Cyberbullying among Youth with and without Disabilities

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Abstract Cyberbullying refers to bullying that occurs through the Internet and text messaging. While strides have been made in understanding the frequency with which cyberbullying occurs and its correlates, only a handful of published studies have examined cyberbullying among individuals with disabilities. Thus, this study examined cyberbullying prevalence rates and correlates among 231 participants age 16 to 20 ($M = 19.32$) with and without disabilities (51% male; 70.6% Caucasian). The study also examined the influence of disability status on participants' ability to detect the presence/absence of cyberbullying. Both individuals with and without disabilities displayed high prevalence rates of cyberbullying victimization, with youth with disabilities displaying significantly higher rates. Perpetration rates did not differ significantly between the two groups. Disability status (present/absent) did not influence the ability of participants to detect the presence or absence of cyberbullying. Implications of the findings for prevention/intervention efforts are discussed.

Keywords Cyberbullying · Disability · Victimization

Youth today are forever tethered to their technology. Over 90% of teens 13 to 17 surveyed about their use of technology

reported that they go online daily, with 24% of these teens saying that go online “almost constantly” (Lenhart 2015). Smartphones have made online accessibility much easier, with 73% of teens saying that they own a smartphone. Social media use by teens is widespread, with the most common medium being Facebook (71%) followed by Instagram (52%) and Snapchat (41%) (Lenhart 2015). Almost three quarters of teens say that they have accounts on multiple social media platforms. According to Lenhart (2015), most teens send and/or receive an average of 30 texts a day. While such technology use can be beneficial and open up communication channels, particularly for those who find face-to-face communications difficult, it is not without its perils, notable among them cyberbullying. Research on cyberbullying has increased rapidly in recent years as recognition of the dangers associated with involvement in the behavior has been increasingly recognized. However, the cyberbullying experiences of individuals with disabilities have not received much attention, particularly as they compare to the victimization and perpetration experiences of those without disabilities, the purpose of the current study.

Cyberbullying Defined

Smith et al. (2008, p. 376) defined cyberbullying as “an aggressive, intentional act carried out by a group or individual using mobile phones or the Internet, repeatedly and over time against a victim who cannot easily defend him or herself.” Like traditional bullying, cyberbullying is an act of aggression that is often repeated over time, and occurs among individuals whose relationship is defined by a power imbalance (Kowalski et al. 2014; Kowalski et al. 2012a; Smith 2015). Whereas the power imbalance with traditional bullying may involve differences in physical stature or social status, the

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power differential in cyberbullying situations may be reflective of differences in technological expertise. Additionally, the anonymity inherent in many cyberbullying incidents may make victims feel powerless (Dooley et al. 2009; Vandebosch and Van Cleemput 2008).

Although they share certain features in common, cyberbullying and traditional bullying differ in important ways (Kowalski et al. 2014; Smith 2015). First, whereas most traditional bullying happens at school during the school day (Nansel et al. 2001), cyberbullying can occur at any time of the day or night through any of a number of different venues (e.g., email, instant messaging, text messaging, online gaming). Second, the perpetrator of traditional bullying can be identified by the victim. In cyberbullying situations, on the other hand, perpetrators often hide under an umbrella of anonymity. Kowalski and Limber (2007) noted, for example, that almost half of the adolescent cyberbullying victims in their study did not know the identity of the person who cyberbullied them. Believing that they are anonymous online, people may say and do things that they would not say or do in face-to-face interactions (Diener 1980; Kowalski et al. 2014; Postmes and Spears 1998). Third, whereas few youth tell someone about their experiences with either traditional bullying or cyberbullying, the reasons behind this silence differ. Victims of traditional bullying report that they fear retaliation on the part of the perpetrator. Cyberbullying victims, conversely, fear that adults to whom they disclose their victimization will remove their technology, the means by which the victimization occurs (Kowalski et al. 2012a).

In spite of these important differences between traditional bullying and cyberbullying, researchers have been consistent in showing that involvement in one type of bullying is predictive of involvement in another type (Gradinger et al. 2009; Hinduja and Patchin 2008; Kowalski et al. 2012b; Sourander et al. 2010). Olweus (2013) stated that only 10% of youth are involved in cyberbullying independently of traditional bullying involvement. In their critical analysis and meta-analytic review of the cyberbullying literature, Kowalski et al. (2014) found a correlation of .40 between cybervictimization and traditional bullying victimization, as well as a correlation of .25 between cyberbullying victimization and traditional bullying perpetration.

Cyberbullying Prevalence Rates

Prevalence rates of cyberbullying are highly discrepant across studies depending on a number of variables including the definition of cyberbullying used, characteristics of the sample (e.g., age and gender), the criteria used to determine whether cyberbullying occurred (e.g., at least once vs. two to three times or more), and the time frame used to assess cyberbullying (e.g., two months, six months, lifetime), to

name a few (Smith 2015; Whittaker and Kowalski 2015). In general, overall prevalence rates for youth typically range between 10% and 40% (Kowalski et al. 2014; Kowalski and Limber 2007; O'Brennan et al. 2009).

Prevalence rates of cyberbullying among youth with disabilities are much more difficult to come by as only a few studies have been conducted examining this issue (e.g., Didden et al. 2009; Heiman and Olenik-Shemesh 2015; Heiman et al. 2015; Kowalski and Fedina 2011; Kowalski et al. 2016a). Research on traditional bullying has been consistent in showing that youth with disabilities are more likely to be bullying victims, perpetrators, and bully/victims than individuals without disabilities, with variations by type of disability (e.g., Blake et al. 2012; Rose et al. 2009; Rose et al. 2011; Sterzing et al. 2012; Swearer et al. 2012; Van Cleave and Davis 2006; Weiner and Mak 2009; Whitney et al. 1994). Theory of Mind (ToM) attests to the fact that individuals with particular types of disability, such as autism, process information about bullying differently than neurotypical individuals (van Roekel et al. 2010). Research also suggests that individuals with particular types of disabilities, such as those that fall along the autism spectrum, share many of the same characteristics as those that identify as traditional bully victims, perpetrators and bully/victims (Swearer et al. 2012).

Given the high degree of overlap between involvement in traditional bullying and cyberbullying, one might expect similar patterns of heightened cyberbullying victimization and perpetration among individuals with disabilities. As noted above, limited research has examined this relationship between the presence of disabilities and cyberbullying involvement. Research has shown that individuals with particular disabilities (e.g., autism spectrum disorders, learning disabilities) are at particular risk when engaging in online activities because of reduced critical thinking abilities and lack of impulse control (Good and Fang 2015). Kowalski and Fedina (2011) examined the prevalence of both traditional bullying and cyberbullying among youth with ADHD and/or Asperger Syndrome. Over 57% of the participants reported traditional bullying victimization within the previous two months; 21% indicated they had been victims of cyberbullying during the same time period. Rates of perpetration of traditional bullying and cyberbullying were 28.6% and 5.8%, respectively. Didden et al. (2009) obtained cyberbullying victimization rates of 7% via the Internet and 4% via text messaging among youth with developmental disabilities ages 12 to 19. Kowalski et al. (2016a) found that college students with disabilities were significantly more likely to have experienced cyberbullying victimization than those without disabilities. However, they found lower rates of cyberbullying perpetration among individuals with (3.7%) as opposed to without (8.7%) disabilities. Collectively, all of these studies highlight the need for additional research examining cyberbullying among individuals with disabilities to help clarify patterns of victimization and

perpetration as well as to illuminate relationships of cyberbullying involvement among individuals who have disabilities compared to those who do not.

Correlates of Cyberbullying

In addition to understanding prevalence rates of cyberbullying among individuals with and without disabilities, it is important to examine the relative magnitude of the consequences or correlates (Smith 2015) of cyberbullying victimization for youth with disabilities compared to their neurotypical peers. Existing research on cyberbullying among non-disabled youth show that victims of cyberbullying experience heightened levels of anxiety, loneliness, depression, suicidal ideation, substance abuse, and physical symptomology than non-cyberbullied youth (Gamez-Guadix et al. 2013; Hinduja and Patchin 2010; Klomek et al. 2008; Kowalski and Limber 2013; Kowalski et al. 2012a; Nakamoto and Schwartz 2010; Selkie et al. 2015; Schenk and Fremouw 2012; Tennant et al. 2015). Cyberbullying victims also experience lower levels of self-esteem than individuals not involved with cyberbullying (Brewer and Kerslake 2015). Finally, cyberbullying victims show a higher number of school absences and poor academic performance relative to their non-victimized peers (Kowalski and Limber 2013).

Not surprisingly, given the paucity of research on cyberbullying among youth with disabilities, the consequences or correlates of cyberbullying for disabled youth are relatively unexplored. In one study, however, the negative outcomes associated with bullying involvement for college students with disabilities were magnified relative to neurotypical students (Kowalski et al. 2016a). Didden et al. (2009) similarly found cyberbullying victimization to be related to lower self-esteem and higher levels of depression among individuals with intellectual and developmental disabilities.

Purpose and Hypotheses

Much of the research on both traditional bullying and cyberbullying has focused on middle school children, as this seems to be a particularly vulnerable age during which bullying is likely to occur (Kowalski et al. 2012a; Notar et al. 2013). In addition, this research has been largely limited to neurotypical samples of children to the relative exclusion of examinations of bullying, particularly cyberbullying, among youth with disabilities. Therefore, in this study, prevalence rates of cyberbullying victimization and perpetration were assessed, as well as correlates of cyberbullying victimization, among youth with and without disabilities. Additionally, reactions of individuals with and without disabilities to

cyberbullying situations were examined to test whether disability status (present/absent) influences the ability to detect the presence or absence of cyberbullying, consistent with what would be predicted by theory of mind. Finally, the study focused on youth outside the normally studied middle school population, instead focusing on youth aged 16 to 20. Because cyberbullying is not limited to just middle school youth, it is important to study individuals across all age demographics. The age range covered in the current study has been vastly underrepresented in cyberbullying research. Participants with disabilities were predicted to have higher rates of cyberbullying victimization and perpetration compared to their neurotypical peers and to have more negative outcomes associated with cyberbullying victimization. Participants with disabilities were also predicted to be less accurate in detecting cyberbullying than those without disabilities.

Method

Participants

Two hundred thirty one participants (118 males: 51.1%; 112 females: 48.5%; 1 participant did not identify his/her sex: .4%) aged 16 to 20 ($M = 19.32$; $SD = .81$) participated. Participants were workers on Amazon's Mechanical Turk (MTurk), an online crowdsourcing tool through which workers complete HITS (Human Intelligence Tasks) generated by Requestors. Upon completion of the survey, workers received \$.50. Among these participants, 58.4% did not have a disability and 41.6% did have a disability. A range of disabilities was reported by participants, with anxiety disorders and emotional disorders being the most commonly reported (see Table 1). The majority of the participants were Caucasian (70.6%), followed by Asian (10.0%), African American (7.8%), Hispanic (7.4%), American Indian (1.3%), Arab/Arab American (0.9%), and other (2.2%).

Procedure

After completing demographic items (age, sex, race), respondents indicated the presence/absence of a disability along with the type of disability. They then completed a series of items examining their use of the Internet and related communication technologies. The first question asked participants how often they used the Internet on an average day (1 = 0 h; 7 = >10 h). Respondents then indicated how often they used each of 7 technologies (Texting, Facebook, Twitter, SnapChat, Online gaming, Email, and Instagram; 1 = Never; 5 = Frequently (at least once a day)).

Detailing Cyberbullying Involvement To assess participants' experiences with cyberbullying, they were first

Table 1 Disability types

ADHD/ADD	19 (19.8%)
Anxiety Disorder (e.g., anxiety, OCD, panic disorder)	61 (63.5%)
Learning Disability	9 (9.4%)
Autism Spectrum Disorder	9 (9.4%)
Emotional Disorder (e.g., depression, bipolar disorder)	45 (46.9%)
Physical Disability	15 (15.6%)
Other Psychological Disability (e.g., stress, PTSD)	10 (10.4%)
Other (amputation, diabetes, epilepsy)	3 (1.2%)

Note. Numbers add up to more than 100% as participants could check more than one type of disability

provided with a definition: “Cyberbullying is when someone intentionally and repeatedly harasses, mistreats, or makes fun of another person online or while using a cellphone or other electronic devices. The cyberbullying victim cannot easily defend him or herself.” Participants were asked how often they had been cyberbullied *in their lifetime* (1 = Never; 5 = Many times) and how often they had perpetrated cyberbullying *in their lifetime*. They also indicated when the majority of the cyberbullying victimization occurred (1 = I have never been cyberbullied; 6 = Adulthood). Several questions then determined the venue by which the cyberbullying occurred (e.g., instant messaging, social networking site, email, text message, online gaming; 1 = Never; 5 = Many times). Participants indicated who the perpetrator was (e.g., sibling, friend, relationship partner, colleague, another student at school, teacher, stranger/don’t know); 1 = no; 2 = yes; 3 = I was not cyberbullied). They also indicated whether or not they told someone about their cyberbullying (1 = I was not cyberbullied; 2 = yes; 3 = no) and, if so, whom they told (e.g., parent/guardian, teacher, counselor/therapist, sibling, friend). In regards to the last question regarding whom they told, participants were instructed to check all that applied.

Participants then indicated how they responded to being cyberbullied, if they had been victimized. Response options included not doing anything, reporting the cyberbullying, asking the person to stop, cyberbullying back, making fun of the perpetrator to other people, saving the evidence, and blocking the perpetrator. Respondents checked all that applied to the cyberbullying situations they had experienced.

Correlates of Cyberbullying To determine the correlates of cyberbullying involvement, participants completed several individual difference measures. For all measures, reverse-scoring was used where appropriate and scores were averaged with higher numbers indicating more of the construct of interest. Internal consistency (Cronbach’s alpha) for all measures exceeded .90. Rosenberg’s (1965) 10-item Self-Esteem Scale determined participants’ self-esteem (1 = strongly agree;

4 = strongly disagree). Leary’s (1983) Interaction Anxiousness Scale measured participants’ anxiety in interpersonal interactions. Participants responded to each of the 15 items using a 5-point scale (1 = not at all characteristic of me; 5 = extremely characteristic of me). The California Epidemiological Scale of Depression (Radloff 1977) measured participants’ depression. A 4-point response format was used for each of the 20 items (1 = rarely or none of the time; 4 = most or all of the time). The 20-item UCLA Loneliness Scale measured participants’ loneliness (Russell et al. 1978). Participants responded to each item using a 4-point response format (1 = I often feel this way; 4 = I never feel this way). A single item measured suicidal ideation (“I wish I were dead”; 1 = Never; 4 = Always), and another item the grades that participants usually get in school (1 = Mostly A’s; 9 = Mostly F’s).

Identifying Cyberbullying Finally, three situations determined by the authors to be definitely cyberbullying (*Michael is jealous of how much money Seth’s family has. While he is at Seth’s house, he takes Seth’s cellphone and uses it to send insulting text messages to his friends*), definitely not cyberbullying (*Sam had eye surgery and has to wear a patch over his eye. He and several of his friends alter his Facebook page and picture to make him look like a pirate*), and ambiguous regarding cyberbullying intent (*Bill, John’s coworker, sees that John hasn’t logged out of his work computer. As a joke, Bill uses John’s email account to send inappropriate pictures to their colleagues*) were used to examine the ability of participants in the disability and non-disability groups to recognize cyberbullying. Participants used a yes/no response format to indicate whether or not they perceived each of the situations to represent cyberbullying.¹

Results

Technology Use

Descriptive statistics were used to examine technology use among participants with and without disabilities. At moderate levels of Internet use, patterns were somewhat similar among youth with and without disabilities. Just under 36% of youth without disabilities said they used the Internet an average of 3–4 h daily, with an additional 39.3% saying they used the

¹ Situations involving and not involving cyberbullying were included to allow us to determine where differences in perceptions of cyberbullying by those with and without disabilities occur, if at all. We were interested in whether individuals with disabilities might fail to identify situations that had been classified as definitely cyberbullying but be more inclined to label situations that were not cyberbullying as electronic bullying.

Internet 5–6 h a day. Among youth with disabilities, 32.6% used the Internet 3–4 h a day with 16.8% using it 5–6 h a day. At higher amounts of time, however, differences emerged. When the amount of time approached 9–10 h, 5.9% of those without disabilities compared to 16.8% of those with disabilities used the Internet; more than 10 h: 5.3% (no disability group), 12.6% (disability group). A t-test conducted to examine differences in overall amounts of Internet use among individuals with and without disabilities revealed a significant difference showing greater use among individuals with ($M = 4.41$; $SD = 1.55$) than without ($M = 4.03$; $SD = 1.20$) disabilities, $t(228) = -2.10$, $p = .037$. Specific venues used most frequently by individuals with and without disabilities are reported in Table 2. Texting, e-mail, and Facebook were the most frequent venues reported by individuals with and without disabilities.

Cyberbullying Prevalence

Although over 50% (50.4%) of participants without a disability indicated they had been cyberbullied in their lifetime, three quarters of those (72.9%) with a disability reported the same. Chi-square analysis revealed this difference to be significant, $\chi^2(1) = 11.86$, $p < .001$. Individuals with disabilities (33.3%) also reported higher rates of perpetrating cyberbullying than

those without disabilities (23.9%), although this difference was not significant, $\chi^2(1) = 2.49$, $p = .115$. To determine if cyberbullying involvement varied with the specific type of disability, a chi-square crossing victimization (no/yes) with disability type (e.g., ADHD, physical disability) was conducted, as well as an identical analysis with perpetration (no/yes). Both analyses were nonsignificant, $ps > .05$. All additional analyses were conducted on participants with and without disabilities, not broken down by disability type.

Based on responses to the two questions assessing victimization and perpetration rates, four groups were created: perpetrators, victims, bully/victims, and not involved in cyberbullying. A chi-square analysis of cyberbullying group by disability status (disability absent/present) was significant, $\chi^2(3) = 11.95$, $p = .008$. As shown in Table 3, almost twice as many individuals without disabilities indicated they had perpetrated cyberbullying relative to those with a disability. Negligible differences were observed in percentages involved as victims or bully/victims. However, over twice as many nondisabled respondents indicated they were not involved with cyberbullying compared to those with a disability.

Among individuals who had been cyberbullied, almost identical percentages of youth with (82.9%) and without disabilities (86.8%) reported that the majority of the cyberbullying occurred during middle and high school. However, the breakdown within the two age divisions reversed. More students with disabilities said they were cyberbullied during high school (48.6%) than middle school (34.3%); conversely, among neurotypical students, more were victims of cyberbullying during middle (47.1%) than high school (39.7%).

Both groups of participants revealed similar patterns regarding the nature of their relationship with the perpetrator.

Table 2 Frequency of venue use

	Never	Rarely	Sometimes	Often	Frequently
Texting					
No Disability	0.0	3.0	4.4	8.1	84.4
Disability	2.1	5.2	4.2	10.4	78.1
Facebook					
No Disability	9.6	5.9	3.0	15.6	65.9
Disability	10.5	3.2	3.2	14.7	68.4
Snapchat					
No Disability	24.1	5.3	4.5	15.8	50.4
Disability	30.5	4.2	14.7	16.8	33.7
Twitter					
No Disability	40.7	12.6	8.1	10.4	28.1
Disability	36.5	11.5	11.5	13.5	27.1
Online gaming					
No Disability	20.7	20.7	17.8	20.7	20.0
Disability	24.0	17.7	10.4	19.8	28.1
Email					
No Disability	2.2	3.0	5.2	17.8	71.9
Disability	0.0	0.0	5.2	18.8	76.0
Instagram					
No Disability	4.1	5.2	4.4	13.3	43.0
Disability	38.3	8.5	8.5	9.6	35.1

Note. Numbers indicate percentages who used each venue

Table 3 Group x disability status

Group		Disability Status	
		No Disability	Disability
Perpetrator	Count	7	4
	% Within Group	63.6%	36.4%
	% Within Status	5.2%	4.2%
Victim	Count	43	42
	% Within Group	50.6%	49.4%
	% Within Status	32.1%	43.8%
Bully/Victim	Count	25	28
	% Within Group	47.2%	52.8%
	% Within Status	18.7%	29.2%
Not Involved	Count	59	22
	% Within Group	72.8%	27.2%
	% Within Status	44.0%	22.9%

A slightly higher percentage of youth in the disability group (42.8%) indicated that the perpetrator was a stranger compared to 32.3% of those in the neurotypical group. Just over 35% (35.7%) of respondents with a disability reported that the perpetrator was another student at school, compared to 33.8% of those without a disability. Slightly more participants in the non-disability group said the perpetrator was a friend (17.6%) or relational partner (7.4%) than in the disability group (friend: 12.9%; relational partner: 1.4%).

Unfortunately, students in both groups were unwilling to report their cyberbullying victimization. Sixty percent of those in the disability group and 64.7% of those in the non-disability group reported that they had *not* told anyone about their cyberbullying victimization. Among those who did tell, participants in the two groups followed similar patterns. The most frequently told individuals were friends (100% for individuals in both groups who told), followed by parents/guardians (disability group: 61%; non-disability group: 75%), siblings (disability group: 39%; non-disability group: 50%), girlfriends/boyfriends (disability group: 36%; non-disability group: 35%), and teachers (disability group: 35%; non-disability group: 18%). Students in the disability group were much more likely to report their victimization to a counselor/therapist (32%) than students in the non-disability group (0%). As indicated by the percentages, participants could indicate more than one person with whom they spoke about their victimization.

Table 4 presents the reactions of cyberbullying victims in both the disability and non-disability groups. The most notable differences are in the percentages of individuals in the two groups who told someone about their victimization and those who made fun of the perpetrator to other people. More individuals in the disability group both told and made fun of the perpetrator.

Correlates of Cyberbullying

2 (disability status: no disability/disability) $\times$ 2 (cyberbullying victimization: no/yes) ANOVAs were conducted on outcome

variables. Significant main effects of disability status were obtained on all outcome variables. As shown in Table 5, students with a disability had lower self-esteem, lower grades, higher depression and suicidal ideation, and higher social anxiety than their nondisabled peers. However, students with a disability reported being significantly less lonely. A significant main effect of cyberbullying victimization was found for social anxiety, $F(1, 223) = 3.46, p = .064 (\eta^2 = .02)$, depression, $F(1, 223) = 12.70, p < .001 (\eta^2 = .05)$, suicidal ideation, $F(1, 223) = 5.89, p = .016 (\eta^2 = .03)$, and loneliness, $F(1, 223) = 14.29, p < .001 (\eta^2 = .06)$. Cyberbullying victims had higher rates of social anxiety ($M = 3.28; SD = .86$), depression ($M = 2.01; SD = .63$), suicidal ideation ($M = 1.63; SD = .74$), and loneliness ($M = 3.05; SD = .87$) compared to individuals who had not been a victim of cyberbullying [social anxiety ($M = 3.06; SD = .78$); depression ($M = 1.70; SD = .61$); suicidal ideation ($M = 1.40; SD = .78$); loneliness ($M = 2.60; SD = .79$)]. No interactions approached significance, $ps > .05$.

Perceptions of Cyberbullying Situations

Chi square analyses showed, surprisingly, that individuals in the two disability groups did not differ from one another in their ability to identify each type of cyberbullying, $ps > .05$. Interestingly, in the situation that was ambiguous regarding the intent of the perpetrator (“As a joke...”), 82.2% of respondents in the non-disability group and 80.9% of those in the disability group evaluated the situation as cyberbullying. In the situation determined by the researchers not to be cyberbullying, 39.6% of individuals without disabilities and 27.7% of those with disabilities still evaluated the scenario as cyberbullying.

Discussion

As hypothesized, youth with some type of disability reported significantly higher rates of cyberbullying victimization than their neurotypical peers. However, the two groups did not

Table 4 Reactions to cyberbullying victimization by disability status

Reaction	Disability Status	
	No Disability	Disability
Did nothing	38.2%	34.3%
Told someone	17.6%	35.7%
Asked person to stop	39.7%	37.1%
Cyberbullied back	19.1%	21.4%
Made fun of perpetrator	8.8%	17.1%
Saved the evidence	22.1%	30.0%
Blocked the perpetrator	48.5%	54.3%

Table 5 Main effects of disability status on outcome variables

Variable	Disability Status		<i>F</i>	<i>p</i>	η^2
	No Disability <i>M</i> (<i>SD</i>)	Disability <i>M</i> (<i>SD</i>)			
Self-Esteem	3.08 (.51)	2.66 (.66)	24.49	.001	.10
Social Anxiety	2.85 (.81)	3.52 (.86)	27.77	.001	.11
Depression	1.61 (.52)	2.16 (.75)	30.32	.001	.12
Suicidal Ideation	1.30 (.59)	1.76 (.78)	19.45	.001	.08
Grades	1.83 (.90)	2.42 (1.48)	9.95	.002	.04
Loneliness	2.95 (.86)	2.59 (.83)	4.76	.03	.02

differ significantly in rates of cyberbullying perpetration. While the relative differences between the two groups are important, what is even more notable is the high rate of cyberbullying victimization experienced by youth in both groups – over 50% of neurotypical respondents and nearly three-fourths of those with disabilities, highlighting the importance of studying cyberbullying among both disabled and nondisabled individuals.

Although one might think that the higher victimization rate among youth with disabilities could be attributed to an inability to correctly identify cyberbullying, the results from the three cyberbullying scenarios suggests this is not the case. Indeed, individuals with and without disabilities were equally able to identify the cyberbullying situations, suggesting that additional research is needed in this area testing the extent to which theory of mind differences are operational, at least in cyberbullying situations (Badenes et al. 2000; Heerey et al. 2003). The significant difference in victimization could, however, reflect differences in time spent online as individuals with disabilities spent significantly more time online than those without. More specifically, a greater percentage of individuals with disabilities than without disabilities spent 9 or more hours online daily. Prior research has shown that time spent online is correlated with cyberbullying victimization (Casas et al. 2013; Kowalski et al. 2014). In addition, the current study assessed *lifetime* prevalence among a more diverse sample of participants. One of the advantages of using a data collection tool such as Amazon's Mechanical Turk is that the participant pool is less homogeneous than is likely to be obtained from a single school or other data collection site.

The failure to find differences among individuals with and without disabilities in their ability to detect cyberbullying in the current study may also be due to the cyberbullying victimization histories of the participants, particularly those with disabilities. Over 50% (56.2%) said they had been cyberbullied at least a few times in their lifetime, with 11% reporting having been cyberbullied several times. This level of victimization may have sensitized these respondents to situations that do and do not involve cyberbullying.

The data provide mixed results regarding progress in youth reporting their victimization. Few students in either group said they had told someone about being cyberbullied. However, among those who did tell, more than half told a parent. This is important as parents are often in a better position to help the youth deal with the cyberbullying than a friend might be. Only participants with disabilities confided in a therapist, but this likely reflects the fact that they were more likely to have a therapist because of their disability.

The finding regarding participants' unwillingness to confide their victimization was reinforced in the question asking participants about their reactions to being cyberbullied. Unfortunately, over a third of respondents in each group indicated that they did nothing in response to being cyberbullied.

While this response might be recommended in isolated instances, it is typically not the recommended course of action when victimization is ongoing. On the other hand, other responses suggest that participants have received some instruction regarding the most effective responses, including blocking perpetrators and saving evidence. That respondents in the disability group were more likely to make fun of the perpetrator to other people suggests that they may require additional skills training regarding how to respond appropriately in cyberbullying situations, particularly to ward off further victimization. This particular response may also account for why the trend was for perpetration rates to be higher among youth in the disability group compared to the neurotypical group. The ridiculing response may be evaluated by others as cyberbullying.

Among students in both groups, middle and high school were key times for cyberbullying to occur, although the specific times reversed depending on the disability group. Neurotypical respondents reported being cyberbullied most often during middle school whereas youth with disabilities indicated that they were cyberbullied most often during high school. These results are important from a prevention/intervention perspective. Because so much attention regarding cyberbullying education is directed at elementary and middle school students, a group in great need of cyberbullying education and instruction post middle school may not be receiving it (Cantone et al. 2015). This is reinforced by the fact that the second most common identification for the perpetrator was another student at school, highlighting the need for continued prevention/intervention efforts within the school system.

The relationship of the victim to the perpetrator may be reflective of the social relations of individuals with and without disabilities in general. A higher percentage of respondents without disabilities than with disabilities were cyberbullied by friends and relationship partners. Perhaps individuals with disabilities have more narrow social networks than their neurotypical peers, so there are fewer peers and/or relational partners available to perpetrate bullying against them. Additional research is needed to further explore this idea.

The negative correlates of cyberbullying victimization observed in the current study correspond with those obtained in previous studies – higher social anxiety, depression, suicidal ideation, and loneliness (e.g., Kowalski and Limber 2013). That these effects were not qualified by an interaction of disability status and victimization suggests that the correlates may be similar for both those who have and those who do not have a disability, at least for individuals in this age demographic. Previous research by Kowalski et al. (2016a) with college students found negative correlates of victimization to be particularly pronounced among individuals with disabilities relative to individuals without disabilities. For youth in late adolescence, however, where the social meaning of bullying victimization may differ from that in college,

victimization status may supercede disability status in influencing negative outcomes. In the current study, because of the small number of individuals with particular types of disabilities and because we did not find overall differences in cyberbullying involvement by disability type, we did not examine cyberbullying correlates by specific types of disability. This would be an interesting area of future investigation, however, that could help to inform prevention/intervention efforts.

Limitations and Future Research

The failure to find differences in victimization and perpetration by specific type of disability was somewhat surprising given prior research. Not only do some disabilities impede social skills more than others, but some disability types are more easily concealed online than others (Kowalski et al. 2016b), making those individuals less susceptible to online bullying, particularly by strangers. Yet, no differences were obtained in the current study. We believe, however, that with a larger sample size and, thus, larger numbers of individuals within each disability type, differences may have been observed. Additional research is also needed exploring the theory of mind concept. In the current study, single scenarios were used to represent the presence of cyberbullying, the absence of cyberbullying, and ambiguous cyberbullying intent. To do a more complete evaluation of differences in the ability of individuals with and without disabilities to accurately detect cyberbullying, more situations would need to be presented. Comparisons of individuals with and without disabilities would also clearly benefit from longitudinal research. Such research would allow researchers to more clearly determine the extent to which variables such as social anxiety, depression, loneliness, and low self-esteem are antecedents of cyberbullying victimization, consequences, or both.

Conclusion

The current study highlights the importance of studying not only cyberbullying but also cyberbullying among marginalized groups, such as individuals with disabilities. This was emphasized by the high prevalence rate of cyberbullying among all participants, but most particularly those with some type of disability. In addition, the finding that victimization rates of neurotypical students were higher in middle school compared to high school for disabled students suggests that there is not a “one-size fits all model” for cyberbullying prevention and intervention. Rather, programs within schools may need to be tailored to group characteristics that place members of those groups at risk.

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