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The associations between substance use, sexual behaviors, bullying, deviant behaviors, health, and cyber dating abuse perpetration

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Abstract

Dating violence is an important public health concern and is considered to be a form of school violence. While digital technologies have enabled perpetrators of dating violence to target their victims online (cyber dating abuse), little is known about how this form of perpetration relates to specific adolescent risk behaviors. This brief research report focuses on the associations between substance use, sexual behaviors, deviant behaviors, self-reported health, and cyber dating abuse perpetration. Participants included 705 ethnically diverse adolescents ($n = 408$; 57.9% *female*) in southeast Texas. Having had sexual intercourse or using alcohol or drugs before having sex was significantly linked with cyber dating abuse perpetration, as was poor physical health, and substance use. Consistent with limited research, we found a link between cyber dating abuse and engagement in bullying behaviors. The discussion section includes suggestions for school nurse practice and further research.

Key Words

School nursing, cyber dating abuse; digital dating violence; dating violence; bullying;

The associations between substance use, sexual behaviors, deviant behaviors, health, and cyber dating abuse perpetration

Introduction

Although romantic relationships mostly affect the lives of teenagers in positive ways, they can also lead to negative experiences if young people are involved with an abusive partner (Stonard, Bowen, Lawrence, & Price, 2014). Dating violence, including physical violence, psychological abuse, and sexual assault is a major public health concern (CDC, 2016) and is considered a form of school violence by the National Association of School Nurses (NASN, 2014). Through digital media, dating violence perpetrators can target their victims in additional ways. Cyber dating abuse includes a host of behaviors, which can be grouped along two dimensions: (1) non-sexual forms of cyber dating abuse (e.g., repeatedly contacting the romantic partner to check where he/she is), and (2) sexual forms of cyber dating abuse (e.g., pressuring the partner to send self-made sexually-explicit pictures) (Dick et al., 2014; Zweig, Dank, Yahner, & Lachman, 2013).

Previous research found that 11.8% of 7th to 12th graders reported cyber dating abuse perpetration (Zweig et al., 2013). Cyber dating abuse differs from offline forms of dating violence in several ways, which warrants specific research on cyber dating abuse perpetration and its correlates. Similar to cyberbullying, digital forms of dating violence can occur at anytime and are not dependent on physical proximity. Furthermore, the victims can be targeted at any time, which can potentially make it more difficult to escape the abuse. As opposed to offline forms of dating violence, the perpetrators might not be immediately exposed to the reactions of their victims (e.g., tears or being visibly upset), which makes it harder for them to assess the

consequences of their actions (Van Ouytsel, Walrave, Ponnet, & Temple, 2016; Stonard, Bowen, Walker, & Price, 2015).

A paucity of research exists that could provide insight into the context in which cyber dating abuse takes place and how it is related to other risk behaviors. Prior research has found that victims of cyber dating abuse were more likely to have used various substances, to have engaged in sexual behaviors and sexual risk behaviors, and to have been involved in delinquent behavior (e.g., bringing a weapon to school or vandalism) (Dick et al., 2014; Zweig, Lachman, Yahner, & Dank, 2014). Similarly, victims of cyber dating abuse are at a heightened risk of being involved in other online risk behaviors, including adding strangers to their friends' list, sending personal information to strangers, or sexting behaviors. This could be explained by the fact that victims of cyber dating abuse are more often in situations where adult supervision, which could provide protection, is absent (Van Ouytsel, Ponnet et al., 2016). While first studies have started exploring the correlates of cyber dating abuse victimization, little is known about cyber dating abuse perpetration. Our exploration between cyber dating abuse perpetration and other risk behaviors was guided by problem behavior theory (Jessor, 2014), which posits that problem behaviors are often interrelated and share similar personal and environmental predictors.

The current study will address the gap in knowledge on the associations of cyber dating abuse among adolescents with other types of risk behaviors and health outcomes. Research into these associations is relevant to school nurses and other health professionals, as engagement in certain risky behaviors may be indicative of cyber dating abuse perpetration. Moreover, it might inspire the development of school nursing prevention, education, and screening programs that could target these behaviors. Thus, we investigate the link between cyber dating abuse perpetration and sexual (risk) behaviors, substance use, self-reported health, bullying victimization and perpetration, and deviant behaviors (weapon carrying, been in a physical fight).

Methods

Sample and Procedure

Data are drawn from the fourth wave of the *Dating it Safe* study (Temple et al. 2012; 2014), a larger study on dating violence and adolescent health. Respondents were recruited from 7 public high schools across 5 school districts throughout southeast Texas. These students identified themselves as African-American ($n = 174$; 24.7%), Caucasian ($n = 216$; 30.6%), Hispanic ($n = 232$; 32.9%), and other ($n = 83$; 11.7%). Participants consisted of 705 students ($n = 408$; 57.9% *female*) with a mean age of 17.96 ($SD = .74$), who had indicated that they had “begun dating, going out with someone, or had a boyfriend/girlfriend.” Students completed paper/pencil surveys during school hours. Students who graduated or who were no longer in their original school completed web-based surveys (25.7%). Participants received a gift card for participating. To enhance the students’ feeling of privacy, teachers and other school staff were not present during survey administration, and participants were informed that a federal certificate of confidentiality protected their responses. The study was approved by the last author’s Institutional Review Board.

Measures

Cyber Dating Abuse Perpetration

The cyber dating abuse perpetration scale consisted of 13 items that were adapted from previous studies (Picard, 2007; Zweig et al., 2013). The scale asked whether the respondents had perpetrated (0 = *no*; 1 = *yes*) forms of cyber dating abuse to their current dating partner (if not currently dating, the person they most recently dated). Sample behaviors that were assessed

included: spreading rumors through cell phone and social networking sites, sending multiple messages that made the partner feel unsafe, or sending text messages to ask the partner to engage in sexual acts against their will. One item was removed from the scale, as it did not necessarily constitute a form of abuse and could have been interpreted in different ways by the respondents (i.e., “I sent him/her text messages on his/her cell phone to check up on him/her (where are you, what are you doing, who are you with”). The final 12 items of the cyber dating abuse perpetration scale were summed and for the purpose of data analyses dichotomized (17.8% engaged in cyber dating abuse perpetration; $n = 125$).

Substance use in the previous year

The substance use measure was adapted from previous research (Johnston, O'Malley, Bachman, & Schulenberg, 2012). Respondents were presented 9 substances and for each substance, the scale inquired whether respondents had used it in the past year (yes/no). Because the use of cocaine ($n = 27$; 3.9%), amphetamines ($n = 11$; 1.6%) and inhalants ($n = 10$; 1.4%) were not reported frequently, these substances were not included in subsequent analyses.

Sexual behaviors

Respondents reported on their prior engagement (yes/no) with sexual intercourse and, if positively endorsed, were asked the number of past year (since last survey) sexual partners (ranging on a scale from *1 person* to *6 or more people*). Participants were also asked (yes/no) if they used alcohol or drugs prior to engaging in sexual intercourse over the past year (ranging on a scale from 0 = *never* to 3 = *always*) (Centers for Disease Control and Prevention, 1995).

Deviant behaviors

Both questions about to deviant behavior were adapted from the YRBS. Respondents were asked ((yes/no)) whether they had *carried a weapon* “such as a gun, knife, or club” (Centers for Disease Control and Prevention, 1999). In a separate item, respondents were asked whether they had gotten into a *physical fight* in the past year, since the last survey (Centers for Disease Control and Prevention, 1995b).

Bullying victimization and *bullying perpetration* were measured by inquiring whether the respondents had been a victim of bullying or had engaged in bullying behavior in the year prior to the survey, on a scale ranging from 0 = *never* to 3 = *many times*. Adapted from Solberg & Olweus’ (2003) conceptualization, bullying was defined to the participants as “Bullying is, for example, when one or more persons repeatedly say or do nasty and unpleasant things to someone. For example, when others take away, destroy, or hide another person’s stuff or when others hit or push another person. The bullied person is usually unable to defend him/herself. It is not bullying when two people of about the same strength argue or fight.”

Self-reported health measures

Two items, adapted from the YRBS (Centers for Disease Control and Prevention, 2005) measured self-reported health. Respondents were asked how they evaluated their *physical health* as either 1) *better*, 2) *about the same*, or 3) *worse* than most teenagers their age. The participants also indicated whether they received *mental health treatment or counseling* in the year prior to the survey from a psychologist, psychiatrist, social worker, or counselor.

Control variables

Gender, age, race (African-American, Hispanic, White/Not Hispanic, or Other), perceived social economic status (SES) when growing up (poor ($n = 92$; 13.1%)/ average ($n = 479$; 68.1%)/ pretty well off ($n = 132$; 18.8%)), self-reported sexual orientation (recoded to “completely heterosexual” ($n = 554$; 80.6%) and “other” ($n = 133$; 19.4%)), living arrangement (living with both parents ($n = 305$; 43.4%) or other ($n = 398$; 56.6%)), and the frequency of social networking site use on an average day (from none to more than 6 hours) ($M = 1.69$; $SD = 1.08$) were also measured.

Analytic strategy

Using SPSS v 22.0 (IBM Corp., Armonk, NY), we used logistic regression analyses to examine the relationship between substance use, sexual behaviors, deviant behaviors, bullying victimization and perpetration, self-reported health, and cyber dating abuse perpetration. The perpetration of cyber dating abuse was treated as the dependent variable in all analyses with other variables serving as independent variables. The odds ratios (aOR) and confidence intervals (CI) are reported in Table 2 and are adjusted for gender, age, race, SES, sexual orientation, living arrangement, and the frequency of social networking site use. The relationships between the control and dependent variables are displayed in Table 1.

[PLEASE ADD TABLE 1 ABOUT HERE]

Results

Substance use

Youth who reported use of alcohol and cigarettes, and the misuse of over-the-counter and prescription medications were more likely to perpetrate cyber dating abuse relative to their non-substance using counterparts.

Sexual behaviors

Adolescents with a self-reported history of sexual intercourse, relative to those without such a history, had a higher likelihood of perpetrating cyber dating abuse. Similarly, students who used substances (alcohol or drugs) prior to having sexual intercourse were more likely to have perpetrated cyber dating abuse relative to those who had not used substances before having sexual intercourse. There was no significant association between number of past-year sexual partners and cyber dating abuse perpetration.

Deviant behaviors

Adolescents who reported bullying victimization or perpetration were more likely to have engaged in cyber dating abuse perpetration, but no significant associations emerged with respect to weapon carrying or involvement in physical fights.

Self-reported health

Youth who evaluated their physical health as worse than most teens their age were more likely to have engaged in cyber dating abuse perpetration, but there were no significant associations with respect to cyber dating abuse perpetration and the use of mental health counseling.

[PLEASE ADD TABLE 2 ABOUT HERE]

Discussion

To the best of our knowledge, this is one of the first studies to focus on the associations between cyber dating abuse perpetration, substance use, bullying victimization and perpetration, deviant behaviors, sexual behaviors, and self-reported health. Findings suggest that adolescent's engagement in certain risk behaviors might be indicative of, or a marker for their engagement in cyber dating abuse perpetration.

Our finding that youth who used substances had a higher likelihood of perpetrating cyber dating abuse builds on previous research that found an association between substance use and offline dating violence perpetration (Niolon et al., 2015; Schnurr & Lohman, 2008; Temple, Shorey, Fite, Stuart, & Le, 2013). As has been argued in the literature, (Temple, Stuart, & O'Farrell, 2009) this suggests that prevention efforts targeting dating violence and cyber dating abuse could also discuss adolescents' substance use, and that youth who use these substances might be a target group of prevention campaigns. Future studies could further investigate the role of substance use within cyber dating abuse perpetration, and whether substance use plays a role in lowering one's inhibitions to engage in abusive online behaviors.

Extending the research on the correlates of cyber dating abuse *victimization* (Dick et al., 2014; Zweig et al., 2014), our study found that sexual behavior, including risky sexual behavior, might be a marker for cyber dating abuse perpetration. Comprehensive sexual education interventions may benefit from discussing cyber dating abuse prevention and vice versa. Youth who had poorer perceived health had an increased likelihood of cyber dating abuse perpetration compared to other students. A possible explanation for this finding might be provided by the general strain theory, which posits that negative life events and stressors could lead to engagement in deviant behaviors, in this case, cyber dating abuse (Agnew, 2014). Given previous

research showing a relationship between poor subjective health and aggressive online behaviors (Låftman, Modin, & Östberg, 2013), future research could focus on how health and other strain (e.g., poor peer-relationships or financial strain) could impact adolescents' cyber dating abuse perpetration.

Contrary to studies finding a link between fighting and offline forms of dating violence perpetration (Cleveland, Herrera, & Stuewig, 2003; Ozer, Tschann, Pasch, & Flores, 2004), this relationship did not emerge in the current study. The fact that these two measures of delinquency were not independently related to the outcome measure, could suggest that the motivations of cyber dating abuse perpetrators might differ from those that engage in offline dating violence perpetration. Future research could investigate whether perpetrators of online types of dating abuse might be less likely to engage in offline, physical, forms of violence than youth who engage in offline forms of dating abuse.

However, similar to studies on traditional forms of dating violence (Connolly, Pepler, Craig, & Taradash, 2000; Foshee et al., 2014; Niolon et al., 2015), we did find that adolescents who were the victim or perpetrator of bullying were more likely to engage in cyber dating abuse perpetration than non-bullying/bullied youth. Coercive relationships with peers might be continued by these adolescents within their romantic relationships (Connolly et al., 2000), and bullying and dating abuse might share similar underlying factors (Foshee et al., 2014). Given the link between peer aggression and cyber dating perpetration, prevention efforts could include messages about the development of healthy peer relationships offline as well as online.

With respect to the control variables, gender differences did not emerge between engagement in cyber dating abuse perpetration. This is in contrast to Zweig et al. (2013) who found in their sample, that females were more likely to engage in non-sexual cyber dating abuse

perpetration than males, and that males were more likely to engage in sexual forms of cyber dating abuse perpetration. These equivocal findings with respect to gender differences warrant additional research. As opposed to research into other types of online risk behavior, such as engagement in sexting and cyberbullying, perceived lower social economic status was not significantly related to engagement in cyber dating abuse perpetration (Jang, Song, & Kim, 2014; Van Ouytsel, Van Gool, Ponnet, & Walrave, 2014). More research is needed to fully realize the role of social-economic status and financial stress in online risk behaviors. Adolescents who lived in a different family setting than a two parent household were also more likely to engage in cyber dating abuse perpetration. Future research could focus on how stressors and family situations (e.g., parental monitoring) are linked with engagement in cyber dating abuse perpetration. Among the demographic variables, adolescents' frequency of social networking site use was significantly linked to cyber dating abuse perpetration. This unsurprising findings is in line with a study on cyber dating abuse victimization by Van Ouytsel, Ponnet, and Walrave (2016) that found that frequent use of social networking sites was related to a higher chance of being victimized by digital controlling behaviors. Likewise, as Van Ouytsel et al. (2016) suggested, spending more time online might also confront the perpetrator with more online content that could elicit jealousy and subsequently cause abuse. Additional longitudinal research is needed to establish the causality of these relationships and to see whether the relationship between time spent online and cyber dating abuse perpetration resembles a dose-response effect.

Implications for school nurses

Findings indicate that 17.8% of respondents had engaged in cyber dating abuse perpetration. This prevalence was slightly higher than the 11.8% found in the Zweig et al. (2013)

study, which used the same items but with different response options. School nurses might have to act as first responders when an online or offline dating violence incident arises (Van Ouytsel, Walrave, Ponnet, & Temple, 2016). Together, with other school team members, school nurses can play an important role in the prevention and intervention of cyber dating abuse. School nurses should be cognizant of this relatively high prevalence, and that cyber dating abuse perpetration can be a marker of engagement in other risk behaviors and poor health outcomes, and vice versa. The results of the present study provide further evidence that online behaviors such as cyber dating abuse, should be a part of school climate surveys next to offline measures (Van Ouytsel et al., 2016). School nurses should be aware of the characteristics of cyber dating abuse perpetrators, and potentially underlying, health problems, such as bullying victimization, or poor perceived physical health. Moreover, as Van Ouytsel et al. (2016) suggested, school nurses could advocate the implementation of prevention and educational efforts in their schools. The remainder of the discussion includes suggestions for the development of such programs.

Limitations

This study is not without limitations, including the use of self-report to assess behaviors and the reliance on a regional school-based sample. As opposed to the original cyber dating abuse measure used by Zweig et al. (2013) which measured cyber dating abuse perpetration on a scale from 0) never to 3) very often, our survey provided dichotomous response options, which may have resulted in a loss of important information. Despite these limitations, findings provide valuable insight for school nurse practice and prevention, including the importance of incorporating information about substance use and healthy peer relationships within cyber dating abuse prevention efforts.

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Conflict of Interest: None

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Table 1: Control variables in relationship with the dependent variable.

Engaged in a form of cyber dating abuse perpetration		
Predictor	<i>B</i> (S.E.)	Exp (<i>B</i>) [95% CI]
Constant	-3.39 (2.59)	.03
Gender (<i>female</i>)	-.33 (.21)	.72 [.47 – 1.10]
Age	-.01 (.14)	.99 [.75 – 1.30]
Sexual Orientation	.26 (.25)	1.30 [.80 – 2.10]
Race	.06 (.07)	1.06 [.92 – 1.22]
Social economic status	.16 (.18)	1.18 [.82 – 1.69]
Living arrangement	.68 (.22)	1.98 [1.28 – 3.06]**
Self-reported use of social networking sites	.19 (.09)	1.20 [1.00 – 1.45]*

* $p \leq .05$; ** $p \leq .01$

	Did not engage in a form of cyber dating abuse perpetration		Engaged in a form of cyber dating abuse perpetration		aOR [95% CI]
Variables	Frequency	% / M [SD]	Frequency	% / M [SD]	
Sexual behaviors					
Ever had sexual intercourse					
<i>No</i>	129	22.3%	15	12.0%	2.15 [1.18 – 3.93]*
<i>Yes</i>	449	77.7%	110	88.0%	
Amount of sexual partners in the past year	425	<i>M</i> = 2.11, <i>SD</i> = 1.47	105	<i>M</i> = 2.29, <i>SD</i> = 1.39	1.10 [.94 – 1.28]
Taking alcohol or drugs before having sex in the year prior to the survey	426	<i>M</i> = .79, <i>SD</i> = .87	106	<i>M</i> = 1.03, <i>SD</i> = .95	1.32 [1.03 – 1.70]*
Substance use in the past year					
Alcohol (more than just a few sips)					
<i>No</i>	174	30.2%	25	20.0%	1.67 [1.03 – 2.72]*
<i>Yes</i>	402	69.8%	100	80.0%	
Cigarettes (more than just a puff)					
<i>No</i>	444	77.2%	84	67.2%	1.77 [1.13 – 2.78]**
<i>Yes</i>	131	22.8%	41	32.8%	
Marijuana					
<i>No</i>	331	57.6%	60	48.0%	1.41 [.93 – 2.13]
<i>Yes</i>	244	42.4%	65	52.0%	
Over the counter cold or cough medicine with the intent of getting high					
<i>No</i>	537	93.4%	110	88.0%	2.28 [1.13 – 4.63]*
<i>Yes</i>	38	6.6%	15	12.0%	
Ecstasy (MDMA, X, XTC, E)					
<i>No</i>	538	93.7%	113	90.4%	1.41 [.67 – 2.95]
<i>Yes</i>	36	6.3%	12	9.6%	
Prescription medications that weren't prescribed by a health professional					
<i>No</i>	518	90.1%	100	80.0%	2.44 [1.41 – 4.24]**
<i>Yes</i>	57	9.9%	25	20.0%	
Health					
Self-reported physical health					
<i>Better than most teens your age</i>	209	37.1%	30	24.2%	RG 1.32 [.81 – 2.16] 5.79 [2.89 – 11.60]***
<i>About the same as teens your age</i>	326	57.8%	69	55.6%	
<i>Worse than most teens your age</i>	29	5.1%	25	20.2%	
Mental-health counseling in past year					
<i>No</i>	492	91.3%	102	86.4%	1.42 [.75 – 2.69]
<i>Yes</i>	47	8.7%	16	13.6%	
Deviant behaviors					
Bullying victimization	567	<i>M</i> = 1.28, <i>SD</i> = .60	124	<i>M</i> = 1.49, <i>SD</i> = .73	1.53 [1.16 – 2.03]**
Bullying perpetration	567	<i>M</i> = 1.22,	124	<i>M</i> = 1.41,	1.75 [1.28 – 2.38]***

	<i>SD</i> = .53		<i>SD</i> = .67		
Weapon carrying					
<i>No</i>	367	82.8%	72	78.3%	1.46 [.81 – 2.65]
<i>Yes</i>	76	17.2%	20	21.7%	
Involvement in a physical fight					
<i>No</i>	356	80.4%	67	72.8%	1.52 [.88 – 2.62]
<i>Yes</i>	87	19.6%	25	27.2%	

Table 2: Associations between substance use, sexual behaviors, self-reported health, involvement in deviant behaviors, and cyber dating abuse.

The sample size for each model varies due to missing data.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$;

CI = Confidence Interval; RG = Reference Group; aOR = Odds Ratio adjusted for gender, age, race, social economic status, sexual orientation, living arrangement, and the self-reported use of social networking sites