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Abstract

Dating violence is a growing and prominent problem for today's middle and high school students. Intimate partner violence, which can include physical, sexual, emotional, and psychological aggression, affects millions of individuals worldwide. This specific study will examine one age group affected by this rampant phenomenon: adolescents under the age of 18. The purpose of this study is to continue the examination of correlates of dating violence, specifically physical and sexual, through the analysis of data from the 2015 Youth Risk Behavior Survey and application of Routine Activities Theory. Results support hypotheses that the components of Routine Activities Theory are moderate to strong predictors of physical and sexual dating violence in adolescents.

Keywords

domestic violence, quantitative, theory

Introduction

Dating violence is a growing and prominent problem for today's middle and high school students. While intimate partners should act as protectors for their significant others (Hollis, Felson, & Welsh, 2013), many teenagers are

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becoming entrenched in relationships that are based on fear, intimidation, and assaultive behavior. Intimate partner violence, which can include physical, sexual, emotional, and psychological aggression, affects millions of individuals worldwide (Black et al., 2011). This specific study will examine one age group affected by this rampant phenomenon: adolescents under the age of 18. Multiple factors have been linked to adolescent dating violence, including but not limited to substance abuse (Temple & Freeman, 2011), justifying attitudes regarding violence (O'Keefe, 1997), and sexual behaviors (Alleyne, Coleman-Cowger, Crown, Gibbons, & Vines, 2011).

The end goal of research, policies, and educational programming in this field is to decrease dating violence and encourage participation in healthy relationship behaviors. However, efforts to decrease teen dating violence has been difficult based on academic efforts as many cross-sectional studies cannot distinguish between predictors and consequences of dating violence (Capaldi & Langhinrichsen-Rohling, 2012). A particularly beneficial theory for predicting victimization is Routine Activities Theory, as it is shown to be strongly supported when predicting various forms of criminality, including personal victimization. The purpose of this study is to continue the examination of correlates of dating violence, specifically physical and sexual, through the analysis of data from the 2015 Youth Risk Behavior Survey (YRBS) and application of Routine Activities Theory. The hope is that these findings will support previous findings and assist policy makers in creating educational and prevention programs to help teens stay out of unhealthy and abusive relationships.

Literature Review

While adolescence is supposed to be a time of gaining autonomy and developing a sense of identity, it is also a period that many teens are determining what traits are attractive to them in a potential romantic partner. Dating is considered an important developmental marker for adolescents (Collins, Welsh, & Furman, 2009), and can be affiliated with high level of self-esteem and academic achievement (Collins et al., 2009; Quatman, Sampson, Robinson, & Watson, 2001). However, negative teen dating experiences, especially those involving violence, can be linked to negative outcomes, including low levels of academic achievement, higher levels or depression, and substance abuse (McCarthy & Casey, 2008). According to the 2013 National Youth Risk Behavior Survey, approximately 10% of 11- to 17-year-old students experience some form of physical dating violence (i.e., pinching, hitting, slapping, kicking, punching, or shoving), and 10% of this age group experience sexual dating violence (forcing a partner to

participate in any sex act without consent; Vagi, Olson, Basille, & Vivolo-Kantor, 2015). When comparing dating violence experiences by sex, 21% of female high school students and 10% of male high school students reported physical and/or sexual dating violence. While there is not one single cause of teen dating violence, there are a variety of factors linked to this form of abuse.

Substance abuse has been continuously linked to dating violence for all ages as a predictor of offending and victimization (Howard, Wang, & Yan, 2007; Rothman, Reyes, Johnson, & LaValley, 2012; Shorey, Stuart, & Cornelius, 2011; Temple & Freeman, 2011; Vagi et al., 2013). Utilizing the category "substance" is not just indicative of narcotics or marijuana but can also include alcohol, prescription medication, hard drugs, or tobacco depending upon the study. For instance, Rothman, Johnson, Azreal, Hall, and Weinberg (2010) found that alcohol, tobacco, and marijuana use was linked to perpetration of dating violence in Boston area high school students. Reyes, Foshee, Bauer, and Ennett (2012) and Foshee et al. (2011) both found links between adolescent dating violence and alcohol use. Even studies examining the behaviors of adolescents internationally had found a link with drug and alcohol use in Mexico (Rivera-Rivera, Allen-Leigh, Rodriguez-Ortega, Chavez-Ayala, & Lazcano-Ponce, 2007) and Thailand (Chaveepojnkamjorn & Pichainarong, 2011), indicating adolescent dating violence is not just a problem experienced in the United States. There is a varied support when investigating the predictive power of substance abuse for dating violence when examining sexes separately. Shorey et al. (2011) found that substance abuse is a stronger predictor of dating violence perpetration for males, while McDonnell, Ott, and Mitchell (2010) found it was a better predictor for females. Conversely, other studies have found no difference between sexes with the strength of substance abuse as a predictor (Nabors, 2010; Reyes, Foshee, Bauer, & Ennett, 2011).

Participation in sexual intercourse and risky sexual behavior, such as multiple sex partners and unintended pregnancy, has also been linked to the risk of dating violence in adolescents (Ramrakha et al., 2007). Lormand et al. (2013) used data from southeast Texas adolescents to determine that approximately half the students who were in a romantic relationship reported nonphysical or physical victimization. About 20% were hit, kicked, or pushed by a romantic partner, similar to findings from previous studies (Temple & Freeman, 2011). While the reader may assume that this is an indication that females are generally the victims of dating violence in a sexual or physical manner, this is not necessarily the case. Rothman et al. (2010) and Swahn, Simon, Arias, and Bossarte (2008) both found that females perpetrate dating

violence at a similar rate or even more than male adolescents. While male on female violence is more severe (Foshee et al., 2011), the rate of occurrence is growing for female offenders.

Other literature has examined the relationship between technology and dating violence, but more in an online capacity. Cyberstalking and the term "cyber dating abuse" (also termed as negative interpersonal electronic surveillance) has been recognized as a consistent problem between adolescent and young adult romantic partners (Borrajo, Gamez-Guadix, Prereda, & Calvete, 2015; Lyndon, Bonds-Raacke, & Cratty, 2011; Zweig, Dank, Yahner, & Lachman, 2013). For example, Hinduja and Patchin (2011) found that approximately 10% of adolescents reported their romantic partners threatened negative recourse if a romantic partner strayed from boundaries set by the dominant partner. Marcum et al. (2017) found that university students with low self-control were likely to victimize romantic partners via cyberstalking behaviors, behaviors associated with cyber dating abuse also found by other studies: monitoring and surveillance of a partner (Burke, Wallen, Vail-Smith, & Knox, 2011; Lyndon et al., 2011), sending threatening or rude emails and messages (Bennet, Guran, Ramos, & Margolin, 2011; Hinduja & Patchin, 2011; Kellerman, Margolin, Borofsky, Baucom, & Iturralde, 2013; Zweig et al., 2013), and posting humiliating photographs (Hinduja & Patchin, 2011; Lyndon et al., 2011). Between 11% and 31.5% of adolescents and young adults have been a victim of cyber dating abuse (Bennet et al., 2011; Hinduja & Patchin, 2011; Zweig et al., 2013).

Cyberbullying, often similar to cyberstalking, is another form of online victimization and perpetration not unfamiliar to this age group. Cyberbullying, a prevalent form of cybercrime among adolescents, is an intentional, aggressive form of victimization that occurs with electronic devices (Hinduja & Patchin, 2009; Reekman & Cannard, 2009). Cyberbullying can occur on multiple mediums in several different ways, including harassment (receiving repetitive, often offensive messages), unauthorized sharing of personal information, or posting untrue information about a victim (i.e., denigration; Hinduja & Patchin, 2008; Kowalski, Limber, & Agatston, 2008). Past studies have indicated a wide range in victimization rates for adolescents, as well as varying findings for sex. For example, Marcum (2010) found males are more likely to report victimization than females (35.3% vs. 16%, respectively), while Marcum, Higgins, and Ricketts (2014) found that females were more likely to be victimized online than males.

The predictors mentioned above have been consistently supported, but further examination of the predictors of adolescent dating violence is still necessary. While it is fully recognized that this phenomenon is increasing, there has

not been a successful program or policy that is effectively combatting the occurrence and educating our youth. The purpose of this study is to use data recently gathered from adolescents to better understand what is causing this violent trend in youth, and hopefully what can be done to decrease its occurrence. Usage of criminological theory, specifically Routine Activities Theory, to explore correlates of victimization will be applied in this particular study.

Routine Activities Theory

Decades of research and arguments have focused on examining victimization through the lens of lifestyle-routine activities theory (a fusion of lifestyle-exposure theory and routine activities theory). Cohen and Felson's (1979) theory asserted that macro-level changes in the daily routines of individual explained crime rates based on the convergence in time and space of a suitable target, a lack of a capable guardian, and a motivated offender must all be present. Cohen and Felson also believed that crime follows regular patterns that require these three components, not just random occurrences. For example, more activity outside the home increases the likelihood of property victimization and personal victimization (Taylor, Peterson, Esbensen, & Freng, 2007; Wolfe, Marcum, Higgins, & Ricketts, 2014). Offenders make note that a house is left unguarded during the same time daily while the occupant is at work, positing it as an attractive target to burglarize.

Target suitability is based on a person's availability and attractiveness to an offender (Meier & Miethe, 1993). The fewer precautions a person takes to prevent victimization, the more suitable of a target he becomes. This can include activities such as participating in overtly risky behavior (i.e., drug use, sexual behaviors), or simply providing personal information on social networking websites. Guardianship referred to the presence or absence of persons or objects to prevent a crime from occurring (Meier & Miethe, 1993). This can take the form of social guardianship such as lifestyle factors, household composition, marital status, and employment type (i.e., being a single female living alone with a job that requires frequent travel would increase the opportunity for victimization of the home) or physical guardianship such as alarm systems and outside lighting of the home. Last, a motivated offender is one who is willing to commit a crime when an opportunity is presented through the presence (or absence) of the other two components (Cohen & Felson, 1979). Schwartz and Pitts (1995) suggested that a lack of punishment or presence of social support for the offender's behavior are also motivational factors.

Routine Activities Theory has been utilized to explain a variety of crimes. Spano and Freilich (2009) performed a meta-analysis of 33 studies using

Routine Activities Theory to predict property and violent crime and determined the theory to be a useful criminological theory when explaining these forms of victimization. The theory has been used to provide predictors of sexual assault (Cass, 2007), violent victimization (e.g., robbery, assault with weapon, physical assault; Koo, Chitwood, & Sanchez, 2008; Schreck & Fisher, 2004; Spano, Freilich, & Bolland, 2008; Spano & Nagy, 2005), and property crimes (Tseloni, Wittebrood, Farrell, & Pease, 2004). More recently, empirical research has found Routine Activities Theory as useful in explanation for cybercrime (Bossler & Holt, 2009; Navarro & Jasinski, 2013; Reyns, Henson, & Fisher, 2011; Wolfe et al., 2014).

Method

Research Question and Hypotheses

The purpose of this study is to investigate the following research question:

> **Research Question 1:** What are the predictors of physical and sexual victimization of adolescents in the United States?

The hypotheses for this study, based on the components of Routine Activities Theory, are as follows:

> **Hypothesis 1:** Exposure to motivated offender variables will provide moderate support of predictive factors of physical and sexual dating violence in adolescents.
> **Hypothesis 2:** Target suitability variables will provide strong predictive factors of physical and sexual dating violence in adolescents.
> **Hypothesis 3:** Lack of capable guardianship variables will provide moderate support of predictive factors of physical and sexual dating violence in adolescents.

Based on findings from past studies examining violent and sexual victimization (Cass, 2007; Koo et al., 2008; Schreck & Fisher, 2004; Spano et al., 2008; Spano & Nagy, 2005), we expect to find moderate to strong support for the use of the theory in predicting this type of victimization.

Research Design

The analyses for this study was based on 3 years of the national cross-sectional data from the 2011, 2013, and 2015 YRBS. In general, the YRBS is a

nationally representative sample of high school students in Grades 9 to 12. The students voluntarily and anonymously completed the self-administered survey in school. Local parental permission procedures were followed, and the students assented to participation.

The survey was administered using a complex design.[1] A three-stage cluster sampling design was used to produce a nationally representative sample of students in Grades 9 to 12. All school (i.e., public, private, and Catholic) students, in Grades 9 to 12, in the United States and the District of Columbia were included in the sampling frame. The selection of schools occurred systematically that was based on probability that was proportional to school enrollment. All classes in a required subject, or all classes meeting during a particular period of the day, depending on the school, made up the sampling frame. The survey had a 71% response rate, and the sample size is 44,632. Finally, the sample was weighted to nationally representative of high school students in the United States.

Measures

The dependent measures of the study consisted of experiencing physical violence in a dating relationship within 12 months of taking the survey (experiences included being hurt on purpose, such as hitting, slammed into something, or injured with a weapon), and experiencing sexual violence in a dating relationship within 12 months of taking the survey (experiences included unwanted kissing or touching, or forced into sexual intercourse). The dependent measures were captured dichotomously as no (0) and (1) yes.

Dichotomously, a number of psychosocial risk factors of sexual intercourse and demographics were used as independent measures and all measured as dichotomous variables. The independent measures for the study based on Routine Activities Theory include exposure to motivated offenders, target suitability, and lack of capable guardianship. Variables that represent exposure to motivated offenders include behaviors that place respondents in the potential path of a person who could victimize him or her. Participating in a physical fight in the past year was categorized as an exposure to motivated offender. Risky sexual behaviors for teenagers who exposed respondents to potential motivated offenders included (a) participating in sexual intercourse, (b) having sexual intercourse with multiple partners, and (c) using drugs or alcohol before having sex. Last, exposure to motivated online offenders was implemented with report of using computers more than 3 hr a day, and report of ever been electronically bullied (i.e., cyberbullying)

Variables that are behaviors that increase a respondent's target suitability are behaviors that make a respondent more attractive to a potential motivated

offender. In this particular study, mental health variables were considered. The variable involving report of feeling sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities during the past 12 months, as well report of consideration of suicide were measures of target suitability. In addition, drug-related behaviors were categorized as target suitability factors. Reports that respondents were offered, sold, or given an illegal drug on school property in the past 12 months, and report of ever having used cocaine, inhalants, heroin, or methamphetamines increased target suitability.

Last, behaviors that represent a lack of capable guardianship are those that demonstrate there is an absence of a protective measure. Report that respondent did not go to school on one or more of the past 30 days because they felt they would be unsafe at school or on their way to or of from school indicates lack of capable guardianship. Report of an average school night a respondent having had 8 or more hours of sleep is an indication as lack of sleep can indicate purposeful or involuntary risky results. Last, reports of achieving mostly As or Bs in school demonstrates better dedication to academics and less risky behaviors.

The remaining variables included in the analysis are control variables and were measured as dichotomous variables (exception of age). Sexual minority or heterosexual was included in the analysis. White compared with being non-White and Black compared with being non-Black was the race measurement. Last, biological sex was measured as either male or female and age using a 7-point Likert-type scale that ranged from 1 (12 years old), 2 (13 years old), 3 (14 years old), 4 (15 years old), 5 (16 years old), 6 (17 years old), and 7 (18+ years old).

Analysis Plan

The analysis plan takes place in a series of steps. Before the analysis steps are presented, it is important to understand that these data are clustered and weighted. To properly work with these data, we use STATA 14 and the survey (i.e., SVY) features in this program. The first step is a presentation of the univariate analysis via descriptive statistics. The descriptive statistics provides an indication of the distribution of the data. The analysis makes use of the mean and standard deviation. For the measures that are dichotomous, the mean represents the percentage of affirmative responses, and the standard deviation is not used for these items. To be clear, we use the SVY means feature in STATA to arrive at these results.

The second step is a presentation of the bivariate analysis. The bivariate analyses are a series of bivariate logistic regressions. These logistic regressions

are used to provide evidence of a link between the single independent measure and the dependent measure, especially given the dependent measure is dichotomous (Pampel, 2000). In addition, this analysis gives an indication of the direction and magnitude of the link via the odds ratio. Operationally, we use STATA 14 svy logistic regression to produce these results.

The third step is a presentation of the multivariate analysis. The multivariate analyses are a series of logistic regressions that include all the independent measures. This analysis provides an indication of the independent measures that have a link with the dependent measure while controlling for other independent measures. In addition, multicollinearity is a consistent concern when performing logistic regression. Following Menard's (2010) suggestions, the tolerance measure helps make a determination of whether multicollinearity is an issue in these data. Similar to the bivariate analysis, we use STATA 14 svy logistic regression to produce these results.

Results

Table 1 presents the descriptive statistics. Approximately 10% of the sample reported victimization of physical dating violence, while 10.46% of the sample reported being forced into sexual acts against their will (e.g., kissing, touch, sexual intercourse). The percentage of respondents who reported ever having sexual intercourse in the sample was 45.11, and the percentage of individuals who reported having multiple sex partners in the sample was 13.90. The percentage of respondents who used alcohol or drugs before the last time they had sex in the sample was 21.75. Almost 17% of the sample had also considered suicide.

The data also provided information on the frequency drug use behaviors by the sample. The percentage of students who reported current use of alcohol is 35.48, while almost 23% reported currently using marijuana. A little more than 18% of the sample had abused prescription medications. In regard to harder illegal drugs, few individuals in the sample reported use. Almost 6% of respondents reported trying cocaine and 2.4% of sample reported trying heroin. Inhalants were tried by 9.10% of the sample and 3.36% of the sample had tried methamphetamines. Last, 6.57% of the sample had tried ecstasy and a little more than 9% had tried synthetic marijuana products (e.g., K2, Spice, Moon Rocks).

The percentage of sexual minorities (i.e., homosexuals, bisexual) in the sample is 8.27. The percentage of White respondents in the sample is 54.53 and the percentage of Black respondents in the sample is 13.73. A little more than 6% of the respondents reported feeling unsafe in the past 30 days while at school or going to or from school. More than 9% of respondents reported

Table 1. Descriptive Statistics.

Variable	*M*	*SD*	Value	Frequency
Physical dating violence	0.10	0.30	No	18,300
			Yes	2,131
Sexual dating violence	0.10	0.31	No	17,955
			Yes	2,138
Ever used cocaine	0.06	0.24	No	41,278
			Yes	2,749
Ever used inhalants	0.09	0.29	No	39,097
			Yes	3,986
Ever used heroin	0.02	0.15	No	41,660
			Yes	1,088
Ever used meth	0.03	0.18	No	41,696
			Yes	1,483
Sexual identity	0.08	0.28	Heterosexual	12,954
			Sex Minority	1,246
Race				
White	0.55	0.50		26,163
Black	0.14	0.34		37,205
Unsafe at school	0.06	0.24	No	41,377
			Yes	3,060
Physical fight at school	0.09	0.29	No	39,500
			Yes	4,366
Cyberbullied	0.16	0.36	No	36,631
			Yes	6,212
Experienced sadness	0.29	0.46	No	30,807
			Yes	13,412
Drug possession	0.23	0.42	No	32,539
			Yes	10,823
Used a computer 3+ hr	0.38	0.49	No	26,301
			Yes	17,129
8 hr of sleep	0.30	0.46	No	27,429
			Yes	11,638
AB grades	0.72	0.45	No	4,448
			Yes	10,321
Sex				
Male				22,355
Female				22,086
Age			12	113
			13	59
			14	4,613
			15	10,385
			16	11,297
			17	11,227
			18+	6,733

Table 2. Bivariate Regression Model for Physical Dating Violence.

Variable	*b*	*SE*	OR	*Z*	*p* value
Unsafe in school	1.59	0.09	4.91	18.21	0
Physical fighting	1.11	0.09	3.05	12.26	0
Cyberbullied	1.36	0.06	3.89	20.97	0
Experienced sadness	1.25	0.06	3.51	22.20	0
Drug possession	0.89	0.07	2.43	11.89	0
Used computer 3+ hr	0.17	0.06	1.18	2.94	0
8 hr of sleep	−0.36	0.08	0.70	−4.38	0
Ever used cocaine	1.61	0.08	4.98	19.51	0
Ever used inhalants	1.49	0.08	4.42	19.06	0
Ever used heroin	2.46	0.14	11.75	18.08	0
Ever used meth	2.02	0.11	7.53	19.21	0
AB grades	−0.44	0.11	0.64	−3.98	0
Sexual identity	0.85	0.13	2.34	6.65	0
White	−0.15	0.08	0.86	−1.70	.09
Black	0.05	0.09	1.06	0.58	.57
Sex	0.56	0.08	1.75	7.06	0
Age	0.07	0.03	1.08	2.65	.01

Note. OR = odds ratio.

participating in at least one physical fight at school, while 15.53% reported being the victims of electronic bullying. Almost 30% of respondents reported feeling hopeless or sad for at least the past 2 weeks at the time of survey administration. Twenty-three percent of respondents reported that they were offered, sold, or given an illegal drug on school property in the past 12 months. Almost 38% of the respondents used the computer for at least 3 hr per day. Approximately 30% of the sample got 8 hr of sleep each night. Most of the students, 72.3%, got either As or Bs in school. Last, the percentage of males in the sample was 49.00 and the average age was 16 years old.

Bivariate Regression Models: Physical and Sexual Dating Violence

Table 2 presents the first bivariate logistic regression for the sample. Multiple variables were indicated to be significant predictors of physical dating violence in high school students within the past 12 months of the survey.

Three variables representing exposure to a motivated offender were shown to be significant predictors of physical dating violence. Respondents who

participated in physical fights at school were also 3.05 times more likely to report physical dating violence (b = 1.11, odds ratio = 3.05, Prob = .00). Online behaviors were shown to be predictive. Individuals who used a computer at least 3 hr per day were 1.18 times more likely and those who had been cyberbullied were 3.89 times more likely to be a victim of physical dating violence (b = 1.36, odds ratio = 3.89, Prob = .00).

Several variables were related to feelings of safety and related behaviors that represent target suitability. Potentially related to the physical violence were feelings of sadness and depression, as respondents who reported these experiences within the past 2 weeks were 3.51 times more likely to experience physical dating violence. Drug use was also found to be related to physical dating violence by adolescents. Students who reported that they were offered, sold, or given an illegal drug on school property in the past 12 months were 2.43 times more likely to experience physical dating violence (b = 0.89, odds ratio = 2.43, Prob = .00). Respondents who had ever tried the following drugs were more likely to report physical dating violence: cocaine (4.98 times; b = 1.61, odds ratio = 4.98, Prob = .00), inhalants (4.42 times; b = 1.49, odds ratio = 4.42, Prob = .00), heroin (11.75 times; b = 2.46, odds ratio = 11.75, Prob = .00), and methamphetamine (7.53 times; b = 2.02, odds ratio = 7.53, Prob = .00).

Two variables representing lack of capable guardianship were significant predictors of physical dating violence in bivariate regression models. Students who reported feeling unsafe in school or going to or from school were 4.91 times more likely to report experiencing physical dating violence compared with respondents who did not report issues of safety (b = 1.59, odds ratio = 4.91, Prob = .00). Students with higher grades (As and Bs) were 36.00 times less likely to report doing physical dating violence compared with those with lower grades (b = −0.44, odds ratio = 0.64, Prob = .00).

Last, personal and demographic characteristics of the sample were shown to be predictors of physical dating violence. Sexual minorities (students reporting sexual preference other than heterosexual) were 2.34 times more likely to report physical dating violence (b = 0.85, odds ratio = 2.34, Prob = .00). In addition, males are 1.75 times more likely to report physical dating violence (b = 0.56, odds ratio = 1.75, Prob = .00). Older students were 1.08 times more likely to report physical dating violence compared with younger students (b = 0.07, odds ratio = 1.08, Prob = .01).

Table 3 presents the second bivariate logistic regression model for the sample. Multiple variables were indicated to be significant predictors of sexual dating violence in high school students within the past 12 months of the survey. Three variables were related to exposure to motivated offenders. Respondents who participated in physical fights at school were also 2.43

Table 3. Bivariate Regression Model for Sexual Dating Violence.

Variable	*b*	*SE*	OR	*Z*	*p* value
Unsafe in school	1.65	0.09	5.2	19.27	0
Physical fighting	0.89	0.10	2.43	8.69	0
Cyberbullied	1.51	0.07	4.54	20.51	0
Experienced sadness	1.3	0.06	3.68	22.09	0
Drug possession	0.75	0.07	2.12	10.34	0
Used computer 3+ hr	0.37	0.07	1.44	5.19	0
8 hr of sleep	−0.28	0.08	0.76	−3.48	0
Ever used cocaine	1.36	0.10	3.88	13.18	0
Ever used inhalants	1.42	0.08	4.13	17.58	0
Ever used heroin	2.09	0.14	8.11	14.45	0
Ever used meth	1.76	0.12	5.82	14.85	0
AB grades	−0.15	0.10	0.86	−1.55	.13
Sexual identity	1.08	0.15	2.95	7.29	0
White	−0.12	0.09	0.89	−1.36	.18
Black	−0.14	0.11	0.87	−1.21	.23
Sex	1.05	0.08	2.86	12.23	0
Age	−0.07	0.03	0.93	−2.13	.04

Note. OR = odds ratio.

times more likely to report sexual dating violence ($b = 0.89$, odds ratio = 2.43, Prob = .00). High school students who had used the computer at least 3 hr per day were 1.44 times more likely ($b = 0.37$, odds ratio = 1.44, Prob = .00) and individuals had been cyberbullied were 4.54 times more likely to be a victim of sexual dating violence ($b = 1.51$, odds ratio = 4.54, Prob = .00).

Target suitability predictors were similar to those of physical dating violence. Students who reported experiencing feelings of sadness and depression within the past 2 weeks were 3.68 times more likely to report sexual dating violence ($b = 1.30$, odds ratio = 3.68, Prob = .00). Drug-related variables that increased the likelihood of unwanted sexual dating violence within the past 12 months for high school students were also target suitability variables. Students who reported that they were offered, sold, or given an illegal drug on school property in the past 12 months were 2.12 times more likely to report sexual dating violence ($b = 0.75$, odds ratio = 2.12, Prob = .00). Respondents who had ever tried the following drugs were more likely to report sexual dating violence: cocaine (3.88 times; $b = 1.36$, odds ratio = 3.88, Prob = .00), inhalants (4.13 times; $b = 1.42$, odds ratio = 4.13, Prob = .00), heroin (8.11 times; $b = 2.09$, odds ratio = 8.11, Prob = .00), and methamphetamine (5.82 times; $b = 1.76$, odds ratio = 5.82, Prob = .00).

Table 4. Multivariate Regression Model for Physical Dating Violence.

Variable	*b*	*SE*	OR	*Z*	*p* value
Unsafe in school	0.71	0.19	2.04	3.74	0
Physical fighting	0.73	0.21	2.07	3.46	0
Cyberbullied	0.92	0.15	2.51	6.14	0
Experienced sadness	0.61	0.11	1.85	5.57	0
Drug possession	0.53	0.12	1.71	4.45	0
Used computer 3+ hr	0.14	0.09	1.15	1.56	0
8 hr of sleep	−0.23	0.16	0.79	−1.45	0
Ever used cocaine	0.71	0.23	2.03	3.08	0
Ever used inhalants	0.77	0.24	2.16	3.22	0
Ever used heroin	−0.06	0.47	0.94	−0.13	.9
Ever used meth	0.55	0.28	1.73	1.96	.06
AB grades	−0.03	0.12	0.97	−0.28	.78
Sexual identity	−0.03	0.16	0.97	−0.19	.86
White	0.03	0.17	1.03	0.16	.87
Black	0.35	0.21	1.42	1.67	.1
Sex	0.61	0.16	1.83	3.79	0
Age	0.24	0.05	1.27	4.79	0

Note. OR = odds ratio.

Only one variable representing lack of capable guardianship was significant for sexual dating violence. Students who reported feeling unsafe in school or going to or from school were 5.20 times more likely to report sexual dating violence ($b = 1.65$, odds ratio = 5.20, Prob = .00).

Last, there were interesting findings regarding demographic predicators of sexual dating violence among high school students. Sexual minorities (e.g., homosexual, bisexual) were 2.95 times more likely to report sexual dating violence compared with heterosexual respondents ($b = 1.08$, odds ratio = 2.95, Prob = .00). Males are 2.86 times more likely to report sexual dating violence ($b = .05$, odds ratio = 2.86, Prob = .00), and older students are 7.00 times less likely to report it ($b = -0.07$, odds ratio = 0.93, Prob = .04).

Multivariate Regression Models: Physical and Sexual Dating Violence

Table 4 presents the multivariate logistic regressions for the sample on physical dating violence within the past 12 months of the survey. Exposure to motivated offender variables were significant in two manners. Respondents

who participated in physical fights at school were also 2.07 times more likely to report physical dating violence ($b = 0.73$, odds ratio = 2.07, Prob = .00). Those having been cyberbullied are 2.51 times more likely to report having physical dating violence ($b = 0.92$, odds ratio = 2.51, Prob = .00).

Variables of target suitability were also shown to be significant predictors in the multivariate analysis for physical dating violence. Students who reported experiencing feelings of sadness and depression within the past 2 weeks were 1.85 times more likely to report physical dating violence ($b = 0.61$, odds ratio = 1.85, Prob = .00). Drug and alcohol use was again shown to be related to physical dating violence. Students who reported that they were offered, sold, or given an illegal drug on school property in the past 12 months were 1.71 times more likely to report experiencing physical dating violence ($b = 0.53$, odds ratio = 1.71, Prob = .00). Respondents who had ever tried the following drugs were more likely to report dating violence: cocaine (2.03 times; $b = 0.71$, odds ratio = 2.03, Prob = .00) and inhalants (2.16 times; $b = 0.77$, odds ratio = 2.16, Prob = .00).

Only one lack of capable guardianship variable has continued to be a significant predictor of dating violence. Students who reported feeling unsafe in school or going to or from school were 2.04 times more likely to report physical dating violence ($b = 0.71$, odds ratio = 2.04, Prob = .00).

Last, two demographic factors were shown to be significant in the multivariate analysis. Males were 1.83 times more likely than females to report physical dating violence ($b = 0.61$, odds ratio = 1.83, Prob = .00), as well as older student respondents were 1.27 times more likely to report this type of violence ($b = 0.24$, odds ratio = 1.27, Prob = .00).

Table 5 presents the multivariate logistic regressions for the sample regarding sexual dating violence within the past 12 months of survey administration. Two exposure to motivated offender variables were found to be significant predictors of sexual dating violence. Cyberbullying victims were 2.38 times more likely to experience sexual dating violence ($b = 0.87$, odds ratio = 2.38, Prob = .00), and those having used a computer for more than 3 hr per day were 1.31 times more likely ($b = 0.27$, odds ratio = 1.31, Prob = .05).

Much like the multivariate regression model for target suitability, physical dating violence predictors, respondents who have experienced feelings of depression or sadness within the past 2 weeks of the survey were 1.67 times more likely to report sexual dating violence ($b = 0.52$, odds ratio = 1.67, Prob = .00). Students who reported that they were offered, sold, or given an illegal drug on school property in the past 12 months were 1.74 times more likely to increase likelihood of sexual dating violence ($b = 0.56$, odds ratio = 1.74, Prob = .00). Specifically, use of the following drugs increased the likelihood of sexual dating violence: inhalants (2.48 times; $b = 0.91$, odds ratio = 2.48, Prob = .00) and methamphetamine (1.70 times; $b = 0.53$, odds ratio = 1.70, Prob = .05).

Table 5. Multivariate Regression Model for Sexual Dating Violence.

Variable	*b*	*SE*	OR	*Z*	*p* value
Unsafe in school	0.9	0.17	2.45	5.27	0
Physical fighting	0.49	0.28	1.64	1.76	.09
Cyberbullied	0.87	0.13	2.38	6.68	0
Experienced sadness	0.52	0.09	1.67	5.73	0
Drug possession	0.56	0.11	1.74	5.06	0
Used computer 3+ hr	0.27	0.14	1.31	1.95	.05
8 hr of sleep	−0.13	0.15	0.87	−0.89	.37
Ever used cocaine	0.51	0.27	1.67	1.0	.06
Ever used inhalants	0.91	0.19	2.48	4.78	0
Ever used heroin	0.05	0.29	1.05	0.16	.88
Ever used meth	0.53	0.26	1.7	2.03	.05
AB grades	0.29	0.11	1.34	2.66	.01
Sexual identity	0.16	0.16	1.18	1.01	.33
White	0.05	0.13	1.05	0.35	.72
Black	−.09	0.2	0.92	−0.44	.66
Sex	1.4	0.13	4.04	10.74	0
Age	0.02	0.05	1.02	0.39	.7

Note. OR = odds ratio.

Two lack of capable guardianship variables were found to be predictors of sexual dating violence. Those having felt unsafe at school or going to or from school were 2.45 times more likely to experience sexual dating violence (b = 0.90, odds ratio = 2.4, Prob = .00). Interestingly, students who received As and Bs were 1.34 times more likely to report sexual dating violence (b = 0.29, odds ratio = 1.34, Prob = .01). As a last finding, the control variables of males were 4.04 times more likely to report this abuse (b = 1.40, odds ratio = 4.04, Prob = .00).

Discussion

The models revealed several common predictors of the two forms of victimization examined in this study, supporting the use of Routine Activities Theory to examine physical and sexual victimization in adolescents. Based on the consistent results in the models demonstrating the predictive value of variables representing exposure to motivated offenders, as well as the strength of p values for each, we believe it is a stronger predictor than expected. Three of the four models indicated that respondents were more likely to participate in physical altercations at school. This is not surprising as aggressive and

physical behavior has been repeatedly linked with dating violence (Foshee et al., 2011; Pepler et al., 2006). This finding potentially indicates that youth are becoming more brazen with their violent behavior, even against a romantic partner, and openly displaying aggression in public places. Violence is not just a behavior performed in the privacy of home and if perceived as acceptable, youth feel more comfortable acting violently in public.

An especially interesting finding was the link between cyberbullying victimization and both forms of dating violence. All four models found a significant relationship between victimization via cyberbullying and physical and sexual dating violence. Finding support for the theory, this demonstrates that exposing oneself to motivated offenders online also increased the likelihood for offline victimization. While there was not a follow-up question regarding who was the bullying aggressor, it is extremely possible the offending party was often the other member of the romantic relationship who also initiated the physical or sexual violence. Past research in this area has found that there has been an increase in the occurrence of cyberbullying and cyberstalking by romantic partners (Marcum, Higgins, & Nicholson, 2017), or often labeled cyber dating abuse (Bennet et al., 2011; Korchmaros, Ybarra, Langhinrichsen-Rohling, Boyd, & Lenhart, 2013). The findings from this study indicates that victims of dating violence are receiving abuse offline and most likely online by romantic partners.

The theoretical component of target suitability received strong support as a predictor of physical and sexual dating violence, as asserted in Hypothesis 2. Models indicated that feelings of sadness and depression increased the likelihood of both types of dating violence. Relatedly, victims of cyberbullying often experience anxiety, depression, loneliness, and school phobias (Cook, Williams, Guerra, Kim, & Sadek, 2010; Juvonen, Graham, & Schuster, 2003; Pabian & Vandebosch, 2016), demonstrating a link between the two predictors.

Drug exposure and use was also strongly linked to both forms of violence, corresponding with findings from past studies (Howard et al., 2007; Rothman et al., 2012; Shorey et al., 2011; Temple & Freeman, 2011; Vagi et al., 2013). All four models indicated that respondents who had been offered, sold, or given an illegal drug within the past 12 months were more likely to be victimized via physical and sexual dating violence. Both bivariate regression models indicated that ninth to 12th graders in the sample who specifically used cocaine, methamphetamine, heroin, and inhalants were more likely to be victimized by physical and sexual dating violence. In addition, both multivariate aggression models indicated that inhalant use was also a strong predictor of physical and sexual dating violence. Again, temporal ordering is an issue with this causal relationship. However, it is fair to assume that physical and dating violence victimization is

influencing high school students to use drugs as a coping mechanism, a finding supported by past studies of adolescents (Office of National Drug Control Policy, 2007; Reid, Peterson, Hughey, & Garcia-Reid, 2006).

Last, only one theoretical predictor of lack of capable guardianship was a consistent predictor of physical and sexual dating violence in teenagers, supporting the hypothesis that it is only a moderate predictor of physical and sexual dating victimization. Students who felt unsafe at school, or going to and from school, had an increased likelihood of these two forms of victimization as indicated in all four models. It is possible, based on these findings, that the offender is not only initiating the violence at home, but also on school grounds or traveling to school. While a true limitation to the use of this secondary data is the lack of follow-up questions to particular measures, it is not unreasonable to assume that there is a link between unsafe feelings and the victimization measured in this study. The aggressor of the physical and/or sexual victimization is likely to participate in other threatening behaviors that cause trepidation and fear.

Results in this study also indicated the likelihood an adolescent would experience physical or sexual dating violence increased with age. Older high school students were more likely to be victimized in this manner, a finding supported by past studies (Orpinas, Hseih, Song, Holland, & Nahapetyan, 2013; Rosario, Schrimshaw, Hunter, & Braun, 2006). This finding is not surprising for two reasons. First, adolescents are more likely to be dating and involved in relationships as they get older (Child Trends, 2015). Second, they are more likely to be participating in serious, physically intimate relationships as they get older. While intimate partner violence does not discriminate on age, race, or sex, it is not difficult to understand why 17-year-olds would be more likely to engage in physical or sexual violence simply because they have lack of experience as a younger teen.

An interesting finding that may go against societal assumption of violence perpetration is that male adolescents in the sample were more likely to report physical and sexual dating violence in all models. Other studies have produced similar findings (Rothman et al., 2010; Swahn et al., 2008), indicating that females should not be misconstrued as the only sex experiencing victimization by a romantic partner. Sexual minorities (individuals who self-identified as homosexual, bisexual, or unsure) were also more likely to experience physical dating and sexual violence according to the bivariate models. This supports findings from multiple past studies examining the likelihood of intimate partner violence for adults (Messinger, 2011), college students (Jones & Raghavan, 2012; Porter & Williams, 2011), and adolescents (Goodenow, Szalacha, Robin, & Westheimer, 2008). In fact, there is a substantive amount of literature that linked sexual minority status with overall levels of peer

victimization (Katz-Wise & Hyde, 2012; Ryan, Huebner, Diaz, & Sanchez, 2009). The models also indicated that feelings of sadness and depression were more likely for victims of personal dating violence. Past literature has linked depressive systems to individuals who claim sexual minority status (Almeida et al., 2009; Martin-Storey & Crosnoe, 2012).

There is definitely limitation to this particular study. We are still utilizing cross-sectional data, and without longitudinal analysis, it is extremely difficult to determine causal factors and the temporal ordering issues with some of the variables. It is not surprising that substance abuse and physical violence are strongly connected with these two forms of dating violence, but there is still a question of which behavior occurs first or is it a continuous rotating pattern. In other words, are youth who use inhalants more likely to then participate in relationship violence? Or, are victims of dating violence more likely to turn to illegal drugs to cope with the victimization.

These predictive factors indicate the need for better education and programming for youth on healthy relationship practices. There is an indication of crossing societal expectations of behavior and relationship expectations. Males are becoming more likely to be victimized and more adolescents are exploring their own sexual identity, two strong predictive measures in this study. Based on these findings and other studies, it is obvious that relationship violence in youth is increasing, and may in turn be accepted by many adolescents as acceptable behavior. Without proper guidance and mentorship on healthy relationship practices, more youth are going to fall into unhealthy relationship habits. For instance, programs such as Loveisrespect (2017) promote February as teen domestic violence month and provide helpful discussion and educational resources on positive dating and sexual relationship behaviors. The Centers for Disease Control and Prevention (2016) also promotes the "Dating Matters" program, which focuses preventive dating strategies for 11- to 14-year-old youth in urban communities.

Echoing the sentiments of Temple et al. (2011), programs developed to prevent dating violence should not only be targeted at male adolescents; furthermore, they should not be based on the assumption that relationship bias is only present in heterosexual relationships. Youth frequently report same-sex sexual practices, but may not necessarily identify with a sexual minority identity (Igartua et al., 2009). While the current day has allowed for youth to feel free in exploring their options and identities, as well as accessing resources, it has also presented more opportunities for victimization via technology and online methods. Dating violence is not only increasing in frequency but also occurring in different ways compared with 10 years ago. If we as a system are dedicated to decreasing these occurrences, we need to dedicate more creative effort to tackle the problem in a timely and relevant manner.

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