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EMPIRICAL RESEARCH

The Rate of Cyber Dating Abuse Among Teens and How It Relates to Other Forms of Teen Dating Violence

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Abstract To date, little research has documented how teens might misuse technology to harass, control, and abuse their dating partners. This study examined the extent of cyber dating abuse—abuse via technology and new media—in youth relationships and how it relates to other forms of teen dating violence. A total of 5,647 youth from ten schools in three northeastern states participated in the survey, of which 3,745 reported currently being in a dating relationship or having been in one during the prior year (52 % were female; 74 % White). Just over a quarter of youth in a current or recent relationship said that they experienced some form of cyber dating abuse victimization in the prior year, with females reporting more cyber dating abuse victimization than males (particularly sexual cyber dating abuse). One out of ten youth said that they had perpetrated cyber dating abuse, with females reporting greater levels of non-sexual cyber dating abuse perpetration than males; by contrast, male youth were significantly more likely to report perpetrating sexual cyber dating abuse. Victims of sexual cyber dating abuse were seven times more likely to have also experienced sexual coercion (55 vs. 8 %) than were non-victims, and perpetrators of sexual cyber dating abuse were 17 times more likely to have also perpetrated sexual coercion (34 vs. 2 %) than were non-perpetrators. Implications for practice and future research are discussed.

Keywords Teen dating violence · Cyber dating abuse · Victimization · Perpetration

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Introduction

The term “teen dating violence” encompasses varying levels and types of abuse that can range from physical and sexual violence to forms of psychological and emotional abuse occurring between teens who are in dating/romantic relationships with one another (Mulford and Giordano 2008). Recent advancements in technology (e.g., social networking, texting on a cellular phone) have created new ways for people to relate to one another socially, and new tools for those involved in dating violence to harass, control, and abuse their partners. Despite growth in the adolescent dating violence and abuse literature over the past two decades, critical questions remain unanswered as to the role of new technologies in these experiences for victims and perpetrators. The goal of this article is to expand knowledge about the extent of youth victimization and perpetration via technology and new media within dating relationships and to understand how this type of cyber dating abuse might relate to other forms of teen dating violence, such as psychological abuse, physical violence, and sexual coercion.

Youths’ daily activities and social worlds revolve around new media practices such as using cell phones, engaging in instant messaging, watching and creating online videos, and connecting to social networking websites (Rideout et al. 2005). Based on data from a nationally representative sample of 799 youth, most youth ages 12–17 have cell

phones (77 %; Lenhart 2012) and 95 % of youth ages 12–17 are online (Lenhart et al. 2011). In addition, wireless access impacts teens' Internet use, since more than 25 % of teens report using their cell phone to go online (Lenhart et al. 2010). Social networking is key to teen's media use: 80 % of youth ages 12-17 report using social networking sites (e.g., Facebook, MySpace) and many report using such sites daily (Lenhart et al. 2011). Given the high frequency at which youth use technology, it is not surprising that technology use plays an important role in how youth interact with dating partners, and that these interactions may not always be positive (Picard 2007). Further, the ability to be in constant contact with a dating partner via these relatively new technologies may contribute to someone's ability to stalk, control, harass, and abuse their partners.

Nationally representative data on youth show the majority who use social media (69 %) report that other youth are mostly kind to one another on social networking sites (Lenhart et al. 2011); however, and notably for the purposes of this study, another 20 % of youth who use social media say that their peers are mostly unkind to others via this technology. Further, 88 % of youth reported having observed other teens being mean or cruel on social networking sites, and 12 % said they observed this behavior frequently. Fifteen percent reported that they were the victim of cruelty through social media in the 12 months prior to being surveyed (Lenhart et al. 2011). Further, 25 % of teens on social media reported having an experience resulting in a face-to-face confrontation with someone, 13 % reported concern about having to go to school the next day, and 8 % reported having actually had physical altercations with someone because of something that occurred on a social network site (Lenhart et al. 2011). Thus, technology—and social media in particular—is one avenue by which teens might treat one another poorly, and on-line exchanges can have implications for in-person interactions.

Many researchers also have examined the role of technology in bullying between peers. For example, Lenhart et al. (2011) found that 19 % of the 799 teens surveyed in their nationally representative study had been bullied in the past year, of which 12 % were bullied in person, 9 % were bullied via text message, 8 % were bullied online (through e-mail, instant messaging, or a social networking site), and 7 % had been bullied through phone calls (Lenhart et al. 2011). Juvonen and Gross (2008) also examined the extent of cyber bullying among peers. They used an anonymous web-based survey to collect data from 1,454 youth ages 12–17, and found that about three-quarters of respondents said that they had experienced at least one incident of online bullying (72 %). The researchers also found that heavy Internet use (more than 3 h a day) significantly increased the likelihood of cyber bullying, almost sevenfold, while heavy use of webcams (1–2 times per week) and message boards (almost every day) increased the likelihood of repeated cyber bullying. Overall, half of the students said that they were cyber bullied by a schoolmate, 43 % by someone they knew from online, and 20 % by someone they knew offline but not from school. Thus, technology also plays a key role in bullying behavior.

Cyber Abuse Within Teen Dating Violence

While more is known about youth's use of technology in general and cyber bullying among teens, less is known about the extent to which teens experience dating violence via technology (cyber dating abuse). Draucker and Martsolf (2010) conducted a qualitative study with 56 participants to examine the role of electronic communications in dating violence and abuse. Their study highlights the myriad ways that youth can use technology to abuse their partners. Specifically, they found eight ways in which partners used electronic communications, the last six of which were related to violence, abuse, or controlling behaviors: (1) establishing a relationship; (2) nonaggressive communication; (3) arguing; (4) monitoring the whereabouts of a partner or controlling their activities; (5) emotional aggression toward a partner; (6) seeking help during a violent episode; (7) distancing a partner's access to self by not responding to calls, texts, and other contacts via technology; and (8) reestablishing contact after a violent episode. Poignant qualitative narrative from this study provided examples of cyber abuse, such as a male hacking into his partner's Facebook account, reading all of the messages she had ever received or posted, and then making her explain to him each one. Another example involved one partner creating a "hate" website about their former partner and allowing others to post to it with similarly nasty insults. Based on this work, we can see that individuals might use technology in several ways to control and abuse their dating partners.

An additional study sheds further light on the nature of the behaviors that make up cyber dating abuse. Conducted in 2006, 615 teens age 13–18 from around the country participated in a study conducted by Teen Research Unlimited, commissioned by Liz Claiborne, Inc. (Picard 2007). The findings showed that youth are both victims and perpetrators of abuse through technological devices; however, details of the findings only were released regarding victimization experiences. More specifically, 25 % of youth reported having been called names, harassed, or put down by their partner via cell phone and texting; 22 % reported having been asked by cell phone or the Internet to do something sexual they did not want to do; 19 % reported that their partner used a cell phone or the Internet to spread rumors about them; 18 % reported that their partners used a social networking site to harass them or put them down; 11 % reported that their partner shared private or embarrassing

pictures or videos of them; 17 % reported that they were made to feel afraid of what their partner might do if they did not respond to their partner's cell phone call, e-mail, instant message, or text message; and 10 % reported being physically threatened by their partner through an e-mail, instant message, or text message. Both this study and the study by Draucker and Martsolf (2010) indicate that cyber dating abuse is an issue in teen dating relationships.

There have been two additional studies assessing the prevalence of cyber abuse in teen dating relationships conducted by RTI International (2012). For middle school youth, nearly a third of students (31.5 %) reported being a victim of electronic dating aggression and nearly one-fifth (18.4 %) reported being a perpetrator (Cutbush et al. 2012). For ninth grade youth, over half (56.0 %) reported electronic dating aggression and nearly a third (29.4) reported perpetrating these behaviors (Cutbush et al. 2010). In this study, females were more likely to report electronic dating abuse victimization than males.

Prevalence of Other Forms of Teen Dating Violence and Abuse

It is not clear whether cyber dating abuse among teens happens in isolation of other forms of dating violence such as physical violence and sexual coercion—which have been well-documented for nearly two decades—or whether cyber dating abuse exists alongside these other behaviors in the context of an abusive relationship. Past studies have shown that rates of other forms of dating violence and abuse vary based on the samples included in studies and on how questions are asked. Among studies of high school youth, estimates of how many youth are victims of dating violence range widely. Using a single question to assess physical dating violence, asking about ever having been hit, slapped or physically hurt on purpose by a partner, the nationally representative, biennial Youth Risk Behavior Surveys indicate that between 9 and 10 % of youth report experiencing physical dating violence in each survey year since 1999, with 9 % of both boys and girls reporting such violence in 2011 (Centers for Disease Control and Prevention 2012). Other national studies have included a greater number of questions, albeit still limited, and found higher rates of dating violence. Data from the nationally representative Commonwealth Fund Survey of the Health of Adolescent Boys and Girls show that about 17 % of girls and 9 % of boys reported dating violence and abuse victimizations, using a limited definition of such acts including having been threatened to be hurt, actually physically hurt, or forced to have sex when they did not want to (Ackard et al. 2003). Less is known about dating violence experiences among middle school youth. A recent study conducted by RTI International (2012) found that among nearly 1,500 seventh grade students in eight middle schools, 37 % reported being a victim of psychological dating abuse in the 6 months prior to data collection and 15 % reported being a victim of physical dating violence. Regardless of the measures used or the sample included, studies consistently find significant numbers of dating youth are reporting dating violence.

As is true for cyber dating abuse (Cutbush et al. 2010, 2012), far fewer youth report perpetrating other dating violence behaviors than having been a victim of them, and the relevant literature also indicates conflicting levels of violence and abuse perpetration by gender. In some studies of adolescents, more boys than girls report sustaining physical violence and abuse from partners, and more girls than boys report perpetrating these behaviors with partners (O'Leary et al. 2008). However, in many studies, adolescent girls were more likely to report being sexually victimized by partners than boys. Young et al. (2009a) found that 26 % of high school boys and 53 % of high school girls were victims of sexual assault, and that only 8 % of males and 4 % of females reported perpetrating such acts. Thus, past literature shows that both boys and girls report greater levels of victimization than perpetration, that boys report more physical victimization than girls, and that girls report more sexual victimization than boys.

Several other studies have shown adolescent dating violence to be reciprocal, meaning that both partners engaged in violence and abuse perpetration toward one another (see e.g., Fergusson et al. 2008; O'Leary et al. 2008; Renner and Whitney 2010). O'Leary et al. (2008) found that among their sample of 2,363 youth in seven high schools, whenever physical violence occurred between dating partners, it typically was perpetrated by both partners. Although these studies show reciprocal violence, most do not distinguish between offensive versus defensive violence, or between the frequency and severity of violence being perpetrated.

Research Questions and Hypotheses

To further inform the field about rates of cyber dating abuse and how these experiences relate to other forms of dating violence, this study is guided by five research questions that we examine across all dating youth and then for males and females separately. Because almost all (98 %) of the teen relationships youth described herein involved male–female dyads, we explore dating violence and abuse between males and females in depth. First, within their dating relationships, how often do youth experience cyber dating abuse victimization and does this differ from the extent to which they experience other psychologically abusive experiences, sexual coercion, and physical violence? Second, to what

extent do cyber dating abuse victims also experience other forms of teen dating violence; that is, what is the co-occurrence of these experiences? Third, within their dating relationships, how often do youth perpetrate cyber dating abuse and does this differ from the extent to which they perpetrate other psychological abuse, sexual coercion, and physical violence? Fourth, to what extent do cyber dating abuse perpetrators also perpetrate other forms of teen dating violence; that is, what is the co-occurrence of perpetrating these behaviors? Fifth, is cyber dating abuse primarily reciprocal between partners?

Although the extent to which youth report cyber dating abuse is largely an unanswered question, we hypothesize that rates of cyber dating abuse will differ from rates of other forms of psychological abuse, physical violence, and sexual coercion as per findings from the RTI International studies (2012; Cutbush et al. 2012). Based on Cutbush et al.s' (2010) previous work, we hypothesize that more females than males will report cyber dating abuse victimization and more females than males will report perpetrating it. Based on our understanding of the nature of dating violence in general (Mulford and Giordano 2008), we anticipate that cyber dating abuse will overlap with other forms of dating violence such as physical violence and sexual coercion. However, the extent to which these behaviors co-occur remains unclear. Finally, based on past research in the dating violence field more generally that identifies both dating partners as being violent toward one another (e.g., O'Leary et al. 2008), we hypothesize that some proportion of cyber dating abuse will be reciprocal among partners.

Methods

Design

This study employed a cross-sectional, research design with a large-scale survey of 7th to 12th grade youth using a convenience sampling of schools in the northeastern U.S. We recruited schools that were willing to allow access to youth on a single school day to conduct a survey about sensitive topics; yielded a sample size large enough to examine the issues of interest, given that only a portion of any sample would report such experiences; and provided some diversity. The study included 10 schools across five districts in New York, Pennsylvania, and New Jersey. All New Jersey schools in the sample were in suburban areas, all New York schools were in rural areas, and all Pennsylvania schools were in small cities. Like many districts, each had some type of anti-bullying programming in their middle and high schools and some of these programs also had an anti-teen dating violence and abuse component.

Procedure

The survey was anonymous and administered via paper–pencil procedures. It was developed and piloted by a group of 8th grade (n = 11) and 12th grade (n = 12) students in one New York district. Students completed both the survey and a feedback form, indicating what survey changes they would recommend and what questions/instructions were unclear. Surveys were revised based on this feedback. Survey completion ranged from 12 to 36 min.

In terms of survey procedure, the institutional review board approved a two-stage consent process: passive parental consent and informed assent for students. Eight schools mailed home letters and two schools e-mailed letters authored by the Principal Investigators to all the parents; describing the purpose of the study and survey content, noting that the data would be anonymous and not linked to their children's names or other personally identifying information, and informed them of the rights their children had as participants in the study. Parents could review a copy of the survey in the school's main office or the office of the school psychologist or counselor. If parents did not want their child to participate in the survey, they were instructed to call a toll-free 1–800 number. To ensure that students were properly consented, survey administrators gave each student a form listing their rights as participants in the study (e.g., being able to skip a question if they chose to) and reviewed it with them prior to the survey. A student's willingness to start the survey was their implied assent to participation in the study.

In the days prior to survey administration, the Principal Investigators trained the teachers in each school on survey administration procedures, including the proper protocols that needed to be in place in terms of confidentiality (e.g., youth would be taking one of three different versions of the survey so that classmates would not be able to know what questions each other were answering based on page number), collecting surveys (e.g. youth placed their own completed surveys into the provided envelopes and sealed them), and distressed respondent protocols (e.g., referral to appropriate school and research personnel).

The survey was administered on a single day at each school, included the census of youth attending school on that day, and was conducted during one class period. In eight of the ten schools, the survey was administered during first period; thus, all students in the school took the survey simultaneously. In the other two schools, the survey was administered during English class throughout the day. At the completion of the survey each student was given a business-size card that included contact information for local domestic violence and sexual assault service providers, as well as the national domestic violence, sexual assault, and suicide prevention hotlines. Members of the research team went to students' classrooms to collect surveys directly from teachers.

Sample

Response rates from schools were calculated by documenting the number of students made available to the research team, the number who were reported absent on the date of survey administration, the number who refused to take the survey, the number whose parents opted them out of the survey, and the number of students surveys removed from the data during the data entry and cleaning process due to irregularities in the answering of questions that indicated they were not completed in a serious manner. Response rates ranged from 70 to 94 % of the school's student population, with an overall response rate of 84 % and a total of 5,647 valid completed surveys. Nine percent of the non-response was due to student absenteeism, 3 % was due to parent refusal, 1 % was due to student refusal, and 4 % was due to surveys being removed for irregularities. Of the final valid sample of youth, 3,745 reported currently being in a dating relationship or having been in one during the prior year.

Table 1 presents the sample characteristics of all students in a current or recent relationship who completed a valid survey. Fifty-two percent of the sample is female and 47 % is male, with 94 % identifying as heterosexual. Eighteen students in the sample of those in relationships identified as transgender and 3 did not report a gender. These youth are included in the total sample of relationship youth but not in the male and female columns. Sixty-four percent of youth reported living with both parents. Approximately 26 % of the sample identified as non-White, and 18 % reported that neither parent had received a college education. Notably, a high portion of youth (28 %) did not know or did not state their parents' highest level of educational attainment. As shown in the table, although a majority of the sample was White and of medium to high income status, sizeable portions of the sample also represented lower income and minority youth.

Table 1 Sample characteristics

Measure	Total (%) (N = 3,745)	Males (%) (N = 1,768)	Females (%) (N = 1,956)
High school	90.6	90.3	90.8
Middle school	9.4	9.7	9.2
Race			
Caucasian/White	73.7	73.6	74.3
African American/Black	5.0	6.1	4.0
Hispanic/Latino(a)	8.2	7.8	8.5
Asian	2.2	2.2	2.1
Native American	0.7	0.7	0.6
Mixed race	10.2	9.6	10.5
Sexual orientation			
Heterosexual/straight	93.8	96.5	91.9
Lesbian/gay/bisexual/transgender/questioning/queer/other	6.2	3.5	8.1
Living situation			
Both parents	64.0	66.6	61.9
One parent	29.1	26.3	31.8
Other relatives (not incl. grandparent)	2.5	2.0	3.0
Other guardian	0.5	0.5	0.4
Friend(s)/significant other	1.7	1.6	1.5
Parent(s) highest education			
College or higher	54.4	56.0	53.2
High school or less	18.3	15.7	20.4
Don't know/missing response	27.3	28.3	26.3

Measures

As a precursor to questions about teen dating violence and abuse, all respondents were asked if they were currently in a romantic relationship or had been in the past year. Romantic relationship was defined as that with "a boyfriend or girlfriend, someone you have dated or are currently dating (e.g. going out or socializing without being supervised), someone who you like or love and spend time with, or a relationship that might involve sex." Respondents who said they were or had recently been in a romantic relationship were then asked a series of questions about their current or most recent partner, including those regarding four types of teen dating violence and abuse: cyber dating abuse, physical dating violence, other psychological dating abuse, and sexual coercion. The generic category of questions under other psychological dating abuse did not distinguish between psychological abuse that occurred in person and that which might have occurred via technology. However, when these measures were developed, technology was not as advanced as it is today, so cyber dating abuse was not something to distinguish. Thus, we distinguish between these two forms of abuse.

Cyber Dating Abuse

Respondents who reported currently being in a dating relationship or being in a dating relationship within the past year were asked 16 questions relating to cyber dating abuse by their current or most recent partner, six of which were adapted from Picard (2007) and 10 of which were created for the purposes of the current study; however, we examined a cyber bullying scale (Griezel 2007) to guide this process and adapted several items from that work. All 16 questions were asked twice: the first time to capture

victimization experiences during the prior year and the second time to capture perpetration behaviors during the same time period. Response options were (0) never, (1) rarely, (2) sometimes, and (3) very often. Two subscales of cyber dating abuse with current and recently former partners were then developed: sexual cyber abuse and non-sexual cyber abuse. Sexual cyber abuse items (4 items; $\alpha = .810$ for victimization and $\alpha = .885$ for perpetration) included pressuring partners to send sexual or naked photo of themselves, sending partners sexual or naked photos of him/herself that s/he knew the partner did not want, threatening partners if they did not send a sexual or naked photo of themselves, and sending text messages, email, IM, chats, etc., to have sex or engage in sexual acts with him/her when he/she knew the partner did not want to. Examples of non-sexual cyber abuse items (12 items; $\alpha = .891$ for victimization and $\alpha = .923$ for perpetration) included sending threatening text messages to partners, using partner's social networking account without permission, taking a video of partners and sending it to friends without permission, sending partners so many messages (like texts, e-mails, chats) that it made them feel unsafe, threatening to harm the partner physically using a cell phone, text message, social networking page, etc., and writing nasty things about partners on his/her profile page (e.g., on Facebook, MySpace, etc.).

Physical Dating Violence

Respondents in a current or recent dating relationship were asked questions about physical dating violence in the prior year using a scale developed and validated by Foshee (1996). The scale measured three types of abuse: mild physical violence (3 items; $\alpha = .723$ for victimization and $\alpha = .745$ for perpetration), moderate physical violence (5 items; $\alpha = .775$ for victimization and $\alpha = .753$ for perpetration), and severe physical violence (6 items; $\alpha = .854$ for victimization and $\alpha = .859$ for perpetration). All 14 items were asked in two separate series of questions to asses both victimization experiences and perpetration behaviors. Response options for these questions were: (0) never happened, (1) happened 1–3 times, (2) happened 4–9 times, and (3) happened 10 or more times. Examples of mild violence include scratching and slapping; examples of moderate violence include kicking, biting, twisting arms, and slamming and holding against walls; and examples of severe violence include choking, burning, hitting with a fist, and assaulting with a knife or gun.

Psychological Dating Abuse

Respondents who were in a current or recent dating relationship were asked generic questions about other psychological dating abuse in the prior year, based on control and fear measures adapted from the Michigan Department of Community Health's (MCH 1997) and the Canadian Housing, Family, and Social Statistics Division's (1999) studies, as well as Foshee's (1996) psychological abuse scales. These questions did not distinguish between psychological abuse that had occurred in person and that which might have occurred via technology, though they were originally developed without the technological aspect being a part of youth's lives as it is today. Items from these scales were combined into four psychological dating abuse subscales based on Foshee's (1996) conceptualization of these behaviors: threatening behaviors (4 items; $\alpha = .731$ for victimization and $\alpha = .630$ for perpetration), monitoring (6 items; $\alpha = .885$ for victimization and $\alpha = .831$ for perpetration), personal insults (4 items; $\alpha = .804$ for victimization and $\alpha = .723$ for perpetration), and emotional manipulation and fear (7 items; $\alpha = .852$ for victimization and $\alpha = .760$ for perpetration). All 21 items were asked for both victimization experiences and perpetration behaviors. Response options were (0) never, (1) rarely, (2) sometimes, and (3) very often. Examples of threatening behaviors include damaging something that belonged to the partner or threatening to hurt the partner. Examples of monitoring behavior include not letting the partner do things with others, telling the partner they could not talk to people of the gender that he/she dates, and trying to limit contact with family and friends. Examples of personal insults include insulting the partner in front of friends and calling the partner names to put them down or make them feel bad. Examples of emotional manipulation include making the partner feel unsafe or uneasy when they spend time alone together, threatening to start dating someone else, making the partner feel owned or controlled, and making the partner feel afraid to tell others the truth.

Sexual Coercion

Again focusing on respondents who were in a current or recent dating relationship, we asked questions about experiences of sexual coercion and unwanted sexual intercourse in the prior year. The sexual coercion measure included two items from Foshee's (1996) physical abuse scale (being forced to have sex and forced to do sexual things that person did not want to), one from Zweig et al.s' (2002) scale measuring unwanted sexual intercourse (having sexual intercourse when person did not want to), and one additional item from Zweig et al. (1997; being pressured to have sex). The item from Zweig et al. (2002) was only included in the victimization scale; all other items were included in the perpetration measure as well. Response options for Foshee's (1996) items and Zweig et al.s' (1997) item were: (0) never happened, (1) happened 1–3 times, (2) happened 4–9 times, and (3) happened 10 or

more times. The item from Zweig et al.s' (2002) scale was a binary measure with yes (1) and no (0) response options. Measures of internal consistency were acceptably high for both scales: $\alpha = .737$ for victimization and $\alpha = .723$ for perpetration.

Results

Teen Dating Violence and Abuse Victimization

Table 2 shows the prevalence of dating violence and abuse victimization among teens in a current or recent relationship, and for males and females separately. Within their dating relationships, more than one out of four youth reported being victims of cyber dating abuse (26 %) in the past year. The most frequently reported form of cyber abuse was a romantic partner's use of a youth's social networking account without permission; nearly one out of ten youth (9 %) in a relationship said this happened in the prior year. The next most frequently reported items were forms of sexual cyber abuse: 7 % of youth said their partner had sent them texts/emails to engage in sexual acts the respondent did not want, and 7 % said their partner had pressured them to send a sexual/naked photo of themselves. The fourth and fifth most commonly reported forms of cyber dating abuse, each of which was reported by 6 % of youth in a relationship, dealt with threatening text messages from youth's partners and an intimidating amount of texts/emails from one's partner that made youth feel unsafe.

With regard to gender differences, surveyed female youth reported higher victimization rates for all but one type of teen dating violence/abuse. For cyber dating abuse specifically, female youth in a current/recent relationship were more likely to report being victims than males (29 and 23 %, respectively). Females were twice as likely as males to experience sexual cyber dating abuse (15 %, compared to 7 % for males), and they were more likely to experience non-sexual cyber dating abuse (23 %, compared to 21 % for males; the difference approached significance at $p < .10$). Physical dating violence was the only type of teen dating violence/abuse for which male teens reported significantly higher rates of victimization than did females. More than a third of male youth reported physical dating violence victimization, compared to a quarter of female youth. Notably, male youth were more likely to report victimization of all types of physical dating violence, including severe physical violence and moderate physical violence, but the difference was most pronounced for mild physical violence, for which the male victimization rate was nearly twice that reported by females. Notably, although most gender differences were statistically significant, nearly half yielded odds ratios corresponding to medium level effect sizes (Cohen 1988); the other half could be characterized as small effects. The medium effects were those for which the χ^2 values shown are largest; specifically, they represent gender differences in victimization rates for sexual cyber dating abuse, physical dating violence—particularly, mild physical violence, emotional manipulation/fear, and sexual coercion.

Tables 3 and 4 document the high degree of overlap between reports of cyber dating abuse victimization—sexual and non-sexual—and other forms of dating violence victimization. Victims of sexual cyber dating abuse are significantly more likely than non-victims of sexual cyber abuse to report non-sexual cyber dating abuse, physical violence, other psychological abuse, and sexual coercion from the same partner during the same time period. Similarly, victims of non-sexual cyber dating abuse are significantly more likely than those who are not victims of non-sexual cyber

Table 2 Percent of teens in a relationship reporting dating violence and abuse victimization

	Total (%) (N = 3,745)	Male (%) (N = 1,768)	Female (%) (N = 1,956)	χ^2
Cyber dating abuse	26.3	23.3	28.8	13.646***
Sexual cyber abuse	11.2	7.2	14.8	51.565***
Non-sexual cyber abuse	22.2	20.9	23.2	2.779†
Physical dating violence	29.9	35.9	23.9	63.860***
Severe physical violence	6.9	8.3	5.2	14.130***
Moderate physical violence	23.2	26.2	20.0	20.050***
Mild physical violence	21.6	28.5	15.1	97.210***
Psychological dating abuse	47.2	44.2	49.7	11.255**
Threatening behavior	17.4	17.6	16.9	0.372
Monitoring behavior	31.7	28.7	34.3	13.452***
Personal insults	21.1	18.6	23.1	11.405**
Emotional manipulation/fear	34.2	27.6	39.9	60.830***
Sexual coercion	13.0	8.8	16.4	47.737***

Subtypes of violence and abuse are not mutually exclusive. For example, youth who experienced both severe and moderate physical violence show up in both prevalence rates

Valid, non-missing data on measures in this table were present for 94–99 % of respondents

† $p < .10$; ** $p < .01$; *** $p < .001$

Table 3 Percent of sexual cyber dating abuse victims reporting other forms of dating violence and abuse

	Sexual cyber dating abuse victimization (%) (N = 403)	No sexual cyber dating abuse victimization (%) (N = 3,185)	χ^2
Non-sexual cyber abuse	63.4	17.0	445.973***
Physical dating violence	54.3	26.8	128.054***
Psychological dating abuse	85.8	42.5	268.078***
Sexual coercion	55.1	7.8	696.248***

Valid, non-missing data on measures in this table were present for 95–96 % of respondents

*** $p < .001$

Table 4 Percent of nonsexual cyber dating abuse victims reporting other forms of dating violence and abuse

	Nonsexual cyber dating abuse victimization (%) (N = 797)	No nonsexual cyber dating abuse victimization (%) (N = 2,794)	χ^2
Sexual cyber abuse	32.0	5.3	445.973***
Physical dating violence	54.3	22.9	290.855***
Psychological dating abuse	86.1	36.2	616.709**
Sexual coercion	30.9	8.0	283.333***

Valid, non-missing data on measures in this table were present for 95–96 % of respondents

** $p < .01$; *** $p < .001$

abuse to report other forms of teen dating violence and abuse. Across both tables, the greatest degree of overlap occurs between sexual cyber abuse victims and victims of sexual coercion. Specifically, those who experience sexual cyber dating abuse report rates of sexual coercion that are seven times higher than that for non-victims of sexual cyber abuse (55 %, compared to 8 %).

Teen Dating Violence and Abuse Perpetration

Table 5 shows the prevalence rates of dating violence and abuse perpetration for all youth in a relationship and for males and females separately, with the last column showing the statistical significance of gender variation. In contrast to the share who previously reported cyber abuse victimization, half as many youth said they had perpetrated cyber abuse against their romantic partner. As shown, just over one in ten youth in a relationship reported perpetrating cyber dating abuse (12 %) against a partner in the prior year. As with cyber dating victimization, the most frequently reported form of perpetration was use of a romantic partner's social networking account without permission (6 %). The next most frequently reported items were writing nasty things about one's partner online (3 %) and posting embarrassing photos of one's partner online (2 %).

Despite the fact that more female than male youth had reported being *victims* of cyber dating abuse and psychological dating abuse, females were also significantly more likely than males to report *perpetrating* these types of teen dating violence and abuse. With regard to cyber dating abuse subtypes, although females were more likely to report non-sexual cyber dating abuse (13 %, compared to 7 % of males), male youth were significantly more likely to report having perpetrated sexual cyber dating abuse (4 %, compared to 2 % for females). Females were also more likely than males to report perpetrating physical dating violence. Only with regard to sexual coercion did a significantly higher share of male than female youth report perpetration. Four percent of males, compared to 1 % of females, said they had perpetrated sexual coercion against a partner in the prior year. Lastly, we note that the same gender differences that showed medium level effects for victimization also showed medium level effects with regard to perpetration rates. These differences are those for which the χ^2 values are largest; specifically, that for sexual cyber dating abuse, physical dating violence—particularly, mild physical violence, emotional manipulation/fear, and sexual coercion.

Tables 6 and 7 document the high degree of overlap between cyber dating abuse perpetration—sexual and non-sexual—and other forms of dating violence perpetration. Perpetrators of sexual cyber dating abuse are significantly more likely than non-perpetrators of sexual cyber abuse to report non-sexual cyber dating abuse, physical violence, other psychological abuse, and sexual coercion against the same partner during the same time period. Similarly, perpetrators of non-sexual cyber dating abuse are significantly more likely than those who do not perpetrate non-sexual cyber abuse to report other forms of teen dating violence and abuse perpetration. Across both tables, one of the greatest degrees of overlap occurs between perpetration of sexual cyber abuse and sexual coercion. Specifically, those who perpetrate sexual cyber dating abuse also report perpetration of sexual coercion at a rate that is 17 times higher than that for non-perpetrators of sexual cyber abuse (34 %, compared to 2 %).

Table 5 Percent of teens ion a relationship reporting dating violence and abuse perpetration

	Total (%) (N = 3,745)	Male (%) (N = 1,768)	Female (%) (N = 1,956)	χ^2
Cyber dating abuse	11.8	9.3	13.9	18.011***
Sexual cyber abuse	2.7	3.8	1.6	15.427***
Non-sexual cyber abuse	10.5	7.4	13.0	29.338***
Physical dating violence	20.5	14.4	25.5	67.283***
Severe physical dating violence	4.6	2.5	6.3	30.205***
Moderate physical dating violence	13.5	9.9	16.4	32.005***
Mild physical dating violence	16.4	10.0	21.8	89.627***
Psychological dating abuse	25.7	18.8	31.7	76.045***
Threatening behavior	8.9	6.5	10.9	21.577***
Monitoring behavior	15.0	11.0	18.3	36.423***
Personal insults	10.3	7.0	12.9	33.582***
Emotional manipulation/fear	14.7	9.7	19.0	60.570***
Sexual coercion	2.6	3.9	1.2	26.471***

Subtypes of violence and abuse are not mutually exclusive. For example, youth who perpetrated both severe and moderate physical violence show up in both prevalence rates

Valid, non-missing data on measures in this table were present for 94–95 % of respondents

*** $p < .001$

Table 6 Percent of sexual cyber dating abuse perpetrators reporting other forms of dating violence and abuse perpetration

	Sexual cyber dating abuse perpetration (%) (N = 96)	No sexual cyber dating abuse perpetration (%) (N = 3,444)	χ^2
Non-sexual cyber abuse	51.6	9.4	175.028***
Physical dating violence	43.0	19.7	30.251***
Psychological dating abuse	61.1	24.8	63.669***
Sexual coercion	34.4	1.6	396.131***

Valid, non-missing data on measures in this table were present for 93–95 % of respondents

*** $p < .001$

Table 7 Percent of nonsexual cyber dating abuse perpetrators reporting other forms of dating violence and abuse perpetration

	Nonsexual cyber dating abuse perpetration (%) (N = 373)	No nonsexual cyber dating abuse perpetration (%) (N = 3,167)	χ^2
Sexual cyber abuse	13.2	1.5	175.028***
Physical dating violence	58.0	16.0	358.416***
Psychological dating abuse	75.7	19.9	541.387***
Sexual coercion	9.5	1.7	82.416***

Valid, non-missing data on measures in this table were present for 93–95 % of respondents

*** $p < .001$

Reciprocal Violence and Abuse in Teen Dating Relationships

Finally, we examined the extent of reciprocal violence and abuse in teen dating relationships, or reports of both victimization by and perpetration against the same romantic partner within the prior year. When the surveyed youth were asked about teen dating violence and abuse, they were specifically instructed to report violence and abuse by and against a single partner (their current or most recent partner). In this section, we report reciprocal violence prevalence rates for each type of teen dating violence across all youth in a relationship and for males and females separately. We also show the prevalence of youth who only reported victimization experiences, and those who only reported perpetration experiences. It is important to note that the survey was not designed to disentangle reports of violence and abuse used *defensively* from that used *offensively*, so our focus here is on reciprocity regardless of who the primary perpetrator may have been.

Table 8 shows the breakdown of reciprocal teen dating violence and abuse for all youth in a current/recent relationship and for males and females separately, as well as the prevalence of only victimization and only perpetration reports. With regard to reciprocal cyber dating abuse, approximately one out of ten youth (8 %) reported such behavior, while twice that share (18 %) reported only cyber dating abuse victimization. A small share of youth reported only cyber dating abuse perpetration (3 %). On average, for all youth in a relationship, the highest prevalence of reciprocal acts occurred with regard to physical dating

Table 8 Percent of teens in a relationship that report only victimization, only perpetration, or reciprocal violence and abuse

	Total (%) (N = 3,745)	Male (%) (N = 1,768)	Female (%) (N = 1,956)	χ^2
Cyber dating abuse				24.693***
Only victimization	17.6	16.2	18.6	
Only perpetration	3.3	2.3	4.1	
Reciprocal abuse	8.6	7.1	9.8	
Physical dating violence				266.550***
Only victimization	13.6	22.1	6.1	
Only perpetration	4.7	1.1	7.9	
Reciprocal violence	15.8	13.3	17.7	
Psychological dating abuse				80.517***
Only victimization	23.8	27.1	21.0	
Only perpetration	2.7	2.3	3.1	
Reciprocal abuse	23.1	16.5	28.7	
Sexual coercion				85.338***
Only victimization	12.0	7.4	15.8	
Only perpetration	1.4	2.5	0.4	
Reciprocal coercion	1.2	1.5	0.8	

Valid, non-missing data on measures in this table were present for 92 to 95 % of respondents

*** $p < .001$

violence (16 %) and psychological dating abuse (23 %). Lastly, looking at gender variation in reciprocal violence/abuse: Females in a relationship were significantly more likely than males to report engaging in both reciprocal and only perpetration abuse for all types of violence/abuse, except sexual coercion. The only types of teen dating violence/abuse for which females were more likely than males to be exclusively victimized was cyber dating abuse and sexual coercion.

An alternative way of looking at data in the table below is to examine what proportion of teen dating violence and abuse victims also perpetrate violence and abuse, and what proportion of perpetrators are also victimized. For example, dividing the percentage who experienced reciprocal violence/abuse by the total percentage of victims (which equals the sum of reciprocal violence/abuse and only victimization percentages), we can see what portion of victims perpetrated violence/abuse. Performing these calculations across all groups, we note the following findings: Most cyber dating abuse victims (67 %), psychological dating abuse victims (51 %), and sexual coercion victims (91 %) did *not* report perpetrating the same type of teen dating violence/abuse. By contrast, over half of the physical dating violence victims (54 %) reported perpetrating physical dating violence. In addition, most cyber dating abuse perpetrators (72 %), physical dating violence perpetrators (77 %), and psychological dating abuse perpetrators (90 %) reported also being victimized by the same type of teen dating violence/abuse. By contrast, less than half of sexual coercion perpetrators (46 %) reported sexual coercion victimization.

Discussion

Although the literature on teen dating violence and abuse has grown dramatically in the past two decades, recent advances in technology (e.g., social networking, texting on cellular phones) create new tools for those involved in dating violence to harass, control, and abuse their partners; yet, we know little about the nature of cyber dating abuse, how often youth experience it, and how it relates to other forms of dating violence. To address this gap in knowledge, this study examined cyber dating abuse in youth relationships and how it relates to other forms of teen dating violence, specifically physical violence, other forms of psychological abuse, and sexual coercion. We documented the varying rates of reports of victimization and perpetration of each type of dating violence and examined the overlap of types by exploring the co-occurrence of such experiences for individuals.

In the current study, we found that just over a quarter of youth in a relationship said that they experienced some form of cyber dating abuse victimization in the prior year. This rate is in line with two past studies examining the prevalence of such abuse (Cutbush et al. 2012; Picard 2007), but is half that of a study of only ninth grade youth (Cutbush et al. 2010). Youth experienced cyber dating abuse at a rate that was about comparable to that of physical dating violence, about half that of psychological dating abuse, and twice that of sexual coercion. Interestingly, twice the number of youth reported non-sexual cyber dating abuse as compared to sexual cyber dating abuse. Clearly, large numbers of dating youth are experiencing cyber forms of harassment, control, and abuse.

Dating violence is often understood as encompassing varying types of abuse ranging from physical and sexual violence to forms of psychological and emotional abuse within a given relationship (Mulford and Giordano 2008). The current study found that cyber dating abuse often co-occurs with other forms of dating violence. Half of the victims of sexual cyber dating abuse and non-sexual cyber dating abuse were also victims of physical violence, and nearly all of both types of cyber abuse victims also experienced other psychologically abusive experiences. Findings related to sexual coercion are particularly noteworthy. More than half of sexual cyber dating abuse victims also experienced sexual coercion—a rate seven times higher than that of those who had not experienced sexual cyber dating abuse. Thus, it is important to stress that victims of cyber dating abuse are also often subject to physical and sexual violence and, when it comes to sexual cyber dating abuse, victims are quite likely to experience sexual violence.

Gender differences in reports of teen dating violence and abuse victimization are similar in this study to past studies, and findings related to cyber abuse are as one might expect. Specifically, female youth reported significantly higher victimization rates than males with regard to cyber dating abuse, psychological dating abuse, and sexual coercion. Comporting with past research on psychological abuse and sexual victimization (Foshee 1996; Young et al. 2009a), females were twice as likely as males to report being a victim of sexual cyber dating abuse and/or sexual coercion in the prior year. Male youth in the current study, on the other hand, reported significantly higher rates of all forms of physical dating violence victimization—mild, moderate, and severe—as in past studies (Foshee 1996; O'Leary et al. 2008). The gender difference was markedly greatest with regard to mild physical violence; almost twice as many males as females reported experiencing mild physical dating violence in the prior year.

We also found that, as in past research (Mulford and Giordano 2008), far fewer youth in this sample reported perpetrating teen dating violence and abuse than reported having been a victim of it. More than a tenth (12 %) of youth in a relationship said that they perpetrated cyber dating abuse in the prior year. Also in line with past research (O'Leary et al. 2008), female youth reported significantly higher perpetration rates with regard to physical dating violence and psychological dating abuse. Notably, females were twice as likely as males to report perpetrating mild physical dating violence and/or psychological abuse that involved emotional manipulation.

When it comes to non-sexual cyber dating abuse, females reported greater levels of perpetration than males. By contrast, male youth were significantly more likely to report perpetrating sexual cyber dating abuse, which is similar to findings from past studies regarding sexual coercion perpetration. Young et al. (2009b) found that males were twice as likely as females to report sexual violence perpetration, and Borowsky et al. (1997) found that males were five times as likely to report such behaviors. In the current study, males were twice as likely to report perpetrating sexual cyber dating abuse and three times as likely as females to report perpetrating sexual coercion in the prior year. While this study confirms past research related to sexual coercion perpetration, it also extends the current knowledge base about teen dating violence and abuse by indicating that more males than females perpetrate sexual cyber dating abuse.

Discrepancies in reports of rates of victimization versus perpetration may in part come down to social desirability, with youth more willing to report victimization experiences than they are willing to report their own violent behaviors. Past meta-analytic research on adults has shown that reporting perpetration of intimate violence is correlated with social desirability, but reporting victimization is not (Sugarman and Hotaling 1997). For adults, these relationships were not different for males and females. Thus, social desirability cannot account for gender differences in adult reports of perpetration and victimization, and this may be the case for youth as well. However, one element that might contribute to gender differences in adolescent reports of perpetration is related to youth's perceptions that physical violence toward romantic partners is acceptable when perpetrated by a female. Two recent studies indicate widespread acceptance of female physical violence toward dating partners, but not the same for male physical violence toward dating partners; these findings suggest that female adolescents may be more willing to report their own violent behaviors than male adolescents. RTI International (2012) examined this issue among middle school students and found that half of the 1,430 students strongly agreed with the idea that it was acceptable for a girl to hit her boyfriend under certain circumstances. However, only 7 % of those same students reported that it was acceptable for a boy to hit his girlfriend under certain circumstances. A similar pattern was found among ninth graders (Reeves and Orpinas 2012). In a group of 624 ninth graders, one out of three reported support for girls hitting boyfriends, while only half that amount reported support for boys hitting girlfriends. Further, the belief that it was okay to hit one's partner was correlated with their likelihood of perpetrating physical dating violence. Though it was not a tested hypothesis in this study, acceptance of violence toward dating partners may contribute to higher rates of violence for some groups and higher rates of willingness to report such violence.

Another element that might contribute to reporting differences might be related to measurement issues and the context in which the violence occurs. Much can be learned from Foshee et al. (2007) in terms of understanding the

measurement of these issues and the context in which violence occurs between teen dating partners. This qualitative study involved follow-up, in-person interviews with 63 females and 53 males who participated in surveys for the Safe Dates study. Adolescents were eligible for the interview if they were part of the control group, had perpetrated dating violence, and completed at least two of the original studies' surveys. The findings reveal that upon further examination, 11 of the 63 females and 9 of the 53 males (17 % for both groups) who reported that they perpetrated violence against their dating partner on the survey revealed that they never had used any violence against their partner during the interview. Reasons given for this discrepancy indicate that the context of the violence was not nefarious. Instead, both girls and boys reported that violence was sometimes committed "in play" or accidentally. Thus, these types of interpretations of survey items may in part underlie the discrepant reports of violence both in terms of more victimization than perpetration and in terms of more girls reporting violent acts than boys.

As in many past studies, the current one examines reciprocity of violence between dating partners. The survey was not designed to disentangle offensive from defensive acts of violence and we in no way want to imply that the reciprocal violence between partners in this study represented equal amounts and types of violence with similar motives. With that said, females in a relationship were significantly more likely than males to report engaging in reciprocal or only perpetration abuse for all types of violence and abuse, except sexual coercion, which is similar to past research findings examining reciprocity of violence and abuse in teen dating relationships (O'Leary et al. 2008; Renner and Whitney 2010). For sexual coercion, more male than female youth reported only perpetration or reciprocal behavior. Relatedly, twice the share of female as male youth reported being victimized but not perpetrating sexual coercion. However, we found that when it comes to cyber abuse specifically, two-thirds of cyber dating abuse victims did *not* report perpetrating cyber abuse. Thus, there may be less reciprocity between partners when it comes to this form of dating violence than perhaps other forms.

Foshee et al.s' (2007) work described previously also assists us in understanding reciprocal violence in relationships by describing the context in which dating violence occurs. Boys and girls commit violence against their partners at different frequencies and severities, as well as for different reasons. The researchers found four types of violence perpetrated by females, listed in the order of their commonality: (1) girls' use of violence against a boyfriend who had a history of abusing her physically or psychologically (39 %): (2) girls' use of violence in anger with no evidence of prior abuse perpetrated by the boyfriend (25 %); (3) girls' use of violence to let her boyfriend know that he had done something wrong or unacceptable with no evidence of prior abuse perpetrated by the boyfriend (19 %); and (4) girls' use of violence against a boyfriend as a first time aggression response whereby the girl responds to the boyfriend's violence with violence, yet there is no history of the boyfriend perpetrating violence (17 %). Thus, more than half of the violence perpetrated by girls toward boys was in reaction to their boyfriends' initiation of violence (types one and four). For males, nearly two-thirds of violence toward girlfriends was described as "escalation prevention." In other words, these acts were not intended to harm the girl, but to deescalate a situation which might involve restraining the girlfriend, preventing her from using a weapon, or preempting impending violence. So, males may be initiating violence in some of these scenarios, but with the intention of preventing further or escalating violence. In more than half of the cases, boys admitted that the girls were using violence against them because they cheated on her or because she was jealous of another girl. The remaining reasons for male violence could not be coded as other types because they were too disparate, but involved motives such as using violence to stop repeated nagging or in retaliation for female violence. Clearly, the reasons males and females are violent towards one another vary and are quite nuanced. While reciprocity of violence implies that both partners are committing some form of violence toward one another, the current study cannot explicate the *reasons* for male versus female violence in the way Foshee et al. (2007) was able to do, nor did we capture the nuance that underscores motives for such violence.

As with all research, this study is subject to limitations related to its design, sample, and measurement. First, the sample is limited to those youth who attend school (which excludes those who have dropped out) and specifically, those who attend schools with administrators supportive of the study, who were willing to allow students to be surveyed about sensitive topics. Thus, the sample may have been limited to youth from potentially forward-thinking schools and excluded some disconnected and/or disadvantaged youth, perhaps skewing the prevalence rates of the interpersonal violence experiences being measured. In addition, based on the schools that were willing to participate, the sample is largely white and has a lower proportion of middle school youth compared to high school youth.

Finally, the study is subject to limitations related to measurement. As raised previously, the survey measures did not allow us to separate offensive from defensive use of violence and abuse. In addition, although we derived our measures from existing literature wherever possible, and the cyber abuse measures created for this study indicated strong internal consistency, the extent of youths' underreporting and/or overreporting of violence and abuse experiences cannot be assessed. The survey methodology relies on youth

self-reports, which have been shown to be valid in past studies using certain instruments (see, e.g., Ebesutani et al. 2011; Ridge et al. 2009; Walsh et al. 2008), yet which may overestimate or underestimate accounts of school violence (e.g., issues with recall error, as described in Furlong et al. 2004; Rosenblatt and Furlong 1997). The measures also may have been subject to misinterpretation in the same way Foshee et al. (2007) describe and youth report violent experiences that were actually accidental or not meant to harm ("in play").

Despite the study's limitations, the current findings extend our knowledge about teen dating violence/abuse, particularly around cyber dating abuse. Further, the findings provide some indication of implications for program practice. First, although there are some schools that provide prevention programming around these issues, the study's findings on the prevalence of cyber dating abuse suggest that schools should raise awareness about the harmfulness of perpetrating such acts and educate victims about the importance of reporting incidents and seeking help. These activities might include all members of the school community: principals, teachers, and peer leaders. Second, while the bulk of this study focuses on how technology makes youth vulnerable to victimization and abuse, such technology also may be an opportunity for prevention and intervention efforts around teen dating violence and abuse issues, particularly given the number of youth who use it regularly (Lenhart 2012; Lenhart et al. 2011). Thus, new technology and social networking sites can be used to spread awareness about these types of interpersonal violence and abuse. In particular, awareness campaigns might address the specific issues related to female as well as male perpetration of violence and address reciprocal violence between partners. These campaigns could be implemented with the goal of increasing knowledge and change attitudes regarding the unacceptability of violence against partners, regardless one's gender. Further, technology can be used to report incidents of teen dating abuse—whether directly by the victim, a bystander, or a peer. For example, bystanders and peers could text "eyewitness reports" anonymously to school officials, similar to how texts can be sent to police anonymously whenever someone witnesses a crime (Quinn 2012).

Finally, the current research findings lead directly to suggestions for future research endeavors. Much remains to be learned about cyber dating abuse and the field would benefit from a national, longitudinal, multi-year study to determine the prevalence of teen dating violence/abuse, with a particular focus on cyber dating abuse. Such a study would allow us to further examine the overlap of cyber dating abuse with other forms of teen dating violence/abuse—including physical violence, other psychological abuse, and sexual coercion—and examine causality related to the risk factors and consequences of experiencing and perpetrating cyber dating abuse. More research is needed to examine what life factors (in terms of psychosocial adjustment, other behaviors, family factors, etc.) might put youth at greater risk for experiencing or perpetrating cyber dating abuse, and if or how these factors compare to the risk factors for other forms of dating violence/abuse.

In conclusion, technology use—such as social networking, cell phone and smart phone use—is an integral part of teens' lives and something that will evolve and change but not cease to exist. Such technology has developed new ways for youth to be in contact with one another, creating both opportunity and risk. Based on this study's results, cyber dating abuse experiences are common among youth, and given the nature of the technology used to perpetrate cyber abuse, youth who are victims of such abuse are vulnerable to it anytime of day or night. People no longer have to be actually physically together to fall victim to or perpetrate various forms of dating abuse. Further, females are especially vulnerable to cyber dating abuse, and sexual cyber dating abuse in particular. This study is a first step in examining who falls victim to and/or perpetrates cyber abuse, but future research should explore what puts youth at risk for cyber abuse and what the consequences of such abuse are. This would inform existing intervention and prevention efforts targeted towards other forms of abuse and allow these efforts to be tailored to respond to cyber abuse victims and perpetrators.

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Author contributions JZ is co-Principal Investigator of the study and helped guide substantive decisions regarding survey development, measurement development, conceptualization of the research questions, and direction of research. She is primary author of the manuscript, drafting the literature review, methods, and portions of the discussion. MD is co-Principal Investigator of the study and helped guide substantive decisions regarding survey development, measurement development, conceptualization of the research questions, and direction of research. She also drafted portions of the discussion. JY participated in conceptualization of measures, research questions, and direction of analyses. She drafted portions of the results section. PL participated in conceptualization of measures, research questions, and direction of analyses. She conducted analyses

and drafted portions of the results section. All authors read and approved the manuscript.

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