviors and attitudes, rather than respondents’ perceptions of their friends’ behaviors and attitudes were used to create the peer context variables. This approach eliminated the possibility of a false consensus effect that can occur when adolescent perceptions are used to measure friends’ behaviors.

**Demographic variables.**—Demographic variables included grade in school (eighth, ninth, or 10th), race/ethnicity, and parent education. Race/ethnicity was measured by two variables, one indicating black race and one indicating race/ethnicity other than white or black; white served as the reference. Parent education, an indicator of family socioeconomic status was measured as the highest level of education attained by either parent at each wave, from less than high school (0) to graduate school or more (5).

### Analytic sample

The analytic sample was composed of adolescents who were in both waves and had a social network identification number in the student directories ( $n = 4,227$ ; 84% of those completing W1). The sample was 48% male; 55% white, 33% black, and 12% other race/ethnicity; 31% of the adolescents reported that the highest education obtained by either parent was high school or less. At W1, 31% (30% of males and 31% of females) reported perpetrating PV, and 16% (8% of males and 22% of females) reported perpetrating DV.

### Analytic strategy

A generalized estimating equations approach was used to model the longitudinal effect of each W1 risk and protective factor on W2 PV and DV, controlling for the W1 values of outcome variables, dating status, and demographic variables. This approach adjusted standard errors to account for the correlation between the two violence outcomes [15]. First, data were organized so that a row of data was included for each outcome for each participant (i.e., two rows per participant; one for the PV score and one for the DV score). A binary indicator variable (violence type) was scored “0” for PV and “1” for DV. Next, in each domain, a “full” model was estimated that included the predictors, the violence type variable, the control and demographic variables, and the interaction between each predictor and the violence type variable. Significant interactions ( $p < .05$ ) indicated that the effect of the predictor varied depending on violence type; these interactions were retained in the model, and odds ratios for each violence outcome associated with the predictor were produced. Nonsignificant interaction terms indicated that the effect of the predictor did not vary depending on violence type; these interaction terms were removed from the model, and a homogeneous main effect of the predictor was presented as a single odds ratio denoting the effect of that predictor on both PV and DV. Models were stratified by sex of the adolescent.

Missing data in the covariates were addressed through multiple imputations using SAS PROC MI (SAS Institute, Cary, NC, 2003).

## Results

At W2, approximately 28% reported engaging in PV (27% of boys and 29% of girls) and 15% reported perpetrating DV (9% of boys and 20% of girls). PV and DV were significantly associated for both boys ( $\chi^2=120.7$ (degree of freedom = 1);  $p < .0001$ ) and girls ( $\chi^2 = 169.21$ (degree of freedom = 1);  $p < .0001$ ); the prevalence of DV was higher among adolescents who reported PV (21% for boys and 38% for girls) than among those who did not (4% for boys and 12% for girls).

Tables 2 and 3 present the adjusted odds ratios (AOR) and 95% confidence intervals (CI) for girls and boys, respectively, from the demographic and domain-specific models. The AOR and 95% CI for the homogeneous main effect are presented in Columns 1 and 2 of the table when the effect of the predictor was the same for both types of violence. When the effect of the predictor differed for PV and DV, the AOR and 95% CI for the effects of the predictor on each violence type are presented in the last four columns of the table. A summary of the modifiable shared predictors, some of which were the same and some of which were different for boys and girls, is presented in Table 4.

### Predictors for girls

For girls, the significant shared modifiable risk factors were anger (AOR = 1.17;  $p = .009$ ), anxiety (AOR = 1.16;  $p = .007$ ), family conflict (AOR = 1.18;  $p < .0001$ ), and having models of deviant behavior in school (AOR = 1.20;  $p = .0014$ ) and in the neighborhood (AOR = 1.24;  $p < .0001$ ). The only significant shared modifiable protective factor was holding prosocial beliefs (AOR = .83;  $p = .0182$ ). However, having friends with prosocial beliefs was marginally significant (AOR = .82;  $p = .06$ ).

Demographic variables that related to both PV and DV in the same direction were black race and parent education. Although black race significantly interacted with violence type, it was significantly associated with both types of violence. Black girls were more likely than white girls to report both PV and DV, but the association was stronger between black race and DV (AOR = 2.44;  $p < .0001$ ) than between black race and PV (AOR = 1.56;  $p = .0002$ ). Higher parental education was protective against both PV and DV (AOR = .92;  $p = .009$ ).

Friend DV and grade in school significantly interacted with violence type. Both variables were significantly associated with both types of violence but in opposite directions. Having friends who perpetrated DV was protective against PV perpetration (AOR = .59;  $p = .007$ ) but was a risk for DV perpetration (AOR = 1.15;  $p = .012$ ). Higher grade in school was protective against PV (AOR = .79;  $p = .0008$ ) but was a risk for DV (AOR = 1.20;  $p = .02$ ).

### Predictors for boys

For boys, the modifiable shared risk factors were anger (AOR = 1.18;  $p = .01$ ), heavy alcohol use (AOR = 1.27;  $p = .0005$ ), family conflict (AOR = 1.21;  $p < .0001$ ) and having models of deviant behavior in school (AOR = 1.21;  $p = .0004$ ). Shared modifiable protective

factors were holding prosocial beliefs (AOR = .85;  $p=.03$ ) and parental monitoring (AOR=.87;  $p=.016$ ). None of the demographic variables predicted both PV and DV. Having models of deviant behavior in the neighborhood predicted DV (AOR = 1.50;  $p < .0001$ ) but not PV (AOR = 1.09;  $p = .11$ ).

## Discussion

Our findings provided substantial support for PV and DV sharing modifiable risk and protective factors, although with some differences for boys and girls. Notably, shared predictors were identified at intrapersonal, family, school, and neighborhood levels, and thus, the findings can inform the development of comprehensive approaches to prevention that include strategies at each level of the social ecology. Further, since the predictors examined were based on social learning and SCT, these theories could guide the development and selection of programs for preventing both types of violence.

Shared intrapersonal predictors for both boys and girls that could be targeted in comprehensive programs included holding prosocial beliefs and anger. Promoting prosocial beliefs and improving emotional competencies, such as anger management, are key components of positive youth development programs [28]. These types of programs are based on the premise that promoting positive youth development can prevent multiple adolescent health risk behaviors [28] and in fact have been shown to be effective at preventing tobacco, alcohol, and illicit substance use, risky sexual behaviors, delinquency, and aggression against peers [8,28]. Their effects on DV have not been assessed. Intervention activities used in these programs to promote prosocial beliefs and improve anger management skills may be useful for developing programs to prevent both PV and DV. Additionally, programs designed to prevent both PV and DV could draw from evidence-based anger management programs [29,30].

Anxiety was an additional shared intrapersonal risk factor for girls only. Studies have found that internalizing factors are stronger predictors of PV [21] and DV [11] for girls than for boys. The current findings suggest that efforts to decrease anxiety among girls are warranted; however, understanding more about the source of anxiety would facilitate such efforts, as would a better understanding of why anxiety promotes violence in girls but not boys.

Heavy alcohol use was a shared risk factor for boys but surprisingly not for girls as alcohol use has been found to be associated with both PV [31] and DV [32] for both boys and girls in several outcome-specific studies. Assessing heavy alcohol use rather than the more commonly assessed “any” alcohol use may have produced the sex difference. It is also possible that there are sex differences in why, how, and under what circumstances alcohol use is related to the two types of violence that were not discerned in the present study, or that the relationships for girls were inflated in prior studies because of a lack of control for covariation between PV and DV.

At the family level, family conflict was a shared risk factor for both boys and girls and parental monitoring was a shared protective factor for boys. Family-based programs

have demonstrated effectiveness in decreasing family conflict and promoting parental monitoring [33] and thus could inform cross-cutting family-based efforts to prevent both types of violence. Moreover, because a conflictual family environment can produce anger and anxiety [34] in adolescents and promote adolescent alcohol use [35], which is also associated with lack of parental monitoring, family-based programs designed to reduce family conflict and increase monitoring could prevent both PV and DV by altering the shared intrapersonal risk factors.

Exposure to deviance models in school was a shared risk factor for both boys and girls, and exposure to deviant models in the neighborhood was a shared risk factor for girls. SLT could guide strategies to address these shared risk factors by decreasing exposure to deviant models or by introducing more prosocial models in the adolescent's environment. Also, SLT could inform efforts to decrease the likelihood of modeling aggressive behaviors by teaching nonviolent responses to the emotional triggers of violence observed in others; altering the perceived status and power of those who use violence (because modeling is more likely when the model is perceived as high in these attributes); and altering adolescent outcome expectations for violence by promoting awareness of the potential negative consequences of each violence type.

We had several unexpected findings. Although our finding that having friends who perpetrate DV was a risk for DV was as expected based on SLT, the finding that having friends who perpetrate DV was protective against PV was not. These findings were the same even in models that did not include the other peer context variables. Having a high proportion of friends who are using DV may indicate that the adolescent is in a more dating-centric friendship group and as such is not interacting much with peers outside that group and therefore not in many situations in which PV could occur. It was also surprising that parental monitoring, which is one of the most commonly implicated protective family factors, was protective against both types of violence for boys but for neither type for girls. On further investigation, parental monitoring was found to be protective against both PV and DV for girls when family conflict was not included in the models. Borawski et al. [36] also found that the protective effect of parental monitoring on girl risk behaviors decreases in importance when other more negative aspects of the family environment were included in the models, whereas parental monitoring remained protective for boys. For girls, the protective effect of parental monitoring may be overcome by negative aspects (family conflict) of the family environment. Finally, consistent with noted trends that DV perpetration increases [10], whereas PV perpetration decreases [37] across adolescence, we found that for girls increasing grade in school was a risk for DV but protective for PV. However, these same trends were not noted for boys. Others have found slower declines in PV across adolescence for boys than girls, attributed primarily to the greater negative social sanctions that girls compared with boys begin to receive for being aggressive [37]. However, we do not know why DV did not increase across grades for boys. Perhaps, for boys, increases in DV occur over a longer age span than was captured in this study.

Although the study had significant strengths including the longitudinal design, analysis strategy that accounted for correlated outcomes and measures that distinguished peers from dates as the targets of the violence, the study also had several limitations. It did not include

measures of constructs that have been implicated in both PV and DV in violence-specific studies such as conflict resolution skills, attitudes about the acceptance of violence, and self-control. In addition, the study focused on physical PV and DV and did not include relational aggression against peers or psychological and sexual violence against dates. Also, although the DV measure ruled out violence perpetrated in play and self-defense, more contextual information on perpetrated acts, such as the motives for and circumstances surrounding the violence, would have provided more information for evaluating the much higher prevalence rate of DV for girls than boys, although greater DV among girls is a common finding [10]. In terms of the sample, although it was large in size and reflected high response rates, the study was conducted in a primarily rural county, limiting the ability to generalize the findings to more urban areas. Finally, the data are approximately 10 years old, and over that period, substantial changes have occurred in the ways that teens interact with dates and peers because of technological developments. Nevertheless, our theoretically based predictors are likely still relevant given that they continue to be important, even in recent PV- and DV-specific studies [9,10]. Future studies examining shared predictors of PV and DV will need to include new risk and protective factors that will likely begin emerging as a result of these changes in the peer and dating relationships landscape due to technology.

Despite the limitations, findings from this observational study of shared modifiable risk and protective factors for PV and DV suggest the potential to develop comprehensive prevention strategies to reduce both these outcomes focusing on shared predictors across the social ecology. Additional research is needed, however, to replicate the current findings and extend the predictors examined. Moreover, additional research is needed that evaluates the effects of strategies specifically designed to prevent both types of violence. Only three programs have been evaluated for effects on both PV and DV; one was effective at preventing DV in a general population sample but effective in preventing PV only in a high-risk sample [5,38], and two were effective at preventing both DV and PV [4,39,40], although the effects of one of these programs was assessed only on sexual and not physical PV and DV [4]. Given the limited resources and opportunities for prevention, the promise of strategies that can efficiently reduce several types of violence makes this line of research particularly important.

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### **IMPLICATIONS AND CONTRIBUTION**

This longitudinal study identified shared predictors of peer and dating violence that can inform the development of cross-cutting prevention strategies at multiple levels of the social ecology designed to prevent both types of violence. Implementing interventions designed to prevent both types of violence could yield efficiencies in cost and time.

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**Table 1**

Construct measurement

Variable	RF/PF	# of items (Wave 3 alpha)	Response categories	Item or example item
Intrapersonal				
Anger [23]	RF	3 (.88)	0 = never to 3 = always	In the past 3 months, "How often did you feel each of the following (mad, angry, furious)?"
Anxiety [24]	RF	7 (.89)	0 = strongly disagree to 4 = strongly agree	In the past 3 months, "I worried about what was going to happen."
Depression [25]	RF	3 (.92)	0 = strongly disagree to 4 = strongly agree	In the past 3 months, "I hated myself."
Heavy alcohol use	RF	4 (.95)	0 = times to 4 = 10 or more times	In the past 3 months, "Gotten drunk or very high from drinking alcoholic beverages."
Marijuana use	RF	1	0 = no times to 4 = 10 times or more	Number of times over the past 3 months they used marijuana.
Grade point average	PF	4 (.85)		Average grade point average based on self-reported grades of the most recent grading period in English/ Language arts, Mathematics, History/ Social studies, and Science.
Individual prosocial beliefs (composite of endorsement of conventional beliefs, commitment to prosocial values, degree of religiosity, and attitudes toward substance use)	PF	12 (.84)	0 = strongly disagree to 4 = strongly agree	Endorsement of conventional beliefs (e.g. "It is good to be honest") (three items).
			0 = not at all important to 3 = very important	Commitment to prosocial values (e.g. "finishing high school," "going to college") (three items).
			0 = never to 5 = more than once a week	Degree of religiosity (e.g. frequency of church attendance) (one item).
			0 = not at all important to 3 = very important	Religion importance (two items).
			0 = only good things to 6 = only bad things	"Do you believe that drinking alcohol one or more days a week would bring you ..." (three items).
Family context				
Family conflict [26]	RF	3 (.87)	0 = strongly disagree to 4 = strongly agree	In the past 3 months, "We fight a lot in our family."
Parental monitoring [27]	PF	6 (.85)	0 = not like him/her to 3 = just like him/ her	"He/she tells me when I must come home."
Peer context				
Friends DV	RF	NA	0 to 1	Proportion of nominated friends who self-reported DV perpetration in the past 3 months.
Friends PV	RF	NA	0 to 1	Proportion of nominated friends who self-reported PV perpetration in the past 3 months.
Friend prosocial beliefs	PF	12	See above for individual prosocial beliefs	Mean self-reported prosocial belief score across nominated friends.
School context				
School deviance models	RF	6 (.92)	0 = strongly disagree to 4 = strongly agree	"At your school, about how many students your age do you think ... use marijuana?"

Variable	RF/PF	# of items (Wave 3 alpha)	Response categories	Item or example item
School bonding	PF	3 (.86)	0 = strongly disagree to 4 = strongly agree	“My school is like a family.”
Neighborhood context				
Neighborhood deviance models	RF	4 (.79)	0 = strongly disagree to 4 = strongly agree	“People there have violent arguments.”
Neighborhood social control	PF	3 (.79)	0 = strongly agree to 4 = strongly disagree	“Adults keep an eye on what teens are up to.”

DV = dating violence; NA = not applicable; PF = protective factor; PV = peer violence; RF = risk factor.

Prospective associations between Wave 1 predictors and Wave 2 peer and dating violence perpetration for girls

Table 2

	Homogenous main effect		Different effect by outcome			
	AOR	95% CI	Peer violence		Dating violence	
			AOR	95% CI	AOR	95% CI
Model 1: demographic covariates						
Grade	—	—	.79	.69–.91	1.20	1.03–1.40
Black race (ref = white)	—	—	1.56	1.24–1.96	2.44	1.89–3.14
Other race (ref = white)	1.10	.82–1.46	—	—	—	—
Parent education	.92	.87–.98	—	—	—	—
Model 2: individual attributes and behaviors						
Anger	1.17	1.04–1.31	—	—	—	—
Anxiety	1.16	1.04–1.30	—	—	—	—
Depression	1.04	.95–1.13	—	—	—	—
Heavy alcohol use	1.05	.90–1.22	—	—	—	—
Marijuana use	1.06	.95–1.17	—	—	—	—
Grade point average	1.03	.92–1.15	—	—	—	—
Prosocial beliefs	.83	.71–.97	—	—	—	—
Model 3: family modeling and control						
Family conflict	1.18	1.10–1.22	—	—	—	—
Parent monitoring	.91	.82–1.02	—	—	—	—
Model 4: peer modeling and control						
Friend dating violence	—	—	.59	.40–.87	1.75	1.15–2.66
Friend peer violence	1.09	.83–1.44	—	—	—	—
Friend prosocial beliefs	.82	.67–1.01	—	—	—	—
Model 5: school modeling and control						
School deviance models	1.20	1.08–1.32	—	—	—	—
School bonding	.95	.87–1.03	—	—	—	—
Model 6: neighborhood modeling and control						
Neighborhood deviance models	1.24	1.14–1.35	—	—	—	—
Neighborhood social control	.96	.88–1.05	—	—	—	—

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All models control for baseline peer violence, dating violence, and dating status.

Models 2—6 include all domain-specific variables and the demographic and control variables.

**Bold** represents statistically significant results ( $p < .05$ ).

AOR = adjusted odds ratio; CI = confidence interval; ref = reference.

Prospective associations between Wave 1 predictors and Wave 2 peer and dating violence perpetration for boys

Table 3

	Homogenous main effect		Different effect by outcome	
	AOR	95% CI	Peer violence	Dating violence
	AOR	95% CI	AOR	95% CI
Model 1: demographic covariates				
Grade	.91	.81–1.03	—	—
Black race (ref = white)	.88	.70–1.11	—	—
Other race (ref = white)	1.14	.87–1.50	—	—
Parent education	.98	.91 –1.05	—	—
Model 2: individual attributes and behaviors				
Anger	<b>1.18</b>	<b>1.04-1.35</b>	—	—
Anxiety	1.15	.99–1.33	—	—
Depression	.99	.87–1.12	—	—
Heavy alcohol use	<b>1.27</b>	<b>1.11-1.46</b>	—	—
Marijuana use	.99	.89–1.09	—	—
Grade point average	1.11	.98–1.26	—	—
Prosocial beliefs	<b>.85</b>	<b>.73-.98</b>	—	—
Model 3: family modeling and control				
Family conflict	<b>1.21</b>	<b>1.11-1.31</b>	—	—
Parent monitoring	<b>.87</b>	<b>.78-.97</b>	—	—
Model 4: peer modeling and control				
Friend dating violence	1.18	.73–1.89	—	—
Friend peer violence	1.13	.81–1.57	—	—
Friend prosocial beliefs	.95	.79–1.14	—	—
Model 5: school modeling and control				
School deviance models	<b>1.21</b>	<b>1.09-1.35</b>	—	—
School bonding	1.01	.92–1.10	—	—
Model 6: neighborhood modeling and control				
Neighborhood deviance models	—	—	1.09	.98–1.22
Neighborhood social control	1.00	.91 –1.09	—	—
			<b>1.50</b>	<b>1.27-1.77</b>



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AOR = adjusted odds ratio; CI = confidence interval; ref = reference.

**Table 4**

Modifiable shared predictors for peer and dating violence for girls and boys

<b>Girls</b>	<b>Boys</b>
Shared risk factors	
Anger	Anger
Anxiety	—
Family conflict	Family conflict
School deviance models	School deviance models
Neighborhood deviance models	—
—	Heavy alcohol use
Shared protective factors	
Prosocial beliefs	Prosocial beliefs
Friend prosocial beliefs <sup>a</sup>	—
—	Parental monitoring

<sup>a</sup>Marginally significant  $p = .06$ .

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