

# Consequences of Teen Dating Violence

## Understanding Intervening Variables in Ecological Context

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Increasing attention has been given to the problem of teen dating violence with more research needed on mediating and moderating factors in the relationship between victimization and negative consequences. This article explores mental health and educational consequences of physical and sexual abuse by peers in a convenience sample of adolescents. Dating violence was associated with higher levels of depression, suicidal thoughts, and poorer educational outcomes. The use of alcohol and depression complicated the relationship between victimization and outcomes. Sex differences in patterns of perceived social support as a moderator were also examined with more significant effects for girls.

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A review of recent research highlights the prevalence and increasing recognition of the problem of teen dating violence. For example, Silverman, Raj, Mucci, and Hathaway (2001) found that 20% of female high school students in one state reported sexual or physical abuse in a dating relationship. National studies of adolescents find rates of 7% to 8% for sexual assault alone (e.g., Raghavan, Bogart., Elliott, Vestal, & Schuster, 2004). Attention to this topic, however, is more recent than research on other areas of interpersonal violence. Thus, much of the focus of dating violence research to date has been on establishing prevalence rates and documenting risk factors for victimization, work vital to the design of prevention programs (e.g., see Foshee, Benefield, Ennett, Bauman, & Suchindran, 2004; Gover, 2004; Harner, 2003, for a review). Furthermore, a large segment of dating violence

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research focuses on college-age students, leading to calls for the study of younger segments of adolescent samples (e.g., Harned, 2002). The current study examined educational and mental health consequences of dating violence in a sample of adolescents in grades 7 through 12.

Recent studies of consequences related to dating violence victimization document negative outcomes similar to studies of adult sexual assault and intimate partner violence, including a range of mental health concerns. For example, Ackard and Neumark-Sztainer (2002) and Coker et al. (2000) found associations between dating violence and higher rates of eating disorders, suicidal thoughts, and decreased mental and physical health and life satisfaction. We could identify few studies that have examined education or school-based outcomes related to teen dating violence, with studies of school outcomes related more to broader variables of sexual or physical abuse (e.g., Garnefski & Arends, 1998). For example, Luster, Small, and Lower (2002) found experiences with family violence (e.g., physical and sexual abuse by an adult) related to lower grade point average (GPA) for boys and girls, but a general variable of school harassment and lower GPA only for females. A focus on dating violence more particularly seems a key area for further study given the centrality of education and school at this point in the life cycle.

In addition, the field of interpersonal violence has also called for what Merrill, Thomsen, Sinclair, Gold, and Milner (2001) term "third generation research questions" (p. 992). This research requires going beyond looking at direct associations between violence and its impact on survivors. Instead, this research examines the role of potential moderating and mediating variables that may explain the links between victimization and outcomes, thus providing key points for intervention (e.g., Roche, Runtz, & Hunter, 1999). Studies of adults in the broader literature on interpersonal violence, for example, have looked at mediators, such as family-of-origin relationships and attachment, coping, and retraumatization across the life course (e.g., Banyard, Williams, & Siegel, 2001; Coffey, Leitenberg, Henning, Bennett, & Jankowski, 1996; Merrill et al., 2001; Wind & Silvern, 1994). Theoretical reviews have focused on the potential role of intrapersonal risk factors such as "traumagenic dynamics" (powerlessness, betrayal, or shame and stigma) (Finkelhor & Browne, 1985, p. 530) and coping processes (e.g., Spaccarelli, 1994), interpersonal processes including attachment (e.g., Alexander, 1992), and broader ecological factors (e.g., Harvey, 1996). In the specific area of adolescent dating violence, several studies examined the protective function of social support and parental monitoring (e.g., Holt & Espelage, 2005; Luster & Small, 1997; Roche et al., 1999), although more work has been done on mediators of risk for dating violence victimization or perpetration (e.g., Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004), and many questions remain about factors that may explain variability in its consequences for survivors.

Of particular interest has also been the lens of gender, although again mostly in terms of differences in prevalence and risk factors (e.g., Foshee, 1996; Katz, Kuffel, & Coblenz, 2002; Molidor & Tolman, 1998). Many studies report comparable rates

of dating violence victimization and perpetration by males and females, whereas more detailed analyses suggest gender differences in severity and types of violence. For example, Molidor and Tolman (1998) found that girls were more likely to experience more severe violence, including sexual assault and being punched, as well as physical injury as a result of the violence. Other studies have found gender differences in risk factors for perpetration (e.g., Banyard, Cross, & Modecki, 2006; Foshee, Linder, MacDougall, & Bangdiwala, 2001) and victimization (e.g., O'Keefe & Treister, 1998). Much less is understood about patterns of gender similarity and difference with regard to outcomes of victimization and their mediators, a limitation in the field of interpersonal violence more broadly (e.g., Banyard, Williams, & Siegel, 2004). Again, research in this field has focused more on the impact of victimization by adults on adolescent outcomes (e.g., Garnefski & Arends, 1998).

## Current Study

The current study sought to examine the educational and mental health problems associated with dating violence victimization. It was hypothesized that dating violence victimization would be associated with more negative school attitudes and outcomes and higher depressed mood, suicidal thoughts, and substance use. It was further hypothesized that the relationship between victimization and educational outcomes would be complicated (and potentially mediated) through the relationship of victimization to higher depressed mood and substance use. It should be noted that the current study was cross-sectional in nature, and thus could not examine causal links between these variables or the true direction of their effects. For the current study, substance use and depression were hypothesized mediators for the purposes of exploratory analyses and a hypothesized theory of causation. Finally, exploratory analyses were conducted to examine patterns of sex difference and similarity and the potential buffering effect of social support from parents and community, hypothesizing that support would have a buffering effect for victims of dating violence. Based on previous research it was hypothesized that girls would report higher rates of sexual victimization by a peer. We expected few sex differences in the association between victimization and outcomes and explored sex as it affected the buffering role of social support.

## Method

### Procedures

The current analyses represent a secondary analysis of data collected as part of a community empowerment, intervention, and needs assessment project (the Teen Assessment Project or TAP) originally developed by Small and Kerns (1993) in

Wisconsin and adapted and administered through Cooperative Extension at a state land-grant university in New England. Measures and procedures were developed with the primary goal of assisting volunteer communities interested in conducting a needs assessment survey of risky behaviors among youth in grades 7 to 12 around the state. Communities enlisted the help of TAP staff to develop a community coalition to oversee the study. The TAP staff then administered the survey to all students in grades 7 to 12 on one day during the academic year. Students completed the surveys anonymously in their classrooms during school hours, and TAP staff and the community coalition then used the data from each community to raise awareness and develop prevention and intervention strategies around youth risk behaviors particular to each community. The data for the current secondary analyses represent a compilation of data from all of the participating schools during 2000 to 2001.

## Participants

The original sample for the current analyses consisted of 9,791 youth in grades 7 to 12 from 10 school districts around the state surveyed during a 1-year period during 2000 to 2001. Only four of these districts chose to include questions about physical dating violence victimization and unwanted sexual experiences by peers; thus, the current analyses use a convenience subsample of 2,101 participants who did not have missing data on both of these questions. Students with inconsistent responses on the survey (e.g., self-reported that they used all listed drugs daily or said they never used alcohol but scored positively for binge drinking) were eliminated from the analyses because of questions about the reliability of their self-reports (63 students in districts in the current sample that asked dating violence questions). Fifty-one percent were female, and there was relatively equal distribution across grades (15.3% in 7th, 16.4% in 8th, 19.1% in 9th, 18.6% in 10th, 15.5% in 11th, and 15% in 12th grade). Information on ethnicity was not collected because many of the communities in which the survey was done were not ethnically diverse, and such information was potentially identifying for some participants, compromising their anonymity in participating. The median response for father figure's level of education was 2, which indicated some college or technical school.

## Measures

*Victimization.* Victimization was assessed using two questions. For physical abuse, 986 students were asked, "How many times have you been hit, pushed, or beaten by a girlfriend or boyfriend?" whereas 1,130 were asked this question with a slight word change made by participating communities ("How much have you been hit, pushed, or beaten by a girlfriend/boyfriend?"). The answer choices were identical and ranged from 0 (*never*) to 6 (*10 or more times*). This question was taken from the Youth Risk Behavior Survey (Centers for Disease Control and Prevention, 2004) and has been used in previous studies (e.g., Silverman et al., 2001). No specific time

frames were given for these questions. A dichotomous variable was created to deal with skewness of data such that any response greater than 0 was coded as 1 for the presence of physical dating violence. Three hundred and fifty-six individuals self-reported physical violence (16.9%).

One question about use of sexual coercion by a peer was also included. Participants were asked, "Have you ever been made by someone to do something sexual that you didn't want to do?" Answer choices were categorical including 0 for *no* and various *yes* categories, including coercion by a student in or out of school or by an adult. Again, a dichotomous variable was created for the current analyses with 0 representing a *no* response to this question and 1 representing any *yes* response for which at least one of the indicated perpetrators was another student. Two hundred and seventy-seven students reported this (13.2%).

Finally, a composite victimization variable was created as a dichotomous variable, with 0 for students who answered *No* to both above questions, and 1 for students who answered *Yes* to either. Five hundred and sixteen participants reported some type of abuse victimization (24.6%).

*Mental health indicators.* Alcohol and drug use were assessed through calculation of a mean score on three items adapted from Small and Rodgers (1995) and Schulenberg, Bachman, and O'Malley (1993). The items asked participants to indicate on a 6-point scale, from 0 (*don't use and never have*), 1 (*have used it but don't anymore*), 2 (*once or twice a year*), to 6 (*daily*), how frequently they use smoking tobacco, alcohol, and marijuana. Scores were created by taking the mean of responses to these three items; missing data were treated with mean substitution unless there were missing values on all 3 items (the case for 2 participants). Cronbach's alpha was .82 for this sample. The mean for this sample was 1.42 ( $SD = 1.58$ ), with scores ranging from 0 to 6.

Depressed mood was assessed by asking, "During the past month have you felt depressed or very sad?" Response choices ranged from 0 (*no*) to 4 (*yes, all of the time*). The mean for this sample was 1.22 ( $SD = 1.16$ ), with a range from 0 to 4. Twenty-two participants had missing data on this item.

Suicidal thoughts were assessed by asking, "During the past month, have you seriously thought about killing yourself?" Participants answered on a 5-point scale from 0 (*no*) to 4 (*yes, all of the time*). The mean for the current sample was 0.38 ( $SD = 0.86$ ) with 7 participants missing data. Of the sample, 21.5% said *yes* to this question.

Worries were assessed with 5 items adapted from Small and Rodgers (1995). Participants were asked how much they worried about "getting good grades," "getting along with parents at home," "not fitting in with other kids at school," "how well parents get along," and "how I look." Answers were given on a 5-point scale from *not at all* to *very much*. Scores were calculated by taking the mean across these 5 items. Cronbach's alpha was .70 for these items. The mean score for this sample was 2.06 ( $SD = 0.84$ ).

## Educational Attitudes and Outcomes

School attachment was assessed with four items from Small and Rodgers (1995) that examined perceptions of school environment. The items were: "I enjoy going to school," "The rules in my school are enforced fairly," "I will probably drop out before I complete high school," and "I believe I am getting a good, high quality education at my school." Responses on a 4-point scale from *strongly agree* to *strongly disagree* were reverse scored so that higher scores indicated more positive views of school. Final scores were calculated as the mean across responses to the four questions. Cronbach's alpha was .62 for the current sample ( $M = 1.80$ ,  $SD = 0.55$ ). Three participants had missing data.

In addition, specific attention was also paid to one individual item from the school attachment scale, whether the participant felt that they were likely to drop out of high school. The mean for this sample was 0.25 ( $SD = 0.67$ ). Most students (84%) strongly disagreed that they would drop out before finishing high school. Twenty participants had missing data on this item.

Participants were asked to report the average grades they usually get on a scale from 0, which indicated *mostly As* to 7, which indicated *mostly below D*. The mean score for this sample was 1.93 ( $SD = 1.48$ ), which was between *about half As and half Bs* and *mostly Bs*. Some school districts did not use this question in their survey, thus analyses with this item have only 1,112 valid participants.

## Social Support

Perceptions of maternal and paternal support were assessed with 3 items each adapted from Armsden and Greenberg (1987) and Small and Rodgers (1995). Separate questions for mother and father were asked about whether the parent is "there when I need her/him," "cares about me," and "is fair when it comes to enforcing family rules" on a 5-point scale from *never* to *very often*. There was also an answer choice for participants who did not have an adult female or male at home; these responses were coded as missing, as the question was not applicable to them. For the current study, a composite measure of parental support was created by taking the mean of responses to all 6 items (3 for mothers and 3 for fathers), scoring similar to other support satisfaction measures (e.g., Sarason, Sarason, Shearin, & Pierce, 1987). Cronbach's alpha for this composite of parental support was .83 ( $M = 3.18$ ,  $SD = 0.80$ ) with 44 missing.

Perceptions of neighborhood support were assessed with three items also from Small and Kerns (1993). The items were "My town is a good place to live," "In my town there are a lot of fun things for kids my age to do," and "If I had a problem, there are neighbors whom I could count on to help me." A 4-point scale from 0 (*never*) to 3 (*strongly disagree*) was used. Scores were calculated as the mean across the 3 items and reversed so that higher scores indicated views of greater perceived support and positive view of community. The Cronbach's alpha for this sample was .50 ( $M = 1.42$ ,  $SD = 0.67$ ). Eight participants had missing data.

**Table 1**  
**Correlations Between Risk Factor Variables and**  
**Indices of Dating Violence Victimization**

Correlates	Physical	Sexual	Either
Gender	-.01	.11***	.07***
Depressed mood <sup>a</sup>	.23***	.20***	.27***
Substance use <sup>b</sup>	.23***	.16***	.24***
Suicidal thoughts <sup>c</sup>	.22***	.23***	.26***
Worries <sup>d</sup>	-.03	0.04	-0.01
School attachment <sup>e</sup>	-.18***	-.14***	-.20***
Average grades <sup>f</sup>	.18***	.09**	.16***
Dropping out <sup>g</sup>	.06**	.06**	.08***
Parental support <sup>h</sup>	-.14***	-.12***	-.14***
Neighborhood support <sup>i</sup>	-.16***	-.13***	-.19***

a.  $n = 2,079$

b.  $n = 2,099$

c.  $n = 2,094$

d.  $n = 2,101$

e.  $n = 2,098$

f.  $n = 1,112$

g.  $n = 2,081$

h.  $n = 2,057$

i.  $n = 2,093$

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Results

As stated previously, 16.9% of the sample reported physical dating violence, 13.2% unwanted sexual experiences perpetrated by a peer, and 24.6% either of these forms of victimization. Age was also related to victimization with higher rates for older age and grade categories for both physical abuse ( $r = .08$  for both age and grade,  $p < .001$ ) and the composite variable ( $r = .07$  for both,  $p < .003$ ), but not for sexual abuse (was significant only for grade,  $r = .04$ ,  $p < .05$ ). However, it should be noted that for further analyses, age did not seem to function as a moderator variable and thus was not examined further in the same ways that gender, for example, was.

Initial analyses examined the relationships between self-reported victimization and mental health and educational consequences. Table 1 presents bivariate correlations between victimization variables, social support, and outcomes.

To examine these relationships at the multivariate level, procedures for examining mediation as described by Baron and Kenny (1986) were used. They describe three conditions that must be satisfied to demonstrate mediation. First, the independent variable (victimization) must account for significant variance in the outcome variables (average grades, school attachment, and thoughts of dropping out). Next,

**Table 2**  
**Regression Equations for Assessing Mediation of the Relationship**  
**Between Dating Violence Victimization and School Outcomes**

Dependent Variable	Predictor Entered	R <sup>2</sup>	β
Bivariate relationships			
1. School attachment	Victimization	.04***	-.20***
1. Drop out	Victimization	.01***	.08***
1. Average grades	Victimization	.02***	.16***
2. Depressed mood	Victimization	.08***	.27***
2. Average substance use	Victimization	.06***	.24***
Mediator relationships			
3. a. School attachment	Victimization	.08***	-.15***
	Depressed mood		-.21***
b. School attachment	Victimization	.18***	-.11***
	Average substance use		-.39***
3. a. Drop out	Victimization	.01***	.05*
	Depressed mood		.09***
b. Drop out	Victimization	.06***	.03
	Average substance use		.23***
3. a. Average grades	Victimization	.03***	.12***
	Depressed mood		.09**
b. Average grades	Victimization	.14***	.08**
	Average substance use		.34***

Note: Numbers 1, 2, 3 beside equations represent steps outlined by Baron and Kenny (1986) in establishing mediator relationships using multiple regression.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

the independent variable (victimization) must account for significant variance in the hypothesized mediator (depressed mood and substance use). Finally, the outcome variables (educational attitudes and outcomes) are regressed on both the independent variable and mediators. If the amount of variance accounted for by the independent variable (victimization) in the presence of the mediator becomes nonsignificant, mediation is said to have been shown. Table 2 presents these regression equations with the roles of depression and substance use assessed separately (though it should be noted that when the two were entered into a regression equation simultaneously, both were significant in accounting for variance in school attachment and attitudes about dropping out). To simplify analyses, only the composite dating violence victimization variable was used in the multivariate analyses and the worries variable was dropped from further analyses because it was not significant at the bivariate level.

Dating violence victimization did account for significant variance in all three educational attitude and outcome variables (equations numbered 1) and both mediators (equations numbered 2), thus satisfying the first two conditions of mediation.

Equations numbered 3 in Table 2 show regression equations with victimization and mediator variables entered. For average grades, dating violence remained significant though the beta decreased, suggesting partial mediation by both depression and substance use, although substance use seemed to have a stronger effect. Substance use fully mediated the relationship between dating violence and thoughts of dropping out of school, as the victimization variable became nonsignificant in the presence of this variable. Mental health concerns did not mediate the relationship between victimization and school attachment, as dating violence continued to exert a direct effect on this outcome variable, though a decrease in the beta when substance abuse was entered into the equation suggests a partial relationship.

The next aim of the study was to examine patterns of sex similarity and difference. There was no significant difference for physical abuse (17.1% of males and 16.8% of females). Females were more likely to report sexual abuse (16.8% compared with 9.4% of males,  $\chi^2 = 24.54$ ,  $p < .001$ ) and the composite of either form (27.6% versus 21.4% of males,  $\chi^2 = 10.68$ ,  $p < .001$ ). A multiple analysis of variance (MANOVA) was also computed using the general linear model (GLM) procedure in SPSS 11.5 for five of the outcome variables (average grades were not entered, but were analyzed separately because only half of the current sample had complete data on this variable). The overall MANOVA for sex,  $F(5, 2048) = 16.00$ ,  $p < .001$ , and for dating violence victimization,  $F(5, 2048) = 60.44$ ,  $p < .001$ , was significant, but was not significant for the interaction of gender and victimization,  $F(5, 2048) = 1.18$ . Similar to previous work, dating violence victims reported more negative outcomes than nonvictims regardless of sex.

Finally, moderator analyses were used to explore the potential protective function of social support from parents and community. Again, Baron and Kenny's (1986) guidelines were used. A series of interaction terms were created to represent the interaction of victimization with parental support, victimization with neighborhood support. All interaction terms were entered simultaneously with the main effect terms into the regression equations using the six outcomes (depressed mood, suicidal thoughts, substance use, school attachment, thoughts of dropping out, and average grades). Tables 3 and 4 present the results of the analyses, conducted separately for males and females. Across outcome variables there were fairly consistent effects for victimization and social support directly, with higher support related to more positive outcomes. There were several interesting two-way interactions, with abuse survivors who had high perceptions of neighborhood support related to better outcomes relative to survivors with lower levels of support. This buffering effect was less pronounced for nonvictims. Indeed, the pattern of correlations between neighborhood support and outcomes computed separately for victims and nonvictims for females and males separately revealed stronger correlations between support and outcome for victims than nonvictims. It is interesting to note that there were a greater number of significant interaction effects for perceptions of social support for girls

**Table 3**  
**Multiple Regression to Assess Moderating Effects of**  
**Perceived Social Support for Sexual Abuse**

Variable	Female			Male		
	<i>B</i>	Standard Error <i>B</i> ( <i>SEB</i> )	$\beta$	<i>B</i>	<i>SEB</i>	$\beta$
Suicidal thoughts		$R^2 = .19^{***}$			$R^2 = .13^{***}$	
Sexual abuse	1.48	.23	.69***	0.99	.3	.31***
Parent support	-0.28	.03	-.28***	-0.24	.04	-.21***
Neighborhood support	-0.04	.04	-.03	-0.11	.04	-.08**
Parent support $\times$ abuse	-0.26	.07	-.38***	-0.04	.09	-.04
Neighborhood support $\times$ abuse	-0.25	.1	-.17**	-0.14	.14	-.07
Depressed mood		$R^2 = .20^{***}$			$R^2 = .09^{***}$	
Sexual abuse	0.63	.33	.21*	-0.03	.38	-.01
Parent support	-0.39	.05	-.27***	-0.21	.05	-.15***
Neighborhood support	-0.35	.06	-.20***	-0.31	.06	-.18***
Parent support $\times$ abuse	-0.03	.11	-.03	0.04	.12	.03
Neighborhood support $\times$ abuse	-0.06	.14	-.03	0.28	.18	.1
Substance use		$R^2 = .14^{***}$			$R^2 = .13^{***}$	
Sexual abuse	0.42	.45	.1	0.57	.52	.1
Parent support	-0.25	.06	-.13***	-0.23	.07	-.12***
Neighborhood support	-0.67	.08	-.29***	-0.66	.08	-.28***
Parent support $\times$ abuse	-0.1	.15	-.08	0.1	.16	.01
Neighborhood support $\times$ abuse	0.29	.19	.1	0.02	.24	.01
School attachment		$R^2 = .20^{***}$			$R^2 = .19^{***}$	
Sexual abuse	-0.16	.15	-.11	-0.12	.18	-.06
Parent support	0.14	.02	.21***	0.08	.02	.12***
Neighborhood support	0.26	.03	.32***	0.3	.03	.36***
Parent support $\times$ abuse	0.01	.05	.02	-0.01	.06	-.02
Neighborhood support $\times$ abuse	0.03	.06	.03	-0.04	.08	-.03
Average grades (higher is worse)		$R^2 = .07^{***}$			$R^2 = .11^{***}$	
Sexual abuse	0.59	.59	.16	1.88	.89	.32*
Parent support	-0.27	.07	-.17***	-0.36	.1	-.18***
Neighborhood support	-0.27	.09	-.14**	-0.42	.11	-.18***
Parent support $\times$ abuse	-0.16	.19	-.14	-0.04	.22	-.02
Neighborhood support $\times$ abuse	0.09	.24	.04	-0.9	.38	-.25*

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . <sup>a</sup> $p < .10$ .

than for boys. Of note, there were only two significant two-way interactions for boys. One showed the buffering effect of perceived neighborhood support was greater for male victims of sexual abuse versus nonvictims. Another, however, was in the opposite direction. Perceptions of greater neighborhood support were more strongly linked to higher school attachment among boys who did not report physical abuse compared to boys who reported this type of victimization.

**Table 4**  
**Multiple Regression to Assess Moderating Effects of**  
**Perceived Social Support for Physical Abuse**

Variable	Female			Male		
	<i>B</i>	Standard Error <i>B</i> ( <i>SEB</i> )	$\beta$	<i>B</i>	<i>SEB</i>	$\beta$
Suicidal thoughts		$R^2 = .15^{***}$		$R^2 = .13^{***}$		
Sexual abuse	0.51	.22	.24*	0.54	.27	.22*
Parent support	-0.3	.03	-.30***	-0.24	.04	-.22***
Neighborhood support	-0.07	.04	-.06*	-0.1	.05	-.07*
Parent support $\times$ abuse	0	.07	.01	-0.01	.08	-.01
Neighborhood support $\times$ abuse	-0.24	.1	-.16**	0.02	.11	.01
Depressed mood		$R^2 = .19^{***}$		$R^2 = .11^{***}$		
Sexual abuse	0.3	.31	.1	0.33	.33	.11
Parent support	-0.38	.05	-.27***	-0.2	.05	-.14***
Neighborhood support	-0.37	.06	-.21***	-0.25	.06	-.15***
Parent support $\times$ abuse	0.05	.1	.05	0.09	.11	.09
Neighborhood support $\times$ abuse	0.01	.14	0	0.02	.14	.01
Substance use		$R^2 = .17^{***}$		$R^2 = .14^{***}$		
Sexual abuse	1.13	.41	.28**	0.84	.46	.19 <sup>a</sup>
Parent support	-0.23	.07	-.12***	-0.19	.07	-.10**
Neighborhood support	-0.54	.08	-.23***	-0.67	.08	-.29***
Parent support $\times$ abuse	0.05	.13	.04	-0.16	.15	-.12
Neighborhood support $\times$ abuse	-0.37	.19	-.12*	0.16	.19	.05
School attachment		$R^2 = .21^{***}$		$R^2 = .19^{***}$		
Sexual abuse	-0.22	.14	-.15	-0.02	.16	-.01
Parent support	0.14	.02	.21***	0.08	.02	.11***
Neighborhood support	0.24	.03	.29***	0.32	.03	.38***
Parent support $\times$ abuse	-0.03	.04	-.06	0.01	.05	.03
Neighborhood support $\times$ abuse	0.15	.06	.14*	-0.15	.06	-.15*
Average grades (higher is worse)		$R^2 = .10^{***}$		$R^2 = .10^{***}$		
Sexual abuse	-0.37	.54	-.09	-0.41	.7	-.1
Parent support	-0.31	.08	-.19***	-0.39	.1	-.19***
Neighborhood support	-0.26	.09	-.13**	-0.43	.11	-.18***
Parent support $\times$ abuse	-0.13	.18	.1	0.31	.21	.23
Neighborhood support $\times$ abuse	0.42	.25	.16 <sup>a</sup>	-0.18	.26	-.07

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . <sup>a</sup> $p < .10$ .

## Discussion

The current study found high rates of dating violence victimization across a sample including both younger and older adolescents. As predicted, being a survivor of dating violence was associated with more mental health concerns and more negative educational outcomes. Mental health symptoms in part mediated the relationship between victimization and school outcomes, although the cross-sectional nature of

the data prohibits conclusions about causality. Gender and social support both affected the relationship between victimization and outcomes in complex and interesting ways that merit further inquiry.

The overall prevalence of self-reported victimization was comparable to other studies, even with the limited measure of dating violence used (e.g., Silverman et al., 2001), but extends this work in its inclusion of a sample with younger adolescents. The findings are also consistent with previous work on the relationship between dating violence victimization and more negative outcomes including depression, substance use, and negative views of school (e.g., Ackard & Neumark-Sztainer, 2002). These negative correlates seemed to be linked to victimization similarly for males and females in this sample, similar to previous work on gender similarities in outcomes of family violence (e.g., Banyard et al., 2004). It extends this work in the examination of mediating and moderating relationships among risk and protective variables.

Roche et al. (1999) discuss the importance of identifying mediating variables that help to explain links between trauma and outcomes as such factors can be important targets for intervention efforts. The current study found direct effects of dating violence on school attachment. However, mental health concerns, including depression and substance use, did seem to function to complicate the relationship between victimization and grades and thoughts of dropping out of school. Given the cross-sectional nature of the study, the role of depression and substance use as true mediators could not be established. It may be that educational problems lead to increased substance use, which creates situational risk for dating abuse. The contribution of the current study is its suggestion that this may be a key area for further inquiry. If such longitudinal studies find a mediating effect, this would suggest the need for interventions that address educational problems associated with victimization in tandem with mental health concerns, particularly issues of substance use.

The current study also fits with previous work on the important moderating role of social support. Waysman, Schwarzwald, and Solomon (2001) describe "stress moderating effects" (p. 532) as variables that promote well-being, not just across the board in all samples of participants, but particularly for participants under stress. Across all outcomes, greater perceived support was related to more positive outcomes. However, there were also some interesting significant interactions showing that in some instances support functioned differently for victims as compared to nonvictims. In the current study, perceived parental and neighborhood support lowered suicidal thoughts for female sexual abuse victims compared with female nonvictims, although for males the interaction was significant for the impact of perceived neighborhood support on grades. Such findings fit with Holt and Espelage (2005). Perceived neighborhood support was more strongly related to outcomes including substance use, suicide, and grades for female victims versus nonvictims, whereas fewer of these significant interactions were found for males. Indeed, for one outcome, school attachment, neighborhood support was more strongly associated with

positive outcomes for the nonabused group. This further fits with research by Taylor et al. (2000) that highlights the importance of social connections as a coping resource for females. The current study also suggests that we know less about factors that may promote resilience among boys. More research on this question is needed. Further, the protective role of social support may vary by outcome. More research using more diverse samples of participants will help further clarify social support and other coping resources as protective variables for survivors. Longitudinal studies may also be able to investigate the role of social support as a mediator in the relationship between victimization and outcomes. Indeed, the current exploratory research suggests directions for fourth generation studies (e.g., Merrill et al., 2001) that examine how various mediator and moderator variables may function differently across contexts.

In addition, the significant role of perceived neighborhood support as a moderator is interesting and suggests the need for ongoing research about the role of constructs such as sense of community and neighborhood ties, sources of social support, and social capital for adolescents beyond the family. If such results are confirmed in other studies, it supports the need for prevention efforts and provision of resources for teens at all levels of the ecological model with perhaps a particular focus on community (e.g., Bogenschneider, 1996).

There are a number of important limitations to the current study, including the brief measure of victimization used (see Hanson, 2002, for a critique of measures of dating violence) and the need to measure in more detail characteristics of participants' experiences. The few questions used here may have masked gender differences, particularly in the area of physical abuse. Furthermore, the questions used prohibited a more detailed examination of the severity of violence. Many measures included only one or two items. Indeed, the current study illustrates the strengths but also the limits of research conducted in collaboration with community-based projects as researchers had to use questions that communities had chosen, because the primary purpose of data collection was community needs and resource assessment. As mentioned above, further studies using more diverse samples and a wider range of outcome measures and risk and protective factors will move this research forward. The cross-sectional nature of the data creates ambiguity in trying to draw any sort of causal model from the data as we know little about the temporal ordering of variables including victimization and mental health symptoms. Longitudinal research is needed to clarify and further understand the findings of the current study. Finally, although the large sample size is a strength of the current study, it also may create statistically significant findings from small effect sizes. Further studies of the real world implications of the current study are needed.

Given such limits, the purpose of the current study was to build, in a small but important way, on other work that has been done. Future work needs to continue to examine protective factors in addition to risk, more "second and third generation" studies of teen dating violence. The current study represents an important first step

in examining variables in combination, results that will help with the design of better interventions and prevention programs. For example, the high prevalence rates found in this study support the need for effective dating violence and relationship skill building prevention efforts in schools not only in high school, but earlier. Making time for such programming is crucial, given the links between victimization and problems in mental health and school functioning. The current study is an early and exploratory attempt to examine more complex, multicomponent models of dating violence effects, studies that in the future may also provide valuable data for tailoring interventions to the unique needs of different groups of survivors.

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