



Sexual Dating Violence, School-Based Violence, and Risky Behaviors Among U.S. High School Students

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Abstract

Sexual dating violence is associated with several risky health behaviors among adolescents. This study explored the associations between school-based violence, risky health behaviors, and sexual dating violence victimization among U.S. high school students using the 2017 Youth Behavior Risk Survey data. Results indicate a statistically significant correlation ($p < .05$) between sexual dating violence, sex, sexual identity, and various risky behaviors including bullying, electronic bullying, alcohol use, and physical fighting. These additional behavioral risks experienced by sexual dating violence victims should be further researched to determine impact on overall quality of life and to help guide health education intervention development.

Keywords Sexual dating violence · Teen dating violence · School-based violence · Adolescent health

Introduction

Dating violence is a serious, reoccurring public health problem affecting millions of people in the United States (U.S.). The Centers for Disease Control and Prevention [7] estimated 1 in 4 women and 1 in 7 men have reported experiencing severe physical violence from their intimate partner. Approximately 41% of female and 14% of male victims of dating violence had a physical injury related to victimization. Additionally, 40% of U.S. female homicide victims were killed by their intimate partner. These risks are not solely experienced by adults as teen dating violence is considered a risk factor which may lead to negative intimate relationships in adulthood. Approximately 8.5 million women and 4 million men reported first experiencing a form of partner victimization before the age of 18 [9] with reports of high teen dating violence prevalence as early as middle school [24]. Dating violence is considered a complex phenomenon during adolescence because individuals in this stage of development are beginning to engage in intimate relationships with their peers and are only starting to develop sufficient conflict management skills. This state of

early development in conflict management may impact how adolescents emotionally handle intimate partnerships [29, 30]. Youth involved in relationships are less experienced compared to older adults, or those who have engaged in relationships before, making them more vulnerable to various forms of victimization [1].

The term “intimate partner violence” refers to the emotional, sexual, or physical harm to a person from a current partner, former partner, or spouse [6]. Intimate partners include girlfriends, boyfriends, current or former spouses, dating partners, and sexual partners [5]. Teen dating violence is a type of intimate partner violence occurring among teenage populations. Dating violence is physical, sexual, psychological, or emotional aggression within a dating relationship that is directed toward a partner [36]. Dating violence is often referred to using many terms including dating abuse, relationship violence, relationship abuse, domestic abuse, and domestic violence and such victimization can occur among both heterosexual and same-sex couples [8, 12]. Among teens specifically, dating violence also includes stalking and can occur in-person or electronically [12].

According to the 2015 Youth Risk Behavior Survey, approximately 23% of female and 14% of male high school students have experienced a form of dating violence before the age of 18 [8]; however, some studies indicate that the rates may be higher. Pearlman and Dunn [29] found that 40.9% of teens sampled reported victimization related to teen dating violence, while Wincentak et al. [37] reported

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that upwards of 61% of teens may experience physical dating violence and 54% may experience sexual dating violence. National reports indicate that about 7% of high school students report being forced to perform sexual acts by a dating partner [19]. Compared to adults, teenagers are at a greater risk of experiencing both physical and sexual violence from their partner. These issues may be linked to other social risks such as peer pressure, bullying, and homophobic teasing [29] which can potentially cause negative effects on one's future relationships. Negative health consequences can stem from dating violence, including low self-esteem, depression, and problems in school [15, 29].

Research also suggests associations between teen dating violence and other violence-related behaviors, risky behaviors, and bullying. Participation in early onset alcohol use, drug use, school violence, carrying weapons, lack of condom use, and other sexual risk behaviors such as having more sex partners are also linked to teen dating violence [23, 24, 33, 35]. Moreover, youth who engage in risky behaviors at a younger age are more likely to progress to more intense and frequent risky behaviors as they grow older [15, 25, 35]. Furthermore, it is important to examine associations between teen dating violence, school-based violence, and other risky behaviors (e.g. alcohol consumption, having multiple sex partners) [23, 34].

School-Based Violence and Victimization

School-based violence is used as an umbrella term encompassing multiple forms of victimization. The National Center for Education Statistics reported that 65% of U.S. public schools recorded instances of physical attacks while other research indicated that 90% of high schools recorded instances of physical violence [14]. Research has shown a possible link between teen dating violence, early substance use, and school-based violence, particularly instances of bully and social and physical aggression.

Bullying

Cook et al. [11] suggested childhood aggression is considered a major social problem, specifically in the form of bullying. As they transitioned into adulthood, adolescents who were victims of bullying displayed more internalizing behaviors compared to those who were not bullied [11]. Internalized behaviors include depression, anxiety, traumatic stress, interest in drugs and alcohol, and suicidal tendencies [3]. Prior research suggests dating violence and bullying are positively related, especially during adolescence when youth are beginning to have interest in romantic relationships [25]. Bullying includes more than just physical aggression—verbal aggression (threats and name-calling), relational aggression (spreading rumors, social isolation, exclusion) and

cyber-aggression (sending or posting hurtful messages and/or images through text-messages and/or social media) are all considered forms of bullying [25]. Results from the 2015 YRBS study in Rhode Island estimated around 12% of high school students had been victimized by peers two or more times through electronic bullying, homophobic name calling, and/or hurt (physically or emotionally) by an intimate partner [29]. Additionally, students who were physically or emotionally disabled had a higher chance of experiencing forms of peer victimization. Similarly, Vivolo-Kantor et al. [36] found students who were involved in physical fights at school and/or were bullied on school property were more likely to experience teen dating violence victimization.

Social and Physical Aggression

The three classifications of people involved in bullying are the bully, the victim, and those who experience both roles [11]. Vivolo-Kantor et al. [36] concluded adolescents who were perpetrators of bullying became involved in romantic relationships earlier than those who did not. Perpetrators of bullying were more likely to report social and physical aggression toward their intimate partner [36]. Likewise, youth who experience school-based victimization are more likely to be targeted and suffer from repeated instances [25, 35]. Youth who were involved in a form of school-based violence were more likely to engage in physical and/or sexual teen dating violence compared to students not involved in school-related violence [11]. Furthermore, early experiences in school-based violence and teen dating violence may have future impact on an individual as it has been reported that victims of violence during adolescence often are bullied as adults in their future workplace [11].

Risky Behaviors

In addition to school-based violent behaviors, adolescents who engage in dating violence have a higher chance of being involved in risky behaviors, and vice versa. Results from a secondary analysis by Eaton et al. [15] showed participating in marijuana use, alcohol use, and sexual intercourse each had a positive association with dating violence victimization. Female adolescents who reported engaging in four risk behaviors (smoking, alcohol use, marijuana use, sexual intercourse) were 15 times more likely to be a victim of teen dating violence compared to adolescents who had not engaged in these behaviors [15]. Poor academic performance, binge drinking, increased depression and suicide rates, poor overall health, lack of social and peer acceptance, and participating in risky health and sexual behaviors are more likely to occur when someone is a victim of teen dating violence [1, 12, 36].

Alcohol and Other Substance Use

In addition to being the time when the risk of abuse by a dating partner emerges, adolescence is also typically when experimenting with alcohol, marijuana, and other substances may begin. Among U.S. youth, alcohol is reported to be the most frequently misused substance, and marijuana is reported to be the most commonly used illicit drug among teens [28]. In a similar study, 12% of students in grades 10 and 12 reported having been drunk in the past 30 days and 14% of students in grades 10 and 12 reported marijuana use in the past 30 days [18]. Students' recent use of alcohol and marijuana has been linked to dating violence victimization [26, 27]. The use of alcohol or and/or marijuana could increase a teen's vulnerability to victimization or cause impairment, physically and mentally. Adolescents may also turn to substances as a coping mechanism response to victimization [26].

Sexual Risky Behaviors

Previous studies have found associations between teen dating violence victimization and sexual risk behaviors including the first instance of intercourse at an early age, having multiple partners, current sexual activity, and use of alcohol or other substances before engaging in sexual activity [13]. Among both male and female students, as the number of sexual partners increased, the number of other risk behaviors and a higher chance of dating violence victimization increased. This association could be because students who have had multiple sex partners have been involved in more intimate partner relationships, inferring a higher chance of victimization [13, 15]. A secondary analysis of the 2015 YRBS focused on the relationship between sexual dating violence and sexual risk behaviors. Results suggested a strong association between alcohol and other substance use before engaging in sexual activity and dating violence victimization. Additionally, female students were at a greater risk of sexual violence victimization than their male peers [13]. Cross-sectional research in similar studies indicated the same risk factors associated with dating violence also associate with depressive symptoms, internalizing behaviors, eating disorders, and sexual risk behaviors [15, 22, 35]. These findings suggest a complex health behavioral issue for those who may experience teen dating violence [11, 29, 30].

School-based violence and other risky health behaviors, including drinking alcohol, substance use, and engaging in sexual risk behaviors can be positively associated with teen dating violence, particularly sexual dating violence. Much of the current literature has focused on exploring the relationship between one risk category (e.g., substance use) and teen dating violence. Research has indicated high-risk behaviors such as risky sexual practices and substance use are highly

correlated among adolescents [4, 10]; therefore, researchers should examine how these clustered risk behaviors may relate to teen sexual violence victimization.

In addition to the link between teen dating violence and other health risks, research has also shown that victimization rates differ based on demographic variables. Adolescents who do not conform with the social norms concerning physical appearance, gender, and sexuality are at a higher risk to be rejected by their peers, bullied, and victimized [12, 21, 29]. Those adolescents experiencing higher rates of sexual dating violence include females [15, 35], racial and ethnic minorities [20–22, 25, 32], and members of the LGBTQ community [12, 31].

Study Purpose

Sexual dating violence is associated with several risky health behaviors among adolescents [35]. This study explored the associations between school-based violence, risky health behaviors, and sexual dating violence victimization among U.S. high school students using the 2017 Youth Behavior Risk Survey data. Analyses of the YRBS will assist in determining current associations between teen dating violence (specifically sexual dating violence) and multiple behavioral risks. The following research questions were addressed:

- Is sexual dating violence victimization associated with demographic characteristics, participation in risky behaviors, and other violence victimization?
- Which specific measures of demographics, risky behaviors, and other violence victimization are associated with sexual dating violence?

Methods

This project was approved by the IRB in November 2018. Data for this study are from a national representative sample of public and private United States high school students who participated in the 2017 Youth Risk Behavior Survey (YRBS). Developed in 1990, the YRBS is a national, school-based, biennial-conducted, cross-sectional survey which observes six priority health-risk behaviors among youth: tobacco use, alcohol and other drug use, physical activity, dietary behaviors, sexual behaviors, and behaviors that can influence unintentional injuries and violence [9].

During each survey year, an independent three-stage cluster-sample design is used to gather data from students in the 50 states and the District of Columbia. Student participation in the survey is voluntary and anonymous. Additionally, parents of the participants were required to give consent for their child before participation in the survey. Student responses to the questionnaire were recorded

directly on a self-administered, computerized survey form. A weighting factor was applied to each record to adjust for nonresponse and the oversampling of Latino and Black students [9]. In 2017, 14,956 students completed the national survey, and the overall response rate was 60% [9]. Because this study focused on high school students, the sample was restricted to those participants who reported age 14 or higher ($N = 14,603$). Among this age-restricted sample, only participants who responded to survey items related to sexual dating violence were included in the analysis, yielding a final sample of $N = 9150$.

Data Analysis

Binary logistic regression analyses were used to explore correlates of sexual dating violence, including demographic items for age, grade, sex, sexual identity, and race/ethnicity. The YRBS dataset included both seven-level race and four-level variables for race. The four-level variable categories were Black, Latino, White, and all other races. [Explain the seven-variable categories here]. The seven-level variable contained small cell sizes in some categories; therefore, the four-level race-variable was utilized in the study. For clarity, only the terms Black, Latino, White, and all other races were used in this study.

We also investigated the relationships between risky behavior variables including school-based violence (e.g., bullying, physical fighting, and social aggression), substance use (e.g., alcohol, tobacco, marijuana, and electronic vapor products), and risky sexual behaviors. All statistical analyses were completed in SPSS and all survey items listed below were included on the 2017 YRBS survey [9].

Sexual Dating Violence

Sexual dating violence was assessed using the question: “During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do? (Count such things as kissing, touching, or being physically forced to have sexual intercourse)”. The response options were “0 times,” “1 time,” “2 or 3 times,” “4 or 5 times,” and “6 or more times.” The response categories for this question were coded and dichotomized to indicate “0 times” and “1 or more times” (coded in analysis as 0, 1).

School-Based Violence and Victimization

To assess school violence related behaviors, the following questions were utilized for this study:

Physical Fights “During the past 12 months, how many times were you in a physical fight?” The categorical

responses were as follows: “0 times,” “1 time,” “2 or 3 times,” “4 or 5 times,” “6 or 7 times,” “8 or 9 times,” “10 or 11 times,” and “12 or more times” (coded in analysis as 1, 2, 3, 4, 5, 6, 7, 8).

Physical Fights at School “During the past 12 months, how many times were you in a physical fight on school property?” Response choices were as follows: “0 times,” “1 time,” “2 or 3 times,” “4 or 5 times,” “6 or 7 times,” “8 or 9 times,” “10 or 11 times,” and “12 or more times” (coded in analysis as 1, 2, 3, 4, 5, 6, 7, 8).

Bullied at School “During the past 12 months, have you ever been bullied on school property?” Response choices were “Yes” or “No” (coded in analysis as 1, 0).

Electronically Bullied “During the past 12 months, have you ever been electronically bullied?” Response choices were “Yes” or “No” (coded in analysis as 1, 0).

Substance Use Behaviors

The YRBS items on lifetime and past 30-day substance use were used in this study. The substances of interest included cigarettes, electronic vapor, alcohol, and marijuana:

Lifetime Cigarette Use “Have you ever tried cigarette smoking, even one or two puffs?” Response choices were “Yes” or “No” (coded in analysis as 1, 0).

Current Cigarette Use “During the past 30 days, on how many days did you smoke cigarettes?” The categorical response options were as follows: “0 days,” “1 or 2 days,” “3 to 5 days,” “6 to 9 days,” “10 to 19 days,” “20 to 29 days,” and “All 30 days” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Lifetime Electronic Vapor Use “Have you ever used an electronic vapor product?” Response choices were “Yes” or “No” (coded in analysis as 1, 0).

Current Electronic Vapor Use “During the past 30 days, on how many days did you use an electronic vapor product?” The categorical response options were as follows: “0 days,” “1 or 2 days,” “3 to 5 days,” “6 to 9 days,” “10 to 19 days,” “20 to 29 days,” and “All 30 days” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Lifetime Alcohol Use “During your life, on how many days have you had at least one drink of alcohol?” Categorical response options were: “0 days,” “1 or 2 days,” “3 to 9 days,” “10 to 19 days,” “20 to 39 days,” “40 to 99 days,” and “100 or more days” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Current Alcohol Use “During the past 30 days, on how many days did you have at least one drink of alcohol?” The response categories were: “0 days,” “1 or 2 days,” “3 to 5 days,” “6 to 9 days,” “10 to 19 days,” “20 to 29 days,” and “All 30 days” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Lifetime Marijuana Use “During your life, how many times have you used marijuana?” Response categories were: “0 times,” “1 or 2 times,” “3 to 9 times,” “10 to 19 times,” “20 to 39 times,” “40 to 99 times,” and “100 or more times” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Current Marijuana Use “During the past 30 days, how many times did you use marijuana?” The categorical response options were as follows: “0 times,” “1 or 2 times,” “3 to 9 times,” “10 to 19 times,” “20 to 39 times,” “20 to 29 days,” and “40 or more times” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Sexual Risky Behaviors

Sexual risky behaviors were measured using the following four survey items:

Ever Engaging in Sex “Have you ever had sexual intercourse?” Response options for this question were “Yes” or “No” (coded in analysis as 1, 0).

Age the First Time Engaging in Sex “How old were you when you had sexual intercourse for the first time?” Response choices were as follows: “I have never had sexual intercourse,” “11 years old or younger,” “12 years old,” “13 years old,” “14 years old,” “15 years old,” “16 years old,” and “17 years or older” (coded in analysis as 1, 2, 3, 4, 5, 6, 7, 8).

Number of Sex Partners “During your life, with how many people have you had sexual intercourse?” Response categories were as follows: “I have never had sexual intercourse,” “1 person,” “2 people,” “3 people,” “4 people,” “5 people,” and “6 or more people” (coded in analysis as 1, 2, 3, 4, 5, 6, 7).

Consuming Alcohol/Drugs Before Engaging in Sex “Did you drink alcohol or use drugs before you had sexual intercourse the last time?” Response categories were “Yes” or “No” (coded in analysis as 1, 0).

Results

While age was normally distributed with most participants between the ages of 15–17, the sample included slightly more underclassmen than upperclassmen. Participants

predominately identified as female (51.5%), White (43.5%), and heterosexual (85.3%). Complete data on these demographic characteristics can be found in Table 1.

Sexual Dating Violence

After accounting for missing data, a total of 9150 participants responded to the survey item related to sexual dating violence. Approximately 4% (N = 605) of participants reported experiencing sexual dating violence during the past 12 months. Table 2 illustrates the associations between sexual dating violence and sex, race/ethnicity, age, grade, and sexual identity. Participants who identified as female were nearly four times more likely ($p < .001$; OR 3.922) to experience sexual dating violence (9.1%) than male participants (3.1%). As indicated in Table 3, participants who identified as heterosexual (5.4%) were less likely to experience sexual dating violence compared to those who identified as gay or lesbian (13.9%), bisexual (14.6%), or not sure (12.9%).

The bivariate logistic regression analyses indicated bullying, involvement in physical fights, having multiple

Table 1 Total 2017 YRBS participants by demographics

	N	%
Sex		
Male	7058	48.5
Female	7489	51.5
Age		
14 years old	1922	13.2
15 years old	3586	24.6
16 years old	3866	25.3
17 years old	3611	24.7
18 years old or older	1796	12.3
Grade		
9th grade	3875	26.7
10th grade	3705	25.5
11th grade	3590	24.7
12th grade	3369	23.2
Race/ethnicity ^{a,b}		
White	6247	43.5
Black or African American	2782	19.4
Hispanic/Latino	3604	25.1
All other races	1712	11.9
Sexual identity		
Heterosexual (straight)	11,910	85.3
Gay or lesbian	346	2.5
Bisexual	1113	8.0
Not sure	592	4.2

^aDifferences in n values represent students who selected more than one race

^bDifferences in n values due to missing data

Table 2 Binary logistic regression results exploring sexual dating violence and multiple demographics

	B	SE	Wald	df	Sig.	Exp(B)	CI
Sex							
Male	Ref						
Female	1.367	.159	74.058	1	.000	3.922	2.873–5.354
Race/ethnicity							
White	–.261	.193	1.836	1	.175	.770	.528–1.124
Black/African American	–.677	.244	7.690	1	.006	.508	.315–.820
Hispanic/Latino	–.188	.208	.816	1	.366	.829	.551–1.246
All other races	Ref		8.427	3	.038		
Age							
14 years old	–.150	.450	.110	1	.740	.861	.356–2.081
15 years old	.416	.376	1.224	1	.269	1.517	.725–3.172
16 years old	.288	.304	.896	1	.344	1.334	.735–2.421
17 years old	–.250	.235	1.133	1	.287	.779	.491–1.234
18 years old	Ref		11.849	4	.119		
Grade							
9th grade	–.066	.372	.032	1	.859	.936	.452–1.940
10th grade	–.387	.312	1.535	1	.215	.679	.368–1.252
11th grade	.103	.234	.195	1	.659	1.109	.701–1.755
12th grade	Ref		6.462	3	.091		
Sexual identity							
Heterosexual	–.462	.317	2.128	1	.145	.630	.338–1.172
Gay or lesbian	.278	.431	.417	1	.519	1.320	.568–3.071
Bisexual	.376	.340	1.226	1	.268	1.457	.748–2.835
Not sure	Ref		30.934	3	.000		

sex partners, and current alcohol use were statistically significant correlates of sexual dating violence (Tables 4, 5).

Bullying

Participants who reported being bullied at school within the past 12 months were approximately 1.6 times more likely to report experiencing sexual dating violence ($p = .005$; OR 1.586). Of participants who reported experiencing bullying at school, 14.2% ($N = 236$) also reported being a victim of sexual dating violence. Among those who have not experienced bullying at school within the past year, only 4.8% ($N = 355$) reported prior experience with sexual dating violence. Participants who experienced electronic bullying within the past 12 months were two times more likely to report sexual dating violence victimization ($p < .001$; OR 2.124). Among participants who reported electronic bullying experiences within the past year, 17.4% ($N = 245$) also reported experiencing sexual dating violence. Of those participants who did not report experiences of electronic bullying, only 4.5% ($N = 348$) reported experiencing sexual dating violence (Tables 4, 5).

Physical Fights

Experiences in physical fighting were significantly associated with sexual dating violence for those who experiences 1 or fewer physical fights in the past 12 months ($p < .05$). Of the participants who were not involved in a physical fight in the past 12 months, 5.2% ($N = 292$) reported experiencing sexual dating violence victimization. Among participants who reported experiencing 2 or 3 physical fights in the past 12 months, 9.5% ($N = 67$) reported sexual dating violence victimization. Of the participants who experienced 12 or more physical fights, 33.6% ($N = 37$) reported experiencing sexual dating violence victimization. Similarly, involvement in a physical fight on school property was significantly associated with sexual dating violence victimization ($p < .05$). Participants who were involved in three or fewer physical fights at school were significantly less likely to experience sexual dating violence. Among those who were not involved in any physical fights on school property, 5.6% ($N = 452$) reported sexual dating violence victimization. Of the participants who experienced 1 physical fight at school, 10.5% ($N = 63$) reported experiencing sexual dating violence victimization. Of the participants who reported experiencing 4 or 5 physical fights at school,

Table 3 Victims versus nonvictims of sexual dating violence by demographics

	Victim		Not a victim	
	N	%	N	%
Sex				
Male	135	3.1	4255	96.9
Female	460	9.7	4264	90.3
Race/ethnicity				
White	277	7.0	3706	93.0
Black/African American	87	4.7	1761	95.3
Hispanic/Latino	156	6.8	2128	93.2
All other races	73	8.0	837	92.0
Age				
14 years old	64	6.6	902	93.4
15 years old	141	6.8	1930	93.2
16 years old	170	7.2	2203	92.8
17 years old	138	5.6	2331	94.4
18 years old or older	92	7.2	1179	92.8
Grade				
9th grade	142	6.6	1997	93.4
10th grade	149	6.6	2100	93.4
11th grade	161	6.7	2243	93.3
12th grade	144	6.2	2174	93.8
Sexual identity				
Heterosexual	410	5.4	7204	94.6
Gay or lesbian	30	13.9	186	86.1
Bisexual	110	14.6	646	85.4
Not sure	36	12.9	242	87.1

28.3% (N = 13) reported being a victim of sexual dating violence. Among participants who reported involvement in a physical fight on school property 12 or more times within the past year, 63.4% (N = 26) reported experiencing sexual dating violence (Tables 4, 5).

Alcohol Consumption

Participants who reported consuming alcohol within the past 30 days had a statistically significantly greater chance of experiencing sexual dating violence than those who did not consume alcohol in the past 30 days ($p = .006$; OR 1.251). Data indicated a positive relationship between the number of days in which alcohol was consumed in the past 30 days and experiencing sexual dating violence. Among participants who did not consume alcohol during the past month, 4.7% (N = 242) reported experiencing sexual dating violence. Among those who consumed alcohol on each of the past 30 days, 56.3% (N = 27) reported experiencing sexual dating violence (Tables 4, 5).

Multiple Sex Partners

The risk of experiencing sexual dating violence ($p = .013$; OR 1.149) was significantly greater for participants who reported having multiple sexual partners. Among participants who reported having 6 or more sexual partners, 14.5% (N = 73) reported experiencing sexual dating violence. Among those who reported never having sex, 4.2% (N = 169) reported sexual dating violence victimization. Additional data on variables associated with sexual dating violence can be found in Tables 4 and 5.

Discussion

This study examined the prevalence of sexual dating violence, as well as the factors associated with sexual dating violence among U.S. high school students. Because dating violence among teens has become a more visible and scientifically explored health concern within the recent decade, this study utilized the most recent YRBS data from 2017 and contributed to the existing knowledge of the variables associated with teen dating violence. Findings from this study provided insight about predictors of sexual dating violence and may inform educational and public health programs intended to reduce the risk and occurrence of sexual dating violence among teens.

Demographic Associations with Sexual Dating Violence

Previous studies have suggested sexual dating violence is prevalent among U.S. high school students [15, 35]. In the current study, approximately 6.6% of students reported experiencing sexual dating violence. As indicated in prior literature, race and ethnicity were associated with sexual dating violence [15, 22, 25]; however, this study identified the odds of sexual dating violence victimization were lower among students who identified as Black or African American compared to White and Hispanic/Latino. This is inconsistent with prior research which suggested that racial and ethnic minority youth were at an increased risk for dating violence compared to White students [15, 21, 22, 25]. Such inconsistent findings suggest further exploration of the association between race/ethnicity teen sexual dating violence.

Sex and sexual identity were associated with sexual dating violence victimization. Female participants were much more likely to report sexual dating violence victimization than male participants. Of the total participants who reported sexual dating violence victimization, over 77% identified themselves as female. There was also a strong association between sexual dating violence and sexual identity as participants who identified as a sexual minority (gay or lesbian,

Table 4 Binary logistic regression results exploring sexual dating violence and associated variables

	B	SE	Wald	df	Sig.	Exp(B)	CI
Bullying at school within the past 12 months	0.461	0.164	7.886	1	0.005	1.586	1.149–2.188
Electronic bullying within the past 12 months	0.753	0.165	20.829	1	0	2.124	1.537–2.934
Current alcohol use	0.224	0.082	7.556	1	0.006	1.251	1.066–1.468
Multiple sex partners	0.139	0.056	6.141	1	0.013	1.149	1.029–1.282
Experienced physical fights within past 12 months							
0 times	– 1.197	0.477	6.295	1	0.012	0.302	.119–.770
1 time	– 1.322	0.496	7.091	1	0.008	0.267	.101–.706
2 or 3 times	– 0.613	0.481	1.619	1	0.203	0.542	.211–1.392
4 or 5 times	– 0.902	0.56	2.595	1	0.107	0.406	.135–1.216
6 or 7 times	0.139	0.628	0.049	1	0.825	1.149	.335–3.936
8 or 9 times	– 1.077	0.954	1.274	1	0.259	0.34	.052–2.210
10 or 11 times	– 0.035	1.222	0.001	1	0.977	0.966	.088–10.594
12 or more times	Ref		19.041	7	0.008		
Experienced physical fights at school within past 12 months							
0 times	– 3.016	0.954	9.996	1	0.002	0.049	.008–.318
1 time	– 2.458	0.967	6.457	1	0.011	0.086	.013–.570
2 or 3 times	– 3.393	1.031	10.82	1	0.001	0.034	.004–.254
4 or 5 times	– 1.645	1.148	2.053	1	0.152	0.193	.020–1.832
6 or 7 times	– 21.163	23,068.8	0	1	0.999	0	0
8 or 9 times	– 22.069	28,240.8	0	1	0.999	0	0
10 or 11 times							
12 or more times	Ref		17.839	6	0.007		

bisexual, or not sure) were more likely to experience sexual dating violence than those who identified as heterosexual. These findings are consistent with previous research, which suggests adolescents who do not conform with social norms concerning physical appearance, gender, and sexuality are at a higher risk to be excluded, bullied, and victimized by their peers and intimate partners [12, 21, 29]. When developing teen dating violence prevention programs, school and public health professionals should seek curricula containing culturally relevant and competent information for LGBTQ adolescent populations.

School-Based Violence, Risky Behaviors, and Sexual Dating Violence

The simultaneous occurrence of sexual dating violence, school-based violence, and risky behaviors, alongside the harmful physical and psychological impacts of these experiences, suggest that teen dating violence is a major public health issue among adolescents.

School-Based Violence and Victimization

Past studies have suggested youth who are involved in incidences of school-based violence are at a higher risk of experiencing dating violence [11, 35]. Similar to previous

research [12, 36], bullying and electronic bullying were both strongly associated with sexual dating violence in this study. Bullying has become a behavior which not only can be experienced in-person but could follow the individual online [11]. Teens may not detach from the internet and media platforms because they have been conditioned to socialize with others online [12]. This is an important issue to school and public health professionals. By understanding the relationships between types of bullying and teen dating violence, health professionals should be able to more appropriately develop prevention and intervention programs for at-risk adolescents.

Similarly, engaging in physical fights was associated with the students' risk of experiencing sexual dating violence. Aligning with previous research, frequency of fights has a strong association with teen dating violence [11, 29]. Early experience with violence among adolescents also increases the risk of continued participation of violence throughout their life. The higher number of physical fights a teen experiences, the higher chance they will experience physical fights throughout life [11, 29]. Research has also indicated that teens who experienced school-based victimization were more likely to start dating at an earlier age compared to those who did not experience school-based victimization [36]. Involvement in violence and romantic relationships during early adolescence may increase the risk sexual

Table 5 Victims versus nonvictims of sexual dating violence by associated variables

	Victim		Not a victim	
	N	%	N	%
Bullying at school within past 12 months				
Yes	236	14.2	1431	85.8
No	355	4.8	7059	95.2
Electronic bullying within past 12 months				
Yes	245	17.4	1166	82.6
No	348	4.5	7319	95.5
Experienced physical fighting within past 12 months				
0 times	292	5.2	5310	94.8
1 time	59	6.7	820	93.3
2 or 3 times	67	9.5	636	90.5
4 or 5 times	23	11.7	174	88.3
6 or 7 times	10	11.9	74	88.1
8 or 9 times	9	19.1	38	80.9
10 or 11 times	2	10.5	17	89.5
12 or more times	37	33.6	73	66.4
Experienced physical fighting at school within past 12 months				
0 times	452	5.6	7647	94.4
1 time	63	10.5	535	89.5
2 or 3 times	24	11.6	183	88.4
4 or 5 times	13	28.3	33	71.7
6 or 7 times	2	15.4	11	84.6
8 or 9 times	0	0.0	4	100.0
10 or 11 times	2	50.0	2	50.0
12 or more times	26	63.4	15	36.6

dating violence due to lack of emotional development [25, 29, 30]. Since the present study indicated that teen dating violence is occurring at the high school level, intervention strategies should be implemented earlier (e.g., junior high or middle school) to introduce students to examples of healthy relationships (romantic and platonic). Additionally, educating about healthy communication strategies and developing appropriate values about sexual consent can benefit teens in their developmental stage before becoming involved in relationships [2].

Risky Behaviors

Adolescence is often the period when an individual begins experimenting with alcohol and other substances [15]. Alcohol use is the most misused substance among American youth [28] and is potentially linked to victimization as it may increase physical and mental vulnerability and impairment, physically and mentally. The present study revealed sexual dating violence victimization was higher among students who drank alcohol in the past 30 days than those who did not engage in drinking. Unlike previous research [15,

26], cigarette, electronic vapor product, and marijuana use had weak associations sexual dating violence. Inconsistent results among research studies indicates further exploration of substance use as it relates teen sexual dating violence may be needed.

As the number of sexual partners increased, there was a greater chance of sexual dating violence among this study's participants, which aligned with prior research findings [13, 15]. Students who reported having multiple sexual partners had a higher chance of experiencing victimization than those who did not report being sexually active. Evidence-based public health interventions are needed to address these risky behaviors related to teen sexual dating violence. Public health advocates and school administrators should collaborate to create more appropriate educational and prevention strategies to address these significant health risks experienced among adolescents. Promising school-based strategies to prevent teen dating violence and sexual violence are currently being explored [16, 17].

Limitations

Because this study was a secondary analysis, researchers were limited by the available questions in the survey instrument, which did not allow for further quantitative and qualitative exploration of teen dating violence. In depth reasons as to why sexual dating violence occurs could not be explored. Additionally, the data were cross-sectional, limiting longitudinal analysis and exploration of causality. The YRBS data only assess behaviors within the past year and does not account for lifetime experiences. The YRBS data were self-reported by high school students, and there may be associated biases. Additionally, there is chance for an under-represented sample due to misreporting of teen dating violence instances. Finally, the YRBS is administered only to participants who are attending high schools, which excludes those who do not attend high schools; therefore, this study does not represent all teens living in the U.S. Despite these limitations, the results of this study do expand the current knowledge related to teen sexual dating violence and its associated risks.

Conclusion

This study was designed to investigate the factors associated with teen dating violence, specifically sexual dating violence in U.S. high school students. As with other public health issues, teen sexual dating violence appears to be affected by the interaction of multiple factors. Using nationally representative data from the 2017 YRBS, this study has shown a relationship between teen sexual dating

violence, sex, sexual identity, and various risky behaviors that may have impact on an adolescent's current and future health. Current adolescent health interventions must understand associations of school-based violence, risky behaviors, and sexual dating violence among diverse populations. A comprehensive public health approach is best to develop appropriate preventative measures, initiatives, and programs promoting healthy adolescent development.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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