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Cyber-victimization, Depression, and Social Anxiety among

College Students

(TITLE)

BY

Kenna L. Mager

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
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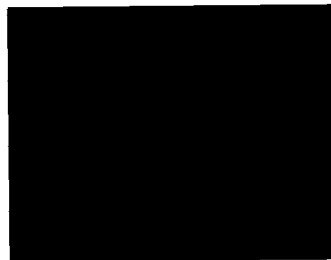
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Cyber-victimization, Depression, and Social Anxiety among College Students

Kenna L. Mager, B.S.

Eastern Illinois University, 2015

Thesis Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master of Arts

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Abstract

Cyber-victimization, a new form of bullying, emerged with the development and evolution of technology. Recent research shows discrepancies in cyber-victimization definitions and there are inconsistencies of methods used to measure cyber-victimization. This paper reviewed the literature on cyber-victimization and developed a new scale to measure cyber-victimization with the intention of making cyber-victimization research more consistent. The current study examined known correlates of cyber-victimization (e.g., depression and social anxiety) in a sample of college students using the newly developed measure. The current study also explored the moderating role of social support in the relationship between cyber-victimization and depression, as well as cyber-victimization and social anxiety. Eighty two Eastern Illinois University students participated in the study through an online survey. Cyber-victimization was found to be correlated positively with depressive symptoms, consistent with predictions. Social support was not found to have a relationship with cyber-victimization. Social support was not found to be a moderator of the relationship between cyber-victimization and depression, or the relationship between cyber-victimization and social anxiety. Clinical implications of the research, limitations, and suggestions for future studies were discussed.

Keywords: college, cyber-victimization, Cyber-Victimization Scale, depression, CES-D, social anxiety, SIAS, social support, MSPSS

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Cyber-victimization, Depression, and Social Anxiety among College Students

The use of electronic technology (e.g., email, text messaging, social networking sites, blogs) has become a primary means of communication for the current generation of college students. According to a Pew Internet and American Life report (Smith, Rainie, & Zickuhr, 2010), 94% of community college students, 98% of undergraduate students, and 99% of graduate students access the internet. Moreover, 86% of those students use social networking sites such as Facebook or LinkedIn (Smith et al., 2010). The internet has become a social environment with opportunities to interact, both positively and negatively, with peers. One potentially harmful interaction of current concern is cyber-victimization (Dilmac, 2009). The current study examined *cyber-victimization* (i.e., the receipt of cyber-aggression) among college students by addressing the disparate definitions of cyber-victimization used in the literature and proposed a new, behaviorally-based measure, with the goal of making cyber-victimization research more consistent. Furthermore, this study explored potential correlates (e.g., depression, social anxiety) of cyber-victimization.

Cyber-victimization and Cyber-aggression

The literature in this area often uses the term "cyber-aggression" to refer to both the perpetration and receipt of these behaviors. We propose that more specifically referring to *cyber-aggression* as the perpetration and *cyber-victimization* as the receipt of these behaviors is preferable. However, when discussing past research, we defaulted to the term used by the researcher. Cyber-aggression, also referred to as *cyber-bullying* in the literature, is similar to traditional aggression, as both refer to an intentional, harmful interaction between people (Ybarra & Mitchell, 2004). However, the forms of aggression

take place in different contexts and represent different types of behaviors. Forms of cyber-aggression include, but are not limited to, sending threatening messages, creating web sites that ridicule others, posting derogatory pictures of someone online, sending embarrassing material to others, cyber-stalking, impersonating someone or pretending to be someone you are not, gossiping online, and sexting (Raskauskas & Stoltz, 2007; Willard, 2007). Cyber-aggression research is still an exploratory area with many unclear issues, including what constitutes cyber-aggression. Cyber-aggression is similar to traditional relational aggression in that it seeks to harm people's relationships and/or damage individual's self-esteem. However, there are apparent factors that make cyber-aggression unique from traditional bullying that are important to understand in order to better conceptualize cyber-victimization.

First, traditional aggression/bullying is a face-to-face interaction with a perpetrator who can be identified, but a perpetrator of cyber-aggression can be anonymous. Second, cyber-aggression can take place virtually any time of day and can seem inescapable; whereas traditional aggression/bullying usually only occurs in a single setting (e.g., school, neighborhood) and allows the recipient to feel as though she/he has a safe place to which to escape (e.g., home). Third, the online realm may allow a wider audience to see and participate in a cyber-aggression incident, such as when it occurs in a social media format (e.g., Facebook). These issues suggest that cyber-victimization may be as harmful or perhaps is even more harmful than traditional aggression/bullying. Although the harmfulness of cyber-victimization has yet to be established, current research has shown cyber-aggression to be a prevalent, harmful

problem above and beyond traditional bullying (Campbell et al., 2012; Gradinger, Strohmeier, & Spiel, 2009; Patchin & Hinduja, 2010; Perren et al., 2010).

Recent research on cyber-*victimization* lacks a universally accepted definition (Dempsey, Sulkowski, Nichols, & Storch, 2009). The lack of consensus regarding the definition of cyber-victimization is problematic because it limits the ability to make comparisons across studies. Moreover, the development of valid and reliable cyber-victimization measures is impaired by the lack of a standard operational definition. Studies conducted on cyber-victimization have not used consistent measures to date, and have paid little attention to issues of reliability and validity. However, it is important to have consistency between the conceptualization of cyber-victimization and in how we measure it in order to compare cross-study results (Tokunaga, 2010).

In addition, it is difficult to establish an accurate prevalence rate for cyber-victimization when studies vary in the definition of cyber-victimization. Reported prevalence rates for cyber-victimization have varied wildly, with rates ranging from 4.8% (Sourander et al., 2010) to 55.3% (Dilmac, 2009) across all age groups. The national Second Youth Internet Safety Survey asked 1,500 children and adolescents between the ages of 10 and 17 years if they have experienced cyber-victimization in the past year and the reported prevalence rate for this age range was 9% (Ybarra, Mitchell, Wolak, & Finkelhor, 2006). For middle school students, studies have reported rates of 21% (Beran & Li, 2005), 24.9% (Li, 2007a) and 33% (Li, 2007b). The three studies of middle school students used the same questionnaire to measure cyber-victimization and found similar prevalence rates. The similar prevalence rates may indicate that prevalence rates of cyber-victimization among middle school students are between 20% and 30%. For

studies of high school students, rates of 4.8% (Sourander et al., 2010), 11.7% (Slonje & Smith, 2008), 15.6% (Smith et al., 2008), and 30% (Hinduja & Patchin, 2008) have been reported for cyber-victimization. These prevalence rates are not as similar as the rates found for middle school students and may be explained by the fact that the studies of high school students used different reference periods and various measures of cyber-victimization. This further emphasizes the necessity of researchers to be consistent with how they define and measure cyber-victimization, including reference periods and scales used.

To date, little research exists examining cyber-victimization rates amongst college students. Kraft and Wang (2010) used a reference period of "in the past 6 months" and found a prevalence of 10% for cyber-victimization among a sample of 471 college students in the United States. Schenk and Fremouw (2012) used "since being at college" as the reference period and found a similar prevalence rate of 8.6% of cyber-victimization among 799 college students. However, a study conducted at a university in Turkey did not use a specific time period and found a significantly higher prevalence rate of 55.3% for cyber-victimization among 666 college students (Dilmac, 2009). The current study used a college-aged sample in order to establish a prevalence rate for this under-studied population.

Despite the lack of a universally accepted cyber-victimization definition, researchers agree that cyber-victimization takes place in a technological realm of electronic text (Wong-Lo & Bullock, 2011). Possible mediums by which cyber-victimization activity takes place includes, but is not limited to, social networking sites (e.g., Facebook, Twitter), blogs, mobile phones, chat rooms, email, gaming devices,

Skype, instant messaging (IM), iPods, social networking apps (e.g., Snapchat, Instagram), message boards, YouTube, Wiki, and tablets. According to Notar, Padgett, and Roden (2013), the most common modalities by which cyber-victimization occurs are email, online chat rooms, social networking sites, and cell-phones. The rapid advancement of technology, however, allows for more potential opportunities for cyber-victimization to occur and also may mean that these types of statistics may change rapidly as well. In addition, this constant evolution of technology makes it difficult to design measures that can accurately assess technology use and remain up-to-date.

    Another limitation of this line of research is that most studies to date have used a methodology involving providing participants with one broad definition of cyber-victimization and asking them to identify whether or not they perceive themselves as a victim. For example, Belsey (2004) provided participants with a broad definition of cyber-bullying: "the use of information and communication technologies such as e-mails, cell phone and pager text messages, instant messaging, defamatory personal Web sites, and defamatory online personal polling Web sites, to support deliberate, repeated, and hostile behavior by an individual or group, that is intended to harm others" (p. 8). Then, they asked participants "Have you been cyber-bullied?" and the participants are prompted to respond with either a "yes" or "no." However, the exact wording of a cyber-victimization definition varies from study to study, making it difficult to compare results. Further, this method of measuring cyber-victimization forces participants to categorically identify themselves as either *victim* or non-victim based on one broad question that could be interpreted differently from one participant to the next, perhaps resulting in less reliable and valid results. For example, some participants who have been the target of

cyber-victimization might not identify with the term "victim" and assume that it implies a position of weakness or vulnerability. The current study addresses the disparity among researchers regarding the definition of cyber-victimization by developing a new, behaviorally-based measure with the goal of making cyber-victimization research more consistent, which will then allow for more accurate cross-study comparisons.

Correlates of Cyber-victimization

Cyber-victimization is associated with various adverse correlates. Recent media have often portrayed cyber-victimization as a serious social problem by linking tragedies with cyber-victimization, such as the suicide of a 12-year-old girl who had experienced cyber-victimization (Alvarez, 2013). However, the media fails in providing a complete picture by failing to mention other factors besides cyber-victimization that may have played a role in these tragedies. For example, rarely do the media talk about potential correlates (e.g., depression, social anxiety, and lack of support beyond the peer group) that may have contributed to these stories.

There also are gaps in the literature regarding people's actual experiences of cyber-victimization, which is especially true for college-aged students, as much of the literature has focused on younger populations (Beran & Li, 2005; Juvonen & Gross, 2008; Patchin & Hinduja, 2006; Raskauskas & Stoltz, 2007; Smith et al, 2008; Ybarra & Mitchell, 2004). It is important to bridge these gaps and research cyber-victimization in order to understand what correlates and protective factors may be relevant in preventing tragedies from occurring. The current study's goal was to shed some light on college students' experiences with cyber-victimization with the intention of forming a more complete understanding of this potentially harmful interaction.

Youngsters may display a variety of direct negative reactions to cyber-victimization. Beran and Li (2005) identified feeling angry and crying as the most frequent reactions to cyber-aggression in a sample of 7th through 9th grade Canadian students. Similarly, adolescents attending high school most frequently endorsed "I can tolerate [it] although I am not happy" when asked how they typically react after experiencing cyber-victimization (Wong, Chan, & Cheng, 2014). College students who experienced cyber-victimization frequently reported feeling frustrated (46.2%), stressed (40.9%), sad or hurt (37.9%), angry (33.8%), and/or experienced difficulty concentrating (23.4%) as a result of their victimization (Schenk & Fremouw, 2012). These findings support the claim that cyber-victimization can lead to varying negative reactions at the middle school, high school, and college student levels.

In addition to examining how students respond to cyber-victimization, some studies have looked more broadly at possible outcomes of cyber-victimization by exploring correlates. For example, Beran and Li (2005) found that poor concentration, low school achievement, and school absenteeism were associated with cyber-victimization in a sample of 7th through 9th grade Canadian students. Behavior problems, such as alcohol consumption, smoking, and low school commitment, also have been correlated to cyber-victimization in a sample of adolescents (Mason, 2008). In addition, 22.8 % of adolescent recipients of cyber-victimization have reported not feeling safe at school (Sourander et al., 2010). These findings demonstrate the potential of cyber-victimization to negatively affect students' behavior at school, which in turn could impact students' grades and academic success. For example, students who have low school commitment will miss numerous classes that can ultimately lead to lower school

achievement. Students who have experienced cyber-victimization also have significantly lower self-esteem (Patchin & Hinduja, 2010), as well as more social difficulties (Campbell et al., 2012) than their peers. These findings support the claim that cyber-victimization is a harmful interaction, particularly for younger populations, although the direction of causality has not yet been determined via these correlational studies. That is, youngsters with certain characteristics (e.g., low self-esteem) may present as relatively easy targets of cyber-victimization.

Most of the studies conducted on cyber-victimization have used younger populations, such as middle school or high school students. However, a few studies have used college samples. Dilmac (2009) found that having social support negatively predicted cyber-victimization; whereas novelty-seeking, seeking novelty of experience and avoiding routine, positively predicted cyber-victimization in a sample of college students attending a university in Turkey. Schenk and Fremouw (2012) was the first study to use a standardized assessment of psychological symptoms (i.e., SCL-90-R) among college students who have experienced cyber-victimization and found that cyber-victimization correlated with higher levels of depression, anxiety, phobic anxiety, paranoia, and suicidal behaviors when compared to control participants. Thus, these initial studies provide tentative support that cyber-victimization is associated with various negative effects at the college level.

Because the environment of college students is similar in nature to middle school and high school students in various ways (e.g., attends classes with peers, involved in extracurricular activities and organizations), cyber-victimization may affect college students in a similar negative manner as has been established in younger populations.

Alternatively, the environment of a college student also is dissimilar from younger populations in many ways (e.g., living away from home, more freedom), which potentially could mean college students' experiences with cyber-victimization may be quite different. Given that nearly all of today's college students can easily access the internet and that most students do so on a regular basis, this population is important to include in the cyber-victimization research (Smith et al., 2010). This study explored college student's experiences with cyber-victimization by exploring two potential correlates of cyber-victimization: depression and social anxiety.

Depression and Cyber-victimization

Given that feeling sad, hurt, and crying are among the most frequent reactions reported by those who experience cyber-victimization (Beran & Li, 2005), it would logically follow that those who experience cyber-victimization may also be at greater risk for developing depressive symptoms. The threatening nature of cyber-victimization has the potential to cause significant harm to individuals. For example, in a case report, a fifteen year-old girl sought counseling for depression after she became the target of an online bullying campaign which consisted of insults, abusive remarks about her weight, and threats (Snider & Borel, 2004). Another possible explanation is that individuals who have depressive symptoms are at greater risk for experiencing cyber-victimization (Fauman, 2008; Gradinger et al., 2009; Ybarra & Mitchell, 2004). For example, depressive symptoms, such as persistent sadness and irritability, may be detrimental for maintaining social relationships and could put individuals at risk for becoming an easy target for cyber-victimization.

Although there are different theories regarding the relationship between cyber-victimization and depressive symptoms, studies have consistently confirmed that cyber-victimization is positively associated with symptoms of depression. Campbell and colleagues (2012) found that adolescents who experienced cyber-victimization reported significantly higher levels of depression compared to victims of traditional bullying. Similarly, students who experience cyber-victimization have higher levels of depressive symptoms, over and above that of traditional bullying (Gradinger, Strohmeier, & Spiel, 2009; Perren et al., 2010; Ybarra & Mitchell, 2004). These findings are in line with the theory that cyber-victimization is a unique type of bullying that may have greater negative effects compared to traditional bullying, including higher levels of depressive symptoms. More research is needed for this claim to be confirmed. However, it has been established that cyber-victimization is linked to higher levels of depressive symptoms in multiple studies involving adolescents and middle school students (Campbell et al., 2012; Fauman, 2008; Thomas, 2006; Ybarra & Mitchell, 2004).

Ybarra and Mitchell (2004) found that students aged 10 to 17 years who experienced cyber-victimization endorsed more depressive symptoms compared to students who did not experience it. Fauman (2008) identified depression as a common psychological consequence related to cyber-victimization. Thomas (2006) also found depression to be positively correlated with cyber-victimization in a sample of adolescents (ages 13-18). These studies support the claim that cyber-victimization is associated with depression in younger populations. This is an important relationship to research because depression can be debilitating and cause significant distress and impairment in daily functioning (e.g., social, occupational, academic) (American Psychiatric Association,

2013). Understanding the relationship between cyber-victimization and depressive symptoms will help researchers develop effective coping strategies that individuals can utilize in order to prevent or combat the progression of depressive symptoms.

Few studies have examined cyber-victimization and depressive symptoms using a college student population. Schenk and Fremouw (2012) found that college students who experienced cyber-victimization were elevated on psychological subscales of depression. Given the lack of cyber-victimization research using a college student sample, not enough evidence exists to conclude that cyber-victimization is related positively to symptoms of depression in college students, necessitating the need for additional research. The current study used a college student sample to help shed light on college students' experiences with cyber-victimization and depressive symptoms.

Social Anxiety and Cyber-victimization

Cyber-victimization can take the form of sending/sharing embarrassing information about an individual or ridiculing others online. These types of victimization could logically lead to feelings of embarrassment and humiliation. This line of thinking has lead to the theory that experiencing cyber-victimization may be related to the development of symptoms of social anxiety (Campbell et al., 2012; Dempsey et al., 2009). However, the theory that cyber-victimization *causes* social anxiety symptoms has not been supported by research. An alternative theory is that students who have social anxiety symptoms are more likely to be victimized by others due to overt signs of anxiety which place individuals at risk for victimization (Troy & Sroufe, 1987). More research is needed to determine if there is an association between cyber-victimization and social anxiety.

For example, Storch, Brassard, and Masia-Warner (2003) found that adolescents who were relationally victimized by their peers experienced greater levels of social anxiety. Because traditional relational victimization is similar to cyber-victimization in many ways (e.g., relational aggression and cyber-victimization can involve spreading rumors or excluding others; Crick & Grotpeter, 1995; Willard, 2007), it would be expected that cyber-victimization also would be associated positively with social anxiety symptoms. Indeed, one study has documented this relationship. Dempsey and colleagues (2009) found that in children attending public middle schools, cyber-victimization was associated positively with symptoms of social anxiety. Similarly, Campbell and colleagues (2012) found that adolescents who experienced cyber-victimization reported significantly more social difficulties (e.g., greater interpersonal difficulties with peers) and higher levels of anxiety than adolescents who had experienced traditional bullying.

To our knowledge, no study to date has explored cyber-victimization and social anxiety in a sample of college students. However, studies have explored the correlation between cyber-victimization and anxiety, as well as cyber-victimization and phobic anxiety. Schenk and Fremouw (2012) used the SCL-90-R (SCL-90-R; Derogatis, 1994) and found that college students who experienced cyber-victimization were elevated on psychological subscales of phobic anxiety. More research involving college students is warranted given that it has been found that college students experience cyber-victimization (Dilmac, 2009) and experience symptoms of social anxiety (Terlecki, Ecker, & Buckner, 2014). This study explored the relationship between cyber-victimization and symptoms of social anxiety in a sample of college students to gain a

better understanding of college student's experiences with cyber-victimization and its

potentially negative effects.

Social Support and Cyber-victimization

Discrepancies exist in the literature regarding the definition of social support. In

general, it has been defined as "knowledge that a person is cared for, is esteemed, and

belongs to a large network of concerned people and that the support can be described

both qualitatively and quantitatively" (Pearson, 1986, p. 392). Social support, regardless

of definition, has been identified in the literature as a factor that can reduce the negative

effects of stressful experiences, such as victimization (Cohen & Willis, 1985). Although

this claim has been found to be true for traditional bullying victimization (e.g., Hodges,

Boivin, Vitaro, & Bukowski, 1999; Vernberg, 1990), few studies have explored social

support in relation to cyber-victimization. Because cyber-victimization is a form of

victimization, it would be expected that social support would also be correlated

negatively with cyber-victimization. Indeed this was found by Dilmac (2009) who

demonstrated that having social support was a negative predictor of cyber-victimization

in a sample of Turkish college students.

Research has shown that social support can act as a buffer in the relationship

between victimization and internalizing distress. Davidson and Demaray (2007) used a

middle school sample and examined social support as a moderator between victimization

and internalizing distress from traditional bullying and found that higher levels of parent,

teacher, classmate, and school social support buffered the relationship between

victimization and externalizing distress, such that the more social support, the less

internalizing distress from bullying was reported. Therefore, social support could act as a

moderator between cyber-victimization and potential negative outcomes. However, few studies to date have examined this issue.

Fanti, Demetriou, and Hawa (2012) explored family and friend social support in a sample of adolescents and found that family social support was related negatively to cyber-victimization; whereas those with low friend social support were at greater risk for being cyber-victimized in the future. This finding provides some support for the theory that social support can serve as a moderator in the relationship between cyber-victimization and potential correlates. However, more research is warranted to provide more evidence in support of this theory. In particular, no studies to our knowledge have explored this issue in college students. Thus, this study explored social support as a moderator in the relationships between cyber-victimization and depression and cyber-victimization and social anxiety.

Current Study Scale Development

To make cyber-victimization research more consistent, the current researchers have developed a new, behaviorally-based scale to measure cyber-victimization called the Cyber-Victimization Scale. The researchers have taken into consideration various definitions of cyber-victimization throughout the literature and items have been sampled from various domains of cyber-victimization with the intention of being comprehensive. For example, Willard (2007) described several cyber-aggression techniques that youth employ: harassment, denigration, impersonation, outing/trickery, and exclusion. Questions were developed to include various forms of cyber-victimization, as well as the many different mediums cyber-victimization can take place (e.g., Facebook, text messaging, chat rooms, and so forth). In addition, based on results from prior studies, we

used a longer point of reference in order to better capture students' experiences with cyber-victimization throughout college. The following is a sample item: "Since you started college, has someone hacked or broken into your e-mail account to pose as you to embarrass or damage your reputation?"

After completing the development portion of the process, the next step we took involved recruiting Eastern Illinois University students to participate in a series of focus groups during which time feedback was provided on the Cyber-Victimization Scale developed for this study. During one focus group, which consisted of three undergraduate students, participants were asked if they have any personal or anecdotal experience with cyber-victimization in college or if they knew someone who did. Participants then shared their experiences (although they were encouraged to not reveal whether it is a personal example, if they would prefer), with the goal being that the researchers learn more about how cyber-victimization is manifested among college students. Another focus group, which consisted of six graduate students, viewed the Cyber-Victimization Scale and provided feedback on the questions with the intention of editing the questionnaire. Based on the feedback from both focus groups, the researchers modified the Cyber-Victimization Scale accordingly.

Current Study Hypotheses

Given that most of the literature to date has focused on cyber-victimization at the middle school level, the current study was conducted to shed light on cyber-victimization from the perspective of a college student. First, we wanted to provide readers with data and information of what a typical college student's experience is with cyber-victimization (e.g., prevalence rate, top forms of cyber-victimization, top mediums where cyber-

victimization occurs). This study aimed to add to the growing literature on college student cyber-victimization by adding arguably more valid and reliable data regarding the rates of specific types of cyber-victimization. To inform readers of the validity and reliability of our data, we conducted analyses to report characteristics of the measures, including means, standard deviations, ranges, and internal consistency values. Because of the novelty of our Cyber-Victimization Scale, we also conducted analyses to determine the Cyber-Victimization Scale's validity and reliability.

It was predicted that experiencing cyber-aggression as a college student will be associated with negative outcomes, similar to those established in younger students. To explore these relationships, this study conducted zero-order correlations between main study variables. Moreover, social support has been established in the cyber-aggression literature as a protective factor (Fanti et al., 2012). This study explored social support as a moderator in the relationship between cyber-victimization and depression, as well as cyber-victimization and social anxiety by conducting multiple regression analyses.

Our first main study hypothesis examined cyber-victimization in relation to depressive symptoms. Cyber-victimization was predicted to be correlated positively with depressive symptoms, as is consistent with prior literature conducted on younger populations (Gradinger, Strohmeier, & Spiel, 2009; Perren et al., 2010; Ybarra & Mitchell, 2004). Further, our next hypothesis examined social support as a moderator in the relationship between cyber-victimization and depression. If a significant relationship was determined to exist between cyber-victimization and depression, the strength of that relationship may be increased or decreased based on current perceived social support. Hypothesis 1b predicted a positive correlation between cyber-victimization and

depression as moderated by social support, such that at high levels of social support, the relationship between cyber-victimization and depression may not exist.

Our second hypothesis examined cyber-victimization in relation to social anxiety symptoms. Cyber-victimization was predicted to be positively correlated with symptoms of social anxiety, as is consistent with prior research on younger populations (Dempsey et al., 2009). Further, our next hypothesis examined social support as a moderator in the relationship between cyber-victimization and social anxiety. If a significant relationship was determined to exist between cyber-victimization and social anxiety, the strength of that relationship may be increased or decreased based on current perceived social support. Hypothesis 2b predicted a positive correlation between cyber-victimization and social anxiety as moderated by social support, such that at high levels of social support, the relationship between cyber-victimization and social anxiety may not exist.

Method

Participants

Participants were students enrolled in an introductory psychology course and recruited through Eastern Illinois University's SONA research pool in the Spring 2015 semester. Participants received course credit for their participation. All students (ages 18 years and above) who were part of the pool were eligible to participate, although those who exceeded 30 years of age were excluded from data analysis (n = 1) (See Table 1). Participants received a message on SONA indicating that students younger than 18 years were not able to participate. Nine participants were excluded for completing the survey in less than 10 minutes and/or for incomplete responding (failed to answer all items in the scales). Another participant was removed for age restriction (participant was 52 years

old). The final sample of 82 participants did not meet the minimum sample size of 107 students needed to achieve a moderate ($f^2 = .15$) effect, which will be addressed in the Limitations section.

This final sample consisted of 23 males (28%) and 58 females (71%), with 1 participant not specifying sex (1%). The final sample ranged in age from 18-30 ($M = 19.37$), with 1 participant not specifying age (1%). Forty seven participants identified as White/Caucasian (57%), 26 identified as Black/African American (32%), 4 identified as Hispanic (5%), 4 identified as Multi-ethnic (5%), and the remaining 1% did not specify ethnicity. Forty-eight participants were freshmen (59%), 21 were sophomores (26%), 7 were juniors (9%), 4 were seniors (5%), 1 was a graduate student (1%), and 1 did not specify his/her year in school (1%).

Procedure

Participants signed up via the research participation pool program run by the psychology department on SONA. The participants then completed all scales online through Qualtrics. Participants were provided an informed consent form. After they provided informed consent, participants were allowed to participate in the study. Participants then completed all questionnaires online beginning with the demographics questionnaire. The rest of the measures were counter-balanced to prevent order effects. At the end of the study, participants were given a debriefing form explaining the study, which contained contact information in the event that they had any questions about the study, as well as referral information in case they felt upset after answering questions about their experiences with cyber-victimization. It took the participants roughly 30 minutes to complete the study. See Appendix A for the demographics questionnaire.

Measures

Demographics. Participants were asked to respond to questions regarding their sex , age, year in school, sexual orientation, enrollment status, ethnicity, relationship status/marital status, involvement in extra-curricular activities and sports, cumulative grade point average, hours worked per week, and number of friends.

Cyber-victimization. Cyber-victimization was assessed using the Cyber-Victimization Scale, which was developed for the current study. The Cyber-Victimization Scale is a 60-item measure of behaviors and acts that are theorized to fully capture cyber-victimization. As discussed previously, questions were developed with the consideration of all forms of cyber-victimization (e.g., harassment, denigration, impersonation, outing/trickery, and exclusion) as well as the many different mediums in cyber-victimization can take place (e.g., Facebook, text messaging, chat rooms). The following ten mediums were chosen based on the results of previous research and feedback from the focus groups: 1) instant messaging, 2) chat rooms, 3) blog, forum, or comment section on a website (e.g., YouTube comments section), 4) e-mail, 5) text messaging, 6) Facebook, 7) Twitter, 8) other social media, 9) social photo/video sharing site or app, and 10) online gaming. Each medium included an item that described a form of cyber-victimization. Because each medium is unique, not all items for a specific medium included the same forms of cyber-victimization. For example, the medium "social photo/video sharing site or app" did not include a question asking if someone had spread rumors as these apps typically are for the sole purpose of sharing photos and videos and do not have the capacity for individuals to spread rumors, unless it is off-topic.

The following is an example item from the measure: "Since you started college, has someone hacked or broken into your e-mail account to pose as you to embarrass or damage your reputation?" If participants responded with yes to any cyber-victimization question, participants were then prompted to indicate how many times it happened, who the perpetrator was, and to describe the experience. Because this measure is in the ongoing developmental process, steps were taken to validate the measure (i.e., administration to a focus group, factor analysis of items), and this lab will continue to refine this instrument based on the results of this study as well as subsequent research. See Appendix B for the full scale.

Additionally, the Cyberbullying Victimization Scale by Hinduja and Patchin (2009) was included for comparison. The Cyberbullying Victimization Scale is a 9-item measure of cyberbullying victimization which has been used with youth samples (Hinduja & Patchin, 2008; Patchin & Hinduja, 2009). Respondents were asked to rate the frequency of their experience of cyberbullying victimization within the past 30 days on a scale from 0 (never) to 4 (every day). Fair internal consistency has been demonstrated for this scale (Cronbach's $\alpha = .74$) (Hinduja & Patchin, 2008; Patchin & Hinduja, 2009). See Appendix C for the full scale.

Depression. Depression was assessed using the Center for Epidemiological Studies Depression (CES-D) scale (CES-D; Radloff, 1977). The CES-D is a 20-item measure of depressive symptomatology commonly used with adolescent and young adult populations (Dierker et al., 2001; Myers & Winters, 2002; Roberts, Lewinsohn, & Seeley, 1991). Respondents were asked to rate the frequency of depressive symptoms experienced in the past week on a scale from 1 (less than one day a week) to 3 (5 to 7

days a week). The CES-D has demonstrated adequate to good test retest reliability (r = .45 to .71) and good internal consistency (α = .85 to .90) (Fountoulakis et al., 2007; Roberts, Andrews, Lewinsohn, & Hops, 1990). Convergent validity for the CES-D has been found with other measures of depression including the Beck Depression Inventory, Zung Depression Rating Scale, Kellner Symptom Questionnaire, and the Major Depression Inventory (Fountoulakis et al., 2007). Divergent validity for the CES-D has been found using measures of positive affect and emotionality (Joseph, 2006; Ryff et al., 2006). See Appendix D for the full scale.

Social Anxiety. Social anxiety was assessed using the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The SIAS assesses social interaction anxiety. Mattick and Clarke (1998) conceptualize social interaction anxiety as distress when meeting and talking with other people. The SIAS is a self-report measure consisting of 20 items scored on a five-point Likert scale (ranging from 0 = "not at all characteristic or true of me" to 4 = "extremely characteristic or true of me"). A sample item from the scale is "I have difficulty talking with other people." Each individual item is summed and higher scores indicate higher levels of social interaction anxiety. The SIAS has demonstrated both high levels of internal consistency (α's ranging from .85 to .94; Mattick & Clarke, 1998; Weeks et al., 2008; Zubeidat, Salinas, Sierra, Fernandez-Parra, 2007) and test-retest reliabilities (r's ranging from .66-.93; Mattick & Clarke, 1998). Additionally, correlations with scales examining similar constructs, such as the Fear of Negative Evaluation Scale (FNES; Watson & Friend, 1969) (r = .66; Mattick & Clarke, 1998) and the social phobia subscale of the Fear Questionnaire (Marks & Mathews,

1979) (r = .66; Mattick & Clarke, 1998) demonstrates good convergent validity. See Appendix E for the full scale.

Social Support. Social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). This instrument was used to measure supportive relationships within three different contexts: family (e.g., "I get the emotional help and support I need from my family"), friend (e.g., "I can talk about my problems with friends"), and significant other ("I have a special person who is a real source of comfort to me"). Participants responded on a seven-point scale (from 1 = "very strongly disagree" to 7 = "very strongly agree"). Scores are typically divided into three categories: low acuity (12-48), medium acuity (49-68), and high acuity (69-84). Prior work has demonstrated that the MSPSS is a valid and reliable measure of perceived social support during adolescence and young adulthood (Canty-Mitchell & Zimet, 2000). See Appendix F for the full scale.

Results

First, characteristics of the measures, including means, standard deviations, ranges, and internal consistency values (α), were calculated. Next, correlations were computed to identify links between main study variables and to test Hypotheses 1 and 2. The Cyber-Victimization Scale was scored three different ways to assess different aspects of cyber-victimization, which will be discussed in greater detail. Zero-order correlations were conducted with all three scores on the Cyber-Victimization Scale. Finally, multiple regression equations tested Hypotheses 1b and 2b concerning the following two moderated models: (1) cyber-victimization and depression and (2) cyber-victimization and social anxiety as moderated by social support.

Characteristics of the Measures

Mean scores and standard deviations of each measure are found in Table 2. The

Cyber-Victimization Scale designed for this study was scored multiple ways. First, we

calculated the Cyber-Victimization Scale *Total Score* by summing the total number of

times participants endorsed experiencing cyber-victimization (yes=1; no=0) across all ten

mediums and varying forms of cyber-victimization within each medium (e.g., offensive

or threatening messages, impersonation, outing/trickery, exclusion). The following are

the ten mediums with the corresponding number of items: instant messaging (6), chat

rooms (6), blog or comment sections on forums (5), e-mail (5), text messaging (6),

Facebook (7), Twitter (7), other social media (5), social photo/video sharing apps or

websites (3), and online gaming (5). Thus, a possible score could range from 0 to 55.

The median of the Cyber-Victimization Scale *Total Score* was 0, and the mode also was

0; the median and the mode for participants who had a non-zero score was 2, suggesting

that when cyber-bullying does occur, it generally is at a low base rate for most

participants.

Second, a cyber-victimization *Severity Score* was calculated by adding the total

number of times a participant reported experiencing cyber-victimization across all ten

mediums; this item was a free-response in which participants had no restrictions on the

number they could report. Participants who reported experiencing cyber-victimization

reported an average of 25.83 times. The average excluding the most extreme outliers

(e.g., two participants reported experiencing cyber-victimization 207 and 209 times) was

12.33. The median of the Cyber-Victimization Scale *Severity Score* was 0, and the mode

also was 0; the median and the mode for participants who had a non-zero score were 6

and 4 respectively.

Finally, to assess the overall presence or absence of cyber-victimization, a

Presence Score was obtained indicating whether a participant endorsed any cyber-

victimization item on the scale. If participants reported experiencing any cyber-

victimization at all, then they scored a "1," whereas those who did not experience cyber-

victimization scored a "0." Thirty five percent of participants reported experiencing at

least one form of cyber-victimization ($N = 29$; 7 males (24%) and 22 females (76%)).

Moreover, our participants spent an average of five hours on the internet per day.

Participants overall spent the most hours per day using text messaging, social photo/video

sharing sites or apps (e.g., Instagram, Snapchat, Fade, Flickr, YouTube, Vine), Facebook,

Twitter, e-mail, and other social network sites (e.g., LinkedIn, Google (+), MySpace,

YikYak, Confessions Page, Reddit) (See Table 3). Those who experienced cyber-

victimization endorsed an average of three forms of cyber-victimization ($M = 3.07$, $SD = $

2.31). Most of the cyber-victimization took place through text messaging (37.80%),

followed by instant messaging (26.83%), Facebook (13.41%), Twitter (10.98%), online

gaming (6.10%), and blog, forum, or comment section on websites (6.10%), social

photo/video sharing site or app (4.88%), other social networking sites (1.22%), and e-

mail (1.22%). None of the participants reported experiencing cyber-victimization

through chat rooms, perhaps reflecting the lack of popularity of this forum in this sample.

The most prevalent forms of cyber-victimization across all mediums were "received

offensive or threatening messages" (30.50%), "repeatedly received messages from

someone after asking him/her to stop contacting you" (24.39%), "had rumors spread

about you" (18.3%), "had someone share secrets or embarrassing information about you" (14.64%), and "were intentionally excluded" (6.10%). Please refer to the Appendix to view more qualitative data on the Cyber-Victimization Scale, such as participants' responses regarding their reactions after experiencing cyber-victimization Appendix G and descriptions of participants' experience of cyber-victimization in Appendix H.

Participants' scores on the CES-D (M = 17.68, SD = 12.25) were indicative of "mild or moderate" depressive symptomatology (Radloff, 1977). Fifty-four percent of students met the standard cut-off score of 16 or lower indicating no clinical significance, while 46% of students met the standard cut-off score of 16 or higher indicating possibility of depression. A study using a similar college student sample found comparable scores when assessing depression using the CES-D at two different time points (Phase 1, M = 13.86, SD = 7.37; Phase 2, M = 13.53, SD = 8.81) (Shean & Baldwin, 2008).

Scores found on the SIAS (M = 25.98, SD = 15.33) were not indicative of social anxiety (Mattick & Clarke, 1998). Sixty-seven percent of students' scores did not meet standard cut-offs indicating social anxiety, while 18% of students met the standard 34 or higher cut-off score indicating social phobia and 15% of students met the standard 43 or higher cut-off score indicating possibility of social anxiety. Ghaedi et al. (2010) found similar scores using the SIAS with a sample of college students (M = 23.8, SD = 12.6).

Participants overall had high levels of social support (M = 69.44, SD = 16.95) (Zimet et al., 1988). Eleven percent of participants fell within the low acuity cutoff, 24% fell within moderate acuity, and 65% fell within high acuity. Our sample's social support scores were similar to those in a study by Hefner and Eisenberg (2009), who found the majority of their college student sample scored on the upper end of the distribution for

overall score on the MSPSS while only 9% percent of students' scores fell within low

acuity, suggesting most college students experience high quality social support.

Internal Consistency

Cronbach's alphas were obtained for each scale (See Table 4). All of the pre-

existing measures demonstrated excellent internal consistency. The Cronbach's alpha for

the CES-D was .92, which was slightly higher than the internal consistency ranging from

.85 to .90 reported by Fountoulakis and colleagues (2007) and Roberts and colleagues

(1990). The SIAS had an internal consistency of .93, which fell within the .85 to .94

range reported by multiple researchers (Mattick & Clarke, 1998; Weeks et al., 2008;

Zubeidat, Salinas, Sierra, Fernandez-Parra, 2007). The internal consistency of the

MSPSS was .97, higher than the .93 alpha level observed by Canty-Mitchell and Zimet

(2000). Finally, the Cronbach's alpha for the Cyber-Victimization Scale was .77, which

was below the .91 internal consistency score found for a comparison scale - the

Cyberbullying Victimization Scale by Hinduja and Patchin (2009). Given that the scale

was designed to be broad and cut across multiple areas, this lower internal consistency is

not surprising.

Cyber-Victimization Scale Validity

Additionally, the Cyber-Victimization Scale and the Hinduja and Patchin (2009)

Cyberbullying Victimization scale were not correlated significantly $r(57) = .09, p = .25$

(one-tailed), suggesting weak concurrent validity. Although both scales measure cyber-

victimization, there are many differences between the scales that may account for the lack

of correlation found between them. For example, the Cyber-Victimization Scale has 55

specific questions spanning across ten different mediums, whereas the Hinduja and

Patchin (2009) scale has a total of nine questions, six of which span across five specific

mediums (e.g., "email, chat room, MySpace, instant messaging, and another Web page")

and three broad questions asking about participants experience online. Additionally, the

Cyber-Victimization Scale made for this study involved a longer reference period (i.e.,

"since you started college") compared to "the past 30 days" reference period of the

Cyberbullying Victimization Scale by Hinduja and Patchin (2009). Subsequent work will

be conducted in this lab to further investigate the reliability and validity of the Cyber-

Victimization Scale designed for this study.

Correlations

The zero-order correlations between the main study variables were examined.

Most correlations were significant (See Table 5). As was predicted, depression was

correlated positively with cyber-victimization $r(82) = .21, p < .001$ (one-tailed). Contrary

to prediction, social anxiety was not correlated with cyber-victimization $r(82) = -.06, p =$

.29 (one-tailed). Additionally, depression and social anxiety were both correlated

negatively with social support, $r(82) = -.23, p = .02$ (one-tailed) and $r(82) = -.20, p = .03$

(one-tailed) respectively.

Hypothesis 1 predicted a positive correlation between cyber-victimization and

depression. We first tested this using the Cyber-Victimization Scale *Total Score*. Cyber-

Victimization Scale *Total Score* was correlated positively with the CES-D score, $r(82) =$

.43, $p < .001$ (one-tailed), as was consistent with our predictions. Second, we examined

the relationship between cyber-victimization and depression using the Cyber-

Victimization Scale *Severity Score*. Cyber-Victimization Scale *Severity Score* was not

correlated with the CES-D score, $r(82) = .06, p = .29$ (one-tailed). Finally, we examined

the relationship between cyber-victimization and depression using the Cyber-Victimization Scale *Presence Score*. Cyber-Victimization Scale *Presence Score* was correlated positively with the CES-D score, $r(82) = .38, p < .001$ (one-tailed).

Hypothesis 2 predicted a positive correlation between cyber-victimization and social anxiety. We first tested this using the Cyber-Victimization Scale *Total Score*. Cyber-Victimization Scale *Total Score* was not correlated with the SIAS score, $r(82) = -.06, p = .29$ (one-tailed), which was inconsistent with our predictions. Second, we examined the relationship between cyber-victimization and social anxiety using the Cyber-Victimization Scale *Severity Score*. Cyber-Victimization Scale *Severity Score* was not correlated with the SIAS score, $r(82) = -.18, p = .05$ (one-tailed). Finally, we examined the relationship between cyber-victimization and depression using the Cyber-Victimization Scale *Presence Score*. Cyber-Victimization Scale *Presence Score* was not correlated with the SIAS score, $r(82) = .01, p = .45$ (one-tailed).

Additionally, we examined the relationship between cyber-victimization and social support. We first tested this using the Cyber-Victimization Scale *Total Score*. Cyber-Victimization Scale *Total Score* was not correlated with the MSPSS score, $r(82) = .09, p = .21$ (one-tailed). Second, we examined the relationship between cyber-victimization and social support using the Cyber-Victimization Scale *Severity Score*. Cyber-Victimization Scale *Severity Score* was not correlated with the MSPSS score, , $r(82) = .05, p = .33$ (one-tailed). Finally, we examined the relationship between cyber-victimization and social support using the Cyber-Victimization Scale *Presence Score*. Cyber-Victimization Scale *Presence Score* was not correlated with the MSPSS score, $r(82) = .04, p = .35$ (one-tailed).

Multiple Regression

Hypothesis 1b examined whether social support would moderate the relationship between cyber-victimization and depression, which was tested using multiple regression. After centering the Cyber-Victimization Scale *Total Score* and the MSPSS total score and computing the cyber-victimization-by-social support interaction term (Aiken & West, 1991), the two predictors (cyber-victimization and social support) and their interaction (cyber-victimization x social support) were entered into a simultaneous regression model to predict depression (See Table 6). The overall regression equation was significant, $R^2 =$ .25, $F(3,78) = 8.87$, $p < .001$ and Cohen's $f^2 = .33$, which is a moderate effect size (Cohen, 1988). Cyber-Victimization Scale *Total Scores* positively predicted depression scores (CES-D) ($\beta = .45$, $p < .001$). Social support scores (MSPSS) negatively predicted depression scores (CES-D), ($\beta = -.28$, $p = .02$). The interaction between cyber-victimization and social support was not significant, ($\beta = -.01$, $p = .91$), suggesting that the relationship between cyber-victimization and depression did not depend on the amount of social support.

Hypothesis 2b predicted that social support would moderate the relationship between cyber-victimization and social anxiety. After centering the Cyber-Victimization Scale *Total Score* and the MSPSS total score and computing the cyber-victimization-by-social support interaction term (Aiken & West, 1991), the two predictors (cyber-victimization and social support) and their interaction (cyber-victimization x social support) were entered into a simultaneous regression model to predict social anxiety (See Table 7). The regression equation was not found to be statistically significant, $R^2 = .05$, $F(3,78) = 1.51$, $p = .22$ and Cohen's $f^2 = .05$, which is a small effect size (Cohen, 1988).

Results indicated that Cyber-Victimization Scale *Total Scores* were not associated with SIAS scores, (β = -.10, p = .43) and MSPSS scores were not associated with SIAS scores, (β = -.12, p = .39). The interaction between cyber-victimization and social support was not statistically significant, (β = .14, p = .32), suggesting that the relationship between cyber-victimization and social anxiety did not depend on the amount of social support.

Discussion

This study explored cyber-victimization among college students. Specifically, the study examined the potential relationships between cyber-victimization and depression, as well as cyber-victimization and social anxiety. Moreover, these relationships were examined via a moderated model with social support as the moderator of the relationship between cyber-victimization and depression, as well as cyber-victimization and social anxiety. Several interesting findings emerged, including information about the nature of cyber-victimization among college students.

Cyber-victimization

One goal of this study was to provide readers with a picture of a typical college student's experience with cyber-victimization, something which previous studies have inadequately addressed. To begin, given that 35% of our sample experienced cyber-victimization, there is a strong probability that any college student will encounter some form of cyber-victimization during their time at college. Females were seemingly more likely to experience cyber-victimization; however, this statistic could reflect the higher percentage of females who participated in our study. Of those college students who experienced cyber-victimization, he/she was likely to endorse experiencing an average of three different forms across all mediums, with the top three forms being "received

offensive or threatening messages," "repeatedly received messages from someone after asking him/her to stop contacting you," and "had rumors spread about you." Moreover, when a college student experiences any one form of cyber-victimization, there is a strong probability that it will occur four times. College students were most likely to experience cyber-victimization through text messaging, instant messaging, Facebook, and Twitter. For further qualitative data of interest, please refer to Appendix G and Appendix H.

Although most of the findings from our Cyber-Victimization Scale are novel findings and cannot be compared to previous research, there are a few results that can be evaluated further. For instance, it is difficult to establish a prevalence rate for cyber-victimization for any age group because researchers often vary in the cyber-victimization measures and reference periods they use to study cyber-victimization. A prevalence rate of 35% was found among our college student sample using a measure developed for the study and a reference period of "since you began college." This prevalence rate was similar to prevalence rates found among middle school students (e.g., 21% (Beran & Li, 2005), 24.9% (Li, 2007a) and 33% (Li, 2007b)). One study using a high school student sample found a similar rate of 30% (Hinduja & Patchin, 2008). Far fewer studies have explored cyber-victimization among college students. One study used the same reference period as our study and found a prevalence rate of 8.6% (Schenk & Fremouw, 2012). In comparison, our study found a much higher prevalence rate; however, an even higher prevalence rate of 55.3% was found among college students in Turkey (Dilmac, 2009). Although it is difficult to compare our prevalence rate with other studies which used different measures and varying reference periods, it is clear that cyber-victimization does

take place among college students and it is important to study its characteristics and related correlates.

Another comparable finding was the most common mediums cyber-victimization occurred through, which included text messaging, instant messaging, Facebook, Twitter, online gaming, blog, forum, or comment section on websites, other social networking sites, and e-mail. Previously, studies have published similar findings with email, online chat rooms, social networking sites, and cell-phones as the most common modalities by which cyber-victimization occurs (Notar et al., 2013). It is important to note that no participants endorsed chat rooms as a medium where cyber-victimization occurs in our study. These findings are likely a reflection of the change in college students' usage of technological mediums with the evolution of social media (e.g., texting, Facebook, Twitter). For instance, our participants overall spent the most hours using text messaging, social photo/video sharing sites or apps (e.g., Instagram, Snapchat, Fade, Flickr, YouTube, Vine), Facebook, Twitter, e-mail, and other social network sites (e.g., LinkedIn, Google (+), MySpace, YikYak, Confessions Page, Reddit). Because technology use is correlated positively with cyber-victimization (Sourander et al., 2010), exploratory analyses were conducted in search of such a pattern with the study data. However, greater time spent using a medium was not associated with higher rates of cyber-victimization, with online gaming being the only exception ($r(82) = .47, p < .001$ (one-tailed)). This finding suggests that time spent using a medium does not necessarily put one at greater risk for experiencing cyber-victimization as might be expected. This finding highlights the necessity to research other factors that could be contributing to the occurrence of cyber-victimization within each medium. One theory that could explain

the link between online gaming and time spent online gaming is that the more avid game

players are more likely to become more involved in game playing in a way that places

him/her at risk for experiencing cyber-victimization. For example, someone who

participates in online gaming likely owns the technology capable of allowing

communication between gamers (e.g., headset, video, and microphone) and plays

competitively against other gamers, many of which the gamer may not know. The

competitive nature of online gaming, the anonymity between gamers, and the interaction

occurring through technological means is a combination that allows for an environment

for cyber-victimization to occur. Therefore, it is not surprising to find that more cyber-

victimization occurs with greater use of this medium.

Cyber-victimization and Depression

The link between cyber-victimization and depressive symptoms has been

established throughout the literature in younger samples, such as middle school and high

school students (Fauman, 2008; Gradinger et al., 2009; Perren et al., 2010; Thomas,

2006; Ybarra & Mitchell, 2004). Although one study has found a link between cyber-

victimization and depression using a college student sample (Schenk & Fremouw, 2012),

further evidence is necessary to firmly establish the association between cyber-

victimization and symptoms of depression in college students. This study adds to the

growing literature on cyber-victimization and depression in college students by being one

of the first studies to have found a positive relationship between these two factors. This

relationship points to the potential harm cyber-victimization can have on those who

experience it. For example, it is logical that a college student would develop negative

feelings after receiving offensive or threatening messages, repeatedly receiving messages

from someone after asking him/her to stop, and/or having rumors spread about him/her. These negative feelings have the potential to develop into more debilitating depressive symptomatology, such as feelings of sadness, hopelessness, loneliness, and a general lack of concentration and energy. Such symptoms have been known to cause significant distress and impairment in daily functioning (American Psychiatric Association, 2013).

Another theory is that those who exhibit signs and symptoms of depression may be more susceptible to experiencing cyber-victimization (Fauman, 2008; Gradinger et al., 2009; Ybarra & Mitchell, 2004) or it could exacerbate minor symptoms. For example, a college student who is frequently posting negative statuses on Facebook may become an online target to others who view that college student as weak or overly pessimistic. Future longitudinal studies could help determine which pathway is most accurate. Regardless of directionality, the consistent finding that cyber-victimization is related positively to depressive symptomatology demonstrates a clear need to prevent or combat the progression of depressive symptoms in relation to cyber-victimization. Clinical interventions regarding this issue will be further discussed in the clinical implications section.

Cyber-victimization and Social Anxiety

Few studies have explored the relationship between cyber-victimization and social anxiety, but studies have found a positive relationship (Dempsey et al., 2009). In contrast, our study found that cyber-victimization was not related to social anxiety. This finding may be due to the differences between our study and the other study. For example, Dempsey and colleagues (2009) used a younger sample (ages 11-16), while our study was a college-aged sample. Typically, adolescents and college students report

differing levels of social anxiety, with adolescents reporting higher rates of social anxiety (Dempsey et al., 2009; Ghaedi et al., 2010; Terlecki et al., 2014). Because adolescents experience higher levels of social anxiety, adolescents' social anxiety symptoms are more likely to worsen after experiencing cyber-victimization. Another explanation for this finding is that the social anxiety measure utilized in this study was not able to truly capture participants' social anxiety related to online interactions. For example, the SIAS measures social anxiety in face-to-face social interactions, but does not ask questions about online interactions that may cause or exacerbate social anxiety symptoms.

This finding may be also attributed to the anonymous nature of cyber-victimization. The face-to-face aspect present during a typical social interaction is absent during a social interaction through technological means (e.g., online). Therefore, most socially anxious individuals may not experience the same anxieties about interacting with peers online compared to most other social situations (e.g., classroom). For example, because a college student who has social anxiety sypmtomatology does not feel anxious when interacting with others online, his/her social anxiety symptoms would likely not worsen after experiencing cyber-victimization. Another possible theory as to why cyber-victimization does not lead to social anxiety symptomatology is that interacting through technology could feel like a relatively safe social interaction that allows the individual experiencing cyber-victimization more anonymity and more time to react/respond.

Cyber-victimization and Social Support

Consistent with one previous study (Dilmac, 2009), it was predicted that cyber-victimization would be correlated negatively with social support. However, our study did not find such a relationship. Moreover, social support was not found as a moderating

factor in the relationships between cyber-victimization and depression, and cyber-victimization and social anxiety. These findings could be due to the overall high levels of social support reported by our sample of college students. Because most of our sample reported moderate to high levels of social support, it made it difficult to gauge the moderating effects that social support could have on cyber-victimization. Another explanation for these findings is that the social support measure utilized in this study was not able to truly capture participants' social support related to online interactions. For example, the MSPSS measures social support in the traditional context of face-to-face social support, but does not ask questions about online social support. Therefore, participants may not have reported about social support that occurs online because the measure did not specifically ask about these types of social support.

Another possible explanation for these findings is that having social support does not play a significant role in cyber-victimization for similar reasons discussed above for social anxiety. For example, the anonymous nature of cyber-victimization complicates the social aspect of the interaction, such that typical social cues and rules followed in face-to-face interactions are not necessary features when interacting through technology. This less structured environment does not call for the same social support required in the non-technological realm of life. For example, a victim of traditional bullying (victim comes face-to-face with the bully) may gain more comfort from social support because of the similar nature (face-to-face), whereas an individual who experiences cyber-victimization may not find as great as comfort in social support after an online interaction.

Limitations and Future Directions

This study had several limitations. One limitation of the study was that there

were not enough participants to meet optimal power. There were two main hypotheses

for this study. While only one main study hypothesis was supported, the other main

study hypothesis was not. The first main study hypothesis was supported; however, the

direction of causality still remains unknown given the correlational nature of the current

study. The second main study hypothesis may not have been supported even if the study

did have enough participants to meet optimal power because there was a low significance

found for this unsupported main study hypothesis. Future research should include a

greater number of participants in order to achieve optimal power, as well as longitudinal

data in order to better determine directionality.

Another limitation of this study was that we only asked participants of their

experiences with cyber-victimization and did not ask about participants' perpetration of

cyber-aggression. Though this study focused on the victimization aspect of cyber-

aggression, perpetration and victimization often go hand in hand (Ybarra & Mitchell,

2004). For example, an individual often experiences cyber-victimization and is the

perpetrator of cyber-aggression (Ybarra & Mitchell, 2004). Therefore, it is important to

study both sides to truly capture the nature of cyber-aggression. Future research on

cyber-victimization in college students should ask participants of their experiences with

both the perpetration and victimization of cyber-aggression.

Moreover, the novelty of our Cyber-Victimization Scale should be noted.

Although the scale demonstrated good internal consistency of .77, future work will be

conducted in this lab to better determine the characteristics of the Cyber-Victimization

Scale and to determine the appropriateness of its use in exploring cyber-victimization among college students. **Clinical Implications**

The results of this study may be tentative in nature, but implications can still be made from the findings. The link found between cyber-victimization and depression in college students demonstrates the importance of addressing this issue in treatment (Tokunaga, 2010). It seems necessary to include questions about one's experience with cyber-victimization when assessing depression in middle school and college aged individuals. Treatment may need to be tailored depending on whether or not the individual experiences cyber-victimization. For example, if a college student presented with depressive symtomatology and reported experiencing cyber-victimization, given the positive link established between cyber-victimization and depressive symptoms, it is imperative to address this issue during treatment (Notar et al., 2013).

Additionally, given the prevalence rate of cyber-victimization reported in this sample of college students, universities should take preventative action in order to lower rates of cyber-victimization and combat the possible development of depression associated with cyber-victimization. One appropriate course of action would be the implementation of programs addressing cyber-victimization. Such programs could provide college students and professors information about cyber-victimization that could help students cope with this potentially harmful experience. For example, students and faculty could be taught about the mediums where cyber-victimization most often occurs, where/who students can turn to for help, how to recognize cyber-victimization, and how to respond/react to common forms of cyber-victimization. Studies have found that the majority of college students are in favor of obtaining such knowledge about cyber-

victimization (Zalaquett & Chatters, 2014). This knowledge would also be useful in clinical treatment of middle school and college students. Clinicians could provide clients with psychoeducation regarding cyber-victimization and link clients with relevant resources to better help clients cope with the negative factors associated with cyber-victimization (e.g., depression).

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Table 1

Ages (in years) of Participants

Age	n
18	24
19	35
20	12
21	4
22	2
23	1
25	1
26	1
30	1
	81

Note. 1 participant did not report his/her age.

Table 2

Means and Standardized Deviations (N = 177)

Measure	Mean	Std. Deviation	Actual Min-Max	Possible Range
CES-D	17.68	12.25	0-53	0-60
SIAS	25.98	15.33	0-65	0-80
MSPSS	69.44	16.95	12-84	12-84
Cyber-Victimization Scale *Total Score*	1.09	2.01	0-9	0-55
Cyber-Victimization Scale *Severity Score*	9.13	33.73	0-209	n/a
Cyber-Victimization Scale *Presence Score*	.35	.48	0-1	0-1

Note. CES-D = depression; SIAS = social anxiety; MSPSS = social support; Cyber-Victimization *Total Score* = total number of times participants endorsed experiencing cyber-victimization (yes=1; no=0) across all ten mediums and varying forms of cyber-victimization within each medium; Cyber-Victimization Scale *Severity Score* = total number of times (free-response) a participant reported experiencing cyber-victimization; Cyber-Victimization Scale *Presence Score* = score indicating presence of any cyber-victimization ("1" = yes, "0" = no).

Table 3

Number of Hours per Day Participants Used Medium

Medium	Hours
Instant Messaging	156
Chat Rooms	111
Read/Comment on a blog, forum, or comment section on websites	162
E-mail	202
Text Messaging	391
Facebook	239
Twitter	216
Other Social Network Sites (e.g., LinkedIn, Google (+), MySpace, YikYak, Confessions Page, Reddit)	183
Social Photo/Video Sharing Site or App (e.g., Instagram, Snapchat, Fade, Flickr, YouTube, Vine)	278
Online Gaming	161

Table 4

Internal Consistency of the Measures (N = 82)

Measure	Cronbach's Alpha
CES-D	.92
SIAS	.93
MSPSS	.97
Cyber-Victimization Scale	.77
Hinduja & Patchin (2008) scale	.91

Note. CES-D = depression; SIAS = social anxiety; MSPSS = social support; Cyber-Victimization Scale = assessed cyber-victimization across the following 10 mediums with the corresponding number of items: instant messaging (6), chat rooms (6), blog or comment sections on forums (5), e-mail (5), text messaging (6), Facebook (7), Twitter (7), other social media (5), social photo/video sharing apps or websites (3), and online gaming (5); Hinduja & Patchin (2008) scale = 9-item cyber-bullying questionnaire.

Table 5

Zero-Order Correlations between Main Study Variables (N = 177)

Variable	Depression	Social Anxiety	Social Support	Cyber-victimization total score	Cyber-victimization Severity Score	Cyber-victimization Presence score
Depression	--	.43**	-.23*	.42**	.06	.38**
Social Anxiety		--	-.20*	-.06	-.18	.01
Social Support			--	.09	.05	.04
Cyber-Victimization *Total Score*				--	.41**	.73**
Cyber-victimization *Severity Score*					--	.37**
Cyber-victimization *Presence Score*						--

*p <.05, **p <.001

Note. Depression = CES-D total score; Social Anxiety = SIAS total score; Social Support = MSPSS total score; Cyber-Victimization *Total Score* = total number of times participants endorsed experiencing cyber-victimization (yes=1; no=0) across all ten mediums and varying forms of cyber-victimization within each medium; Cyber-Victimization Scale *Severity Score* = total number of times (free-response) a participant reported experiencing cyber-victimization; Cyber-Victimization Scale *Presence Score* = score indicating presence of any cyber-victimization ("1" = yes, "0" = no).

Table 6

Multiple Regression Analysis for Predicting Depression

Variable	B	SE B	B	p
Cyber-Victimization	2.77	.66	.45**	< .01
Social Support	-.20	.09	-.28*	.02
Cyber-victimization x Social Support Interaction	-.01	.08	-.01	.91

Note: $R^2 = .25$; adjusted $R^2 = .23$

Table 7

Multiple Regression Analysis for Predicting Social Anxiety

Variable	B	$SE\ B$	β	p
Cyber-victimization	-.75	.93	-.10	.43
Social Support	-.11	.12	-.12	.39
Cyber-victimization x Social Support Interaction	.11	.11	.14	.32

Note: $R^2 = .05$; adjusted $R^2 = .02$

Appendix A: Demographic Information

Demographics Questionnaire

1. Gender:
   Male ___   Female ___

2. How old are you? ____

3. What is your year in school?

   _____   Freshman

   _____   Sophomore

   _____   Junior

   _____   Senior

   _____   Graduate

4. What is your sexual orientation?

   _____   Heterosexual

   _____   Gay

   _____   Lesbian

   _____   Bisexual

   _____   Other

5. What is your enrollment status?

   _____   Full-time

   _____   Part-time

_____ Other

6. Have you transferred to this university within the last 12 months?

_____ Yes

_____ No

How do you usually describe yourself?

_____ White/Caucasian

_____ Black/African-American

_____ Hispanic

_____ Native American

_____ Asian American

_____ Hawaiian or Pacific Islander

_____ Multi-ethnic

_____ Other

7. Are you an international student?

_____ Yes

_____ No

8. What is your marital status?

_____ Single

_____ Married/Partnered

_____ Separated

_____ Divorced

_____ Other

9. What is your relationship status?

_____ Not in a relationship

_____ In a relationship but not living together

_____ In a relationship and living together

10. If you are not currently involved in a monogamous dating relationship, when were you last involved in a monogamous dating relationship?

_____ Less than six months ago

_____ More than six months ago, but less than one year

_____ More than one year ago, but less than two years

_____ More than two years ago

_____ I have never been involved in a monogamous dating relationship

_____ Not applicable (Currently involved in a monogamous dating relationship)

11. Where do you currently live?

_____ Campus residence hall

_____ University apartments

_____ Fraternity or sorority house

_____ Other university housing

_____ Parent/guardian's home

_____ Other off-campus housing

12. How many hours a week do you work for pay?

_____ 0 hours

_____ 1-9 hours

_____ 10-19 hours

_____ 20-29 hours

_____ 30-39 hours

_____ 40 hours

_____ More than 40 hours

13. How many hours a week do you engage in extra-curricular activities?

_____ 0 hours

_____ 1-9 hours

_____ 10-19 hours

_____ 20-29 hours

_____ 30-39 hours

_____ 40 hours

_____ More than 40 hours

14. What is your approximate cumulative grade point average?

Fill in _____

15. Within the last 12 months have you participated in organized college athletics at any of the following levels?

- Varsity

_____ Yes

_____ No

- Club sports

_____ Yes

_____ No

- Intramurals

_____ Yes

_____ No

16. What is your academic major? _____

17. Are you a member of a Fraternity or Sorority?

_____ Yes

_____ No

18. How many close friends do you have?

_____ 0

_____ 1

_____ 2

_____ 3

_____ 4 or more

Appendix B. Cyber-victimization Scale
Cyberbullying Scale

1. How many devices with internet access do you own? (examples: laptop, desktop computer, cell phone, smartphone, ipad, kindle fire, or other portable devices).
Fill in _____

2. On average, how many hours do you use the internet, per day? (circle one)

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

3.On average, how many hours do you use the following, per day? (circle one)

Instant Messaging

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

Chat rooms

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

Read/comment on a blog, forum, or comment section on websites

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

E-mail

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

Text messaging

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

Facebook

0 hours   <1 hour   1-2 hours   2-3 hours   3-5 hours   5-10
hours   >10 hours

Twitter

| 0 hours | <1 hour | 1-2 hours | 2-3 hours | 3-5 hours | 5-10 |
| hours | >10 hours | | | | |

Other Social Network Sites (e.g., LinkedIn, Google (+), MySpace, YikYak, Confessions Page, Reddit)

| 0 hours | <1 hour | 1-2 hours | 2-3 hours | 3-5 hours | 5-10 |
| hours | >10 hours | | | | |

Social Photo/Video Sharing Site or App (e.g., Instagram, Snapchat, Fade, Flickr, YouTube, Vine)

| 0 hours | <1 hour | 1-2 hours | 2-3 hours | 3-5 hours | 5-10 |
| hours | >10 hours | | | | |

Online Gaming

| 0 hours | <1 hour | 1-2 hours | 2-3 hours | 3-5 hours | 5-10 |
| hours | >10 hours | | | | |

Please read the following questions carefully.

4.Since you started college, have you received offensive or threatening Instant Messages (including Facebook Messenger and Twitter Messaging) directed toward you?

Yes   No

How many times?

Please describe your experience:

If it occurred, who sent the messages? (Select as many as applicable)
•Female Friend
•Male Friend
•Former female friend
•Former male friend
•Sorority Sister
•Fraternity Brother
•Girlfriend
•Boyfriend
•Ex-girlfriend
•Ex-boyfriend
•Wife
•Husband

•Ex-wife
•Ex-husband
•Female Sports Teammate
•Male Sports Teammate
•Female Classmate
•Male Classmate
•Female co-worker
•Male co-worker
•Female Neighbor
•Male Neighbor
•Family Member, Specify who: _____
•Anonymous
•Other: _____

5. Since you started college, has someone spread rumors about you via Instant Messaging (including Facebook Messenger and Twitter Messaging)?

Yes   No

How many times?

Please describe your experience:

6. Since you started college, have you repeatedly received Instant Messages (including Facebook Messenger and Twitter Messaging) from someone even after you told him/her to stop contacting you?

Yes   No

How many times?

Please describe your experience:

7. Since you started college, has someone used, hacked, or broken into your Instant Messaging (including Facebook Messenger and Twitter Messaging) account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

8. Since you started college, has someone shared secrets or embarrassing information about you via Instant Messaging (including Facebook Messenger and Twitter Messaging)?

Yes   No

How many times?

Please describe your experience:

9. Since you started college, has someone intentionally excluded you via Instant Messaging (including Facebook Messenger and Twitter Messaging)?

Yes   No

How many times?

Please describe your experience:

10. Since you started college, have you received offensive or threatening chat room messages directed toward you?

Yes   No

How many times?

Please describe your experience:

11. Since you started college, have you repeatedly received messages in a chat room from someone even after you told him/her to stop contacting you?

Yes   No

How many times?

Please describe your experience:

12. Since you started college, has someone spread rumors about you in a chat room?

Yes   No

How many times?

Please describe your experience:

13. Since you started college, has someone hacked or broken into your chat room account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

14. Since you started college, has someone shared secrets or embarrassing information about you in a chat room?

Yes   No

How many times?

Please describe your experience:

15. Since you started college, has someone intentionally excluded you from or in a chat room?

Yes   No

How many times?

Please describe your experience:

16. Since you started college, have you received offensive or threatening messages directed toward you on a blog, forum, or comment section on a website (e.g., YouTube comments section)?

Yes   No

How many times?

Please describe your experience:

17. Since you started college, has someone spread rumors about you in a blog, forum, or comment section on a website (e.g., YouTube comments section)?

Yes   No

How many times?

Please describe your experience:

18. Since you started college, has someone hacked or broken into your blog to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

19. Since you started college, has someone shared secrets or embarrassing information about you in a blog, forum, or comment section on a website (e.g., YouTube comments section)?

Yes   No

How many times?

Please describe your experience:

20. Since you started college, has someone intentionally excluded you from a blog, forum, or comment section on a website (e.g., YouTube comments section)?

Yes   No

How many times?

Please describe your experience:

21. Since you started college, have you received offensive or threatening e-mails directed toward you?

Yes   No

How many times?

Please describe your experience:

22. Since you started college, have you repeatedly received e-mails from someone even after you told him/her to stop e-mailing you?

Yes   No

How many times?

Please describe your experience:

23. Since you started college, has someone spread rumors about you via e-mail?

Yes   No

How many times?

Please describe your experience:

24. Since you started college, has someone hacked or broken into your e-mail account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

25. Since you started college, has someone shared secrets or embarrassing information about you via email?

Yes   No

How many times?

Please describe your experience:

26. Since you started college, have you received offensive or threatening text messages directed toward you?

Yes   No

How many times?

Please describe your experience:

27. Since you started college, have you repeatedly received text messages from someone even after you told him/her to stop texting you?

Yes   No

How many times?

Please describe your experience:

28. Since you started college, has someone spread rumors about you via text message?

Yes   No

How many times?

Please describe your experience:

29. Since you started college, has someone taken your phone and texted messages to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

30. Since you started college, has someone posed as you via text messaging to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

31. Since you started college, has someone shared secrets or embarrassing information about you via text messaging?

Yes   No

How many times?

Please describe your experience:

32. Since you started college, have you read offensive or threatening posts on Facebook directed toward you?

Yes   No

How many times?

Please describe your experience:

33. Since you started college, has someone spread rumors about you on Facebook?

Yes   No

How many times?

Please describe your experience:

34. Since you started college, has someone hacked or broken into your Facebook account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

35. Since you started college, has someone created a fake Facebook account to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

36. Since you started college, has someone shared secrets or embarrassing information about you on Facebook?

Yes   No

How many times?

Please describe your experience:

37. Since you started college, has someone 'friended' you or someone you know on Facebook in order to get private information about you?

Yes   No

How many times?

Please describe your experience:

38. Since you started college, has someone intentionally excluded you on Facebook?

Yes   No

How many times?

Please describe your experience:

39. Since you started college, have you read offensive or threatening posts on Twitter directed toward you?

Yes   No

How many times?

Please describe your experience:

40. Since you started college, has someone spread rumors about you on Twitter?

Yes   No

How many times?

Please describe your experience:

41. Since you started college, has someone hacked or broken into your Twitter account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

42. Since you started college, has someone created a fake Twitter account to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

43. Since you started college, has someone shared secrets or embarrassing information about you on Twitter?

Yes   No

How many times?

Please describe your experience:

44. Since you started college, has someone followed you or someone you know on Twitter in order to get private information about you?

Yes   No

How many times?

Please describe your experience:

45. Since you started college, has someone intentionally excluded you on Twitter?

Yes   No

How many times?

Please describe your experience:

46. Since you started college, have you read/received offensive or threatening messages on a different social networking site directed toward you?

Yes   No

How many times?

Please describe your experience:

Which social networking site was it? (Select as many as applicable)
•LinkedIn
•Google (+)
•MySpace
•YikYak
•Confessions Page
•Ask.fm
•Reddit
•Tinder
•Other:_____

47. Since you started college, has someone spread rumors about you on a different social networking site?

Yes   No

How many times?

Please describe your experience:

Which social networking site was it? (Select as many as applicable)
•LinkedIn
•Google (+)
•MySpace
•YikYak
•Confessions Page
•Ask.fm
•Reddit

•Tinder
•Other:_____

48. Since you started college, has someone hacked or broken into a different social networking site account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

Which social networking site was it? (Select as many as applicable)
•LinkedIn
•Google (+)
•MySpace
•YikYak
•Confessions Page
•Ask.fm
•Reddit
•Tinder
•Other:_____

49. Since you started college, has someone shared secrets or embarrassing information about you on a different social networking site?

Yes   No

How many times?

Please describe your experience:

Which social networking site was it? (Select as many as applicable)
•LinkedIn
•Google (+)
•MySpace
•YikYak
•Confessions Page
•Ask.fm
•Reddit
•Tinder
•Other:_____

50. Since you started college, has someone intentionally excluded you on a different social networking site?

Yes   No

How many times?

Please describe your experience:

Which social networking site was it? (Select as many as applicable)
•LinkedIn
•Google (+)
•MySpace
•YikYak
•Confessions Page
•Ask.fm
•Reddit
•Tinder
•Other:_____

51. Since you started college, have you received offensive or threatening photos/videos on a social photo/video sharing site or app that were unwanted?

Yes   No

How many times?

Please describe your experience:

Which site was it? (Select as many as applicable)
•Facebook
•Twitter/Twitpic
•YouTube
•Instagram
•Snapchat
•Fade
•Flickr
•Imgur
•Pinterest
•Vine
•Other:_____

52. Since you started college, has someone used a social photo/video sharing site or app to send photos/videos of you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

Which site was it? (Select as many as applicable)
•Facebook
•Twitter/Twitpic
•YouTube
•Instagram
•Snapchat
•Fade
•Flickr
•Imgur
•Pinterest
•Vine
•Other:_____

53. Since you started college, has someone taken a screenshot of a photo you sent via a social photo/video sharing site or app and shared it with others and/or posted it on any social networking site without your consent?

Yes   No

How many times?

Please describe your experience:

Which site was it? (Select as many as applicable)
•Facebook
•Twitter/Twitpic
•YouTube
•Instagram
•Snapchat
•Fade
•Flickr
•Imgur
•Pinterest
•Vine
•Other:_____

54. Since you started college, have you received offensive or threatening comments while online gaming directed toward you?

Yes   No

How many times?

Please describe your experience:

55. Since you started college, has someone spread rumors about you while online gaming?

Yes   No

How many times?

Please describe your experience:

56. Since you started college, has someone hacked or broken into your online gaming account to pose as you to embarrass or damage your reputation?

Yes   No

How many times?

Please describe your experience:

57. Since you started college, has someone shared secrets or embarrassing information about you while online gaming?

Yes   No

How many times?

Please describe your experience:

58. Since you started college, has someone intentionally excluded you while online gaming?

Yes   No

How many times?

Please describe your experience:

59. Please think back over all the questions you have just answered. For all the questions that you responded with YES, how did those interactions make you feel emotionally?

60. Please think back over all the questions you have just answered. For all the questions that you responded with YES, what did you do in each situation? (Examples: I responded angrily, I talked with friends, I contacted authorities, etc.)

Appendix C. Hinduja and Patchin (2009) scale

Cyberbullying Victimization Scale by Hinduja and Patchin (2009)

1. In the last 30 days, have you received an e-mail from someone you know that made you upset?

a. never   b. once or twice   c. a few times   d. many times   e. every day

2. In the last 30 days, have you received an instant message that made you upset?

a. never   b. once or twice   c. a few times   d. many times   e. every day

3. In the last 30 days, has someone posted something on your MySpace that made you upset?

a. never   b. once or twice   c. a few times   d. many times   e. every day

4. In the last 30 days, have you been made fun of in a chat room?

a. never   b. once or twice   c. a few times   d. many times   e. every day

5. In the last 30 days, have you received an e-mail from someone you didn't know that made you upset? (This does not include "spam" mail).

a. never   b. once or twice   c. a few times   d. many times   e. every day

6. In the last 30 days, has someone posted something about you on another Web page that made you upset?

a. never   b. once or twice   c. a few times   d. many times   e. every day

7. In the last 30 days, has someone posted anything about you online that you didn't want others to see?

a. never   b. once or twice   c. a few times   d. many times   e. every day

8. In the last 30 days, have you been bullied or picked on by another person while online?

a. never   b. once or twice   c. a few times   d. many times   e. every day

9. In the last 30 days, have you been afraid to go on the computer?

a. never   b. once or twice   c. a few times   d. many times   e.
every day

Appendix D. Center for Epidemiologic Studies Depression Scale (CES-D)

Center for Epidemiologic Studies Depression Scale

Instructions: Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week: (circle one number on each line).

During the past week...	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5- 7 days)
1.) I was bothered by things that usually don't bother me	0	1	2	3
2.) I did not feel like eating; my appetite was poor	0	1	2	3
3.) I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4.) I felt I was just as good as other people.	0	1	2	3
5.) I had trouble keeping my mind on what I was doing.	0	1	2	3
6.) I felt depressed.	0	1	2	3
7.) I felt that everything I did was an effort	0	1	2	3
8.) I felt hopeful about the future.	0	1	2	3
9.) I thought my life had been a failure.	0	1	2	3
10.) I felt fearful.	0	1	2	3
11.) My sleep was restless	0	1	2	3
12.) I was happy.	0	1	2	3
13.) I talked less than usual.	0	1	2	3
14.) I felt lonely.	0	1	2	3
15.) People were unfriendly.	0	1	2	3
16.) I enjoyed life.	0	1	2	3
17.) I had crying spells.	0	1	2	3
18.) I felt sad.	0	1	2	3
19.) I felt that people disliked me.	0	1	2	3
20.) I could not get "going."	0	1	2	3

Appendix E: Social Anxiety

Social Interaction Anxiety Scale

Instructions: For each item, please circle the number to indicate the degree to which you feel the statement is characteristic or true for you. The rating scale is as follows:
0 = **Not at all** characteristic or true of me.

1 = **Slightly** characteristic or true of me.

2 = **Moderately** characteristic or true of me.

3 = **Very** characteristic or true of me.

4 = **Extremely** characteristic or true of me.

1. I get nervous if I have to speak with someone in authority (teacher, boss, etc.).

2. I have difficulty making eye contact with others.

3. I become tense if I have to talk about myself or my feelings.

4. I find it difficult to mix comfortably with the people I work with.

5. I find it easy to make friends my own age.

6. I tense up if I meet an acquaintance in the street.

7. When mixing socially, I am uncomfortable.

8. I feel tense if I am alone with just one other person.

9. I am at ease meeting people at parties, etc.

10. I have difficulty talking with other people.

11. I find it easy to think of things to talk about.

12. I worry about expressing myself in case I appear awkward.

13. I find it difficult to disagree with another's point of view.

14. I have difficulty talking to attractive persons of the opposite sex.

15. I find myself worrying that I won't know what to say in social situations.

16. I am nervous mixing with people I don't know well.

17. I feel I'll say something embarrassing when talking.

18. When mixing in a group, I find myself worrying I will be ignored.

19. I am tense mixing in a group.

20. I am unsure whether to greet someone I know only slightly.

Appendix F: Social Support

Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.
Circle the "1" if you **Very Strongly Disagree**

Circle the "2" if you **Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "4" if you are **Neutral**

Circle the "5" if you **Mildly Agree**

Circle the "6" if you **Strongly Agree**

Circle the "7" if you **Very Strongly Agree**

1. There is a special person who is around when I am in need.

2. There is a special person with whom I can share my joys and sorrows.

3. My family really tries to help me.

4. I get the emotional help and support I need from my family.

5. I have a special person who is a real source of comfort to me.

6. My friends really try to help me.

7. I can count on my friends when things go wrong.

8. I can talk about my problems with my family.

9. I have friends with whom I can share my joys and sorrows.

10. There is a special person in my life who cares about my feelings.

11. My family is willing to help me make decisions.

12. I can talk about my problems with my friend.

Appendix G: Participant Response to Cyber-Victimization Scale Reaction Questions

The following are participant responses for the last two questions on the Cyber-Victimization Scale.

19. Please think back over all the questions you have just answered. For all the questions that you responded with YES, how did those interactions make you feel emotionally?

Just apart of the situation that occurred.

Honestly, the questions are difficult to answer because a lot of people have spread rumors about me, but I have no idea how many times, who they are, or when it happened. It hurts, but at the end of the day I really don't care.

it was scary

Didn't really have an impact on me

I felt lost and worried all the time. I wasn't sure how to handle the situation properly.

Sad

self-esteem dropped, i was embarrassed.

The times the guys tried talking to me even though I clearly wanted nothing to do with them made me feel trapped. I don't like to hurt anyone's feelings so I still tried nicely and politely hinting at the fact that I wasn't interested.

Angry, a little scared, nervous, and hurt.

Worthless

Concerned with who gave out my phone number.

I felt both uncomfortable, and a little disappointed.

Not upset, just annoyed

No one really bullies me or posts bad things about me, most of my answers were no.

Made me feel really upset

After constant calls and text messages of which I fought with my ex-boyfriend, I felt stressed, somewhat hurt, and heart broken.

They made me feel angry and upset

did not feel anyway

angry, hurt, distrusting of others, guarded and very private and anti social
Annoyed, frustrated, sad

They made me furious. I felt as though nobody could understand me... I felt sad.

Felt fine

Any anonymous offensive or threatening messages received were easily shrugged off even though they sort of supported inherent emotional instability. Offensive messages directly from another person were much more difficult to handle, especially given the situation during which they were received (almost immediately following the loss of a loved one); very emotionally degrading.

Nothing

Considering that I rarely get caught up in conflicts or drama via messaging, social media, and photo sharing apps, I was not really emotionally affected by these questions. I do not let social media bother me in this aspect merely because it is just social media.

they hurt me but i was okay

they suck! no matter how much you know they are not true the still cut deep

i didnt really take it to heart so it didnt bother me

I think it is absolutely stupid to fight over social media.

20. **Please think back over all the questions you have just answered. For all the questions that you responded with <u>YES</u>, what did you do in each situation? (Examples: I responded angrily, I talked with friends, I contacted authorities, etc.)**

Ignored it.

I let them say whatever they wanted to say and I answered any questions when and if they were asked.

i ignored most of it and told my friends

It was just a funny snap that they revealed. I thought it was funny too

I talked to my friends about it. I did not talk to my parents because they hated my ex-boyfriend and they would automatically assume that I was getting too involved again. I handled it in a good way in my opinion.

I waited until it went away.

I got over it and flagged the post several times until it was deleted.

I just stopped texting/messaging them back.

I have responded angrily, talked with friends and contacted authorities.

Tried to ignore them

blocked the number

I ignored it all and just let it blow over

I did not respond yes but if it happened i would probably ignore it.

I ignored the person and in most cases blocked them

I called my friends and talked to the ones around me and it helped

Sometimes I responded angrily. Other times, I would ignore him or tell him to leave me alone. I also talked to my friends and mom about the situation.

I responded angrily yet proud that they were upset with me

did not feel anyway

I responded with a vengeance, I responded harshly, I talked with friends, I removed people from my life and depleated my tolerance level.

I talked with friends, and I contacted authority

I responded angrily and talked to friends.

Did nothing, went on my way

Generally did not respond; spoke to a counselor.

I wasn't able to answer yes to any of the questions, but if I had I would have talked to my friends or family, and if it was serious enough I would have contacted the authorities.

Responded angrily and called them noob babies.

I did respond in these situations, but I played off the situation as lightly as possible. I tried not to argue or respond angrily, because it is not necessary, and also for the fact that social media can always be documented and can easily be revealed to other people, whether it is in person or passed on through social media. I would rather not have an old argument or rumor be used against me in the future through social media, because although it seems that social media can be erased, there are many loopholes that can bring it back to the surface.

I just got over it

if it is with text i usually respond angrily or i call them. if it is on facebook i ignore it or like it to show i have seen it. if a friend screenshots a snapchat i tell them not to and i wont snapchat them for a while and if a photo is shared on facebook i do not want on there i will ask them too remove it or i will report it.

i talked to my friends and joked around how stupid she sounded

Sent back angry messages

Appendix H: Participants' Response to Cyber-victimization Perpetration and Descriptions of Cyber-victimization

For each Cyber-Victimization Scale question participants responded "yes" to, participants were then asked to report who the perpetrator was, how many times the cyber-victimization occurred, and asked to describe the cyber-victimization. Participants' responses are listed here for each question within each medium in the following format: participant number, perpetrator, number of times the cyber-victimization occurred, and cyber-victimization description.

Instant Messaging

1.) 6 people endorsed

- 21 Anonymous (1x): *Fade post about me calling me a slut*
- 23 Ex-boyfriend (3x's): *An ex-boyfriend of mine didn't threaten to hit me, but he threatened to come here and also show people pictures he had of me as well as messages between us.*
- 28 Former Female Friend and Sorority Sister (4x's): *Girls who will not say something to your fave, but will try to get to me online*
- 35 Boyfriend's Associate (3x's): *Disagreement/Difference of opinion on a topic and someone would threaten to fight*
- 57 Former female friend (1x): *Freshman Drama*
- 80 Female Friend and Ex-boyfriend (4x's): *psycho girls*

2.) 6 people endorsed

- 5 Former female friend, Fraternity brother, Ex-boyfriend, Male classmate, Female classmate, Male neighbor, Anonymous (2x's): *I know that people do spread rumors about me, but the exact method is unknown to me.*
- 12 Female Friend (1x): *A girl I barely knew spread the rumor that I hooked up with someone*
- 20 Anonymous (5x's): No Description
- 35 Ex-boyfriend (1x): *Lied about me having sex with someone when I was still a virgin.*
- 55 Female Friend (1x): *An old friend put false information on the internet about me because I no longer wanted to be friends with her due to her sneakiness.*
- 57 Former female Friend (1x): *Rumors behind my back*

3.) 8 people endorsed

- 16 Ex-boyfriend (2x's): *It was an ex-boyfriend my freshman and sophomore year. He stopped after my sophomore. He wasn't stable.*
- 20 Male Friend (5x's): *It was very nerve wrecking.*
- 22 Male Friend, former male friend, and Male Classmate (1x): *one guy i used to talk to turned out to be a creep so I stopped texting him for quite a while. Recently*

he messaged me and seemed to be ok to talk to but I still don't trust him that much.

- 23 Ex-boyfriend (50x's): *My ex-boyfriend is blocked on my iPhone, but not facebook. He messages me almost daily, multiple times a day trying to apologize and get me to be with him again.*
- 32 Ex-girlfriend (3x's): No Description
- 47 Ex-boyfriend (3x's): *An ex-boyfriend would not leave me alone after the break up.*
- 53 Ex-boyfriend (11x's): *boys inbox daily and I ignore them its annoying*
- 80 Male Friend (3x's): No Description

4.) None

5.) 1 person endorsed

- 55 Female Friend (1x): *Over twitter*

6.) 1 person endorsed

- 5 Former female friend (1x): *My friends excluded me from a group Facebook chat.*

Chat Rooms

6 questions (NONE)

Blog, Forum, or Comment Section on a Website (e.g., YouTube comments section)

1.) 3 people endorsed

- 35 Boyfriend's Associate (2x's): *Difference of opinion and escalated from there.*
- 61 Anonymous (10x's): *Anonymous direct messages sent to my blog using sexual language which I found offensive in addition to anonymous messages telling me I'm ugly, to kill myself, etc.*
- 77 Cousins and Anonymous (8x's): *Someone was sending my mother messages from a fake page that discussed that i was a homosexual and they said that I am at college eating clitoris. My mother and I both received threatening text messages which resulted in us changing our phone numbers. We believe the messages came from a family member because they did not approve of my sexual lifestyle.*

2.) 1 person endorsed

- 21 Anonymous (1x): *called a slut*

3.) None
4.) 1 person endorsed

- 55 Female Friend (1x): No Description

5.) None

E-mail

1.) None
2.) None
3.) 1 person endorsed

- 77 Anonymous (4x's): No Description

4.) None
5.) None

Text Messaging

1.) 7 people endorsed

- 23 Ex-boyfriend (50x's): *My ex-boyfriend texted me threatening to send pictures of me around and threatened to come to Charleston (where I live), which is an hour away from where he lives, until I blocked him from my phone.*
- 24 Ex-boyfriend (25x's): *Arguing with a boyfriend and he threatens to break up*
- 47 Ex-boyfriend (3x's): *We went through a bad break up, and we fought a lot.*
- 61 Roommate's Ex-boyfriend (5x's): *Offensive texts describing me as not worthy of love and expressing happiness in reaction to a death in my family.*
- 66 Male Friend/Male Roommate (2x's): *My roommate started arguments with me via text message and also snapchat messenger, where she proceeded to insult me and accuse me of different situations rather than speak with me in person.*
- 76 Mother and Grandmother (50x's): *my mother and grandma like to gang up on me and find stupid thing to point out. it is kinda hard to explain but any threats or offensive stuff is sent to me by family.*
- 80 Female Friend (5x's): No Description

2.) 12 people endorsed

- 5 Male Friend (3x's): *Just random guys I used to talk to would harass me.*
- 16 Ex-boyfriend (2x's): *An unstable guy from my high school life. We had been dating and he was slightly abusive. He stopped after my sophomore year of college.*
- 22 Male Co-worker (1x): *A guy who I work with got my number and friended me on Facebook and has been texting me (not threateningly) flirty messages even though I told him I have a boyfriend.*
- 23 Ex-boyfriend (100x's): *Ex-boyfriend wouldn't leave me alone about getting back together*
- 30 Anonymous (10x's): *Don't know the person, kept texting and calling me, then blocked the number.*

- 32 Female friend and Former Female Friend (2x's): *females that I know wanted to spend time with me but I would not because of my relationship*
- 35 Female Friend, Former male friend, sorority sister, and sister (24x's): *Arguments that i didn't feel like discussing at the moment*
- 39 Former male friend (1x): *Annoying*
- 45 Ex-boyfriend (1x): *My ex boyfriend would not leave me alone*
- 47 Ex-boyfriend (4x's): *My ex boyfriend and I went through a tough break up, and we continuously fought.*
- 69 Sorority sister (3x's): *It was just annoying after a while. it eventually stopped*
- 80 Male Friend (3x's): No Description.

3.) 5 people endorsed

- 5 Anonymous (1x): *It has happened, not sure who or how many times.*
- 32 Male friend/Male Sports Teammate (1x): *roommate upset about his information getting out, assumed it was me, which it wasn't and he went about telling people how I've changed*
- 35 Former Male Friend and Ex-boyfriend (1x): *Sex rumor*
- 54 Female Friend and Sorority Sister (2x's): No Description
- 79 Former Female Friend (2x's): *that i wasnt pretty*

4.) 2 people endorsed

- 3 Wife (1x): *Wife took the phone and made suggestive comments to a male friend of mine... It was awkward.*
- 35 Former Male friend (1x): *Sex rumor*

5.) None
6.) 5 people endorsed

- 5 Anonymous (1x): *It has happened.*
- 35 Former Male friend (1x): *Sex rumor*
- 54 Female Friend and Sorority Sister (3x's): No Description
- 77 Anonymous (8x's): *Sending me messages stating that they were going to fight me. &&saying I would be nothing because I am gay.*
- 80 Female friend (1x): No Description

Facebook

1.) 3 people endorsed

- 5 Former Female Friend (1x): *This girl called me out on Facebook.*
- 76 Sister (5x's): *my sister has many mental disorders and thinks if she uses neutral pronouns nobody will know who she is talking about. she is upset i am going to college and bettering myself.*
- 77 Anonymous (8x's): *Through my mother's facebook. Threatening messages discussing my little brother who is only 5 at the time and me when I was 18 at the time. Saying I was gay and my little brother was a pedophile.*

2.) 1 person endorsed

- 5 Anonymous (1x): *It has happened.*

3.) None
4.) None
5.) 2 people endorsed

- 5 Anonymous (1x): *It has happened.*
- 22 Female friend (1x): *my best friend and I were just being silly and posting weird pictures of each other. It was nothing major.*

6.) 3 people endorsed

- 3 Sister In Law (1x): *Brother's soon to be ex wife made a fake persona to try and find out information.*
- 35 Boyfriend's ex-girlfriends and friends (24x's): *My current boyfriend's ex girlfriends and friends*
- 39 Friend's ex-boyfriend (1x): *Annoying*

7.) 2 people endorsed

- 3 Sister In-Law (1x): *Sister in law blocked me because because of impending divorce action.*
- 80 Ex-boyfriend (1x): No Description

Twitter

1.) 2 people endorsed

- 28 Former female Friend and Sorority Sister (3x's): *Girls that do not agree with the decsions i make*
- 80 Female friend and Male friend (3x's): *stupid drama*

2.) 1 person endorsed

- 55 Female friend (1x): *An old friend was not really a friend. She was more so jealous and sneaky*

3.) None
4.) 1 person endorsed

- 55 Female friend (1x): *An old friend made a page posting pictures of pictures of who she felt was a "whore."*

5.) 2 people endorsed

- 53 Female friend (1x): *me and someone I considered a friend put that my mom cheated on my dad and we were poor on twitter*
- 55 Female friend (1x): No Description

6.) 2 people endorsed

- 23 Female friend, Male friend, and Distant cousins (3x's): *Family members or friends of friends do it all the time. It happens to everyone.*
- 55 Other (?): No Description

7.) 1 person endorsed

- 80 Ex-boyfriend (1x): No Description

Other Social Media

1.) None
2.) None
3.) None
4.) 1 person endorsed

- 21 Anonymous (2x's): *involved in sexual activities* on FADE

5.) None

Social Photo/Video Sharing Site or App

1.) None
2.) None
3.) 4 people endorsed

- 12 Female friend and Male friend (3x's): *I sent a goofy snap and friends put it on twitter* on TWITTER and SNAPCHAT
- 23 Ex-boyfriend (1x): *There was a picture of me and a friend in our swimsuits that we sent to a couple friends and my ex boyfriend, he screenshotted it and showed friends.* On SNAPCHAT
- 66 Female friend and former female friend (2x's): *Many of my friends and I screenshot pictures of each other on snapchat to share on social media, such as facebook or instagram just as a joke among us. It is nothing that any of us take to offense, it is just a joke, just as it is to others who do similar things on social media.* On FACEBOOK, INSTAGRAM and SNAPCHAT
- 76 Female friend and aunt (3x's): *my friends like to screenshot photos and share them and my aunt also is kinda obsessive* on FACEBOOK and SNAPCHAT

Online Gaming

1.) 4 people endorsed

- 3 Anonymous (12x's): *Just some children griefers and trolls.*
- 50 Anonymous (5x's): *They were upset that I was winning*
- 57 Anonymous (3x's): *Sore losers*

- 65 Anonymous (209x's): *8 old year children called me a noob on Call of Duty.*

2.) None
3.) None
4.) None
5.) 1 person endorsed

- 63 Female friend (1x): *Horrible*