

ASSOCIATIONS BETWEEN DATING VIOLENCE VICTIMIZATION, RISKY
BEHAVIORS, AND SCHOOL VIOLENCE AMONG TEENS

By

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vii
 CHAPTER	
I. INTRODUCTION	1
Introduction	1
Significance of the Problem	1
Research Questions	4
Assumptions	4
Key Terms	5
II. LITERATURE REVIEW	8
Introduction	8
School-based Violence and Victimization	9
Bullying	9
Social and physical aggression	10
Risky Behaviors	11
Alcohol and other substance use	11
Sexual risk behaviors	12
Characteristics of Victims	14
Race/ ethnicity	14
Sex	15
Sexual identity	16
Summary	17
III. METHODOLOGY	18
IRB Approval	18
Data Collection Techniques	18
Data Analysis	19
Measures	20
Demographics	20
Physical dating violence	21
Sexual dating violence	22

Covariates	22
School-based violence and victimization.....	22
Risk behaviors.....	23
IV. RESULTS	26
Participants.....	26
Quantitative Analysis (YRBS Data)	26
Physical Dating Violence.....	26
Race/ ethnicity	27
Sexual identity	27
Bullying.....	27
Physical fights	28
Alcohol consumption	29
Alcohol/ drug use before sex	29
Covariates not statistically significant	29
Sexual Dating Violence	29
Race/ ethnicity	30
Sex.....	30
Sexual identity	30
Bullying.....	31
Physical fights	31
Alcohol consumption	32
Multiple sex partners.....	32
Covariates not statistically significant	33
V. DISCUSSION	34
Associations Between PDV and SDV with Demographics	35
Associations Between PDV and SDV with Covariates	36
School-based violence and victimization.....	36
Risk behaviors.....	38
Limitations	39
Implications for Future Research.....	40
Conclusion	41
TABLES	43
REFERENCES	55

LIST OF TABLES

Table	Page
1. Total 2017 YRBS Participants by Demographics	43
2. Binary Logistic Regression Results Exploring Physical Dating Violence and Multiple Demographics.....	44
3. Victims Versus Nonvictims of Physical Dating Violence by Demographics	45
4. Binary Logistic Regression Results Exploring Physical Dating Violence and Associated Variables	46
5. Victims Versus Nonvictims of Physical Dating Violence by Associated Variables	48
6. Binary Logistic Regression Results Exploring Sexual Dating Violence and Multiple Demographics.....	50
7. Victims Versus Nonvictims of Sexual Dating Violence by Demographics	51
8. Binary Logistic Regression Results Exploring Sexual Dating Violence and Associated Variables	52
9. Victims Versus Nonvictims of Sexual Dating Violence by Associated Variables	53

I: INTRODUCTION

Introduction

The purpose of this study is to examine the factors associated with physical dating violence (PDV) and sexual dating violence (SDV) in high school students. This study was a secondary analysis of the 2017 National Youth Behavior Risk Survey (YRBS) data. Data used included responses from students who answered questions regarding teen dating violence, school-related violence, and other factors.

Significance of the Problem

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 (CDC, 2017e) 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. Teen dating violence (TDV) is considered a risk factor leading 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 (CDC, 2017e). During adolescence, dating violence is considered a complex phenomenon because individuals in this stage of development are beginning to engage in intimate relationships with their peers and are starting to develop conflict management skills. This state of early development in conflict management may impact how adolescents emotionally handle intimate partnerships (Pearlman & Dunn, 2016; Petering, Rhoades, Rice, & Yoshioka-Maxwell, 2017).

The term “intimate partner violence” (IPV) refers to the emotional, sexual, or physical harm to a person from a current partner, former partner, or spouse (CDC, 2017d). Teen dating violence (TDV) is a type of IPV among teens. Dating violence is physical, sexual, psychological, or emotional aggression within a dating relationship including stalking, that is directed toward a partner (Vivolo-Kantor, Olsen, & Bacon, 2016). Other terms used to define dating violence include dating abuse, relationship violence, relationship abuse, domestic abuse, and domestic violence (CDC, 2017h). Intimate partners include girlfriends, boyfriends, current or former spouses, dating partners, and sexual partners (CDC, 2017c). Dating violence victimization occurs among heterosexual and same-sex couples (Dank, Lachman, Zweig, & Yahner, 2014). Among teens specifically, dating violence also includes stalking and can occur in-person or electronically (Dank et al., 2014). During this stage of development, adolescents are beginning to explore dating relationships. When beginning to engage in romantic and sexual relationships, there is potential for negative outcomes, including violence; however, no sexual intimacy is necessary for this form of violence to occur (CDC, 2017h). 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 (Belshaw, Siddique, Tanner, & Osho, 2012).

According to the 2015 YRBS, approximately 23% of females and 14% of males have experienced a form of dating violence before the age of 18 (CDC, 2017h). Compared to adults, teenagers are at a greater risk of experiencing both physical and sexual violence from their partner. Peer pressure, bullying, and intimate partner relationships can potentially cause negative effects on one’s future relationships. As teens

develop emotionally, there is potential for past or current relationships to impact unhealthy beliefs and schemas (Belshaw et al., 2012). Regarding sex, Pearlman and Dunn (2016) reported females are targets of indirect bullying more often than males. Forms of indirect bullying include gossip and rumors stemmed from negative dating experiences, unhealthy dating, jealousy, and unwanted sexual attention or harassment. Males' experiences of peer victimization usually stem from bullying and intentional or nonintentional homophobic messages (Pearlman & Dunn, 2016). Harmful short-term and long-term effects as a result of dating violence occur because victims are afraid to speak up and are reluctant to report instances. Negative health consequences can stem from dating violence, including low self-esteem, depression, and problems in school (Eaton, Davis, Barrios, Brener, & Noonan, 2007; Pearlman & Dunn, 2016). Additionally, previous research suggested associations between violence-related behaviors, risky behaviors (examples include substance use, early onset sexual behaviors, etc.), bullying, and TDV. Those who have been a victim of violence as a teenager are more likely to experience similar types of victimization as an adult (Eaton et al., 2007; Pearlman & Dunn, 2016).

Within existing literature, dating violence victimization, both physical and sexual, has been associated with school violence and other health risk factors. In a study conducted in 2013, researchers found among students in intimate relationships, 20.9% of females and 10.4% of males had experienced TDV (Vagi, Olsen, Basile, & Vivolo-Kantor, 2015). Youth, in general, are currently in the transitional phase of life where they are developing stronger communication skills, learning how to regulate emotions, and learning conflict resolution skills (Camacho, Ehrensaft, & Cohen, 2012). Current

literature exploring dating and sexual violence among adolescents has not utilized the more current nationally representative data, therefore, exploring recent data may indicate current behavioral trends related to these conditions. Additionally, exploring the behavioral correlates that may be associated with physical and sexual dating violence will assist in the development of effective public health prevention programs. The relationships should be further explored using new, current data from the 2017 YRBS sample. This study will specifically focus on U.S. high-school students and their responses from the 2017 YRBS.

Research Questions

To explore the associations between dating violence, risky health behaviors, and school violence within the 2017 YRBS sample, the following questions will be addressed:

- Is physical 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 physical dating violence?
- 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?

Assumptions

For this study, it is assumed all participants were students from U.S. high schools in grades 9 through 12. Additionally, it is assumed all participants understood the YRBS

survey questions and answered honestly. It is also assumed high-school staff support this research.

Key Terms

The following is a list of key terms and standard definitions used throughout this study. Operational definitions have been provided to clarify specific variables used in the analyses of this study.

Adolescent: an individual typically ages 12-17 (CDC, 2017b)

- Operational definition: high school student in the 9th through 12th grade

Teenager (teen): an individual typically ages 15-19 (CDC, 2017b)

- Operational definition: high school student in the 9th through 12th grade aged 14-18+

Victim: an individual who has experienced intentional physical, sexual, psychological, or emotional abuse from their partner (Vagi et al, 2015)

Dating violence: physical, sexual, psychological, or emotional aggression within a dating relationship including stalking, that is directed toward a partner (Vivolo-Kantor, et al, 2016). This study focused on physical dating violence and sexual dating violence.

- Operational definition of physical dating violence (PDV): if someone a student is dating or going out with physically hurt them on purpose during the past 12 months
- Operational definition of sexual dating violence (SDV): if someone a student is dating or going out with forces them to do sexual things they did not want to do during the past 12 months

Intimate partner violence: physical, sexual, or psychological harm by a spouse, current partner, or former partner (CDC, 2017e)

Victimization: direct personal experience of physical, emotional, or psychological abuse (Parker, Johnson, Debnam, Milam, & Bradshaw, 2017)

Sexual identity: one's view of themselves based on who they are romantically and/or sexually attracted to (Dank et al., 2014)

- Operational definition: how a student best describes who they are romantically and/or sexually attracted to. Categories included heterosexual, gay or lesbian, bisexual, and unsure.

Bullying: unwanted, aggressive behavior among school aged children that involves a real or perceived power imbalance (Stop Bullying, 2018). Bullying is a distinct type of aggression including physical, verbal, relational, and cyber-based aggression (Cook, Williams, Guerra, Kim, & Sadek, 2010). This study examined two categories of bullying – electronic bullying and bullying at school.

- Operational definition of electronic bullying: if a student experienced being bullied through text, Instagram, Facebook, or other social media over the past 12 months

School-based violence: a subset of youth violence, refers to aggression including those age 10-24 on school property, on the way to and/or from school, during a school-sponsored event, and on the way to and/or from a school-sponsored event. This includes bullying, fighting, weapon use, electronic aggression, and gang violence (CDC, 2017a). This study examined bullying at school and physical fights at school.

- Operational definition of bullying at school: if a student in grades 9th through 12th has been bullied on school property over the past 12 months
- Operational definition of physical fights at school: if a student in grades 9th through 12th has been in a physical fight on school property over the past 12 months

Risky behaviors: include substance use, dating abuse, school violence, sexual risk behaviors, sexual violence, suicide, and youth violence (CDC, 2017g). This study focused on the risky behaviors related to current and lifetime substance use (alcohol, cigarettes, electronic vapor products, and marijuana) and sexual risk behaviors (multiple partners and use of drugs prior to sex).

- Operational definition of current alcohol and marijuana use: the number of days a teen has consumed at least one (alcohol, marijuana use) over the past 30 days
- Operational definition of lifetime alcohol and marijuana use: the number of days a teen has consumed at least one (alcohol, marijuana cigarette) during their lifetime
- Operational definition of current cigarette or electronic vapor product use: the number of days a teen has smoked one over the past 30 days
- Operational definition of lifetime cigarette or electronic vapor product use: whether the teen had ever tried smoking cigarettes (even one or two puffs) or electronic vapor products in their lifetime
- Operational definition of multiple sex partners: the number of partners a teen has had sex with during their lifetime
- Operational definition of drugs prior to sex: whether alcohol or other drugs were consumed before the teen's last instance of sexual intercourse

II: LITERATURE REVIEW

Violence between dating partners is a current, relevant public health concern. Prior studies have shown dating violence to be a worldwide health issue. The CDC estimates one in three women and one in six men globally will endure some form of violence during their lifetime (CDC, 2017f). Although research has been done on TDV for decades, the specific topic has only recently attracted attention as a major health concern, and the YRBS survey started including questions specifically tailored to dating violence in 2011 (CDC, 2017i).

The factors associated with dating violence play a strong role in a victim's overall well-being. In adolescents specifically, what happens leading up to violence and what happens as a result can greatly impact them as they become adults (Pearlman & Dunn, 2016). Participation in early onset alcohol use, drug use, lack of condom use, and other sexual risk behaviors such as having more sex partners are also linked to TDV. 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 (Eaton et al., 2007; Okumu, Mengo, Ombayo, & Small, 2017; Vagi et al., 2015). Characteristics, intrapersonal, and interpersonal factors (e.g. demographics, peer-influence) affect adolescents' and young adults' decision-making. Furthermore, it is important to examine associations between physical and/or sexual dating violence, school-based violence, and risky behaviors (e.g. alcohol consumption, having multiple sex partners) (Tyler, Melander, & Noel, 2009).

School-based Violence and Victimization

School-based violence is used as an umbrella term encompassing multiple forms of victimization. According to the National Center for Education Statistics (2017), 65% of public schools in the United States recorded instances of physical attacks during the 2015-2016 school year. More specifically, 90% of high schools recorded instances of physical violence (Diliberti, Jackson, & Kemp 2017). In a school setting, students are constantly surrounded by multiple influential factors. Considered the most developmental time in a person's life, high school can become stressful, overwhelming, exciting, and every other emotion on the spectrum (Cook, Williams, Guerra, Kim, & Sadek, 2010).

Bullying. Cook et al. (2010) 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 (Cook et al., 2010). Internalized behaviors include depression, anxiety, traumatic stress, interest in drugs and alcohol, and suicidal tendencies (Camacho et al., 2012). Prior research suggests dating violence and bullying are positively related, especially during adolescence when youth are beginning to have interest in romantic relationships (Okomu et al., 2017). 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 (Okomu et al., 2017). 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. Additionally, students who were physically or emotionally disabled had a higher chance of experiencing a form of peer victimization (Pearlman & Dunn, 2016). A similar study focused on associations between victimization, school-violence, and bullying using the YRBS data from 2013. Vivolo-Kantor et al. (2016) found students who were involved in physical fights at school and/ or were bullied on school property were more likely to experience TDV victimization.

Social and physical aggression. The three classifications of people involved in bullying are the bully, victim, and those who experience both roles (Cook et al., 2010). Vivolo-Kantor et al. (2016) concluded adolescents who were perpetrators of bullying became involved in romantic relationships earlier than those who did not. Additionally, perpetrators of bullying were more likely to report social and physical aggression toward their intimate partner (Vivolo-Kantor et al., 2016). Similarly, youth who experience school-based victimization are more likely to be targeted and suffer from repeated instances (Okumu et al., 2017; Vagi et al., 2015). Furthermore, victims of violence during adolescence often are bullied as adults in their future workplace (Cook et al., 2010). The relationship between school-violence related behaviors and TDV were strongly correlated. Youth who were involved in a form of school-based violence were more likely to engage in physical and/or sexual TDV. The opposite was concluded for students not involved in school-related violence (Cook et al., 2010).

Prior YRBS secondary analyses have suggested bullying, social, and physical aggression throughout adolescence are associated with TDV victimization. Analyses of the most recent YRBS will further explore these relationships to determine current associations between TDV and behavioral risks. Much research examined relationships

between TDV and individual variables, including bullying and physical aggression. There is need for exploration of multiple behavioral covariates as they relate to PDV and SDV. Alongside school-based violence, both physical and sexual dating violence are associated with several risky health behaviors (Vagi et al., 2015).

Risk 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. (2007) 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 TDV compared to adolescents who had not engaged in these behaviors (Eaton et al., 2007). 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 TDV (Belshaw et al., 2012; Dank, et al., 2014; Vivolo-Kantor, et al., 2016).

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 begins. A study at Johns Hopkins explored the association between recent substance use and dating, physical and social violence. Researchers found 11% of students reported experiencing physical TDV and recent alcohol use was a risk factor among both sexes (Parker, Debnam, Pas, & Bradshaw, 2016). Among American 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 (Patrick & Schulenberg, 2014). 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 (Johnston, Miech, O'Malley, Bachman, & Schulenberg, 2014).

Dating violence victimization in teen relationships has repeatedly been linked to substance use. Parker et al. (2015) aimed to determine the associations between alcohol and marijuana use, and TDV. Results were consistent with other studies and showed a positive relationship between students' recent use of both substances and dating violence victimization. Situational and environmental factors also generate opportunities for potential dating violence occurrences. 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 (Parker et al., 2015).

Sexual risky behaviors. Previous studies have found associations between TDV victimization and sexual risk behaviors, including sexual intercourse, both vaginal and anal, age at first intercourse instance, having multiple partners, current sexual activity, and use of alcohol or other substances before engaging in sexual activity (Demissie, Clayton, Vivolo-Kantor, & Estefan, 2018). 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 (Demissie et al., 2018; Eaton et

al., 2007). 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 physical and sexual violence victimization than their male peers (Demissie et al., 2018). 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 (Eaton et al., 2007; Martz et al., 2016; Vagi et al., 2015). This suggests a complex health behavioral issue for those who may experience TDV (Cook et al, 2010; Pearlman & Dunn, 2016; Petering, Rhoades, Rice, & Yoshioka-Maxwell, 2017).

Risky health behaviors, including drinking alcohol, substance use, and engaging in sexual risk behaviors can be positively associated with physical and sexual dating violence. Existing literature utilized YRBS data from 2015 and prior. Therefore, researchers have suggested future studies to examine the most recent YRBS data for a more current sample. Further exploration of risk factors can bridge the gaps regarding teen physical and sexual dating violence. Specifically, much of the current literature has focused on exploring the relationship between one risk category (e.g., substance use) and PDV. Research has indicated high-risk behaviors such as risky sexual practices and substance use are highly correlated among adolescents (Cavazos-Rehg et al., 2011; Clayton, Lowry, August, & Jones, 2016); therefore, researchers should examine how these clustered risk behaviors may relate to PDV and SDV victimization. Additionally,

there is limited research examining the correlations of both PDV and SDV in a single sample.

Characteristics of Victims

Adolescents make up 13.2% of the U.S. population. Since the 1990's, the number of young adults has increased. Researchers estimate there will be a continuous increase through 2050. Additionally, there is more diversity in the adolescent population compared to the adult population (NAHIC, 2018). Existing literature suggests certain demographic characteristics are affiliated with physical or sexual dating violence victimization.

Race and ethnicity. Previous literature has shown dating violence victimization risks are higher among Black and multiracial youth (Rothman & Xuan, 2014). Data suggested among Black and Latino students, the prevalence of TDV was almost double compared to White students (Eaton et al., 2007; Martz, Jameson, & Page, 2016; Okumu et al., 2017). Furthermore, Black adolescents were at a greater risk of dating violence victimization compared to Latino youth (Luo, Stone, & Tharp, 2014). Researchers at the University of Minnesota focused on dating violence victimization among Latino youth. Additionally, students who identified as multiple-race Latino reported a higher number of TDV victimization instances compared to their single-race Latino counterparts. Furthermore, among multiple-race Latino females, 1 in 5 had experienced both physical and sexual violence (Kast, Eisenberg, & Sieving, 2016). Elevated dating violence victimization rates among racial minority youth are consistent with dating violence victimization rates in racial minority adults. Additionally, researchers suggested other factors may contribute to minority disparities, including education, socioeconomic status,

and employment, are associated with victimization (Kast et al., 2016; Rothman & Xuan, 2014). Researchers also concluded sexually active minority youth, primarily sexually active females, were more likely to be a victim of TDV (Dank et al., 2014). Furthermore, Kast et al. (2016) adolescents who identify as multi-racial may struggle more with acculturation, identity development, and engaging with peer groups. These disparities may increase these individuals' vulnerability to engaging in risky behaviors and unhealthy peer relationships (Kast et al., 2016).

Sex. Both physical and sexual TDV were more prevalent among teenage females compared to teenage males (Okumu et al., 2017). Female students who engaged in alcohol use before the age of 13 had a higher risk of being a dating violence victim compared to those who initiated alcohol use at 13 years or older (Eaton et al., 2007). According to the 2013 YRBS (2013), approximately one in five female students and one in ten male students reported being involved in a physical and/or sexual victimization incident during the prior year. Additionally, Vagi et al. (2015) found male students who engaged in both PDV and SDV had a stronger association with health-risk behaviors compared to each form of dating violence separately. An example was the risk of suicidal behaviors. Males who experienced both forms of TDV were three times more likely to attempt suicide, compared to females who were twice as likely to attempt suicide (Vagi et al., 2015). There are discrepancies in the literature regarding accurate reporting of TDV victimization. Some studies suggested there are similar rates between both males and females on TDV victimization, but females had a higher rate of reporting sexual TDV incidences (Eaton et al., 2007; Vagi et al, 2015).

Sexual identity. Compared to those who identify as binary, meaning heterosexual male or female, youth who identify as LGBT are at greater risk of bullying, perpetration, and dating violence victimization (Luo et al., 2014). More specifically, LGBT youth reported higher rates of three forms of TDV (physical, psychological, and cyber-based), as well as psychological dating abuse, physical dating violence, cyber dating abuse, and sexual coercion (Dank et al., 2014).

Dank et al. (2014) specifically researched youth who identified as lesbian, gay, bisexual, or transgender (LGBT) discovered certain risk factors are associated with dating violence based on sexual orientation. Adolescents who identified as LGBT, female, and/or transgender were more likely to experience physical dating violence victimization. Additionally, depressive symptoms, more acts of delinquency, poorer academic performance, and a higher rate of prior sexual activity was found among this subpopulation. LGBT students reported higher levels of depressive symptoms, an increased chance of truancy, and lower grades. The study also predicted oppressive culture and nonbinary stress also affected these individuals. Adolescents who identified as bisexual were at a greater risk of dating violence victimization compared to adolescents who identified as gay or lesbian (Dank et al., 2014).

These findings are consistent with similar research suggesting 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 (Dank et al, 2014; Luo et al., 2014; Pearlman & Dunn, 2016). Future research is encouraged to further investigate the association between sexual identity and TDV victimization with current data.

Summary

Adolescence is a time when individuals begin to develop their identity, explore roles, and start to form intimate relationships with their peers. Youth are encouraged to engage in positive relationships for potential emotional growth, social skill development, and a strong foundation for future relationships. However, intimate relationships where physical and/or sexual violence occurs can have multiple harmful effects on an individual. Existing literature has shown associations between dating violence victimization and negative health outcomes, both physical and mental (Dank et al., 2014; Eaton et al., 2007; Kast et al., 2016; Pearlman & Dunn, 2016; Tyler et al., 2009).

This study will explore the associations between school-based violence, risky health behaviors, and dating violence victimization. Understanding variables associated with TDV, specifically PDV and SDV, will benefit future research and intervention strategies. Secondary analysis of the 2017 YRBS sample will investigate if, among high school students, PDV and SDV are related to participation in bullying, physical fighting, and other risky health behaviors. Utilizing regression models to examine multiple independent variables as they relate to PDV and SDV will assist in further exploration of all relationships. There has been a heightened awareness of domestic violence, intimate partner violence, and TDV in the past decade. Starting in 2011, the YRBS began to include items specifically regarding TDV. Past research has explored YRBS data from 2015 or prior. This study will investigate the most recent YRBS data from 2017 and students' responses regarding TDV victimization among high school students.

III: METHODOLOGY

IRB Approval

This project was approved by the Texas State University IRB on November 9, 2018 with IRB reference number 6190.

Data Collection Techniques

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 Surveillance System (YRBSS), also referred to as the Youth Risk Behavior Survey (YRBS). The 2017 YRBS was selected because it contains the most recent nationally-representative data on adolescent health risk behaviors as well as information on teen dating violence victimization.

Developed in 1990, the YRBS is a national, school-based, biennial conducted cross-sectional survey which takes place between February and May each odd-numbered year (CDC, 2017i). Between 1991 and 2017, the CDC gathered data using the YRBS from more than 4.4 million high school students. The surveillance 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 (CDC, 2017i).

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 (CDC, 2017i).

An IRB at the CDC approved the national YRBS. The school response rate was 75%, and the student response rate was 81%. In 2017, 14,956 students completed the national survey, and the overall response rate was 60% (CDC, 2017i). Because this study focused on high school students, the sample was restricted to those participants who reported age 14 or higher. After this restriction, the sample was reduced to 14,603. Students who responded to items related to PDV included $N = 9,463$ and SDV included $N = 9,150$.

Data Analysis

In this secondary analysis project, researchers conducted two separate binary logistic regression models, with the outcome/dependent variables being physical dating violence (PDV) and sexual dating violence (SDV). Student demographics included age, grade, sex, race/ethnicity, and sexual identity. Variables of interest related to specific questions in the YRBS regarding 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. For this study, SPSS (25) was utilized to conduct all statistical analyses of the 2017 YRBS data set. Firstly, demographic statistics were used to establish the prevalence of PDV and SDV among high school students.

Subsequently, a binary logistic regression was conducted, which is based on probabilities and odds (Mertler & Vannatta, 2010). “Logistic regressions test the ability of a group of variables to predict group membership as defined by some categorical

dependent variable” (Mertler & Vannatta, 2010, p. 304). A groups’ membership varies between 0 and 1. Odds-ratios were used to examine the relationship between the independent variables (demographic characteristics, school-violence, substance use, and sexual risk behaviors) and the dependent variables (PDV and SDV). Statistical significance was set at a p -value of $p < .05$. The p -value is an indicator of probability. The smaller the number, the greater the likelihood the result obtained was not merely due to chance (Mertler & Vannatta, 2010). An odds ratio (OR) analysis compares the odds of an event occurring in one group with the odds of it occurring in another group. An odds ratio of one indicates there is no relationship between both of the variables analyzed; an odds ratio less than one explains a negative relationship; and an odds ratio greater than one means there is a positive relationship (Mertler & Vannatta, 2010).

Measures

To assess TDV reported on the 2017 YRBS, the following items were used:

Demographics. Demographic characteristics were assessed in the following survey questions:

- Age: (Q1) “How old are you?” Possible participant responses included “12 years old or younger,” “13 years old,” “14 years old,” “15 years old,” “16 years old,” “17 years old,” and “18 years old or older.”
- Sex: (Q2) “What is your sex?” Response categories for this question were “Female” and “Male.”
- Grade level: (Q3) “In what grade are you?” Response categories were “9th grade,” “10th grade,” “11th grade,” “12th grade,” and “Ungraded or other grade.”

- Sexual identity: (Q67) “Which of the following best describes you?”
Response choices were “Heterosexual,” “Gay or lesbian,” “Bisexual,” and “Not sure.”
- Race/ ethnicity: (Q4) “Are you Hispanic or Latino?” Responses categories were “Yes” and “No.” and (Q5) “What is your race? (Select one or more responses.)” The students were given the choice to choose one or more of the following categories: “American Indian or Alaska Native,” “Asian,” “Black or African American,” “Native Hawaiian or Other Pacific Islander,” and “White.”

In this study, students were classified as “Latino” if they identified as “Hispanic or Latino” only or in combination with other responses. Participants were classified as “Black” if they only identified as “Black or African American.” Finally, students who identified as “White” only were classified as White. The YRBS dataset included both a seven-level race and four-level race variable with the four-level variable including White, Black, Latino, and All other races. 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 was in this study.

Physical dating violence. Physical dating violence was assessed using the question: (Q22) “During the past 12 months, how many times did someone you were dating or going out with physically hurt you on purpose? (Count such things as being hit, slammed into something, or injured with an object or weapon)”. The response categories for this question were as follows, “0 times,” “1 time,” “2 or 3 times,” “4 or 5 times,” and “6 or more times.” For the analyses in this study, responses were recoded and

dichotomized into those who had experience being a victim (“1 or more times”) versus those who had not (“0 times”).

Sexual dating violence. Sexual dating violence was assessed using the question: (Q21) “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.”

Covariates. The variables included as covariates in each regression model were selected based on prior research and identified as potentially increasing risk of dating violence victimization (Demissie et al., 2018; Eaton et al., 2007; Okomu et al., 2017; Parker et al., 2015; Vagi et al., 2015; Vivolo-Kantor et al., 2016). Covariates included bullying, involvement in physical fights, substance use, alcohol use, sexual risky behaviors, and sexual identity.

School-based violence and victimization. To assess school violence related behaviors, the following questions were utilized for this study.

Involvement in physical fights was evaluated by two questions:

- Physical fights: (Q17) “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.”

- Physical fights at school: (Q18) “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.”

Bullying was measured by two questions:

- Bullied at school: (Q23) “During the past 12 months, have you ever been bullied on school property?” Response choices were “Yes” or “No.”
- Electronically bullied: (Q24) “During the past 12 months, have you ever been electronically bullied?” Response choices were “Yes” or “No.”

Risk behaviors. The YRBS questionnaire included multiple items on substance use; however, the items on lifetime and past 30-day use were used in this study.

To assess cigarette use, two questions were considered:

- Lifetime cigarette use: (Q30) “Have you ever tried cigarette smoking, even one or two puffs?” Response choices were “Yes” or “No.”
- Current cigarette use: (Q32) “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.”

Electronic vapor use was assessed by two questions:

- Lifetime electronic vapor use: (Q34) “Have you ever used an electronic vapor product?” Response choices were “Yes” or “No.”
- Current electronic vapor use: (Q35) “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.”

To assess alcohol use, two questions were considered:

- Lifetime alcohol use: (Q40) “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.”
- Current alcohol use: (Q42) “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.”

Marijuana use was examined using two questions:

- Lifetime marijuana use: (Q46) “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.”
- Current marijuana use: (Q48) “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.”

To measure sexual risky behaviors, four questions were considered:

- Ever engaging in sex: (Q59) “Have you ever had sexual intercourse?” Response options for this question were “Yes” or “No.”

- Age the first time engaging in sex: (Q60) “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.”
- Number of sex partners: (Q61) “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
- Consuming alcohol/ drugs before engaging in sex: (4) “Did you drink alcohol or use drugs before you had sexual intercourse the last time?” Response categories were “Yes” or “No”.

IV: RESULTS

Participants

A total of 14,956 high school students who completed the 2017 YRBS were initially included as participants in this study. For the current study, fewer than 1% of students were excluded because they indicated they were age 13 years or younger or had a missing value for age, which left 14,603 students aged 14 years or older. Each participant completed the YRBS survey during their respective administration of the instrument.

Quantitative Analysis (YRBS Data)

Student demographic characteristics utilized in the statistical analyses were age, grade, sex, race/ethnicity, and sexual identity. Overall, the sample was representative of the student population. Participants were evenly distributed across grade classifications (23.2-26.7%) and sex (48.5 and 51.5%) (Table 1). The sample included slightly more females and slightly more underclassmen (freshmen (26.5%) and sophomores (25.5%)). Age was normally distributed, with the majority (74.8%) of students being between the ages of 15 and 17. Approximately half of the students were male (51.5%) and the majority of the sample identified as White (43.5%) and heterosexual (85.3%). Complete data on these demographic characteristics can be found in Table 1.

Physical Dating Violence (PDV)

After accounting for missing data, a total of 9,463 participants responded to the survey item related to PDV. Overall, 5.6% (N = 814) of participants experiencing PDV during the past 12 months. Table 2 presents the associations between PDV and sex, race/ethnicity, age, grade, and sexual identity. Table 3 presents the percentage of participants

who reported being a victim or not of PDV victim and their associated demographics. Of demographic variables included in the analyses, race/ethnicity and sexual identity was statistically significantly associated with PDV. Those who did not identify as heterosexual (straight) were significantly more likely to experience PDV.

Race/ ethnicity. Participants who identified as “All other races” were more likely to experience SDV compared to those who identified as White ($p = .031$).

Sexual identity. Students who identified as gay or lesbian, bisexual, or not sure were more likely to experience PDV compared to those who identified as heterosexual (straight) ($p < .001$). Among those who identified as heterosexual, 7.0% ($N = 552$) reported experiencing PDV. For example, among the participants who identified as gay or lesbian (21.8%), bisexual (16.6%), or not sure (15.6%) also reported experiencing PDV (Table 2 and Table 3).

The bivariate logistic regressions indicated bullying, involvement in physical fights, consuming alcohol and/or drugs before engaging in sex, and current alcohol use were statistically significantly correlated to PDV. Table 4 shows the bivariate associations between PDV and selected health-risk behaviors. Table 5 presents the percentage of participants who reported being a victim or not of PDV victim and the associated variables.

Bullying. Participants who reported having been bullied at school within the past 12 months were over two times more likely to report experiencing PDV ($p < .001$; $OR = 2.354$).

Among those participants who reported experiencing bullying at school within the past year, 17.3% ($N = 308$) also reported being a victim of PDV. Among those who did not

experienced bullying at school, only 6.3% (N = 485) reported prior experience with PDV. Students who reported being bullied electronically within the past 12 months were also approximately 1.9 times more likely to experience PDV ($p < .001$; OR = 1.909). Among students who reported electronic bullying experiences within the past year, 19.9% (N = 302) also reported experiences of PDV. Of those students who did not report experiences of electronic bullying, only 6.2% (N = 494) reported experiencing PDV (Table 4 and Table 5).

Physical fights. A statistically significant relationship between involvement in a physical fight and PDV ($p < .001$) was observed. There was a direct relationship between the number of physical fights experienced within the past 12 months and the odds of PDV. As the number of times a student was involved in a physical fight increased, the likelihood of them experiencing PDV also increased. Students who were not involved in a physical fight in the past 12 months reported least likely to be at risk for PDV ($p < .001$; OR = .193). Students who reported being in 1 fight in the past 12 were less likely to have experienced PDV ($p = .008$; OR = .354). The odds of being a victim of PDV increased as the number of physical fights experienced increased with participants who were involved in 10 or 11 fights having a 63% higher chance of experiencing PDV victimization. Among students who were involved in a physical fight 12 or more times within the past year, 68.9% (N = 31) reported experiencing PDV. Among those who were involved in no physical fights, 5.1% (N = 295) reported experiencing PDV. The examination of physical fights on school property revealed no statistically significant pattern ($p = .074$). However, among students who reported involvement in a physical fight on school property 12 or more times within the past year, 47.2% (N = 59) reported experiencing

PDV, while 5.1% (N = 295) of those who were not involved in any physical fights on school property reported PDV victimization (Table 4 and Table 5).

Alcohol consumption. Students who reported consuming alcohol within the past 30 days were significantly more likely to experience PDV ($p = .034$; OR = 1.163). Data indicated a positive relationship between the number of days alcohol was consumed in the past 30 days and the percentage of participants who reported experiencing PDV. Among those who consumed no alcohol during the past month, 5.2% (N = 274) reported experiencing PDV. Among those who consumed alcohol on each of the past 30 days, 55.8% (N = 29) reported experiencing PDV (Table 4 and Table 5).

Alcohol/ drug use before sex. Participants who consumed alcohol and/or other substances before engaging in sex were more likely to experience PDV. Those who responded they have never had sex ($p = .009$; OR = .383) or did not consume either drugs or alcohol before engaging in sex ($p = .028$) were statistically significantly less likely to experience PDV. Additional PDV results can be found in Table 4 and Table 5.

Covariates not statistically significant. Of the other covariates explored, trying a cigarette, current cigarette use, trying electronic vapor products, current electronic vapor product use, lifetime alcohol use, lifetime marijuana use, current marijuana use, age when having sex for the first time, and having multiple sex partners were not statistically significant.

Sexual Dating Violence (SDV)

After accounting for missing data, a total of 9,150 participants responded to the survey item related to SDV. Overall, 4.1% (N = 605) of participants experiencing SDV during the past 12 months. Table 6 illustrates the associations between SDV and sex,

race/ethnicity, age, grade, and sexual identity. Table 7 presents the percentage of participants who reported being a victim or not of SDV victim and the associated demographics. Results suggest sex and sexual identity were statistically significant demographic variables associated with SDV.

Race/ ethnicity. Participants who identified as Black or African American were less likely to experience SDV compared to students who identified as White ($p = .006$; $OR = .508$). Contrarily, students who identified as “All other races” were more likely to experience SDV ($p = .038$).

Sex. Female students were approximately four times more likely to experience SDV victimization compared to males ($p < .001$; $OR = 3.922$). Of female participants, 9.7% ($N = 460$) reported experiencing SDV in the past year compared to only 3.1% ($N = 135$) of male participants (Table 6 and Table 7).

Sexual identity. Participants who identified as gay or lesbian, bisexual, or not sure were more likely to experience SDV compared to those who identified as heterosexual (straight) ($p < .001$). Among students who identified as heterosexual (straight), 5.4% reported SDV victimization. Those who did not identify as heterosexual (straight) were more likely to experience SDV. For example, students who identified as gay or lesbian (13.9%), bisexual (14.6%), and not sure (12.9%) also reported experiencing SDV (Table 6 and 7).

Bullying, involvement in physical fights, having multiple sex partners, and current alcohol use were statistically significantly related to SDV. Table 8 shows the bivariate associations between SDV and selected health-risk behaviors. Table 9 presents

the percentage of participants who reported being a victim or not of SDV victim and the associated variables.

Bullying. Participants who reported being bullied at school within the past 12 months were approximately 1.6 times more likely to report experiencing SDV ($p = .005$; $OR = 1.586$). Of participants who reported experiencing bullying at school, 14.2% ($N = 236$) also reported being a victim of SDV. Among those who have not experienced bullying at school within the past year, only 4.8% ($N = 355$) reported prior experience with SDV. Students who experienced electronic bullying within the past 12 months were two times more likely to report SDV victimization ($p < .001$; $OR = 2.124$). Among students who reported electronic bullying experiences within the past year, 17.4% ($N = 245$) also reported experiencing PDV. Of those students who did not report experiences of electronic bullying, only 4.5% ($N = 348$) reported experiencing SDV (Table 8 and Table 9).

Physical fights. There was a statistically significant relationship between involvement in a physical fight and SDV ($p = .008$). There was a direct relationship between the number of physical fights experienced within the past 12 months and the odds of SDV. As the number of times a student was involved in a physical fight increased, the likelihood of them experiencing PDV also increased. Of the students who were not involved in a physical fight in the past 12 months, 5.2% ($N = 292$) reported experiencing SDV victimization. Among students who reported experiencing 2 or 3 physical fights in the past 12 months, 9.5% ($N = 67$) reported SDV victimization. Of the students who experienced 12 or more physical fights, 33.6% ($N = 37$) reported experiencing SDV victimization. Similarly, involvement in a physical fight on school

property increased the chance of SDV victimization ($p = .007$). There was a steady positive pattern among the sample. As the number of times a student was involved in a physical fight at school increased, the likelihood of them experiencing SDV increased. Among those who were not involved in any physical fights on school property, 5.6% ($N = 452$) reported SDV victimization. Of the students who experienced 1 physical fight at school, 10.5% ($N = 63$) reported experiencing SDV victimization. Of the students who reported experiencing 4 or 5 physical fights at school, 28.3% ($N = 13$) reported being a victim of SDV. Among students who reported involvement in a physical fight on school property 12 or more times within the past year, 63.4% ($N = 26$) reported experiencing SDV (Table 8 and Table 9).

Alcohol consumption. Participants who reported consuming alcohol within the past 30 days had a statistically significantly higher chance of experiencing SDV 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 SDV. Among students who did not consume alcohol during the past month, 4.7% ($N = 242$) reported experiencing SDV. Among those who consumed alcohol on each of the past 30 days, 56.3% ($N = 27$) reported experiencing SDV (Table 8 and Table 9).

Multiple sex partners. Students who reported having multiple sexual partners had a statistically significantly increased risk of experiencing SDV ($p = .013$; $OR = 1.149$). Data displayed a positive relationship between the number of sexual partners a participant had and the percentage of students who reported SDV victimization. Among students who reported having 6 or more sexual partners, 14.5% ($N = 73$) reported

experiencing SDV. Among those who reported never having sex, 4.2% (N = 169) reported SDV victimization. Additional data on variables associated with SDV can be found in Table 8 and 9.

Covariates not statistically significant. Trying a cigarette, current cigarette use, trying electronic vapor products, current electronic vapor product use, lifetime alcohol use, lifetime marijuana use, current marijuana use, age when having sex for the first time, and consuming drugs and/or alcohol before engaging in sexual behaviors were not statistically significant as it relates to SDV.

V: DISCUSSION

This study examined the prevalence of PDV and SDV, as well as the factors associated with PDV and/or SDV among U.S. high school students. A secondary data analysis of the 2017 national YRBS data regarding bullying, multiple substances use (alcohol, cigarettes, marijuana, and electronic vapor products), and risky sexual behaviors as conducted.

Previous teen dating violence research has utilized YRBS data up to 2015 (Eaton et al., 2007; Pearlman & Dunn, 2016; Okumu et al., 2017; Vagi, et al., 2015). Because dating violence among teens has become a more visible and scientifically explored health concern within the recent decade, researchers utilized the most recent YRBS data from 2017 contributed to the existing knowledge of the variables associated with TDV. Findings from this study provided insight about predictors of PDV and SDV and may inform educational and public health programs intended to reduce the risk and occurrence of PDV and SDV.

There is a downward trend when comparing YRBS PDV and SDV data from 2013 to 2017. TDV questions, specifically PDV and SDV, were not asked in YRBS until 2013. Overall, the percentage of students who experienced PDV in 2013 was 10.3%, 9.6% in 2015, and 8% in 2017 (CDC, 2017j). Likewise, the percentage of students who experienced SDV in 2013 was 10.4%, 10.6% in 2015, and 6.9% in 2017. These trends could be related to the awareness and understanding of variables association with PDV and SDV. By exploring the associated covariates in this study, researchers can hope the percentage continues to decrease over the next decade with proper intervention strategies.

Associations Between PDV and SDV with Demographics

Previous studies have suggested PDV and SDV are prevalent among U.S. high school students (Eaton et al., 2007; Vagi, et al., 2015). In the current study, approximately 7% of students who participated in the 2017 YRBS reported experiencing PDV and 6.6% of students reported experiencing SDV.

Race/ ethnicity had strong association with PDV and SDV, aligning with some previous literature (Eaton et al., 2007; Martz et al., 2016; Okumu et al., 2017). Among both males and females, the odds of PDV victimization were higher among students who identified as “All other races.” Among the student sample, the odds of SDV victimization were lower among students who identified as Black or African American and higher among students who identified as “All other races.” This study did not align with previous research findings stating those who identify as Latino were more likely to experience PDV but did align with the same previous study regarding SDV (Luo, Stone, & Tharp, 2014). Inconsistent findings suggest further exploration of the association between race/ ethnicity and PDV and SDV. TDV intervention curricula should contain culturally competent information regarding minority populations. Studies conducted in the future should further investigate the relationship between race/ethnicity and TDV (PDV and SDV).

Sexual identity was the strongest demographic association with PDV. Among the students who identified their sexuality, 778 reported experiencing PDV. Of the total 778 participants, 29% (N = 226) identified as gay or lesbian, bisexual, or not sure. By identifying their sexuality other than heterosexual, a student is more at risk for experiencing dating violence. These findings align with past literature associating sexual

identity and TDV (Dank et al., 2014; Luo et al., 2014; Pearlman & Dunn, 2016).

Similarly, there was a strong association between SDV and sexual identity. Comparing sexual identities, students who identified as non-binary or unsure of their sexuality were more likely to experience SDV. 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 (Dank et al., 2014; Luo et al., 2014; Pearlman & Dunn, 2016). School and public health professionals need to understand the current culture when creating and implementing TDV prevention strategies. Curricula should contain culturally competent information regarding LGBT populations.

Sex was the demographic characteristic with the strongest association with SDV. Of the students who identified their sex, 595 reported experiencing SDV. Of the total 595 participants, 77.3% (N = 460) were females. Aligning with the literature, male students responded experiencing PDV at similar rates with female students, but females had a higher rate of reporting experiences of SDV. Furthermore, we can suggest there is a discrepancy in reporting SDV instances between males and females (Eaton et al., 2007; Vagi et al, 2015).

Associations Between PDV and SDV with Covariates

The simultaneous occurrence of TDV, school-based violence, and risk behaviors, alongside the negative physical and psychological impacts associated, define TDV (PDV and SDV) as a public health issue.

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 (Cook et al., 2010; Vagi et al., 2015). Similar to previous research, bullying and electronic bullying were both strong associations of PDV and SDV in this study (Dank et al, 2014; Vivolo-Kantor et al., 2016). Bullying has become a behavior which not only can be experienced in-person but could follow the individual online (Cook et al, 2010). Teens may not detach from the internet and media platforms because they have been conditioned to socialize with others online (Dank et al., 2014). By understanding the relationships between types of bullying and TDV, school officials can better intervene by being aware if a student is being bullied at school, they are more likely to experience bullying outside of school.

Similarly, engaging in physical fights increased the students' risk of experiencing both PDV and SDV. Aligning with previous research, frequency of fights has a strong association with both measures of TDV (Cook et al., 2010; Pearlman & Dunn, 2016). Early experience with violence among adolescents also increases the risk of continued participation of violence throughout their life. The higher amount of physical fights a teen experiences, the higher chance they will experience physical fights throughout life (Cook et al., 2010; Pearlman & Dunn, 2016). Teachers, staff, and school officials can improve intervention strategies by understanding if a student is involved in school-based violence as a teen, they are more likely to experience violence throughout their lifetime. Past literature has found 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 (Vivolo-Kantor et al., 2016). Involvement in violence and romantic relationships during early adolescence may increase the risk of PDV and SDV due to lack

of emotional development (Okomu et al., 2017; Pearlman & Dunn, 2016; Petering, Rhoades, Rice, & Yoshioka-Maxwell, 2017).

Intervention strategies should be implemented early on in middle school to introduce students to examples of healthy relationships (romantic and platonic). Additionally, educating and practicing consent and healthy communication strategies can benefit teens in their developmental stage before becoming involved in relationships.

Risk behaviors. Adolescence is typically when an individual begins experimenting with alcohol and other substances (Eaton et al., 2007). Existing research suggested alcohol use is the most misused substance among American youth (Patrick & Schulenberg, 2014). Alcohol is a potential precursor for victimization because it increases vulnerability and impairment, physically and mentally. Alcohol can also be used after victimization as a coping mechanism (Parker et al., 2015). Odds ratio analysis reveals similar findings, concluding PDV and SDV victimization were higher among students who drank alcohol in the past 30 days than those who did not engage in drinking. Unlike previous research, cigarette, electronic vapor product, and marijuana use were weak associations to PDV and SDV (Eaton et al., 2007; Parker et al., 2015). Inconsistent results among research studies indicates further exploration of substance use as it relates to PDV and SDV.

Lastly, past literature revealed among both sexes, as the number of sexual partners increased, there was a greater chance of SDV (Demissie et al., 2018; Eaton et al., 2007). Results from the current study presented findings aligned with recent studies. 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 regarding risky behaviors. Public health advocates and school administrators can collaborate and use these findings to create better educational strategies.

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 PDV and SDV. In depth reasons as to why PDV and SDV occur cannot be explored. Additionally, the data is cross-sectional, meaning there is no longitudinal change. Furthermore, the direction of causality cannot be determined. The YRBS data only assess behaviors within the past year and does not account for occurrences before this time period.

The YRBS data were self-reported by high school students, and there may be associated biases. Additionally, there is chance for an underrepresented sample due to misreporting of TDV (PDV and SDV) instances. Furthermore, the analyses were bound by the YRBS questions. Researchers did not explore all potential variables and factors associated with teen dating violence, including further investigation of sexual identity, and physical/ mental disability.

The 2017 YRBS data include two separate questions regarding race/ethnicity, one using 4-level race variables and the other with 7-level race variables. In this study, the question using 4-level race variables was utilized because the question using 7-level race variables contained small cell sizes among the other racial/ethnic groups (American Indian, Alaska Native, Asian and Native Hawaiian or other Pacific Islander populations) and were formed into the category titled “All other races.” 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.

Implications for Future Research

Results from this study have significant implications for future research involving TDV. First, because of the cross-sectional nature of the study it is still uncertain if TDV (PDV and/or SDV) increases involvement in risk behaviors, or contrarily, if participating in risk behaviors leads to being victimized by an intimate partner. Longitudinal studies would allow for further exploration of potential behavioral antecedents of PDV and SDV. For example, first collecting data from middle school students and following the same group of students through high school would allow researchers to potentially explore the causal relationship between TDV and the covariate risks. Results could identify when one becomes involved in relationships, the specific ages, grade level, and other characteristics which may impact their overall risk of victimization. Future research should further examine sexual identity, in depth for all who identify as non-binary (LGBT), and the correlation with both physical and sexual dating violence. Additionally, future studies should explore the association between teen dating violence victimization and physical/mental disabilities. This study can inform future research into the relationships between teen dating violence, risky behaviors, and school violence. This study only included statistics on American Indians, Alaska Natives, Asians, Native Hawaiians or other Pacific Islanders grouped together in a category referred to as “All other races.” There was a lack of representation in the 2017 YBRS for each category by specific race/ethnicity. There was evidence from this study predicting students in the “All other races” category were more likely to experience TDV. Future researchers should focus on races/ethnicities

grouped together in “All other races” or use the 7-level race variable as opposed to the 4-level race variable. Finally, because the YRBS is only administered in high schools, teenagers who are not enrolled in high school were also excluded from the study. Adolescents who are not students may have different prevalence of risk and TDV. Future studies should be expanded to include teenagers who are not attending high school.

Conclusion

This study was designed to investigate the factors associated with TDV (PDV and/or SDV) in high school students. The study findings contribute to the existing knowledge of the variables associated with TDV, as well as added further knowledge on specific factors involved with PDV and/ or SDV. The simultaneous occurrence of TDV, school-based violence, and risk behaviors linked to the leading causes of mortality and morbidity, alongside the negative physical and psychological impacts associated, define TDV (PDV and SDV) as a public health issue. Therefore, preventative measures, initiatives, and programs should be developed from a comprehensive public health approach. Consistently updating the YRBS survey according to societal needs is necessary. Over the past decade, the CDC has added questions regarding dating violence, sexual identity, and psychological behaviors. Further questions should be added to assess social norms, emotional abuse, and physical/ mental disabilities to deliver critical information to assist in identifying risks and potential variables affecting TDV (PDV and/or SDV) prevalence. Additionally, expanding the YRBS to be administered to teenagers not enrolled in high schools will further assist the YRBS in becoming a more inclusive TDV surveillance system, which is necessary to develop proper intervention and prevention programs.

In alignment with other public health issues, teen dating violence appears to be affected by the interaction of multiple factors. Future research is necessary to identify those factors and to determine the interactions within various groups. Current public health interventions must understand the impact of the known associations of school-based violence, risk behaviors, and TDV (PDV and SDV) among diverse populations. A comprehensive public health approach is best for the promotion of healthy adolescent behaviors.

TABLES

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)	11910	85.3
Gay or lesbian	346	2.5
Bisexual	1113	8.0
Not sure	592	4.2

a. Differences in n values represent students who selected more than one race

b. Differences in n values due to missing data

Table 2. Binary Logistic Regression Results Exploring Physical Dating Violence and Multiple Demographics

	B	S.E.	Wald	df	Sig.	Exp(B)	CI
Sex							
Male	ref						
Female	.185	.123	2.263	1	.132	1.203	.946-1.530
Race/Ethnicity							
White	-.228	.198	1.331	1	.249	.796	.540-1.173
Black or Af Am	.224	.217	1.069	1	.301	1.251	.818-1.913
Hispanic/ Latino	-.018	.210	.007	1	.932	.982	.651-1.481
All other races	ref		8.849	3	.031		
Age							
14 years old	.003	.432	.000	1	.994	1.003	.430-2.339
15 years old	-.198	.341	.339	1	.560	.820	.421-1.599
16 years old	.116	.276	.177	1	.674	1.123	.654-1.929
17 years old	-.041	.205	.040	1	.841	.960	.643-1.433
18 years old	Ref		2.941	4	.568		
Grade							
9 th grade	-.342	.358	.917	1	.338	.710	.352-1.431
10 th grade	.069	.268	.066	1	.797	1.072	.633-1.813
11 th grade	-.110	.204	.288	1	.592	.896	.600-1.338
12 th grade	ref		3.537	3	.316		
Sexual identity							
Heterosexual	-.473	.312	2.296	1	.130	.623	.338-1.149
Gay or lesbian	.494	.403	1.500	1	.221	1.639	.743-3.611
Bisexual	.270	.340	.632	1	.427	1.310	.673-2.549
Not sure	ref		29.501	3	.000		
Significance set at $p < .05^a$							

Table 3. Victims Versus Nonvictims of Physical Dating Violence by Demographics

	Victim		Not a victim	
	N	%	N	%
Sex				
Male	315	7.0%	4168	93.0%
Female	481	9.7%	4459	90.3%
Race/Ethnicity				
White	295	7.2%	3808	92.8%
Black or Af Am	215	11.3%	1691	88.7%
Hispanic/ Latino	194	8.2%	2180	91.8%
All other races	89	9.4%	860	90.6%
Age				
14 years old	89	8.8%	924	91.2%
15 years old	154	7.2%	1995	92.8%
16 years old	217	8.9%	2221	91.1%
17 years old	222	8.7%	2328	91.3%
18 years old or older	132	10.1%	1181	89.9%
Grade				
9 th grade	174	7.8%	2053	92.2%
10 th grade	204	8.8%	2119	91.2%
11 th grade	193	7.8%	2279	92.2%
12 th grade	228	9.5%	2169	90.5%
Sexual Identity				
Heterosexual	552	7.0%	7303	93.0%
Gay or lesbian	49	21.8%	176	78.2%
Bisexual	132	16.6%	665	83.4%
Not sure	45	15.6%	244	84.4%

Table 4. Binary Logistic Regression Results Exploring Physical Dating Violence and Associated Variables

	B	S.E.	Wald	df	Sig.	Exp(B)	CI
Bullying at school within the past 12 months	.856	.159	29.171	1	.000	2.354	1.726-3.212
Electronic bullying within the past 12 months	.647	.164	15.548	1	.000	1.909	1.384-2.633
Current alcohol use	.151	.071	4.515	1	.034	1.163	1.012-1.336
Alcohol/drug use and sex							
I have never had sex	-.959	.369	6.765	1	.009	.383	.186-.789
Yes	.116	.201	.332	1	.564	1.123	.757-1.666
No	ref		7.176	2	.028		
Experienced physical fights within past 12 months							
0 times	-1.646	.384	18.353	1	.000	.193	.091-.409
1 time	-.1040	.393	7.003	1	.008	.354	.164-.764
2 or 3 times	-.667	.385	3.000	1	.083	.513	.241-1.092
4 or 5 times	-.504	.441	1.309	1	.253	.604	.254-1.433
6 or 7 times	-.643	.569	1.281	1	.258	.525	.172-1.602
8 or 9 times	-.827	.697	1.408	1	.235	.437	.111-1.715
10 or 11 times	.493	.901	.300	1	.584	1.637	.280-9.568
12 or more times	ref		43.851	7	.000		

Table 4. (cont.)

	B	S.E.	Wald	df	Sig.	Exp(B)	CI
Experienced physical fights at school within past 12 months							
0 times	-2.266	.947	5.729	1	.017	.104	.016-.663
1 time	-2.281	.957	5.679	1	.017	.102	.016-.667
2 or 3 times	-2.939	.999	8.657	1	.003	.053	.007-.375
4 or 5 times	-1.302	1.128	1.331	1	.249	.272	.030-2.482
6 or 7 times	-	22819.261	.000	1	.999	.000	.000
	21.640						
8 or 9 times	-	28208.097	.000	1	.999	.000	.000
	23.325						
10 or 11 times							
12 or more times	ref		11.508	6	.074		
Significance set at $p < .05^a$							

Table 5. Victims Versus Nonvictims of Physical Dating Violence by Associated Variables

	Victim		Not a victim	
	N	%	N	%
Bullying at school within past 12 months				
Yes	308	17.3%	1470	82.7%
No	485	6.3%	7157	93.7%
Electronic bullying within past 12 months				
Yes	302	19.9%	1212	80.1%
No	494	6.2%	7411	93.8%
Experienced physical fighting within past 12 months				
0 times	295	5.1%	5457	94.9%
1 time	103	11.3%	812	88.7%
2 or 3 times	107	14.5%	630	85.5%
4 or 5 times	43	21.0%	162	79.0%
6 or 7 times	14	16.1%	73	83.9%
8 or 9 times	12	23.5%	39	76.5%
10 or 11 times	3	15.0%	17	85.0%
12 or more times	59	47.2%	66	52.8%
Experienced physical fighting at school within past 12 months				
0 times	578	6.9%	7769	93.1%
1 time	98	15.6%	531	84.4%
2 or 3 times	49	21.9%	175	78.1%
4 or 5 times	23	45.1%	28	54.9%
6 or 7 times	8	53.3%	7	46.7%
8 or 9 times	1	25.0%	3	75.0%
10 or 11 times	1	33.3%	2	66.7%
12 or more times	31	68.9%	14	31.1%

Table 5. (cont.)

	Victim		Not a victim	
	N	%	N	%
Current alcohol use within past 30 days				
0 days	274	5.2%	5003	94.8%
1 or 2 days	145	9.1%	1443	90.9%
3 to 5 days	84	12.7%	580	87.3%
6 to 9 days	53	14.7%	307	85.3%
10 to 19 days	45	21.0%	169	79.0%
20 to 29 days	13	25.5%	38	74.5%
All 30 days	29	55.8%	23	44.2%

Table 6. Binary Logistic Regression Results Exploring Sexual Dating Violence and Multiple Demographics

	B	S.E.	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 or Af Am	-.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							
9 th grade	-.066	.372	.032	1	.859	.936	.452-1.940
10 th grade	-.387	.312	1.535	1	.215	.679	.368-1.252
11 th grade	.103	.234	.195	1	.659	1.109	.701-1.755
12 th 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		
Significance set at $p < .05^a$							

Table 7. 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 or Af Am	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				
9 th grade	142	6.6%	1997	93.4%
10 th grade	149	6.6%	2100	93.4%
11 th grade	161	6.7%	2243	93.3%
12 th 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%

Table 8. Binary Logistic Regression Results Exploring Sexual Dating Violence and Associated Variables

	B	S.E.	Wald	df	Sig.	Exp(B)	CI
Bullying at school within the past 12 months	.461	.164	7.886	1	.005	1.586	1.149-2.188
Electronic bullying within the past 12 months	.753	.165	20.829	1	.000	2.124	1.537-2.934
Current alcohol use	.224	.082	7.556	1	.006	1.251	1.066-1.468
Multiple sex partners	.139	.056	6.141	1	.013	1.149	1.029-1.282
Experienced physical fights within past 12 months							
0 times	-1.197	.477	6.295	1	.012	.302	.119-.770
1 time	-1.322	.496	7.091	1	.008	.267	.101-.706
2 or 3 times	-.613	.481	1.619	1	.203	.542	.211-1.392
4 or 5 times	-.902	.560	2.595	1	.107	.406	.135-1.216
6 or 7 times	.139	.628	.049	1	.825	1.149	.335-3.936
8 or 9 times	-1.077	.954	1.274	1	.259	.340	.052-2.210
10 or 11 times	-.035	1.222	.001	1	.977	.966	.088-10.594
12 or more times	ref		19.041	7	.008		
Experienced physical fights at school within past 12 months							
0 times	-3.016	.954	9.996	1	.002	.049	.008-.318
1 time	-2.458	.967	6.457	1	.011	.086	.013-.570
2 or 3 times	-3.393	1.031	10.820	1	.001	.034	.004-.254
4 or 5 times	-1.645	1.148	2.053	1	.152	.193	.020-1.832
6 or 7 times	-	23068.812	.000	1	.999	.000	.000
	21.163						
8 or 9 times	-	28240.769	.000	1	.999	.000	.000
	22.069						
10 or 11 times							
12 or more times	ref		17.839	6	.007		

Significance set at $p < .05^a$

Table 9. 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%

Table 9. (cont.)

	Victim		Not a victim	
	N	%	N	%
Multiple sex partners				
Never had sex	169	4.2%	3849	95.8%
1 person	119	16.4%	1751	93.6%
2 people	86	9.6%	808	90.4%
3 people	47	9.0%	476	91.8%
4 people	26	8.2%	292	91.8%
5 people	15	7.9%	175	92.1%
6 or more people	73	14.5%	432	85.5%
Current alcohol use within past 30 days				
0 days	242	4.7%	4934	95.3%
1 or 2 days	113	7.4%	1416	92.6%
3 to 5 days	62	9.8%	569	90.2%
6 to 9 days	32	9.2%	317	90.8%
10 to 19 days	25	12.9%	169	87.1%
20 to 29 days	10	20.4%	39	79.6%
All 30 days	27	56.3%	21	43.8%

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