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Exploring the Link Between Alcohol and Marijuana Use and Teen Dating Violence Victimization Among High School Students: The Influence of School Context

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Abstract

Background—Adolescence is a developmental period when dating behavior is first initiated and when the risk of abuse by or against a dating partner begins to emerge. It is also one in which experimentation with alcohol and illicit substances typically begins. The current study examined the association between recent alcohol use and recent marijuana use and the experience of physical and verbal teen dating violence (TDV) victimization while considering the potential influence of school contextual variables.

Method—Data came from 27,758 high school students attending 58 Maryland public high schools. Hierarchical linear modeling was used to identify student- and school-level predictors associated with TDV.

Results—Results indicated that approximately 11% of students reported experiencing physical TDV and 11% of students reported experiencing verbal TDV over the past year. In addition, 33% of students reported recent alcohol use and 21% reported recent marijuana use. Hierarchical linear modeling results revealed that students who reported frequent recent alcohol or recent marijuana use were at increased odds of experiencing physical (adjusted odds ratio [AOR]_{alcohol} = 2.80, $p < .001$; AOR_{marijuana} = 2.03, $p < .001$) or verbal TDV (AOR_{alcohol} = 2.63, $p < .001$; AOR_{marijuana} = 2.20, $p < .001$) victimization compared to students who reported little or no alcohol or marijuana use. School support was a protective factor for both physical TDV (AOR = 0.74, $p < .001$) and verbal TDV (AOR = 0.76, $p < .001$) victimization.

Conclusions—Findings suggested that prevention efforts to address alcohol and marijuana use may have an effect on TDV victimization. Results also highlight the potential utility of enhancing student perceptions of school support as an approach for reducing TDV victimization.

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Keywords

alcohol; marijuana; school support; teen dating violence

Adolescence is a developmental period when dating behavior is first initiated and when the risk of abuse by or against a dating partner begins to emerge (Hickman, Jaycox, & Aronoff, 2004). Experimentation with alcohol and illicit substances often also begins during this time (Ellickson, Tucker, Klein, & Saner, 2004). However, there are relatively few studies examining teen dating violence (TDV) victimization as compared to TDV perpetration (Foshee & Reyes, 2012). Additionally, few studies have examined the association between alcohol use and marijuana use and TDV victimization among adolescents or the school context as a potential source of both risk and protection. Therefore, the current study examined the link between recent alcohol and marijuana use and TDV victimization as well as the influence of school context.

Teen Dating Violence

TDV victimization is a major public health problem; 9% of American youth report being victims of physical TDV in the past year (National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of Adolescent and School Health, 2012), while 29% report being psychologically victimized (Halpern, Oslak, Young, Martin, & Kupper, 2001). Physical victimization by a boyfriend/girlfriend includes pinching, hitting, shoving, slapping, punching, or kicking (Division of Violence Prevention, National Center for Injury Prevention and Control, 2014), while psychological victimization includes being sworn at, insulted, or threatened. Cross-sectional studies report that anywhere between 1% and 46% of adolescents have been victimized by a dating partner (Haynie et al., 2013; Hickman et al., 2004).

Studies have shown that TDV victimization is associated with negative physical and mental health consequences, similar to those seen in adult victims of intimate partner violence (IPV; Banyard & Cross, 2008). IPV is defined as physical, sexual, or psychological harm by a current or former partner or spouse, which can occur among heterosexual or same-sex couples, and does not require sexual intimacy (Saltzman, Fanslow, McMahon, & Shelley, 2002; Tjaden & Thoennes, 1998). The correlates of TDV may include depression, anxiety, suicidal thoughts, and poor educational outcomes (e.g., dropout; Banyard & Cross, 2008). Therefore, identifying effective factors that contribute to or protect against TDV victimization for youth is critical.

Adolescence and Substance Use

Two suspected risk factors for TDV victimization are alcohol and marijuana use (Brooks-Russell, Foshee, & Ennett, 2013; Haynie et al., 2013; Temple & Freeman, 2011). Alcohol is the most frequently misused substance among youth in the United States (Patrick & Schulenberg, 2014). Despite this fact, alcohol use in the past year and drunkenness in the past 30 days are at their lowest levels in decades among adolescents (Johnston, O'Malley, Bachman, & Schulenberg, 2011). In 2014, 23% of students in Grades 8, 10, and 12 reported

consuming alcohol and 12% reported having been drunk at least once in the past 30 days (Johnston, Miech, O'Malley, Bachman, & Schulenberg, 2014). Marijuana is the most commonly used illicit drug among adolescents (Johnston et al., 2014). In 2013, 14% of students in Grades 8, 10, and 12 reported using marijuana in the past 30 days (Johnston et al., 2014).

Link Between Substance Use and TDV

Substance use is a modifiable risk factor that has repeatedly been linked to IPV perpetration and victimization among adults (Coker, Smith, McKeown, & King, 2000; Jewkes, 2002) and has been associated with violence in adolescent relationships. In a study of 1,565 high school students, alcohol, but not marijuana, use in the past 30 days was significantly associated with TDV victimization after controlling for demographic factors and use of other substances (Temple & Freeman, 2011). Similarly, a study that examined predictors of latent trajectory classes of physical TDV victimization reported that alcohol, but not marijuana, use for girls was associated with a vulnerability to physical TDV victimization. Alcohol and marijuana use was not related to TDV victimization for boys (Brooks-Russell et al., 2013). These studies suggest that substance use, specifically alcohol, may be associated with a potential vulnerability to victimization; however, there are still substantial gaps in the literature related to TDV victimization, alcohol use, and marijuana use, in particular. More specifically, the findings regarding a possible relationship between marijuana use and TDV victimization have been inconsistent. In contrast to the abovementioned studies that found no relationship between marijuana use and TDV victimization, a study of 9,421 adolescents in the National Longitudinal Study of Adolescent Health (AddHealth) found that consistent marijuana users (i.e., respondents reporting marijuana use over four waves of data collection) were more likely to be victims and perpetrators of TDV (Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2011). Similarly, in a meta-analysis of 96 studies, Moore et al. (2008) concluded that marijuana use was significantly associated with IPV among individuals of all ages. Yet some studies suggest that alcohol use and marijuana use may be differentially associated with aggression; this may be due in part to the tetrahydrocannabinol (the active ingredient in marijuana), which generally suppresses aggression (Taylor, Gammon, & Capasso, 1976), whereas alcohol is often a precursor to aggression (Taylor & Chermack, 1993).

To better understand the associations between substance use and TDV victimization, we draw on lifestyle theory, which posits that adolescents' social activities may put them in higher risk situations where greater exposure to potential offenders and thus victimization are increased (Hindelang, 1978). Substance use during adolescence is a lifestyle risk linked with many adverse outcomes (Feinstein, Richter, & Foster, 2012; Wymbs et al., 2014). Therefore, lifestyle theory would suggest that consuming alcohol is a risk factor for TDV victimization because it puts an individual in an environment where victimization may be more likely to occur (Brooks-Russell et al., 2013). Yet these effects may also vary by context, such as the school.

School Contextual Influences

Schools play a significant role in adolescent development and thus may also influence risk for TDV. For example, TDV may occur among adolescents on school grounds and therefore may be witnessed by school personnel. Schools frequently deliver TDV prevention/intervention programs (Foshee et al., 1996), and school personnel may become aware of TDV through talking with students and other staff. Yet few studies have considered the role schools and school personnel play in addressing TDV. A supportive school climate, defined as student-perceived support from teachers, has been associated with attitudes about help seeking related to bullying and other threats of violence (Eliot, Cornell, Gregory, & Fan, 2010). For example, when examining TDV perpetration, Schnurr and Lohman (2008) found that African American males who perceived their school environment as unsafe were more likely to perpetrate TDV as compared to males from other racial/ethnic groups. A positive school climate, in comparison, has been associated with improved social outcomes for students (Kasen, Berenson, Cohen, & Johnson, 2004).

In aiming to understand the potential influence of schools on the association between substance use and TDV, we draw on social disorganization theory (Shaw & McKay, 1942) as applied to schools (Bradshaw, Sawyer, & O'Brennan, 2009), which posits that aspects of the school environment, including concentrated disadvantage, may increase adolescents' likelihood for engaging in risk behaviors. A disorganized school environment may exacerbate individual-level risk, thereby suggesting cross-level interactions between the school- and student-level factors. In contrast, protective factors at the school level, such as access to caring adults, which is consistent with the notion of collective efficacy in community settings, may serve as a buffer for at-risk youth (Sampson, Morenoff, & Earls, 1999; Sampson, Raudenbush, & Earls, 1997). There is an increasing literature base focusing on the importance of school support, which has been linked with positive adolescent outcomes and inversely related to fighting, bullying, and substance use, among others (Blum, 2005). Although the association between school support and TDV have not been examined specifically, we similarly expected that school support would be associated with reduced risk for TDV victimization (Blum, 2005).

Current Study

The current study used a multilevel approach to examine the association between adolescents' recent substance use and experiences of physical and verbal TDV. The first aim was to determine the association between adolescents' recent use of alcohol and experiences of TDV. The second aim was to explore the association between adolescents' recent use of marijuana and experiences of TDV. We hypothesized that adolescents reporting recent alcohol use or marijuana use would be at increased risk of experiencing both physical and verbal TDV victimization. Given the potential significance of school context (Olweus, 1993), we also examined these associations within the context of school-level variables, including indicators of concentrated disadvantage, such as student poverty, high suspension rate, and enrollment (Bradshaw, Sawyer, et al., 2009). We anticipated that the school-level contextual risk factors (i.e., indicators of school disorder) would increase the likelihood of substance use among youth who had experienced TDV. However, we also examined a

potential school-level protective factor, school-based supports, which was hypothesized to buffer at-risk students from TDV. Taken together, the results of the current study may provide important information for identifying youth at greater risk of TDV victimization and inform school-based preventive interventions for adolescents who are at risk for a range of behavioral health problems, including TDV.

Method

Participants

Data came from 58 public high schools in 12 Maryland school districts participating in a statewide project focused on measuring and improving the school climate, called the Maryland Safe and Supportive Schools Initiative. Data were collected from 27,758 adolescents in Grades 9 to 12 using the Web-based Maryland Safe and Supportive Schools School Climate survey in spring 2013 (see Table 1 for youth and school demographic data). Detailed procedures of the full study are published elsewhere (Bradshaw, Waasdorp, Debnam, & Lindstrom Johnson, 2014; Bradshaw, Waasdorp, Goldweber, & Lindstrong Johnson, 2013). Nonidentifiable data were obtained for analysis for the current article and have been approved for analysis by the university institutional review board.

Instruments

Demographic Characteristics.—Participating adolescents responded to a series of questions regarding their demographic characteristics, including age and gender. The decision to compare 12- to 15-year-olds to 16- to 21-year-olds was based on the prevalence of TDV, which tends to be higher among older youth (Centers for Disease Control and Prevention, 2012). Participants were also asked to report their race/ethnicity, and the responses were dummy coded into the following variables for the current analysis: *Black/African American* (1 = Black/African American students vs. 0 = Other students), and *Hispanic/Latino* (1 = Hispanic students vs. 0 = Other students).

Substance Use.—Two types of substance use were assessed through questions adapted from the Youth Risk Behavior Surveillance System (Centers for Disease Control and Prevention, 2011). For alcohol use, the question read, “In the past 30 days, how many times did you have at least 1 drink of alcohol?” The marijuana question read, “In the past 30 days, how many times did you use marijuana?” The response options were: 0 days, 1 to 2 days, 3 to 5 days, 6 to 9 days, 10 to 19 days, 20 to 29 days, or all 30 days. Based on the distributions for these questions, two three-category substance use variables were created (1 = 0 days [no use], 2 = 1–5 days [little/moderate use], 3 = 6 or more days [frequent use]) and treated as categorical variables in the regression models.

Teen Dating Violence.—Two questions examined adolescents’ experiences of TDV, both of which were adapted from the Youth Risk Behavior Surveillance system (Centers for Disease Control and Prevention, 2011). The physical TDV question read, “During the past 12 months, did someone you were dating or going out with ever hit, slap, or physically hurt you on purpose?” The verbal TDV question read, “During the past 12 months, did someone you were dating or going out with threaten, degrade, or intimidate you?” The following

response options were provided for both questions: yes, no, or I did not date or go out with anyone during the past 12 months. Both physical and verbal TDV items were dichotomized as 0 (did not experience TDV [including students who did not date anyone]), versus 1 (experienced TDV).

Perceptions of School Context.—Adolescents' perceptions of the supports schools have in place was assessed using a three-item scale (Bradshaw et al., 2014; $\alpha = .791$; e.g., “Teachers at my school help students with their problems”). Adolescents responded on a 4-point Likert-type scale, and responses were summed and averaged such that a higher score indicated a greater availability of school supports.

School-Level Contextual Factors.— The percentage of students receiving free and reduced-price meals, the percentage of students who received an out-of-school *suspension*, and the total number of students enrolled in the school (*enrollment*), as an indicator of school size, were obtained from the Maryland State Department of Education as indicators of disorder and were included as school-level indicators of disorder (Bradshaw, Sawyer, et al., 2009). We also included the *percentage of minority students* attending the school, as this is a commonly used indicator of the school context (Bradshaw, Sawyer, et al., 2009).

Data Analysis

Descriptive statistics were run using STATA 13.1, and all variables were assessed for collinearity (StataCorp, 2013). Three-level hierarchical linear models were conducted using HLM 7.0 (Raudenbush & Bryk, 2002) to examine the association between substance use and experience of TDV, while accounting for the nested nature of the data, where students were nested within classrooms, which were nested within schools. Variables included at Level 1 were student *age*, *sex*, *race*, *alcohol use*, *marijuana use*, and *school support*. All variables at Level 1 were tested for randomly varying slopes (Raudenbush & Bryk, 2002). At Level 2, we accounted for classroom-level clustering of students but no covariates. At Level 3, we included the school-level *enrollment*, percentage *minority*, receiving free and reduced-price meals, and *suspended* as additional school contextual variables. All Level-3 variables were grand mean centered (Enders & Tofighi, 2007). Sensitivity analyses confirmed that conclusions were robust whether or not the data included students who did not date or go out with anyone during the past 12 months. To explore for the hypothesized school contextual influences, we examined cross-level interactions between student variables and school demographics.

Results

Descriptive Analyses

Data showed that about 11% of students reported physical and 11% of students reported verbal TDV victimization (this includes students who did not date or go out with anyone during the past 12 months); 33% reported drinking alcohol; and 21% reported using marijuana at least one time (see Table 1 for additional descriptive findings).

Hierarchical Linear Models

Physical Dating Violence.—As illustrated in Table 2, students who reported moderate alcohol use and moderate marijuana use had increased odds of experiencing physical TDV compared to students who reported no recent use of alcohol or marijuana (adjusted odds ratio [AOR]_{alcohol} = 1.58, $p < .001$; AOR_{marijuana} = 1.48, $p < .001$). Similarly, students who reported frequent alcohol and marijuana use had increased odds of experiencing physical TDV compared to students who reported no recent alcohol or marijuana use (AOR_{alcohol} = 2.80, $p < .001$; AOR_{marijuana} = 2.03, $p < .001$). As students' rating of school-based supports increased, they were less likely to report physical TDV (AOR = 0.78, $p < .001$). Girls had reduced odds of reporting physical TDV compared to boys (AOR = 0.67, $p < .001$), whereas Black/African American students reported increased odds (AOR = 1.23, $p < .01$) compared to students of other races. No significant differences in victimization were observed for students when examining age or Hispanic/Latino race/ethnicity. At the school level, only the suspension rate was significant, suggesting that in schools with higher levels of suspensions, youth reported experiencing more physical dating violence (AOR = 1.01, $p < .001$). Individual-level covariates were tested for randomly varying slopes to explore cross-level interactions. The analyses indicated that the variance on the dummy code for Black/African American randomly varied across schools; therefore, a cross-level interaction was modeled with this variable. The interaction between Black/African American and percentage suspension was significant, suggesting that the rates of reporting physical TDV among Black/African American students did not differ across different levels of suspension rates, whereas students of other races/ethnicities had increasing odds of reporting physical TDV as the rate of suspensions increased in the school (AOR = 0.99, $p < .01$; see Table 2 and Figure 1).

Verbal Dating Violence.—The next set of analyses examined influences on reporting verbal TDV victimization (Table 2). Students who reported moderate alcohol use and moderate marijuana use had increased odds of experiencing verbal TDV compared to students who reported no recent use of alcohol or marijuana (AOR_{alcohol} = 1.52, $p < .001$; AOR_{marijuana} = 1.46, $p < .001$). In comparison, students who reported frequent alcohol and marijuana use had increased odds of experiencing verbal TDV compared to students who reported no recent alcohol or marijuana use (AOR_{alcohol} = 2.63, $p < .001$; AOR_{marijuana} = 2.20, $p < .001$). These results are similar to the results obtained for the physical TDV outcome. As students' rating of school-based supports increased, again they were less likely to report verbal TDV (AOR = 0.80, $p < .001$). Compared to their younger classmates, students ages 16 to 21 years showed greater odds of reporting verbal TDV (AOR = 1.12, $p < .05$), as did girls (AOR = 1.21, $p < .001$). No significant differences emerged between Black/African American or Hispanic/Latino students compared to students of other races. At the school level, the suspension rate was again significant, suggesting that in schools with higher levels of suspensions, youth reported experiencing more verbal TDV (AOR = 1.01, $p < .05$). Percentage minority was also significant, suggesting that in schools with a higher proportion of minority students, students reported experiencing less verbal TDV (AOR = 0.99, $p < .05$). Again, randomly varying slopes were detected for Black/African American students, Hispanic/Latino students, and perceptions of school support, so cross-level

interactions were modeled with these three variables. However, cross-level interactions with school-level covariates were not significant (results not reported).

Discussion

The current study used multilevel data from a large, population-based sample of high school students in Maryland to explore the relationship between recent alcohol and marijuana use and physical and verbal TDV victimization. Our analyses indicated recent use of alcohol and recent use of marijuana were both significant risk factors for physical and verbal TDV victimization. As hypothesized, we found that students' recent use of alcohol and marijuana were significantly positively associated with experiencing physical and verbal TDV victimization. These results are consistent with the literature demonstrating that adolescents who use substances may be at greater risk of relationship violence than those who abstain from substance use (Brooks-Russell et al., 2013; Moore & Stuart, 2005; Temple & Freeman, 2011). More specifically, the findings extend the rich literature base linking alcohol use (Devries et al., 2014) with IPV (Moore & Stuart, 2005) among adults, and the growing literature examining these associations among adolescents (Brooks-Russell et al., 2013; Haynie et al., 2013; Temple & Freeman, 2011). We also found evidence of an association between marijuana use and TDV victimization, which is a topic for which the previous literature has been less consistent (Brooks-Russell et al., 2013; Temple & Freeman, 2011).

Together, these findings suggested a link between both alcohol and marijuana use and TDV. However, the mechanisms underlying these associations are not yet well understood. In aiming to understand these associations, we draw on lifestyle theory, which posits that situational and environmental factors generate opportunities for exposure to TDV victimization (Fattah, 1993). Routine activities may also influence the opportunity for interactions between individuals (Mele, 2009). For example, it may be that adolescents who drink alcohol or use marijuana are more likely to associate with deviant peers and therefore their risk of victimization increases. Socializing with deviant peers is a situational factor that may help create opportunities for contact between victims of TDV and their abusers. Alternatively, alcohol and marijuana use may cause impairment and increase adolescents' vulnerability to victimization. It is also possible that adolescents use alcohol and marijuana as coping mechanisms in response to TDV victimization. Additional research is needed to elucidate the mechanisms underlying the relationship between substance use and TDV, for instance, the time ordering of alcohol use, marijuana use, and TDV victimization, as well as differentiating between adolescents who socialize with deviant peers and do not use alcohol or marijuana (compared to those who do use alcohol and marijuana) and experience of TDV. The association between substance use and TDV victimization lends support to the idea that there is a clustering of risky behaviors among some adolescents. In fact, two studies (Dryfoos, 1990; Jessor, 1991) have suggested that certain adolescents may exhibit behavioral patterns or experiences that may include TDV victimization (and perpetration) and substance use, among other behaviors such as risky sexual behavior. Considering the prevalence of substance use among teens, there is a need for multifaceted prevention intervention strategies for reducing levels of substance use and addressing experiences of TDV victimization.

With regard to school contextual factors, only one of the school disorganization factors (i.e., suspension rate) was associated with increased odds of TDV victimization. Specifically, we found that higher suspension rates were associated with increased odds of physical and verbal TDV victimization. Although this finding is consistent with social disorganization theory, given the lack of other school-level effects, they provide only partial support for the hypothesized school contextual risk factors.

However, at the student level, we did find that student perceptions of school support were a significant protective factor. Specifically, we found a protective effect of the students' perception of school supports on their physical or verbal TDV victimization. What is especially notable is that the items measuring school support did not specify supports related to physical fighting, bullying, or TDV. Instead the questions asked students about the availability of general support in schools, specifically from teachers. These items may also tap into aspects of school connectedness, which has been previously identified as an important protective factors for several risky behaviors, including substance use and violence (Blum, 2005). This finding also demonstrates the important influence school personnel have in students' lives and, in particular, the position they are in to address TDV. Several school-wide prevention interventions have been developed to promote a positive school climate and reduce students' behavior problems. According to Bradshaw, Koth, Thornton, and Leaf (2009), these universal program models demonstrate positive behavioral expectations, offer incentives to students meeting expectations, and implement databased decision making. One such program is Positive Behavioral Interventions and Supports (PBIS; Sugai & Horner, 2006). PBIS is a theoretically grounded school-wide prevention framework that improves the school environment by creating enhanced systems (e.g., discipline) and procedures (e.g., office referrals) that encourage positive change in both student and staff behavior (Bradshaw, Koth, et al., 2009; Sugai & Horner, 2006). As such, previous randomized controlled trials have documented improvements in school climate and reduced disciplinary problems resulting from PBIS implementation (e.g., Bradshaw, Koth, et al., 2009). Therefore, schools may consider implementing PBIS or the Olweus Bullying Prevention Program (Olweus et al., 2007) as a way to improve school climate, which in turn may also reduce rates of TDV. More specifically, schools with more positive student-teacher relationships often have reduced rates of bullying incidents (Richard, Schneider, & Mallet, 2012). Given this, a similar association may be expected between school supports and TDV.

Limitations

Some limitations should be considered when reviewing these findings. Although the data were self-reported, this is the most common approach used to assess TDV and substance use among adolescent populations. However, the self-report measures we used have been well validated (Bradshaw et al., 2014; Centers for Disease Control and Prevention, 2011). Our measures of TDV are single-item indicators for physical TDV and verbal TDV. This study was cross-sectional, so the results do not provide insight into the temporal ordering of the alcohol and marijuana use and TDV victimization or causal mechanisms, which may mediate this association. Finally, it is unclear how these results generalize to other samples of youth, including those in elementary or middle school or those in other states.

Conclusions and Implications

The results from this study may have important implications not only for researchers but also for school personnel. Findings suggest that, by focusing on adolescent use of substances, the potential vulnerability to TDV may also be addressed. Preventive interventions may also benefit from focusing on enhancing school support, given that students' perception of school support was protective against reporting experiences of physical and verbal TDV victimization. These recommendations should be interpreted cautiously, and future research efforts should explore the mechanisms around the relationship between substance use and TDV victimization through the use of longitudinal study designs.

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Figure 1.

Interaction between Black/African American and percentage suspension, illustrating predicted probability of experiencing physical TDV victimization (past year).

Note. TDV = teen dating violence.

Table 1.

Sample Descriptives.

Characteristics (<i>N</i> = 27,758 adolescents)	<i>N</i> (%)
Gender	
Male	13,650 (50.7)
Female	13,283 (49.3)
Age, years	
12–15	10,952 (40.7)
16–21	15,977 (59.3)
Race/ethnicity	
Black/African American	8,367 (31.1)
White	13,626 (50.6)
Hispanic/Latino	1,356 (5)
Asian/Pacific Islander	1,247 (4.6)
Native American/American Indian	397 (1.5)
Native Hawaiian/other Pacific Islander	167 (0.6)
Other	1,769 (6.6)
School support, <i>M</i> (<i>SD</i>)	2.7 (0.73)
Substance use (past 30 days)	
Alcohol use	
No use (0 days)	17,447 (66.8)
Little/moderate use (1–5 days)	5,831 (22.3)
Frequent use (≥ 6 days)	2,826 (10.8)
Marijuana use	
No use (0 days)	20,513 (78.7)
Little/moderate use (1–5 days)	2,391 (9.2)
Frequent use (≥ 6 days)	3,176 (12.2)
Teen dating violence (past 12 months)	
Physical violence	2,627 (10.8)
Verbal violence	2,616 (10.7)
School characteristics (<i>N</i> = 58 schools)	<i>M</i> (<i>SD</i>)
% minority students	46.8 (25.1)
% students suspended	17.2 (12.0)
School enrollment	1,262 (462.9)
% students receiving free or reduced price meals	37.5 (17.8)

Table 2.

Individual- and School-Level Indicators of Physical and Verbal TDV.

Fixed effect	Physical TDV			Verbal TDV		
	Coefficient	Odds ratio	SE	Coefficient	Odds ratio	SE
Individual level						
Age (reference = 12–15 years), 16–21 years	0.07	1.08	0.04	0.116 [*]	1.12	0.05
Female (reference = male)	−0.40 ^{***}	0.67	0.04	0.187 ^{***}	1.21	0.04
Black/African American (reference = not black)	0.21 ^{**}	1.23	0.06	0.032	1.03	0.06
Hispanic/Latino (reference = not Hispanic/Latino)	−0.05	0.95	0.09	−0.057	0.94	0.13
Alcohol (reference = no use)						
Moderate use	0.46 ^{***}	1.58	0.06	0.42 ^{***}	1.52	0.06
Frequent use	1.03 ^{***}	2.80	0.07	0.97 ^{***}	2.63	0.07
Marijuana (reference = no use)						
Moderate use	0.39 ^{***}	1.48	0.07	0.38 ^{***}	1.46	0.07
Frequent use	0.71 ^{***}	2.03	0.06	0.79 ^{***}	2.20	0.06
School support	−0.25 ^{***}	0.78	0.03	−0.23 ^{***}	0.80	0.03
School-level						
FARMS, %	0.00	1.00	0.00	0.00	1.00	0.00
Enrollment	0.00	1.00	0.00	0.00	1.00	0.00
Suspension, %	0.01 ^{***}	1.01	0.00	0.01 [*]	1.01	0.00
Minority, %	−0.00	0.99	0.00	−0.00 [*]	0.99	0.00
Cross-level interaction						
Black/African American × suspension	−0.01 ^{**}	0.989	0.00			
Random effect						
	SD	Variance component	χ ²	SD	Variance component	χ ²
Level 2 intercept	0.31 ^{**}	0.09	1530.13	0.24 [*]	0.06	1516.70
Level 3 intercept	0.17 ^{***}	0.03	95.56	0.08 [*]	0.01	72.20
Black/African American	0.22 [*]	0.05	79.27			

Fixed effect	Physical TDV			Verbal TDV		
	Coefficient	Odds ratio	SE	Coefficient	Odds ratio	SE
Reduction of proportion of variance	24.28%			66.12%		

Note. TDV = teen dating violence; FARMs = free and reduced-price meals.

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