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Bullying as a Longitudinal Predictor of Adolescent Dating Violence

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Abstract

Purpose—One suggested approach to preventing adolescent dating violence is to prevent behavioral precursors to dating violence, such as bullying. However, no longitudinal study has examined bullying as a behavioral precursor to dating violence. In this study, longitudinal data were used to examine (1) whether direct and indirect bullying perpetration in the sixth grade predicted the onset of physical dating violence perpetration by the eighth grade and (2) whether the associations varied by sex and race/ethnicity of the adolescent.

Methods—Data were collected in school from sixth graders in three primarily rural counties and then again when students were in the eighth grade. Analyses were conducted with 1,154 adolescents who had not perpetrated dating violence at the sixth-grade assessment. The sample was 47% male, 29% black, and 10% of another race/ethnicity than black or white.

Results—Direct bullying, defined as hitting, slapping, or picking on another kid in the sixth grade, predicted the onset of physical dating violence perpetration by the eighth grade, controlling for indirect bullying and potential confounders. Although indirect bullying, defined as spreading false rumors and excluding students from friendship groups, was associated with the onset of physical dating violence perpetration in bivariate analyses, it did not predict the onset of physical dating violence when controlling for direct bullying. None of the associations examined varied by sex or race/ethnicity of the adolescents.

Conclusions—Our findings suggest that efforts targeted at preventing direct bullying may also prevent the onset of physical dating violence.

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Keywords

Adolescent dating abuse; Dating violence; Dating violence prevention; Bullying

Adolescent dating violence has negative consequences for health and well-being across the life span [1,2]. Thus, its prevention is essential. It has been suggested that prevention of dating violence should begin with prevention of the behavioral precursors to dating violence, such as bullying [3–5]. It is not clear, however, that bullying is, in fact, a precursor to dating violence. Bullying has been correlated with adolescent dating violence perpetration [4,6–8] and adult intimate partner violence perpetration [9] in cross-sectional studies, and bullying has been found to predict sexual harassment, an early form of gender-based dominance and control [10], for both boys and girls in middle school [11,12]. However, no study has used longitudinal data that controls the temporality of relationships to determine whether bullying predicts later dating violence perpetration.

There are several potential theoretical and empirical explanations for an association between bullying and dating violence perpetration. Connolly et al. [4] found that bullies began dating earlier than nonbullies; participated earlier in more advanced types of dating (i.e., dyadic vs. group); reported less affection, commitment, and intimacy with boy/girlfriends; and less positive and equitable views of boy/girlfriends. These characteristics may increase the likelihood that youth who bully will become abusive to dating partners. These two behaviors may also share similar risk factors, including lack of empathy, trait anger, and need for power and control; deficits in emotion regulation and executive functioning that preclude the development of effective conflict resolution and anger management skills; substance use; normative beliefs that are accepting of aggression; and exposure to family violence that could shape these more proximal shared risk factors [13]. Moffitt [14] suggested that manifestations of aggression change with development when new social opportunities arise. Thus, these risk factors could result in bullying in early adolescence but then manifest as aggression against dates when the opportunity for dating arises.

It is also possible that the act of bullying itself results in or leads to conditions that facilitate the use of violence against dates. Evidence suggests that when adolescents bully, it increases their social status [15,16], possibly because bullying is viewed by peers as challenging adult authority, which is attractive at a time when achieving independence from adults is a central developmental task [7,9,14]. In turn, high social status has been linked with dating violence perpetration for both boys and girls [17], possibly resulting from several mechanisms. Faris and Felmlee [18] suggest that high social status enables aggression because high-status adolescents have greater control over information (e.g., rumors) and resources (e.g., social options on weekends) and thus are better positioned to manipulate social situations and exert power and control over dates. Also, high-status adolescents have increased access to partners and thus may be less fearful of the negative consequences that use of violence could have on a dating relationship. Connolly et al. [4] suggest that youth who bully and are then thrust into dating because of their high status may not have developed the social skills needed for dating, which could increase the likelihood of responding poorly to conflict with dating partners. Finally, early adolescent dating has the potential for producing embarrassing

situations, such as those that arise from insensitive comments made by a date in front of others, which could threaten their social status. One way of decreasing the likelihood of embarrassing dating situations is to exert control over the dating partners in the form of violence.

The present study

In the study reported here, longitudinal data were used to test the hypothesis that bullying perpetration in the sixth grade (typically ages 11–12 years) predicts the onset of physical dating violence perpetration by the eighth grade (typically ages 13–14 years). Middle school (typically grades 6–8 in the United States) is the optimal time to capture transitions from bullying to abusing dating partners. Bullying increases at the beginning of middle school and then decreases over the middle school years [11]. As bullying decreases, mixed-gender interactions and dating increase [4,11]; by eighth grade, 40%–60% of adolescents report dating [19,20]. As dating increases, so does physical dating violence: 15%–21% of middle school adolescents report using physical violence against a dating partner [20–22]. We examined both direct bullying, which typically includes physical violence or intimidation and verbal bullying such as name-calling and teasing, and indirect bullying (sometimes referred to as social or relational bullying), which includes behaviors that are intended to harm others through spreading rumors that result in social exclusion or manipulation of relationships [15,18]. We also looked at whether support for the hypothesis varied by sex and race/ethnicity of the adolescent because sex [23] and race/ethnicity [24] differences have been found in the etiology of dating violence, and the correlation between bullying and dating abuse has been found to be stronger for boys than girls [4].

Methods

Study overview

Data came from the Context Study, a multiwave longitudinal investigation of contextual influences on adolescent health-risk behaviors [25,26]. In that study, adolescents from three public school systems in three primarily rural North Carolina counties completed self-administered questionnaires when they were in the sixth and eighth grades. The school systems included 13 schools with middle school grades. Adolescents were eligible for participation if they were able to complete the survey in English and were not in special education programs or out of school because of long-term suspension. Parents had the opportunity to refuse consent for their child's participation by returning a written form or calling a toll-free number. Assent was obtained before the administration of the survey from adolescents whose parents did not refuse their child's participation. Trained data collectors administered the questionnaires in classrooms. The Institutional Review Board for the University of North Carolina at Chapel Hill approved the study.

Analytical sample

A total of 1,854 sixth-grade adolescents completed the baseline survey, representing 88% of those eligible. Of these, 1,401 (76%) completed the eighth-grade follow-up assessment. To control the temporality of relationships, adolescents who reported having ever hit or

threatened a dating partner at the sixth-grade assessment ($n = 103$) or who were missing data on these two items at the baseline assessment ($n = 35$) were eliminated from the analyses. Another 109 adolescents were deleted from the analyses because they did not respond to the sixth-grade bullying perpetration questions ($n = 2$), eighth-grade dating status ($n = 85$), or dating violence perpetration measures ($n = 22$). Thus, the final analytic sample included 1,154 sixth-grade adolescents who had never hit or threatened a dating partner and had no missing data on the bullying, dating status, and dating violence variables. This analytical sample was approximately 47% male, 29% black, and 10% other race/ethnicity including Latino, Asian, American-Indian, or mixed race. At the sixth-grade assessment, approximately 33% of participants reported that the highest education obtained by either parent was high school or less and 6% reported living with only one parent or caregiver.

Measures

Bullying perpetration—The bullying measures were created from items in the Nonphysical Aggression and Physical Aggression subscales of the Problem Behavior Frequency Index [27]. At the sixth-grade assessment, adolescents were asked “During the past 3 months, about how many times have you...,” The two indirect bullying items were “excluded another student from your group of friends,” and “spread a false rumor about someone.” The two direct bullying items were “picked on someone” and “hit or slapped another kid.” Response categories ranged from 0 (0) to 10 times or more (5) in the past 3 months. Table 1 lists the frequency of reporting any of these acts in the total sample and by sex and race/ethnicity. The two direct and indirect bullying items were summed and averaged to create continuous measures of direct and indirect bullying perpetration.

Social exclusion and spreading false rumors are two of the most common forms of indirect bullying, in which third parties are employed to isolate and emotionally harm victims [28]. The two direct bullying items are included in several well-known reliable and valid bullying scales used domestically and internationally [29]. However, although “picking on someone” clearly corresponds to the definition of direct bullying as directly harming a less powerful victim [30], “hitting and slapping another kid” could reflect this definition or the use of general aggression. This is a measurement issue that plagues much of the existing bullying research [31] and, as in many bullying studies, the findings of this study should be evaluated with that in mind.

Physical dating violence perpetration—At the eighth-grade assessment, adolescents were asked “How many times have you ever used physical force against someone you were dating or on a date with (such as hitting, pushing, shoving, kicking, or assaulting them with a weapon) that was not in self-defense or play?” Response categories ranged from 0 (0) to 10 times or more (4). A dichotomous variable was created, such that 0 indicated no physical dating violence perpetrated and 1 indicated any physical dating violence perpetrated. At the eighth-grade assessment, 13% ($n = 147$) reported physical dating violence perpetration.

Control variables—To decrease the likelihood of potential spurious relationships between bullying and physical dating violence, analyses controlled for parent education, family structure, and family conflict because these variables have been associated with both

bullying [32] and dating violence [20]. Parent education was measured as the highest level of education attained by either parent, from less than high school (0) to graduate school, or more (5). Family structure was coded such that adolescents who reported living with only one parent or caregiver were given a “1,” and other family structures were coded “0.” Family conflict was assessed by three items from Bloom’s [33] measure of family functioning (we fight a lot in our family, family members sometimes get so angry they throw things, and family members sometimes hit each other). Higher scores indicated more family conflict (Cronbach’s $\alpha = .80$). Sex and race/ethnicity of the adolescent were considered moderator variables. Sex was coded such that 0 = female and 1 = male. Race/ethnicity was measured by a variable indicating black race and one indicating a race/ethnicity other than white or black, with white as the reference.

Analysis strategy

Descriptive and bivariate analyses were conducted first to examine associations among the control variables, two types of bullying, and physical dating violence. Then, multivariate logistic regression was used to determine whether direct and indirect bullying perpetration in the sixth grade predicted physical dating violence perpetration by the eighth grade and to determine whether there were sex and race/ethnicity differences in those associations. Missing data on the control variables were addressed through multiple imputation using SAS PROC MI and PROC MIANALYZE (SAS Institute Inc., Cary, NC).

Results

Descriptive and bivariate analyses

In bivariate analyses, direct and indirect bullying were significantly correlated with each other ($r = .45, p < .001$). Table 2 lists the correlations among control variables, direct and indirect bullying perpetration, and physical dating violence onset. Boys reported significantly more direct bullying than girls ($r = .08, p < .001$), and black adolescents reported significantly more direct bullying than white adolescents ($r = .18, p < .001$). Parent education was significantly negatively associated with direct bullying ($r = -.09, p < .01$), and family conflict was significantly positively associated with direct bullying perpetration ($r = .21, p < .001$). The only significant correlate of indirect bullying was family conflict ($r = .17, p < .01$).

The onset of physical dating violence was less likely for boys than girls ($r = -.15, p < .001$), more likely for adolescents who were black ($r = .18, p < .001$) or a race other than black or white ($r = .07, p < .05$) than for adolescents who were white, and more likely with greater family conflicts ($r = .08, p < .01$).

In bivariate analyses, both direct ($r = .16, p < .001$) and indirect ($r = .08, p = .01$) bullying perpetration in the sixth grade were significantly associated with physical dating violence onset by the eighth grade. Of the sixth graders who reported any direct bullying, 16% ($n = 111$) reported physical dating violence, whereas for those who reported no direct bullying, 8% ($n = 36$) reported physical dating violence. Of the sixth graders who reported any

indirect bullying, 16% (n = 64) reported physical dating violence, whereas for those who reported no indirect bullying, 11% (n = 83) reported the physical dating violence.

Multivariate analyses

Table 3 presents the adjusted odds ratios (AOR) and 95% confidence intervals (CI) from the multivariate logistic regression models. In Model 1, direct bullying perpetration in the sixth grade significantly predicted the onset of physical dating violence by the eighth grade (AOR 1.54, 95% confidence interval [CI] 1.45–1.64, $p < .0001$), but indirect bullying did not predict physical dating violence (AOR 1.02, 95% CI .93–1.12, $p = .89$). Model 2 included the two bullying measures, the control variables, and the interactions between bullying and sex and race/ethnicity. The interactions were not significant and were dropped in Model 3. In this model, direct bullying continued to predict physical dating violence onset even after adding the control variables (AOR 1.36, 95% CI 1.11–1.68, $p = .003$); a one unit increase in direct bullying in the sixth grade was associated with a 36% increase in the odds of physical dating violence onset by the eighth grade. The association between indirect bullying perpetration and physical dating violence onset remained nonsignificant (AOR 1.26, 95% CI .93–1.73, $p = .14$).

In Model 3, sex and race/ethnicity continued to be associated with physical dating violence onset, just as in the bivariate results. Physical dating violence was less likely for boys than girls (AOR .34, 95% CI .22–.51, $p < .0001$) and more likely for black adolescents (AOR 3.19, 95% CI 2.10–4.86, $p < .0001$) and those of other races (AOR 3.11, 95% CI 1.76–5.49, $p < .0001$) than for white adolescents. Although family conflict was strongly associated with physical dating violence in the bivariate analyses, it was not associated with physical dating violence in the multivariate model ($p = .43$). Parent education and family structure were also not associated with dating violence in this model.

Discussion

Our hypothesis was supported for direct but not indirect bullying. Direct bullying predicted the onset of physical dating violence perpetration by the eighth grade in both bivariate analyses and multivariate analyses, controlling for indirect bullying and potential confounders. Direct bullying and indirect bullying were moderately correlated ($r = .45$), which is consistent with previous research suggesting that these two types of bullying overlap [34]. However, although indirect bullying was positively correlated with physical dating violence onset in bivariate analyses, in multivariate analyses it did not have a significant effect on physical dating violence onset above and beyond the effect of direct bullying.

None of the associations varied by sex or race/ethnicity. However, although sex and race/ethnicity did not moderate the association between bullying and physical dating violence, they were associated with both bullying and dating violence. Our findings that boys used more direct bullying than girls, but that there were no sex differences in indirect bullying are consistent with most studies that have examined sex differences in direct and indirect bullying perpetration [34]. It is difficult to compare our findings that black adolescents reported more direct bullying than white adolescents, and race/ethnicity was not associated

with indirect bullying because few studies have examined race/ ethnicity differences in bullying and those that have did not distinguish direct from indirect bullying. Findings from studies that used a global measure of bullying have been inconsistent, with some reporting no race/ethnicity differences in bullying and others finding that bullying perpetration was less likely among white than Hispanic/Latino and black adolescents [35]. It is possible that our race/ethnicity differences in direct bullying would disappear with controls for potential confounders such as socioeconomic status and family context variables. Our findings that physical dating violence onset was more likely for girls than boys and less likely for white adolescents than adolescents of other race/ethnicities are consistent with most other dating violence studies that have examined sex and race/ethnicity differences in dating violence perpetration [20].

The potential for producing an inflated association between direct bullying and dating violence because the targets of bullying were dating partners was controlled in this study by eliminating baseline dating violence perpetrators. Eliminating these adolescents also controlled the temporality of the relationships. However, as noted earlier, the association between direct bullying and physical dating violence may reflect general aggression against peers, rather than bullying per se, as predicting dating violence onset. Using longitudinal data, others have found that adolescents who were physically violent to peers were at increased risk of using violence against partners in later adolescence and young adulthood, but they did not control the temporality of relationships [36–38]. The only other study to examine associations between indirect bullying and physical dating violence found that indirect bullying in the ninth grade was not associated with dating violence perpetration in the 11th grade, but again the study did not control the temporality of the relationships [39]. It will be important for future studies examining the link between bullying and dating violence to distinguish between these two types of bullying.

Our findings suggest that preventing direct bullying may also prevent physical dating violence. Schools are cautious about issues around intimate relationships, but they may be more willing to implement bullying prevention programs, because they may be viewed as less controversial [13]. However, we should note that whether bullying prevention programs prevent physical dating violence depends on whether the association between direct bullying and physical dating violence is because of shared risk factors or is causal. If the association is driven by shared risk factors, bullying prevention programs that target those risk factors could prevent both bullying and physical dating violence, but prevention programs that do not target the shared risk factors may prevent bullying but not physical dating violence. If the association is causal, any effort that prevents bullying should also prevent physical dating violence and targeting the causal mechanisms that link bullying to physical dating violence could prevent youth who bully from progressing to dating violence.

Unfortunately, although we used a longitudinal design, causality could not be determined because it was not possible to control all the potential shared risk factors that could produce a noncausal prospective relationship. Further, shared risk factors for direct bullying and physical dating violence are currently not known because no study has examined predictors of both direct bullying and physical dating violence in the same study using analytical techniques that appropriately account for the covariation of the two types of violence. When

that covariation is not accounted for, the significance of associations can be overestimated [40]. Examining shared risk factors for direct bullying and physical dating violence, using appropriate analytical techniques, would be a valuable direction for future research because it could further inform intervention development. Many potential shared risk factors could be considered in this type of research including those described earlier, as well as impulsivity, antisocial traits, externalizing and internalizing tendencies, low self-esteem, and association with deviant peers; each has been associated with both direct bullying [35] and dating violence [20] in violence-specific (i.e., bullying or dating violence) studies.

The limitations of this study relate mostly to generalization of the findings and measurement. The study was conducted in a primarily rural county, limiting our ability to generalize the findings to more urban areas. Also, we determined whether bullying predicted physical dating violence onset in a sample that eliminated a potentially high-risk group—those who were already perpetrating dating violence in the sixth grade. Although this was done to control the temporality of relationships and to eliminate the possibility that reports of bullying were against dates, this may have resulted in a selection bias.

The bullying measures were limited by the use of only two items to assess each type of bullying and the lack of items tapping into cyber-bullying, an emerging form of bullying among middle school-aged adolescents. These limitations could have resulted in underreporting of bullying and potential misclassification of bullying status, decreasing the likelihood of finding significant relationships. Also, as noted earlier, one of the direct bullying items could be assessing the use of general aggression rather than aggression in a bullying context. Finally, we did not have measures of psychological and sexual dating violence onset. Conolley et al. [4] found that an overall measure of bullying was more strongly related to psychological than physical dating violence, and Espelage et al. [12] found that bullying perpetration predicted sexual harassment suggesting that bullying may also predict sexual dating violence.

The primary strengths of the study are its longitudinal design and an analysis strategy that appropriately controlled the temporality of relationships. The sample size was relatively large, the response rate was high, and attrition was relatively low, increasing our ability to generalize the study results to similar locales. The study was conducted with middle school-aged adolescents, an optimal developmental period for capturing both bullying and the onset of physical dating violence. Our measure of physical dating violence ruled out acts perpetrated in “play.” This is important when studying dating violence in this age group because early interactions with the opposite sex have been characterized as “pushing and poking” courtship [11] and dating violence measures that do not rule out acts perpetrated in play may overestimate dating violence. Finally, we examined the influence of both direct and indirect bullying on the onset of dating violence, which has not been done previously.

Whatever the nature of the prospective relationship between bullying and physical dating violence, our findings suggest that youth who directly bully others are at high risk of becoming perpetrators of physical dating violence. Future studies should examine prospective associations between bullying and dating violence controlling for multiple potential shared risk factors. If the association does not endure, it will be important to

identify the shared risk factors that explain the prospective association. These factors could then guide the development of programs aimed at preventing both bullying and dating violence perpetration. Future studies also need to examine the mechanisms linking bullying to later dating violence, to develop interventions that prevent progression from bullying to dating violence.

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IMPLICATIONS AND CONTRIBUTION

This longitudinal study found that direct bullying, defined as hitting, slapping, or picking on another kid in the sixth grade, predicted the onset of physical dating violence perpetration by the eighth grade, suggesting that efforts at preventing direct bullying may also prevent the onset of adolescent physical dating violence.

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Frequency of reporting any of each type of bullying in the total sample (N = 1,154) and by sex and race/ethnicity separately

Table 1

Bullying item	Males		Females		White		Black		Other	
	Total	n = 541	n = 613	n = 695	n = 339	n = 120	%	%	%	%
Direct bullying										
Picked on someone	55	58	53	52	61	63				
Hit or slapped another kid	30	34	26	25	40	36				
Indirect bullying										
Excluded others	23	22	24	27	16	22				
Spread rumors	22	25	19	22	20	26				

Table 2

Bivariate correlations among control variables, direct and indirect bullying perpetration, and dating violence onset (N = 1,154)

	Direct bullying	Indirect bullying	Dating violence onset
Sex	.08**	.04	-.15***
Black race (ref = white)	.18***	-.05	.18***
Other race (ref = white)	.03	-.01	.07*
One parent family	.05	-.004	.05
Parent education	-.09**	.01	-.05
Family conflict	.21***	.17***	.08**

*
 $p < .05$;

**
 $p < .01$;

 $p < .001$.

Table 3

Adjusted odds ratios and 95% CIs for the longitudinal effects of sixth-grade direct and indirect bullying perpetration on eighth-grade physical dating violence onset (N = 1,154)

Predictor	Model		
	1	2	3
Indirect bullying	1.02 (.93, 1.12)	1.22 (.72, 2.09)	1.26 (.93, 1.73)
Direct bullying	1.54 (1.45, 1.64)***	1.46 (.93, 2.28)	1.36 (1.11, 1.68)**
Sex	—	.35 (.20, .61)***	.34 (.22, .51)***
Black race (ref = white)	—	3.44 (1.99, 5.94)***	3.19 (2.10, 4.86)***
Other race (ref = white)	—	3.32 (1.56, 7.08)**	3.11 (1.76, 5.49)***
Parent education	—	1.02 (.88, 1.18)	1.02 (.89, 1.18)
One parent family	—	1.53 (.79, 2.95)	1.52 (.79, 2.92)
Family conflict	—	1.06 (.90, 1.25)	1.07 (.91, 1.26)
Male × direct	—	.86 (.57, 1.32)	—
Male × indirect	—	1.34 (.72, 2.51)	—
Black × direct	—	.99 (.61, 1.62)	—
Black × indirect	—	.79 (.40, 1.58)	—
Other × direct	—	.98 (.48, 2.02)	—
Other × indirect	—	.86 (.28, 2.67)	—

CI = confidence interval.

**
 $p < .01$;

 $p < .001$.