Snooping and Sexting: Digital Media as a Context for Dating Aggression and Abuse Among College Students

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Abstract

Digital dating abuse (DDA) is a pattern of behaviors that control, pressure, or threaten a dating partner using a cell phone or the Internet. A survey of 365 college students was conducted, finding that digital monitoring behaviors were especially common. There were no gender differences in number of DDA behaviors experienced, but women reported more negative hypothetical reactions to sexual messaging than men. DDA was associated with measures of physical, sexual, and psychological dating violence. Results suggest that digital media are a context for potentially harmful dating behaviors, and the experience of DDA may differ by gender for sexual behaviors.

Keywords

new media, dating violence, cyber dating abuse

Dating violence has been defined as actual or threatened physical, sexual, psychological, or emotional abuse of a current or former dating partner, including stalking, and can take place in person or electronically (Centers for Disease Control, 2012). Although estimates vary widely, recent national data report that 9.8% of high school aged adolescents experienced physical abuse from a dating partner in the past year (Centers for Disease Control, 2009), and that 30% of youth aged 12-21 and 20% of youth in same-sex relationships report psychological abuse from a partner in the past 18 months

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(Halpern, Oslak, Young, Martin, & Kupper, 2001). Variation in prevalence estimates is largely due to differences in definition and method; studies that only include reports of physical violence result in more conservative estimates of prevalence, whereas other research that includes psychological abuse finds much higher rates.

As the nature of interpersonal communication has shifted with the widespread use of the Internet and cell phones, so have the possibilities for psychological maltreatment. Young adults now experience constant text messaging with the expectation of instant reply, suspicion about "posts" on their social media profile, and pressure to send sexual photos. Behaviors that now seem normative for young people, such as frequent text messaging, may also occur in a constellation of possessive and controlling behaviors in a dating relationship. Are college students experiencing negative and potentially harmful digital behaviors in their dating relationships? Are these experiences associated with other forms of dating violence? This study seeks to explore whether digital media are a context and tool for dating violence among college students by assessing victimization and perpetration of potentially abusive digital dating behaviors, examining gender differences in these behaviors, and comparing the experience of digital behaviors to other forms of dating violence.

Digital Media Use and Dating Violence

Recent technological advances and accompanying cultural shifts have influenced how youth and young adults communicate and interact in dating relationships. According to one report, 75% of teens aged 12-17 use mobile phones, and 60% of teens have their own computer (Lenhart, Purcell, Smith, & Zickuhr, 2010). This digital media usage continues into young adulthood. Reports indicate that 92% of young adults aged 18-24 who are *not* college students are using the Internet, whereas 100% of college students are Internet users (Smith, Rainie, & Zickuhr, 2011). This makes young adults aged 18-24 the most likely of any age group to use the Internet. Analyses of digital behaviors among college students indicate that 88% of college women and 83.4% of college men text message daily (Bennett, Guran, Ramos, & Margolin, 2011). Digital media have therefore become an important social relational context for adolescents and young adults, through which much of their daily social interactions with peers and dating partners occur.

Digital media communication has redefined dating relationship boundaries, sometimes providing opportunities for abuse (Draucker & Martsolf, 2010). Although benefits of digital media include widening the potential pool of dating partners and providing a means for easily maintaining relationships, the way in which digital media make previously private dating interactions public could be problematic. The nature of digital media communication exposes dating partners to the risk of public exposure, humiliation, and ridicule (Melander, 2010). Digital media give young people constant access to their dating partners and the ability to monitor their partner's every move and activity (Draucker & Martsolf, 2010; Patchin & Hinduja, 2006; Tokunaga, 2010). A qualitative study of young adults who have experienced dating violence found that digital media played a role in the escalation of arguments,

intrusive monitoring of partners, and prolonged contact between separated couples (Draucker & Martsolf, 2010).

Our study explored the continuum of digital behaviors that could cause harm within dating relationships among college students. Drawing from the scant existing literature, we chose to call these behaviors "digital dating abuse" (DDA; Futures Without Violence, 2009). The term has three elements: "digital," which in our conceptualization includes cell phones, computers, and Internet communication rather than face-to-face interaction; "dating," which refers to current or former adolescent and young adult romantic relationships; and "abuse," which implies a pattern of behavior that controls, pressures, harasses, threatens, or otherwise harms a dating partner. Although we emphasize a pattern of behaviors to differentiate abuse from isolated negative relationship behaviors, we recognize that some behaviors can be harmful and abusive if they happen only once (e.g., pressure to engage in sexual activity, threats of physical harm through digital messages). The cyberbullying literature, which studies harmful digital behaviors outside of the relationship context, often defines cyberbullying as digital communication that is *aggressive, intentional, repetitive, and involves an imbalance in power* between the victim and bully (Dooley, Pyzalski, & Cross, 2009). These elements are also important to our conceptualization of DDA. However, we argue that the romantic relationship context warrants special consideration, as digital behaviors within a dating relationship can become part of a constellation of tactics used for dating violence. Although intent to harm is an important element of abuse, behaviors occurring outside of the conscious or explicit intent to harm might also be abusive.

Few studies address digital abuse within dating relationships, especially among college students. Draucker and Martsolf (2010) and Melander (2010) conducted qualitative studies with young adults to identify how digital technology was used in dating relationships to perpetrate dating violence, finding that this technology was a common tool for verbal aggression and behaviors leading to offline dating violence. Zweig, Dank, Yahner, and Lachman (2013) conducted a survey study of 5,647 middle and high school students assessing sexual and non-sexual cyber dating abuse, finding that 26% of students were victims of cyber dating abuse in the past year, and female students reported greater rates of victimization than male students. Another study using the same sample (focusing on the 3,745 youth with dating experience) found that experiencing cyber dating abuse was associated with delinquent behaviors and depressive symptoms, even more so than other types of dating violence (Zweig, Lachman, Yahner, & Dank, 2014). Among young adults, Bennett and colleagues (2011) surveyed 437 college students to compare electronic victimization among friends and dating partners. Findings showed high rates of electronic victimization: 72.3% reported experiencing hostility by friends or dating partners, 73.5% reported intrusiveness, 42.6% reported exclusion, and 73.2% reported humiliation. College students anticipated greater psychological distress from electronic victimization perpetrated by a dating partner than by a friend (Bennett et al., 2011).

Bennett et al. (2011), Zweig et al. (2013), and Zweig et al. (2014) found that their measures of digital abuse behaviors were associated with other measures of dating

violence. These recent studies highlight the importance of specifying the relational context in which these digital behaviors occur, and that digital media can be a context and tool for dating violence. We build on this emerging literature by exploring whether both victimization and perpetration of DDA behaviors are associated with other types of dating violence among a college student sample.

Gender Differences in Dating Violence and DDA

Evidence for gender differences in dating violence varies by type of abuse, severity of abuse, and research method used. Reports to law enforcement (Snyder & McCurley, 2008) show higher rates of female victimization, but results from the few nationally representative samples vary. Many studies report that dating violence is equally perpetrated by teenage boys and girls (Archer, 2000; Halpern et al., 2001; White, 2009), but other research shows higher overall rates of female victimization (Forke, Myers, Catallozzi, & Schwarz, 2008), with boys perpetrating more sexual abuse and girls perpetrating more physical abuse. However, girls have been found to be more likely to experience severe dating violence, suffer injuries as a result of dating violence, and experience greater psychological distress resulting from victimization (Arriaga & Foshee, 2004; Foshee, Bauman, Linder, Rice, & Wilcher, 2007; Molidor & Tolman, 1998), indicating that the gendered nature of dating violence may be more complicated than prevalence rates suggest (White, 2009).

Research on electronic aggression (not specific to dating relationships) also finds a complicated relationship between gender and digital behaviors, with inconsistent results (e.g., Bennett et al., 2011; Hinduja & Patchin, 2008; Kowalski & Limber, 2007; Wolak, Mitchell, & Finkelhor, 2007). Zweig and colleagues (2013) found higher rates of cyber dating abuse victimization among female middle and high school students, especially for sexual behaviors. Research on college students showed equal rates of electronic victimization by gender, but women reported more distress than men when thinking about a hypothetical reaction to electronic aggression (Bennett et al., 2011). Research on "sexting"—i.e., sending or receiving sexually suggestive messages–has found that it is associated with risky sexual behavior only for girls (Temple et al., 2012; for null findings, see Ferguson, 2011). As suggested by many authors (e.g., Dobash & Dobash, 2004; Kimmel, 2002; Molidor & Tolman, 1998; Straus, 2011; Swan & Snow, 2006; White, 2009), gender is a complex issue in dating violence that warrants examination of context.

Purpose of the Current Study

In this study, we propose that digital media are an important context for dating relationships, and consequently, for the study of dating violence. This study fills important gaps in the emerging literature, as other quantitative studies have focused on DDA victimization only (Bennett et al., 2011) or have studied middle and high school students (Zweig et al., 2013; Zweig et al., 2014). We sought to extend previous research by examining both victimization *and* perpetration of DDA behaviors among college

students. We believe this is a critical population to study because participation in romantic and sexual activity increases from younger teenagers to young adults (Arnett, 2000; Lefkowitz & Gillen, 2006), thereby providing more opportunities for abusive dating behaviors. In addition, rates of date rape among college students (11.9% of college women report rape; an additional 18.8% of women report attempted rape) indicate that sexual violence is a relevant concern for this population (Bair, Rosenweig, & Whipple, 1991). Research questions include the following:

Research Question 1: What DDA behaviors are experienced by college students? What behaviors are most common?
Research Question 2: Are there gender differences in patterns of DDA victimization, perpetration, and emotional responses to DDA behaviors?
Research Question 3: Are DDA behaviors significantly associated with other forms of dating violence (e.g., psychological, physical, and sexual abuse)?

Method

Participants

The sample consisted of 365 undergraduate students (57% female) enrolled in an introductory psychology course at a large university in the Midwestern United States, who were given course credit for their participation. Participants ranged in age from 17-22 ($M = 18.66$), with the majority (87.9%) being 17, 18, or 19. Although most participants identified their ethnicity as White (72.1%), others identified as Asian (14.8%), Black (6.8%), or Hispanic/Latino (3.8%). Most participants had dating experience (88.2%), and 31% were currently in a relationship. Dating experience was assessed by asking participants how many dating relationships they have ever had, both "casual" and "serious." If participants indicated a value other than "0," they were deemed to have relationship experience. Almost all participants reported exclusively heterosexual dating/hooking up behavior (97.3%), although they were not asked about sexual attaction or their sexual orientation. All participants had access to digital media, with 99.5% reporting that they own a laptop and 100% reporting that they have access to a cell phone. Use of social networking sites was common in this sample, with 97.8% reporting they have a Facebook account, and 25.4% reporting they have a Twitter account.

Measures

Media measures. To contextualize the main findings, we asked participants about their social networking site usage, including how many hours spent per week social networking, and how often they used the Internet for various purposes (e.g., for schoolwork, to communicate with dating partners, to communicate with friends). Questions about hours of use were asked on an 11-point scale from 0-10+ hr per week. Questions about using the Internet for various purposes were asked on a 6-point

scale from 1 meaning *never* to 6 meaning *several times a day*. Similar questions were asked for cell phone use. Participants were also asked how often they use various types of digital media for communicating with dating partners (e.g., email, text messaging, social networking sites) on a 5-point scale from 0 meaning *never* to 5 meaning *several times a day*.

DDA measure. Development of a DDA measure drew from many sources, including our own research and national surveys. For item content, we consulted several publically available, national surveys conducted by private organizations that asked questions about cell phone use, texting, harassment, sexting, and social networking (e.g., the National Campaign to Prevent Teen and Unplanned Pregnancy and CosmoGirl.com, 2008; Picard, 2007). Many of these surveys focused on one digital media platform, such as cell phone use, or focused on one type of behavior such as "sexting." The Psychological Maltreatment Inventory for Adolescents (PMI-A) also informed measure development (modified from the Psychological Maltreatment of Women Inventory [PMWI]; Tolman, 1999). From these sources, 19 behaviors were identified to capture potentially harmful digital behaviors in dating relationships.

For this study, we developed a 38-item measure of DDA. The measure asked about experience with 19 behaviors in two ways: Participants were first asked about victimization (e.g., "My dating partner(s) monitored who I talk to and who I am friends with using the Internet or a cell phone"), and then perpetration (e.g., "I monitored who my dating partner(s) talk to and who he/she is friends with using the Internet or a cell phone"). For the victimization portion, participants were asked to respond to each item indicating "yes" or "no" if they have *ever* had each behavior exhibited toward them, and if yes, *how often in the past year* have they experienced this behavior. For perpetration, the participants were asked to respond "yes" or "no" if they have *ever* exhibited each behavior, and if yes, *how often in the past year* have they exhibited the behavior. The five possible responses ranged from "0 times" to "More than 5 times." Only participants who reported having dating experience (n = 321) were asked to complete this measure; those with no dating experience were asked to skip it. Analyses only include those who reported having dating experience.

Patterns of DDA behaviors were measured in number of behaviors ever experienced and experienced in the past year, yielding four new variables: *number of victimization behaviors ever by a dating partner, number of perpetration behaviors ever exhibited toward a dating partner, number of victimization behaviors by a dating partner in the past year, and number of perpetration behaviors against a dating partner in the past year*. These variables had a range of 0-19.

Frequency of DDA in the past year was measured by summing the frequency of responses across all 19 items for victimization and 19 items for perpetration, to indicate a general pattern of frequency of these behaviors during the past year. Emerging from these responses were two variables, one frequency score for victimization and one for perpetration. Cronbach's alphas for frequency score variables are .76 for victimization and .73 for perpetration.

Anticipated reactions to DDA behaviors. To explore the boundary between affectionate, welcomed digital dating behaviors and harmful digital dating behaviors, we included a set of items to assess how participants might emotionally respond to digital dating behaviors. This approach is similar to the methodology used in the study by Bennett et al. (2011), in which participants were asked to anticipate the level of distress they might feel if they experienced electronic victimization behaviors. Anticipated emotional reactions illuminate which behaviors are viewed by college-age populations as problematic or normative, helping to indicate which behaviors might most indicate abuse in dating relationships.

Four such items were asked of the entire sample, regardless of dating experience or experience with each specific behavior. We asked participants to consider four digital media behaviors that might occur in a dating relationship, and asked how this behavior would make them feel. The prompt stated, "Please indicate how you think you would feel (or have felt) on a normal day when involved in that activity with someone(s) you are in IN A DATING RELATIONSHIP WITH." The four items included, "Sending a sexually suggestive/nude photo of you to a dating partner," "Receiving a sexually suggestive/nude photo of your dating partner," "Having a dating partner call and/or text you repeatedly on your cell phone (on a normal day)," and "Having a dating partner message/post/Tweet several times a day on your social networking sites(s)." Each item included a list of possible emotional reactions, and participants were asked to check all that apply. Positive emotions/reactions included: amused, excited, happy, and turned on. Negative emotions/reactions included: creeped out, angry, grossed out, embarrassed, and scared. The item "surprised" was listed but not analyzed due to a lack of a positive or negative valence.

Dating violence measures. Participants with dating experience were asked to complete two measures of dating violence. The Conflict Tactics Scale–2 Revised Short Form (CTS2S; Straus & Douglas, 2004) is a 20-item measure of physical, psychological, and sexual abuse in intimate partner relationships, and includes items related to both perpetration and victimization of various behaviors. The CTS2-S has been used to measure both adult intimate partner violence and dating violence (Straus & Gelles, 1990). The CTS2-S asks participants to indicate whether each behavior has ever happened, and if yes, to indicate how often it has happened in the past year (0 = *never in the past year* to 6 = *more than 20 times in the past year*.). Reports of frequency in the past year were summed to create chronicity scores for each subscale (see Straus & Douglas, 2004). This measure contains five subscales: Physical Violence, Psychological Abuse, Injury, Sexual Coercion, and Negotiation.

The 20-item PMI-A was used as an additional measure of psychological abuse. This measure is a modified version of the PMWI (Tolman, 1999) created for adolescent populations. The measure included 10 items for victimization and 10 items for perpetration. Participants were asked to indicate how often each behavior has happened to them in the past year with any dating partner, with the endpoints of 0 meaning *never* and 4 meaning *very frequently*. Example items include "I called my partner(s) names" and "My partner(s) told me my feelings were ridiculous or crazy." The

Cronbach's alphas were calculated as .85 for victimization and .78 for perpetration items. The scores of items within each scale were summed to create scale totals.

Procedure

Participants read and signed a written consent form prior to participation; those younger than 18 ($n = 9$) had received prior parental permission to participate in the undergraduate psychology subject pool. Surveys were administered in paper-and-pencil form to participants in groups of approximately 10 people, seated spaced out around the room, who were given clipboards to use for added privacy. A researcher was present to provide appropriate resources if a participant became visibly distressed. Participants were asked to place their survey in a brown envelope before returning it to the experimenter to further ensure anonymity. Participants received course credit for their participation in this research, and were free to refuse or end their participation at any time. It took approximately 45 min to complete the survey.

Results

Preliminary Analyses

Digital media use was common in this college student sample, with women reporting more use overall. Women reported spending an average of 21.73 hr per week social networking, and men reported spending 19.64 hr per week. More than half of women (57.6%) use the Internet for social networking several times a day, whereas 47.4% of men report the same level of use. Cell phone use was also common among men and women, as 35.8% of women and 27.9% of men reported using their cell phone for social networking daily. When asked about digital media communication with their dating partners, most women (72.3%) and men (63.8%) sent or received text messages from their dating partner several times a day. Some (33.5% of women and 50% of men) reported communicating with their dating partner through social network sites at least several times a week.

Patterns of DDA Behaviors

Only those participants reporting any dating experience ($n = 321$) completed the DDA measure. Participants with no dating experience ($n = 44$) and those who had dating experience but did not complete the DDA measure ($n = 14$) were removed, resulting in a sample of 307 participants for all DDA analyses. Table 1 shows the percentage of women and men who reported victimization or perpetration of each of the 19 DDA behaviors.

Results show that some behaviors, especially items such as "Looked at my/my partner's private information on a computer or cell phone without permission," "Monitored my/my dating partner's whereabouts," "Monitored who I/partner talk(s) to and who I/they am/are friends with," "Being mean to me/my dating partner using

Table 1. Percentage of Women and Men Who Experienced Victimization and Perpetration of Digital Dating Abuse Behaviors Ever in Their Lifetime and in the Past Year (n = 307).

	Victimization (n)		Perpetration (n)	
	Ever (women/men)	Past year (women/men)	Ever (women/men)	Past year (women/men)
Looked at my/my partner's private information on a computer or cell phone without permission	40.2/41.9 (74/57)	37.5/36.8 (69/50)	44.6/36 (82/49)	40.8/33.9 (75/46)
Monitored my/my partner's whereabouts	34.8/41.2 (64/56)	31.5/38.3 (58/52)	36.4/35.3 (67/48)	34.2/31.7 (63/43)
Threatened to end our relationship on a cell phone or the Internet	33.7/34.6 (62/47)	31.0/30.9 (60/42)	30.4/24.3 (56/33)	28.3/22.8 (52/31)
Was mean to me/my partner(s) and/or put me/my partner(s) down	33.7/26.5 (62/36)	29.4/24.3 (54/33)	21.2/19.1 (39/26)	19.6/17.7 (36/24)
Monitored who I/partner talk(s) to and who I/they am/are friends with	24.5/27.2 (45/37)	23.4/23.6 (43/32)	38.0/32.4 (70/44)	35.3/27.3 (65/37)
Interfered in my/my partner's relationships with family/friends	10.3/12.5 (19/17)	6.4/11.1 (18/15)	1.6/4.4 (3/6)	1.6/3.7 (3/5)
Pressured me/my partner(s) to engage in sexual behavior	10.3/6.6 (19/9)	10.3/6.7 (19/9)	3.8/8.1 (7/11)	3.8/7.4 (7/10)
Pressured me/my partner(s) to take a sexually suggestive/nude photo or video	12/4.4 (22/6)	11.4/4.5 (21/6)	1.6/14.0 (3/19)	1.6/12.5 (3/17)
Pretended to be me/my partner(s) on the Internet or cell phone without permission	7.6/10.3 (14/14)	7.6/10.3 (14/14)	6.0/4.4 (11/6)	6.0/3.6 (11/5)
Someone threatened me/my partner(s) on behalf of my dating partner(s)/me	6.0/11.0 (11/15)	3.2/9.6 (8/13)	2.7/2.9 (5/4)	2.7/3.0 (5/4)
Spread a rumor about me/my partner(s)	4.3/11.8 (8/16)	4.4/10.3 (8/14)	3.3/5.1 (6/7)	3.3/4.5 (6/6)
Threatened to distribute embarrassing information about me/my partner(s)	3.3/10.3 (6/14)	3.3/8.8 (6/12)	0.0/4.4 (0/6)	0.0/2.9 (0/4)
Took an embarrassing/sexually suggestive image of me/my partner(s) without permission	4.3/4.4 (8/6)	8.8/4.4 (8/6)	2.2/5.1 (4/7)	2.0/2.0 (4/7)
Shared an embarrassing picture/video of me/my partner(s) without permission	2.7/5.9 (5/8)	2.7/5.9 (5/8)	1.6/3.7 (3/5)	1.6/3.7 (3/5)
Made me/my partner(s) feel afraid and/or unsafe	2.7/3.7 (5/5)	2.7/3.7 (5/5)	0.5/1.5 (1/2)	0.5/0.7 (1/1)
Shared a sexually suggestive image of me/my partner(s) without permission	1.6/2.9 (3/4)	1.6/2.9 (3/4)	1.1/0.7 (2/1)	0.5/0.7 (1/1)
Threatened to distribute an embarrassing/sexually suggestive image of me/my partner(s)	1.6/1.5 (3/2)	1.6/1.5 (3/2)	0.5/0.7 (1/1)	0.5/0.7 (1/1)
Threatened to hurt me/my partner(s) physically	0.5/0.7 (1/1)	0.5/0.7 (1/1)	0.0/0.0	0.0/0.0
Distributed my/my partner's private information without permission	0.0/1.5 (0/2)	0.0/1.5 (0/2)	0.0/0.0	0.0/0.0

Table 2. Means for Digital Dating Abuse Victimization and Perpetration Variables and Means by Gender (*n* = 307).

| Variable	*M (SD)*	Range
Number of DDA victimization behaviors reported ever	2.44 (2.52)	19 (0-19)
Women	2.34 (2.24)	
Men	2.59 (2.86)	
Number of DDA perpetration behaviors reported ever	1.98 (2.04)	9 (0-9)
Women	1.96 (1.94)	
Men	2.02 (2.17)	
Number of DDA victimization behaviors reported in past year	2.25 (2.49)	17 (0-17)
Women	2.17 (2.23)	
Men	2.35 (2.81)	
Number of DDA perpetration behaviors reported in past year	1.82 (2.04)	9 (0-9)
Women	1.83 (1.95)	
Men	1.82 (2.17)	
DDA victimization frequency score	5.48 (6.64)	38 (0-38)
Women	5.46 (6.54)	
Men	5.52 (6.82)	
DDA perpetration frequency score	4.50 (5.70)	38 (0-38)
Women	4.67 (5.75)	
Men	4.30 (5.66)	

Note. No gender differences are significant. DDA = digital dating abuse.

digital media" are especially common in this sample. The majority of the sample reported experiencing one or more victimization behaviors (74.1%) and one or more perpetration behaviors (69.5%) in their lifetime. High rates of one or more DDA behaviors were also reported in the past year for victimization (68.8%) and perpetration (62.6%).

Table 2 displays means and standard deviations of the six DDA variables characterizing the number and frequency of DDA behaviors. Paired sample *t* tests show that significantly more victimization behaviors were reported than perpetration behaviors for the lifetime variables, $t(320) = 4.57$, $p < .001$, past year variables, $t(320) = 4.45$, $p < .001$, and frequency score variables, $t(306) = 3.68$, $p < .001$.

Gender Differences in DDA Variables and Individual Items

Similar rates of DDA behaviors for men and women were indicated in this sample from *t*-test analyses. See Figure 1 for the distribution of frequency scores for victimization and perpetration in the past year for men and women. Although there are no
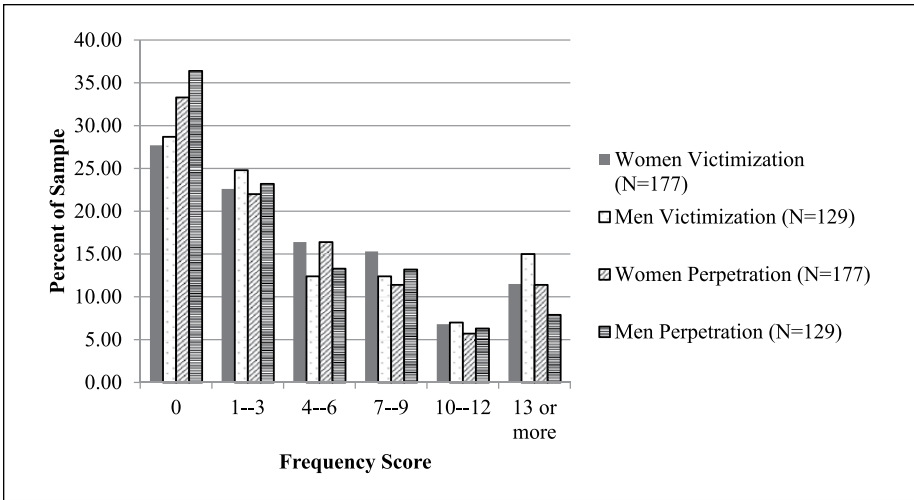
Figure 1. Distribution of frequency scores for DDA victimization and perpetration in the past year (*n* = 306).
Note. DDA = digital dating abuse.

significant gender differences in the overall frequency scores, the figure shows that frequency of experiencing DDA behaviors does differ for men and women, notably in the highest frequency score category. This figure shows that 11.5% of women and 15% of men have scores of 13 or higher for victimization, indicating more frequent experience with DDA victimization behaviors for men.

Gender differences were also found for individual items in the DDA measure of behaviors ever experienced. Individual items were analyzed because of the exploratory nature of this study, and multiple comparisons were accounted for by restricting the level of significance to *p* < .01. Men were more likely than women to report threatening to distribute embarrassing information about their dating partner(s) using the Internet or a cell phone, $\chi^2(1, n = 306) = 8.40$, *p* = .004. Men were also more likely to report pressuring their dating partner(s) to take a sexually suggestive/nude photo or video using a computer or cell phone, $\chi^2(1, n = 306) = 19.00$, *p* < .001. Therefore, although there were no gender differences in number or frequency of overall DDA behaviors in the past year, there appear to be gender differences in the specific DDA behaviors experienced.

Gender Differences in Anticipated Reactions to DDA Behaviors

The full sample was asked to report anticipated emotional reactions to four DDA behaviors regardless of dating history, as the items asked about hypothetical or actual experience. We categorized the reaction words into "positive" (amused, excited, happy, "turned on") and "negative" (creeped out, angry, grossed out, embarrassed,

Table 3. Mean Scores for Number of Positive and Negative Words Chosen as Reactions (*n* = 365).

Variable	Mean score for female participants	Mean score for male participants	*F* statistic
Positive reactions to "sending a sexually suggestive/nude photo of you to a dating partner"	0.50	0.92	14.41***
Negative reactions to "sending a sexually suggestive/nude photo of you to a dating partner"	1.69	0.94	37.25***
Positive reactions to "receiving a sexually suggestive/nude photo of your dating partner"	0.82	1.91	70.63***
Negative reactions to "receiving a sexually suggestive/nude photo of your dating partner"	1.23	0.29	64.94***
Positive reactions to "having a dating partner call and/or text you repeatedly on your cell phone (on a normal day)"	1.43	1.30	0.52
Negative reactions to "having a dating partner call and/or text you repeatedly on your cell phone (on a normal day)"	0.23	0.28	0.24
Positive reactions to "having a dating partner message/post/Tweet several times a day on your social networking site"	0.87	0.87	0.004
Negative reactions to "having a dating partner message/post/Tweet several times a day on your social networking site"	0.55	0.56	0.004

***$p < .001$.

scared) categories. Therefore, for each item there were a possible total of four positive reactions and five negative reactions that participants could have chosen. The mean scores by gender for the number of positive and negative words chosen are provided in Table 3.

These data indicate gender differences for the items pertaining to sending/receiving a sexually suggestive/nude photo to/from a dating partner. Male participants reported more positive reactions than female participants to both sending and receiving sexually suggestive nude photos. Female participants reported more negative reactions than male participants to both sending and receiving sexually suggestive/nude photos. No gender differences were found for items about a dating partner's calling/texting/posting on social networking sites several times a day. To rule out the possibility that results differed for actual experience versus hypothetical experience with dating, analyses were then rerun for only those participants who reported no dating experience (*n* = 44). Results for those with no dating experience did vary from the whole sample, in that participants without dating experience did not show gender differences in

positive and negative reactions to sending a sexually suggestive/nude photo using digital media. However, women without dating experience anticipated significantly more negative reactions to *receiving* a sexually suggestive/nude photo than did men without dating experience, $F(1, 41) = 9.13$, $p < .01$; similarly, men without dating experience anticipated more positive reactions to *receiving* this type of message than women without dating experience, $F(1, 41) = 4.09$, $p = .05$.

DDA and Other Forms of Dating Violence

To investigate potential associations between DDA and other forms of dating violence and abuse, we conducted zero-order correlations between the six DDA variables, the 10 CTS2-S chronicity subscales, and PMI-A victimization and perpetration. Some gender differences in dating violence experience were found using the CTS2-S chronicity score subscales. To account for multiple comparisons, significant results were restricted to the $p < .01$ level. Women reported greater frequency of physical violence perpetration than men, $F(1, 318) = 10.10$, $p < .01$, and more sexual coercion victimization, $F(1, 318) = 11.15$, $p < .01$. For the psychological abuse measure (PMI-A), the means of the Victimization and Perpetration subscales were 5.82 and 4.55, respectively. There were no significant gender differences in PMI-A scores.

The correlations between DDA and other dating violence measures are presented in Table 4. The strong positive inter-correlations between all six DDA variables indicate that participants who reported victimizations were also likely to report perpetration of DDA behaviors. These data also indicate a strong correlation between DDA variables and physical abuse, sexual abuse, negotiation in relationships, and psychological maltreatment. Most CTS2-S chronicity score subscales were positively correlated with DDA variables, suggesting an association between DDA and physical abuse victimization, psychological abuse, sexual abuse, and negotiation. The CTS2-S chronicity scores for physical violence perpetration and injury perpetration were *not* associated with DDA variables, with the exception of a significant positive correlation between physical violence perpetration and the DDA perpetration frequency score.

Discussion

Patterns of DDA Behaviors

This study examined victimization and perpetration of potentially harmful DDA behaviors among college students. Some of the most common DDA behaviors reported included monitoring a dating partner's whereabouts, monitoring with whom a dating partner is friends and/or talks to, and snooping into a dating partner's private information using digital media. The frequency of these behaviors indicates that a common use of digital media in dating relationships is to "keep track" of a dating partner, even if it means invading their privacy.

It remains unclear to what extent these common DDA behaviors of monitoring and snooping create distress. We found that participants reported relatively fewer negative

Table 4. Correlation Between Digital Dating Abuse, CTS2S Chronicity Scores for Subscales, and PMI-A Subscales.

	DDA victim EVER	DDA perpetration EVER	DDA victim PAST YEAR	DDA perpetration PAST YEAR	DDA victim frequency	DDA perpetration frequency
DDA victim ever						
DDA perpetration ever	**.70*****					
DDA victim past year	**.95*****	**.69*****				
DDA perpetration past year	**.68*****	**.95*****	**.72*****			
DDA victim frequency	**.86*****	**.64*****	**.91*****	**.67*****		
DDA perpetration frequency	**.62*****	**.87*****	**.66*****	**.91*****	**.73*****	
PMI-A victimization	**.61*****	**.52*****	**.65*****	**.54*****	**.67*****	**.55*****
PMI-A perpetration	**.52*****	**.60*****	**.54*****	**.61*****	**.54*****	**.62*****
CTS physical violence victimization	**.25*****	**.18*****	**.24*****	**.17****	**.31*****	**.22*****
CTS2-S physical violence perpetration	.05	.08	.05	.08	.08	**.11***
CTS2-S psychological aggression victimization	**.48*****	**.39*****	**.50*****	**.41*****	**.53*****	**.43*****
CTS2-S psychological aggression perpetration	**.39*****	**.40*****	**.42*****	**.42*****	**.45*****	**.44*****
CTS2-S sexual coercion victimization	**.17****	**.16****	**.16****	**.17****	**.16****	**.19*****
CTS2-S sexual coercion perpetration	**.13***	**.21*****	.10	**.20*****	**.13****	**.22*****
CTS2-S injury victimization	**.19****	.09	**.19****	.09	**.23*****	**.12***
CTS2-S injury perpetration	.00	.03	.00	.03	-.03	.02

Note. CTS2-S = Conflict Tactics Scale–2 Revised Short Form; PMI-A = Psychological Maltreatment Inventory for Adolescents; DDA = digital dating abuse. Statisically significant values are shown in bold.
*p < .05. **p < .01. ***p < .001.

emotional responses to frequent cell phone and social networking contact per day from a dating partner compared with sending and receiving "sext" messages. However, we do not know the context in which the participants responded to these items, as frequent

contact is not necessarily intrusive. Bennett et al. (2011) found that college students did not rate hypothetical intrusive digital dating behaviors as significantly more or less distressing than other types of electronic victimization behaviors (hostility, exclusion, and humiliation behaviors). It is possible that with changing social norms around sharing public information about one's life and activities, using digital media to monitor a dating partner is no longer seen as intrusive unless it is accompanied by other possessive or controlling behaviors. For example, qualitative findings in previous research show that abusive partners' calling many times a day to monitor their dating partner's activities, their email, and social networking profiles were often motivated by suspicions of infidelity (Draucker & Martsolf, 2010). Therefore, repeated calls may not be problematic unless they occur within other problematic contexts, such as jealousy.

The high rates of monitoring and potentially intrusive behaviors lend evidence to the notion that widespread and continual access to digital media has changed the process of negotiating relationship boundaries, and that the perception of these behaviors as normative or intrusive can depend on the context and relationship dynamics. The desire to be close to and be assured of the fidelity of a partner is not a new aspect of young people's dating relationships, but digital media use has expanded adolescents' ability to accomplish these goals through increased levels of monitoring. Especially when there is already a conflict, digital media may provide the means to elevate these conflicts to repeated patterns of abuse. However, digital media may provide a means of communicating during conflict that removes the immediate possibility of physical violence, and thus may be safer than face-to-face communication in some circumstances.

Other behaviors may be less common, but perhaps more harmful. For example, behaviors such as threatening to distribute embarrassing information about a dating partner using the Internet or a cell phone, and pressuring a dating partner to take a sexually suggestive/nude photo or video ("sext" message) using a computer or cell phone (6.5% and 9.2% rate of victimization, respectively) may be more harmful than an isolated incident of the more common monitoring behaviors. These threatening and pressuring behaviors may be more harmful because they are less normative and can be more harmful without repetition. Other behaviors (e.g., "making your partner feel afraid/unsafe" and "pressuring your partner to engage in sexual behavior") were also less common, but even low rates of these behaviors are of concern due to their impact on victims.

This study found that although most of the sample reported none or a few of the 19 DDA behaviors, a notable minority reported frequency scores of 13 or more. This subsample experienced a repeated pattern of DDA during the past year, which is perhaps more indicative of abusive relationships. Therefore, this group may be more at risk for experiencing what we would characterize as "digital dating abuse" rather than isolated incidents of what might be better described as "digital dating aggression." Digital dating aggression implies unhealthy and unwanted behavior but does not connote a systemic pattern of exertion of power and control. It should be noted that contrary evidence has been presented in previous work, showing that hypothetical anticipated distress decreases with actual experience of electronic victimization (Bennett et al., 2011).

Bennett et al. (2011) posited that cognitive dissonance might lead electronic victims to report less distress when encountering increased levels of digital aggression in their relationships.

Gender Differences in DDA Behaviors

Although gender differences did not emerge in the number or frequency of DDA behaviors, gender differences were found for some individual items on the DDA measure and in anticipated emotional reactions to "sexting" behavior in dating relationships. Threatening to distribute embarrassing information about a partner and pressuring for sexual behavior perpetration were more likely to be reported by men than women in this study. Women were more likely to report anticipated negative emotional reactions to "sexting" behavior, and men reported more positive anticipated reactions. These results are consistent with previous literature that found that male middle and high school students were more likely to perpetrate sexual cyber dating abuse (Zweig et al., 2013), and that college women reported more hypothetical distress than men when asked about victimization of DDA behaviors (Bennett et al., 2011). Sexual forms of DDA, in particular, seem to align with traditional male roles promoted by gender stereotypes. Some argue that gender stereotypes (e.g.,, men want sex and women want relationships, women are passive sexual objects) are reproduced in the digital context through representations of the self and behavior toward others (Manago, Taylor, & Greenfield, 2012). Therefore, men may be more likely to engage in DDA behaviors that reinforce these stereotypes as means of performing masculinity. Patterns of frequency of DDA experience in the past year also seemed to differ by gender, with a higher percentage of men than women reporting a victimization frequency score of 13 or higher.

Although gender differences in reporting of DDA and electronic aggression more broadly are inconsistent across the emerging literature, there is evidence to suggest that girls and women have more negative reactions and may experience more harm from DDA than boys and men. Gender results from this study support the need for further examination of the gendered context in which DDA occurs, especially in regard to sexual behaviors. Research that asks participants about the level of distress experienced with each type of behavior, their emotional and behavioral reactions to victimization of DDA behaviors, and the motivation for perpetrating DDA behaviors may provide the nuance needed to elucidate potential gendered dynamics in digital dating behaviors and the circumstances under which these behaviors could be characterized as "abuse."

Overlap in Perpetration and Victimization of DDA Behaviors

We found that the number of DDA victimization and perpetration behaviors was strongly positively correlated, a finding that would go unnoticed in studies focusing only on victimization. Zweig et al. (2013) found that most high school students reporting victimization of cyber dating abuse did not report perpetration, but this could be

due to differences in DDA measurement. Associations between perpetration and victimization have been found in dating violence studies in non-digital contexts (Langhinrichsen-Rohling, 2010; Straus, 2011). However, although perpetration and victimization of dating violence and DDA may overlap, it cannot be assumed that this is indicative of bidirectional abuse in dating relationships. Although we have used the terms *victimization* and *perpetration* for simplicity in reporting experience of DDA behaviors, the labels of *victim* or *perpetrator* should be used with caution because it is not known if perpetration occurred in isolation or in response to victimization. As mentioned previously, additional information on the motivation, experience, and consequences of these behaviors would be helpful in understanding these dynamics.

More data are needed to explore how power imbalances in dating relationships translate from the offline world to digital media, and how digital media might be used to maintain power over a partner or to challenge the power of one partner over the other. Research has yet to measure power in a digital media context (Menesini & Nocentini, 2009). Understanding power dynamics within digital dating relationships could elucidate the conditions under which digital dating interactions are positive expressions of intimacy and bonding, isolated acts of aggression, or patterns of abuse. When there are differences in perceived relationship power, perhaps DDA behaviors are used to either maintain or challenge the power hierarchy.

Association Between DDA Behaviors and Other Forms of Dating Violence

The goal of this article was to explore whether digital media are a context and tool for dating violence. Positive correlations were found between DDA variables, all CTS2-S chronicity scores except for perpetration of physical violence and injury perpetration, and psychological maltreatment victimization and perpetration. DDA seems to have the strongest association with psychological abuse, indicating that these may be similar behaviors in different contexts. These results support previous DDA research that found associations between electronic victimization and psychological, physical, and coerced intimacy victimization (Bennett et al., 2011), and associations between sexual cyber dating abuse victimization and sexual coercion victimization (Zweig et al., 2013).

Limitations and Implications

This exploratory study contributes to the emerging field of DDA and electronic aggression research, but further investigation is warranted to address some of its limitations. The first limitation was our measurement and conceptualization of DDA, as the measure created for this study is a preliminary method of measuring these behaviors. We asked only about lifetime experience and past year experience of DDA; therefore, we cannot determine if reported behaviors occurred within one relationship or across several relationships. The 19 DDA behaviors studied are not exhaustive, and further research should explore which behaviors best indicate abuse

in relationships. For example, although monitoring and intrusion behaviors emerged as some of the most common behaviors, and repeated, unwanted, and intrusive monitoring can reach the level of stalking, we cannot conclude from these data alone that the reported monitoring constituted stalking. The strengths of the DDA measure are that it is one of the first attempts to quantify DDA behaviors among college students using digital media broadly (both Internet and cell phones), and it adds to current literature by addressing both victimization and perpetration behaviors. Previous measures of DDA (see Bennett et al., 2011) are in part based on media platform, meaning that there are separate items for each type of digital media technology (e.g., email, texting). Research on digital media and adolescent social relationships indicates that the multiple capabilities of new technology such as "smart phones" have made differentiating between platforms increasingly irrelevant (Subrahmanyam & Smahel, 2011). Also, for the anticipated emotional reaction to DDA items, it should be noted that these were hypothetical reactions rather than actual reactions, so they should be interpreted with caution.

In addition, there were some limitations of our study design and analyses. This study used a sample from an undergraduate psychology subject pool, rather than a representative sample of young adults. Our cross-sectional design cannot determine causation or the direction of the association between DDA and other forms of dating violence. The overall low reporting of physical and sexual behaviors on the CTS also led us to question somewhat the accuracy of self-report, particularly with the male participants. Finally, as this research was meant to be an exploratory investigation of DDA, multiple comparisons were conducted on this sample, and thus the significant gender differences that emerged should be interpreted with caution. Further research should cross-validate these group comparisons to examine if women and men use different digital media behaviors in dating relationships and experience these behaviors differently.

Despite limitations, this study advances the study of harmful forms of digital dating interaction among college students, which has significant implications for this emerging field. In light of the results of frequent reports of more "minor" DDA behaviors (e.g., monitoring whereabouts) and the low frequency of DDA behaviors reported by a majority of the sample, college students are most likely to experience what might be called "digital dating aggression" rather than abuse. This term may be better applied to isolated incidents of mean or unhealthy digital dating behaviors, which are undesirable and can still cause distress. We therefore encourage caution in the interpretation of DDA behaviors, recognizing that only a minority of college students may be experiencing a repeated pattern of DDA behaviors that occur within a constellation of abusive behaviors influenced by systemic forms of oppression. For those who are experiencing abuse that involves or is further perpetuated by digital media, it is important for dating violence researchers and practitioners to recognize digital media as a context and tool for abuse. For others experiencing digital dating aggression and other forms of online harassment, researchers and practitioners should promote positive and respectful digital relationship boundaries and interactions. We encourage further investigation to determine under what circumstances, and with what intensity, the experience, motivation, and consequences of DDA behaviors indicate abuse and when they are most harmful within a gendered understanding of dating violence.

Declaration of Conflicting Interests

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