

The Nature and Prevalence of Cyber Victimization Among Elementary School Children

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Abstract

Background Despite growing concern about the impact of cyberbullying on youth, few studies to date have investigated this phenomenon among elementary school samples. Consequently, little is known about cyber victimization exposure among younger children.

Objective The purpose of the present study was to examine the prevalence and nature of cyber victimization among a sample of elementary school students and determine whether significant differences existed between cyber victimized and non-cyber victimized students.

Methods A total of 660 3rd–5th grade students in six schools completed an online survey on measures of traditional and cyber bullying and victimization. Descriptive statistics were used to determine prevalence, mechanism (e.g., social media), identity of the perpetrator, and whether incidents were reported to others. Fixed effects regression models, including dummy coded school variables to control for nesting, were run to assess group differences.

Results Descriptive findings revealed that a substantial number of youth (17.7 %; $n = 114$) reported cyber victimization, predominantly through online games. Only 38 % ($n = 43$) of cyber victimized children knew the identity of the perpetrator and almost 50 % reported they did not tell anyone about the incident. Results also revealed that cyber victimized children reported significantly higher rates of traditional victimization and bullying involvement along with higher pro-bullying attitudes and lower pro-defending attitudes and self-efficacy for defending others.

Conclusions The results of the present study suggest the need for developmentally appropriate prevention and intervention programs implemented at the elementary school level if efforts to address this complex problem are to be successful.

Keywords Cyber victimization · Elementary school children · Online games · Prevention and intervention

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Introduction

As noted by President Barack Obama (2011), “[t]oday, bullying doesn’t even end at the school bell – it can follow our children from the hallways to their cell phones to their computer screens.” Cyberbullying is defined as repeated negative and aggressive acts or behaviors through electronic media by an individual or group with the intent of causing harm or discomfort to an individual who finds it difficult to defend him or herself (Hinduja and Patchin 2009; Smith 2012). The recent suicide deaths of several teens, contributed in part to cyberbullying, illustrate the detrimental consequences this problem can have on the social and emotional functioning of those involved.

Due to definitional inconsistencies, the prevalence rates of cyberbullying and cyber victimization vary across studies. These rates also vary based on the population studied (i.e., gender, age group), the form of cyberbullying being measured, and the measure used to assess incidents of cyberbullying (von Marées and Petermann 2012). Consequently, it is difficult to provide a definitive answer regarding the frequency of cyberbullying involvement among youth (von Marées and Petermann 2012). Some studies have found the prevalence of cyber victimization to be as low as 9 % (Wolak et al. 2007; Ybarra et al. 2006), while other evidence suggests that upwards of 50 % of adolescents may become victims of cyberbullying (Raskauskas and Stoltz 2007). Of note, the majority of cyberbullying studies have focused on youth between 10 and 17 years of age (Werner et al. 2010), thereby limiting our understanding of the nature and prevalence of cyber victimization among younger children, particularly those under 10 years of age. Although some researchers assert that the number of youth involved with traditional bullying is much greater than those impacted by cyberbullying, some studies have found that one fourth to one third or more of youth have cyberbullied others (Cassidy et al. 2012; Hinduja and Patchin 2010a; Li 2006). In addition, one study found that 47 % of youth reported witnessing cyberbullying as bystanders (Patchin and Hinduja 2006). In a recent meta-synthesis of the cyberbullying literature, Tokunaga (2010) reports that approximately 20–40 % of youth will be impacted by cyberbullying in some way during adolescence. Despite some inconsistencies in the cyberbullying literature (Smith 2012; Tokunaga 2010; Vandebosch and Van Cleemput 2009), it is generally agreed that cyberbullying is a pervasive social problem that negatively impacts the everyday life of a substantial number of youth. Less is known, however, about the experiences of elementary school children and the nature of their involvement in cyberbullying either as perpetrators or victims. To that end, the present study examines the nature and prevalence of cyber victimization among a sample of elementary school children and investigates differences between those who were cyber victimized and those who were not.

Cyberbullying and Cyber Victimization Defined

In the cyberbullying literature, many scholars focus on the various forms of electronic media individuals use in the perpetration of cyberbullying. A cyberbully can use a computer to send insulting and/or threatening emails or instant messages, create defamatory web sites, and post harassing messages to online social networking sites. Cell phones can also be used to send taunting or harassing messages via text, to take and post pictures of individuals in bathrooms, bedrooms, or locker rooms, and to record videos without a person’s consent and post these online to be rated and discussed (Hinduja and Patchin 2010b). For example, some research with youth ages 11–16 years has found cell phones and Internet instant messenger sites to be the most frequent forms of media used by

cyberbullies (Smith et al. 2008; Sourander et al. 2010). Presently, with the advent of smartphone technology allowing instant Internet access, earlier distinctions between cell phone and Internet bullying have become less relevant.

Although much of the cyberbullying literature focuses on the tools or types of media used (Hinduja and Patchin 2010a; Smith et al. 2008), some scholars stress the importance in understanding the potential forms or behaviors involved regardless of the electronic medium employed (von Marées and Petermann 2012; Willard 2007). For example, Willard (2007) identifies several forms of cyberbullying behavior including online harassment, denigration, impersonation, outing and exclusion. Additional forms have been identified by other researchers, such as grieving—bullying others in online gaming communities—and trolling—the continuous posting of offensive comments on a website (Slonje et al. 2013) but these forms have received little attention in the literature. These classifications are not exhaustive and new forms of cyberbullying will continue to emerge as technology advances and the ways that youth utilize ICTs to interact with each other continue to evolve.

Consequences of Cyber Victimization on Youth Development

Exploration into the impact of cyberbullying on youth is still in the preliminary phase. Although there is some discrepancy regarding the impact of age on cyberbullying involvement, a majority of the research examining consequences associated with cyber victimization has focused on youth in grades 5 through 12. Among these age groups, several negative psychosocial difficulties have been correlated with cyber victimization, such as lower self-esteem (Patchin and Hinduja 2010), higher levels of depression, social anxiety (Juvonen and Gross 2008) and academic problems (i.e., a drop in grades, increased tardiness and absence, skipping class; Beran and Li 2007; Katzer et al. 2009; Ybarra et al. 2007). Youth who are being cyberbullied often report feeling emotionally distressed and afraid, as well as angry towards the cyberbully (Ybarra et al. 2006). In one study, adolescents being cyberbullied reported feeling sad, hopeless, and powerless because they did not feel there was anything they could do to stop the anonymous bully from harassing them (Raskauskas and Stoltz 2007). As a result, cyber victims may not report their victimization to either a supportive adult or peer (Hoff and Mitchell 2009; Li 2006). The overall impact of cyber victimization may depend on how long and how often the bullying occurs, as well as the severity of the bullying incidents. Research has shown that the greater the severity of the bullying, the greater the likelihood that the adolescent being bullied will experience mental health and social problems (Tokunaga 2010). Despite the growing body of evidence documenting the negative developmental consequences of cyber victimization, less is known about children in elementary school settings, particularly children in middle childhood, as compared to late childhood and early to late adolescence.

The Relationships Between Attitudes, Empathy, Self-Efficacy Beliefs and Victimization

Developmental theory suggests that children's perceptions, attitudes, and self-efficacy beliefs are strong predictors of behavior (see social learning theory; Bandura 1986). As such, prior empirical evidence has supported the link between these behavioral precursors and children's involvement in and exposure to traditional forms of bullying (Henry et al. 2000; Salmivalli and Voeten 2004; van Goethem et al. 2010). However, little research to date has investigated the relationships between children's attitudes, empathy, and self-

efficacy in defending others and their exposure to cyber victimization. Moreover, the few studies that have examined these constructs have focused on youth that perpetuate cyberbullying rather than youth who are the targets of such behavior. Overall, cyberbullying studies to date examining the relationship between beliefs, attitudes and behavior have found a significant association between normative beliefs about bullying and aggression and increased cyberbullying behavior (Ang et al. 2010; Boulton et al. 2012; Calvete et al. 2010; Williams and Guerra 2007). For example, one recent study found a significant correlation between greater approval of overt and relational aggression and increased cyberbullying behavior (Werner et al. 2010). Another recent study investigating individual and contextual predictors of cyberbullying involvement found that students with higher levels of pro-victim attitudes reported lower rates of cyberbullying perpetration (Elledge et al. 2013). Although many studies in the traditional bullying literature support the association between low levels of empathy and increased occurrence of bullying behavior (Bartholow et al. 2005; Jolliffe and Farrington 2004; Lovett and Sheffield 2007; Olweus 1993), limited empirical evidence on this relationship exists in the cyberbullying knowledge base. While early evidence suggests that empathy may play an important role in cyberbullying involvement as well, most studies exploring the role of empathy focus on perpetrators of cyberbullying rather than victims. In two studies that included victims as well as perpetrators, one found no differences in empathy levels between victims and non-victims (Steffgen et al. 2011) while the other found both victims and bullies to have significantly less empathy than non-involved students (Schultze-Krumbholz and Scheithauer 2009). No studies to date, to our knowledge, have investigated the relationship between self-efficacy in defending others and exposure to cyber victimization. Given the limited evidence in this area, studies are needed that explore the relationships between cyber victimization and other relevant characteristics like bullying attitudes, perceptions, and self-efficacy beliefs.

The Present Study

Of note, little is known about the prevalence and nature of cyber involvement among elementary school students, particularly those under 10 years of age, as the majority of cyberbullying studies focus on adolescent youth (Werner et al. 2010). To that end, the primary purpose of the present study is to explore the prevalence and nature of cyber victimization among a sample of 3rd through 5th students in six elementary schools. A secondary aim of this study is to examine whether significant differences exist between students who report cyber victimization and those who do not. Although differences between those involved and not involved has been the focus of some research in the traditional bullying literature (i.e., Veenstra et al. 2005), it has seldom been the focus in the emerging cyberbullying literature. As such, no hypotheses were set a priori regarding differences between victimized and non-victimized youth. However, understanding these differences is needed to inform the development of effective cyberbullying prevention and intervention strategies and ways to tailor these efforts to the needs of elementary school-age students. Third, gender and grade level differences in cyber victimization were explored. Inconsistencies exist regarding gender differences in cyber victimization, with some studies favoring girls (Kowalski and Limber 2007; Ybarra and Mitchell 2007) and some finding no such differences (Hinduja and Patchin 2008; Juvonen and Gross 2008; Li 2006; Smith et al. 2008). Therefore, no hypotheses were set a priori regarding gender differences. As recent work suggests that cyber involvement may peak in junior high (Tokunaga 2010; Wade and Beran 2011), it is possible that an increase may be evident as

children age. As such, we expected that significant differences would be found by grade level, with 5th graders reporting greater exposure than 3rd and 4th grade students. Last, the present investigation examines correlations between cyber victimization and pro-bullying attitudes, anti-bullying attitudes, pro-defending attitudes, empathy, and self-efficacy in defending peers. Exploring the strength and direction of these associations is an important starting point to understanding the relationships between cyber victimization and other characteristics. In doing so, this preliminary work may reveal important targets for replication and ultimately inform the development of effective age-appropriate intervention strategies that seek to lessen the immediate negative impact of bullying on younger children and prevent the consequences of cyber victimization from carrying over into later adolescence and adulthood.

Method

Sample

A total of 660 students in six schools (48.3 % male; mean age = 9.4 years, $SD = 1.3$) completed a one-time, online survey during October and November 2013. A total of 232 third graders, 190 fourth graders, and 236 fifth graders participated in the study. Consent rates varied from 47 to 72 % across the six schools with an overall average of 58 %. Over 90 % reported that they use the Internet at home with 39 % reporting daily Internet use and an additional 46 % reporting weekly Internet use. Approximately 31 % reported they own a cell phone or a device that can make calls or receive text messages (e.g., iPod Touch).

Procedures

After receiving human subjects approval from the sponsoring university and the participating district, parent consent was obtained by teachers during parent–teacher conferences in October 2013. Some teachers discussed the nature of the study during the conferences by reading a script provided by the principal investigator of the study and provided the consent form for parents' signature at this time—a procedure that led to higher consent rates; while other teachers sent materials home with parents with instructions to return the signed consent form if they approved of their child's participation. Once parental consent was obtained, data collection took place via an online survey developed in Qualtrics. After obtaining students' assent to participate, students were surveyed in the computer lab in each school. Survey questions were read aloud to students by trained research assistants or the principal investigator.

Measures

Demographic questions asked students to report on their age, grade level, and gender. Additional items included the following measures.

Cyber Victimization

Items developed for this study assessed students' exposure to cyber victimization. An eight-item scale asked them to report the frequency at which they were victimized through

various mechanisms (e.g., social media sites, text messages, online games, chat rooms, instant messaging) on a five-point scale ranging from *never* to *a few times a week*. The Cronbach Alpha for this scale was .53. These items were then summed and averaged to create a mean victimization score. These items were also used to create a dichotomized variable, such that students never exposed to cyber victimization were coded zero and students who reported any victimization were coded as one, which was used to analyze differences between victimized and non-victimized youth. Several items also asked students where the cyber victimization took place (e.g., at home, at school) and whether they had reported their experiences to someone else. If they had reported the incident, items asked students to report who they told and what happened after the report. Last, an item was included to measure students' reactions to the cyber victimization incidents on a five-point scale ("It was no big deal," "I lived with it," "I was a little upset," "I was very upset," and "No opinion one way or the other").

Bullying Attitudes

A bullying attitudes scale, modified from Rigby and Slee (1991) and Raskauskas and Stoltz (2007), contained three subscales: (1) A four-item scale measuring pro-bullying attitudes ("It's ok to call some kids nasty names"; "It is funny to see kids get upset when they are teased"; "Kids who get picked on usually deserve it"; "It's ok to send some kids mean text messages"; Cronbach Alpha: .948); (2) A four-item scale measuring anti-bullying attitudes ("I feel bad seeing a child get picked on"; "It is wrong to join in when someone is being picked on"; "It is wrong to post embarrassing pictures of other kids online"; "I don't like it when I see kids picked on"; Cronbach Alpha: .639); and (3) a three-item scale measuring pro-defending attitudes: ("I like it when someone stands up for kids who are picked on"; "It is a good thing to help children who can't defend themselves"; "It makes me upset when no one defends a bullied child"; Cronbach Alpha: .674). Items were rated on a five-point Likert scale ranging from "I agree a lot" to "I disagree a lot." Items were summed then averaged, such that higher scores indicated greater pro-bullying, anti-bullying, or pro-defending attitudes.

Self-Efficacy in Defending

The Defending scale [modified from Pöyhönen et al. (2010)] asked students to report how easy or difficult the following activities would be for them: Trying to get the rest of the group to stop bullying, Comforting the bullied person, Encouraging him/her to report the bullying to a teacher, and asking others to stop bullying. Items were measured on a four-point Likert scale ranging from very easy to very difficult. The Cronbach Alpha for this scale was .585.

Empathy Toward Victims

The Empathy scale, modified from Pöyhönen et al. (2008), included the following six items: "When the bullied student feels sad, I also feel sad"; "When the bullied student feels sad, I want to comfort him/her"; "When the bullied student starts to cry, I also feel bad"; "When someone is bullied, I start to get angry on his/her behalf"; "I can understand how the bullied student must feel"; "I can imagine how the bullied student must feel even if he/she doesn't tell me". The items were measured on a five-point Likert scale ranging

from “I agree a lot” to “I disagree a lot.” Items were summed and averaged to create a mean empathy score, such that higher scores indicated greater empathy toward victims. The Cronbach Alpha was .866 for this scale.

Self-Reported Victimization and Aggression

Children’s self-reports of verbal, physical and relational victimization and aggression were measured via the Peer Experiences Questionnaire used previously with elementary school students (e.g., Biggs et al. 2010; Dill et al. 2004; Vernberg et al. 2011). The victimization scale included 11 items of which four items assessed relational victimization (e.g., “A kid ignored me on purpose to hurt my feelings;” “A kid started a rumor that I had a crush on another kid”), four items assessed physical victimization (e.g., “A kid hit, kicked, or pushed me in a mean way;” “A kid said he or she was going to hurt me or beat me up”) and three items measured verbal victimization (e.g., “A kid teased me in a mean way;” “A kid said things about my body that I didn’t like”). An identical 11-item scale assessed relational (e.g., “I ignored someone on purpose to hurt his or her feelings”), physical (e.g., “I hit, kicked, or pushed someone in a mean way”), and verbal (e.g., “I teased someone in a mean way”) aggression. Items were rated on a five-point Likert scale ranging from *never* to *a few times a week*. Items were then summed and averaged to create a mean score for each subscale, thus mean scores were calculated for verbal, relational, and physical aggression and then for verbal, relational, and physical victimization. Cronbach Alphas for the victimization and aggression scales ranged from .830 and .885.

Willingness to Seek Help

This scale was modified from Bandyopadhyay et al. (2009) and contains six items assessing students’ willingness to seek help from school personnel. Sample items include: “If I tell a teacher that someone is bullying me, the teacher will do something to help”; “Teachers here make it clear that of bullying is not tolerated;” and “There are adults at this school I could turn to if I had a problem.” The items were measured on a five-point Likert scale ranging from “I agree a lot” to “I disagree a lot” and summed then averaged to create a mean score. The Cronbach Alpha was .741 for this scale.

Results

Descriptive Statistics

For this sample, 17.7 % ($n = 114$) of children reported they had been cyberbullied since the beginning of the school year, with over 11 % reporting weekly victimization or more through online games, which was the most common mechanism through which children were victimized (67 %, $n = 76$). Text messages (32 %, $n = 37$) and social media sites such as Facebook, Twitter, or Instagram (21 %, $n = 34$) were the second and third most common mechanism, respectively. The less common mechanisms were through instant messaging (19 %, $n = 22$), email (13 %, $n = 15$), and chat rooms (12 %, $n = 14$). By grade level, 33 (14 %) third graders, 28 (15 %) fourth graders, and 53 (22 %) fifth graders had experienced cyber victimization, although grade level differences were not significant when examining mean levels of cyber victimization. The majority of respondents (83 %,

Table 1 Correlations between study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Cyber victimization	1														
2. Cyberbullying	.13	1													
3. Verbal victimization	.38*	.14*	1												
4. Relational victimization	.47*	.12*	.72*	1											
5. Physical victimization	.34*	.15*	.64*	.56*	1										
6. Verbal aggression	.08	.03	.28*	.19*	.21*	1									
7. Relational aggression	.12	.10*	.30*	.29*	.22*	.58*	1								
8. Physical aggression	.13	.02	.23*	.11*	.27*	.54*	.56*	1							
9. Pro-bullying attitudes	-.37*	.09*	.04	.02	.05	.06	.08	.03	1						
10. Anti-bullying attitudes	.28*	-.02	.03	.03	-.01	-.08*	-.08*	-.08*	-.37*	1					
11. Pro-defending attitudes	.37*	-.04	.02	.03	.01	.05	-.06	-.06	-.76*	.53*	1				
12. Empathy toward victims	.37*	-.02	.05	.08*	.02	-.02	-.04	-.03	-.68*	.45*	.69*	1			
13. Self-efficacy	.05	-.03	-.13*	-.05	-.08	-.02	-.07	-.06	-.14	.13*	.13*	.13*	1		
14. Gender	-.04	-.08	.03	.12*	-.04	-.06	-.01	-.07	.05	-.01	-.06	-.01	-.04	1	
15. Age	.15*	.01	.04	.05	-.03	.02	.07	.05	.02	-.02	-.02	-.06	.17*	-.10*	1

* $p < .05$

$n = 91$) indicated that the cyber victimization took place outside of school, with only 13 % ($n = 15$) indicating it happened at school or on the way to and from school. Only 38 % ($n = 43$) reported they knew who the perpetrator was. Most sample participants reported that they were a little upset (29 %, $n = 34$) or a lot upset (22 %, $n = 25$) in reaction to the cyber victimization. Of note, only about half of those (54 %, $n = 61$) who had been cyber victimized reported their victimization to someone, with friends (62 %, $n = 38$) and parents (67 %, $n = 41$) being the most common individual told about the incident, as compared to a teacher, other school staff member, or another adult. For those who told someone about the incident, 44 % ($n = 27$) reported the situation got better after telling someone, 11 % ($n = 7$) reported it got worse, and 46 % ($n = 28$) reported nothing changed.

Gender differences were examined for cyber victimization. Of the 114 children reporting cyber victimization, slightly more were male (55 %, $n = 63$). However, a significant difference was not found between boys ($M = 1.36$, $SD = .43$) and girls ($M = 1.33$, $SD = .49$), indicating that boys and girls did not differ significantly in mean levels of the frequency at which they were cyber victimized. Of note, boys ($M = 2.18$, $SD = 1.3$) were significantly more likely ($t = 3.13$, $p = .002$) to have experienced cyber victimization through online games as compared to girls ($M = 1.60$, $SD = 1.04$). No other significant gender differences were found when examining other mechanisms of cyber victimization, although text messaging approached significance ($p = .061$) favoring girls ($M = 1.46$, $SD = .92$) as compared to boys ($M = 1.23$, $SD = .65$).

Correlations

Several significant correlations were found between cyber victimization and other study variables (see Table 1). Cyber victimization was significantly correlated with verbal victimization ($r = .38$, $p < .001$), relational victimization ($r = .47$, $p < .001$), and physical victimization ($r = .34$, $p < .001$). These results indicate that cyber victimization was

Table 2 Means for outcome variables for cyber victimized and non-cyber victimized students (with standard deviations in parentheses)

	Cyber victimized	Non-cyber victimized
Pro-bullying attitudes	2.18 (1.61)	1.58 (1.19)*
Anti-bullying attitudes	3.71 (1.24)	3.88 (1.22)
Pro-defending attitudes	3.99 (1.54)	4.37 (1.18)
Self-efficacy in defending	2.50 (.58)	2.61 (.64)
Empathy toward victims	3.82 (1.28)	4.06 (.99)
Willingness to seek help	4.15 (1.16)	4.46 (.94)*
Cyberbullying	1.13 (.42)	1.02 (.20)*
Verbal victimization	2.11 (1.02)	1.46 (.64)*
Relational victimization	2.26 (.97)	1.56 (.69)*
Physical victimization	1.87 (.90)	1.32 (.53)*
Verbal aggression	1.15 (.25)	1.11 (.27)
Relational aggression	1.18 (.26)	1.10 (.27)*
Physical aggression	1.14 (.25)	1.10 (.33)

* $p < .05$; denotes significant differences between cyber victimized and non-cyber victimized students

positively related to all other forms of victimization. However, no significant correlations were found with the forms of aggressive behavior. Cyber victimization was also significantly correlated with pro-bullying attitudes ($r = -.37, p < .001$), anti-bullying attitudes ($r = .28, p < .001$), and pro-defending attitudes ($r = .37, p < .001$) as well as with empathy ($r = .37, p < .001$). Of note, cyber victimization was negatively associated with pro-bullying attitudes but positively associated with anti-bullying attitudes, pro-defending attitudes, and empathy. No significant correlations were found between cyber victimization and cyberbullying behavior, self-efficacy in defending, or gender. A small but significant positive correlation was found between cyber victimization and age ($r = .15, p = .045$).

Group Comparisons

To account for the nesting of students in schools, fixed effects regression models were run that included a dummy coded variable for each school to control for clustering. A dummy coded variable for whether children reported cyber victimization status with cyber victimized youth as the reference group was entered to assess for significant differences between the two groups. Results of these models revealed several significant differences between children who were cyber victimized and children who were not (see Table 2). Significant differences were found between cyber victimized and non-cyber victimized students on rates of verbal ($p < .001$), relational ($p < .001$), and physical ($p < .001$) victimization. Significant differences were also found between cyber victimized and non-cyber victimized students on rates of cyberbullying ($p = .001$) and relational aggression ($p = .014$) but not for verbal or physical aggression scores. Specifically, cyber victimized children reported significantly higher rates of all forms of traditional victimization and higher rates of cyberbullying involvement and relationally aggressive behavior. Moreover, cyber victimized children reported significantly higher pro-bullying attitudes ($p = .032$). Of note, cyber victimized children reported that they were significantly less likely ($p = .008$) to seek help from school staff when compared to children who had not been cyber victimized. Although the means for cyber victimized children were lower on measures of anti-bullying attitudes, pro-defending attitudes, empathy, and self-efficacy in defending as compared to non-cyber victimized children, these differences were not significant.

Discussion

The advent of cyberbullying is often linked to the rapid development of and increasing access to newer forms of interactive communication technology (ICTs). However, few studies have examined this phenomenon among younger children, particularly those under 10 years of age. To that end, the primary goal of this study was to examine the prevalence and nature of cyber victimization among a sample of 3rd through 5th students in six elementary schools.

According to Smith (2012), little is known as to when exposure to cyberbullying begins. Results of the present study suggest that a substantial number of 3rd through 5th grade students experience cyber victimization of some kind. Although 5th graders constituted the largest group of cyber victimized students in the present study, a fair number of younger students reported being victims of cyberbullying. Contrary to our expectations, however, these grade level differences were not significant. Of great concern, only 54 % of the cyber victimized students in this sample reported their victimization to someone with the

majority telling friends or parents rather than teachers or other school staff. This is consistent with prior research, conducted primarily on early to late adolescents, which has found that youth are often reluctant to report their victimization to others, especially educators, for reasons such as fear of losing online privileges or the belief that teachers and school staff would not be able to effectively address the situation (Agatston et al. 2012; Smith and Slonje 2010; Smith 2012). Our results suggest that although prior research has seldom focused on this age group, elementary school children, even under the age of 10, are not immune to the problem of cyber victimization and may experience similar barriers as older youth in reporting these kinds of incidents to adults. One barrier to reporting may be the anonymity allowed in cyberbullying. Consistent with previous research, out of the 17.7 % of participants who reported cyber victimization in the present study, considerably less than half (38 %) knew the identity of the cyberbully. If the victim does not know the identity of the cyberbully, s/he may be less likely to report these incidents to others, which in part may explain the number of youth in the present study who did not report their victimization to anyone.

Of even greater concern, nearly half of the students who did report the cyberbullying to others stated that nothing changed after they told someone with even 11 % reporting the situation got worse. These results are consistent with a recent cyberbullying study, which found that nearly half of the participants who had told an adult reported either nothing changed or the situation worsened (Cross et al. 2009). Of note, a significant portion of students in the present study reported the incident solely to a peer. It is likely that peers may not know how to respond nor tell an adult about the situation, which may partially explain why the situation either got worse or did not change for some participants. Further research would benefit from investigating specific responses of peers and adults, particularly parents, when informed of a cyber incident.

A noteworthy finding in the present study is that the majority of those cyber victimized reported that the bullying occurred through the medium of online games, which is consistent with recent evidence from a sample of middle school youth in South Korea (Tippett and Kwak 2012). Although no gender differences were found for the overall frequency of cyber victimization, boys were significantly more likely to have been victimized through online games as compared to girls. Online games have yet to receive much attention in the literature, particularly among elementary school samples. The results of the present study suggest that these games are clearly an important forum for understanding cyber victimization among this sample of elementary school children, particularly for boys. Further replication of these results is needed to confirm the popularity of online games as a mechanism for cyberbullying among elementary school youth and to determine if this medium is unique to younger children or if the prevalence varies among different age groups.

Further analyses examining the relationships between study variables and differences between cyber victimized and non-cyber victimized students reveal several interesting results. A significant positive correlation was found between cyber victimization and all other forms of victimization (e.g., verbal, physical and relational). Correspondingly, children who reported cyber victimization were significantly more likely to be victims of traditional bullying when compared to non-cyber victimized children. These findings are consistent with prior research that has found a substantial overlap between traditional and cyber victimization (Hinduja and Patchin 2012; Juvonen and Gross 2008; Olweus 2012; Smith 2012; Tokunaga 2010; Vandebosch and Van Cleemput 2009). Of concern, some research suggests that the greater the severity and frequency of the bullying, the greater the likelihood victims will experience mental health and social problems (Kowalski et al.

2012; Tokunaga 2010). Therefore, the negative impact of the bullying may be amplified for those youth who are both cyber and traditional victims. Further group comparisons revealed that cyber victims reported significantly higher cyberbullying involvement and rates of relational aggression. It is possible that children who are victimized by multiple forms of bullying may seek indirect means for retaliating, thus becoming more likely to engage in cyber and relational forms of aggression. Accordingly, some scholars have suggested that youth who are the targets of more direct forms of bullying behavior and lack the power to retaliate in person may seek retribution in the cyber world (Ybarra and Mitchell 2004). Hence, further outcomes research is needed to better understand the consequences associated with multiple forms of victimization, which will be useful in designing comprehensive intervention programs that target all forms of bullying behavior.

Moreover, results revealed a significant negative relationship between cyber victimization and pro-bullying attitudes suggesting that as cyber victimization scores increased pro-bullying attitudes decreased. Yet, when examining the group comparisons, cyber victimized youth reported significantly higher pro-bullying attitudes than non-cyber victimized students. Furthermore, correlations between measures of anti-bullying attitudes, pro-defending attitudes, empathy, and self-efficacy in defending and cyber victimization were positive, suggesting that as cyber victimization scores increased so did scores on these other study variables. However, again, means on these measures for cyber victimized children were lower as compared to non-cyber victimized children, although these differences were non-significant. It is likely that the relationships between cyber victimization and attitude, empathy, and self-efficacy measures are complex, and may potentially represent a non-linear trend. Thus, at different levels of frequency and severity of cyber victimization, the relationships with these other variables may differ. Further research employing longitudinal designs would be beneficial for exploring how these relationships change over time and may result in non-linear trends. Overall, however, these results suggest that elementary-aged cyber victims, not unlike some traditional victims (see Goldbaum et al. 2003; Hodges et al. 1997) and adolescent cyber victims (see Sourander et al. 2010), may hold attitudes and behave in ways that impact the quality of their friendships with peers thereby placing them at higher risk for multiple forms of victimization. Furthermore, these results suggest that preventative interventions may benefit from specifically targeting cyber victims' ability to engage in behaviors that promote friendship quality and reduce negative responses from peers.

Limitations

Several limitations in the present study are worth noting. First, the cross-sectional nature of this study provides data from a single point in time. Consequently, cross sectional data do not provide a full understanding of a complex problem that is likely to change over time. Second, the results from this present study are based on self-report data. Although benefits exist for asking participants directly about their experiences, social desirability bias suggests that some participants may have answered in a way they felt that they should have. Thus, using data from multiple informants, as suggested by several authors (e.g., Cornell and Brockenbrough 2004; Ladd and Kochenderfer-Ladd 2002), may be an important aim for future studies. Third, several of the measures used in the present study had low internal consistency as measured by Cronbach's Alpha with the lowest estimate reported for the cyber victimization measure. The measurement of cyberbullying involvement has varied greatly across studies (Berne et al. 2013; Slonje et al. 2013). An important direction for

future research is to develop and test valid and reliable measures to assess cyberbullying involvement from a perpetration and victimization standpoint.

Last, the participants in this study were from elementary schools located in one school district in the Midwest that volunteered to participate in the project; therefore, no process of randomization was used, suggesting that participating schools may differ from other schools in the district as well as in other districts around the country. Moreover, the consent process varied across classrooms with some teachers asking parents sign the consent form at parent teacher conferences while others sent the consent form home with the parents, which could be a source of bias in the study. Similarly, students whose parents consented to their participation may differ from those whose parents either did not return consent forms or did not allow their children to participate, although sample demographics did not differ from the overall schools' population of students. Collectively, however, these limitations diminish our ability to generalize the results beyond the study's sample. Future research, including longitudinal studies utilizing a minimum random selection, is needed to provide the evidence necessary to develop effective intervention and prevention programs for children in elementary school settings.

Implications for Practice

Despite these limitations, the present study contributes to the emerging cyberbullying knowledge base in several ways. Collectively, the results of the present study suggest that the implementation of developmentally appropriate prevention and intervention programs involving multiple stakeholders (e.g., students, parents, teachers) should not be delayed until middle school, but rather introduced at the elementary school level if efforts to address this complex problem are to be successful (Cassidy et al. 2013).

Results from the present study also speak to the importance of having school-based interventions in place to address all forms of bullying, including cyberbullying. Scholars have suggested that, although cyberbullying may occur outside of school, it is often related to what is happening within the school context, and can significantly disrupt the learning environment once it becomes known to other youth in the school (Raskauskas and Stoltz 2007; Snakenborg et al. 2011). As cyber victimized youth, compared to non-cyber victimized youth, may be less willing to seek help from school personnel, specific strategies may need to be embedded into school-based interventions to identify victims of cyberbullying. One mechanism in doing so is to implement a comprehensive anti-bullying policy that clearly defines all forms of bullying and explicitly states that any type of bullying behavior by students, including cyberbullying, is unacceptable and will be addressed by the school with perpetrators facing appropriate sanctions. Schools may also benefit from a formal reporting procedure (including anonymous and online reporting mechanisms) that makes clear that the reporting of cyberbullying is valued, and thus, will not unduly result in consequences for victims. Having a comprehensive policy and a formal reporting system in place can be an effective way to encourage all students to report cyberbullying incidents, as many times teachers and school staff (as with other forms of indirect bullying) may be unaware of the bullying behavior.

Additionally, results, revealing that majority of the cyber victimization occurred outside of school and through the medium of online games, suggest that parents play an important role in cyberbullying prevention and intervention efforts. Several scholars agree that the involvement of parents is a critical element of any program designed to address cyber forms of bullying and victimization (Cassidy et al. 2013; Kiriakidis and Kavoura 2010; von Marées and Petermann 2012). Furthermore, prior evidence has found that youth often

initiate cyberbullying when they are at home (Cassidy et al. 2013) and that direct supervision or periodic monitoring of youths' online activities can reduce the likelihood of poor social choices in the virtual world (Berson et al. 2002). The results from the present study suggest that parental monitoring may also be an important avenue for preventing and intervening with cyber victimization among elementary school-age youth and point to the importance of monitoring children's involvement in online games. Therefore, parents can help to alleviate children's exposure to cyber victimization by monitoring their children's online activity as they would their offline activities and talking to their children about cyberbullying, the appropriate use of technology, and responsible online behavior. Since youth may be hesitant to report cyberbullying involvement, parents should have regular conversations with their children about what they are doing and seeing online and what to do if they become a target of cyberbullying.

Conclusion

Rising concerns about the prevalence and impact of cyberbullying has led to the identification of this form of bullying as a significant social problem. As a result, research into this phenomenon has increased rapidly over the past several years. However, studies investigating the experiences of elementary school children with cyberbullying are quite limited when compared to studies focusing on middle and high school youth. The results of this study add to our limited understanding of the experiences of elementary school children, particularly for those under 10 years of age. These results also illustrate the need for additional inquiry, especially studies employing longitudinal designs, on the nature of cyberbullying involvement among younger samples of children. Future studies can build upon the results of this exploratory study and advance knowledge needed to enhance the response to cyber victimization by schools, parents, practitioners, and policymakers via the development of effective anti-cyberbullying policies and practices.

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