RESEARCH ARTICLE

Cyberbullying and Depression Among Adolescents in an Acute Inpatient Psychiatric Hospital

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Abstract: ***Background*:** While cyberbullying has been tied to mental health problems, there is a lack of research related to this phenomenon and associated psychopathology among the adolescent inpatient psychiatric hospital population.

***Objective*:** To examine the relationship between cyber aggression, cyber victimization, and depression among adolescents (N = 100) in an acute inpatient psychiatric setting.

***Method*:** We utilized the Cyber Peer Experiences Questionnaire and the Center for Epidemiological Studies- Depression Scale to obtain information related to cyberbullying and depression.

***Results*:** The findings indicate 95% prevalence rate of cyber victimization and 94% prevalence rate of cyber aggression among participants, during the previous two months. The findings also indicated there was a significant difference between the association of gender and cyber victimization (t = 4.12, df = 69, p = 0.01) and gender and cyber aggression (t = 2.36, df = 48, p ≤ 0.02). Ninety nine percent of females reported experiencing cyber victimization (M = 25.53) at least once in the previous two months, compared to 87% of males (M = 20.10). Additionally, 97% of females reported participating in cyber aggression (M = 20.31) at least once in the previous two months, compared to 87% of males (M = 17.73). The findings also indicated a significant association between cyber victimization and depression (r = 0.218, p ≤ 0.03) and adolescents who reported experiencing cyber victimization were significantly likely to engage in cyber aggression (r = .555, p ≤ 0.01).

***Conclusions*:** Inpatient psychiatric hospitals need to update assessment and treatment procedures to account for the impact cyberbullying has on the adolescent population.

1. INTRODUCTION

Cyberbullying can be defined as an intentional aggressive act carried out by a group or individual by electronic or digital means against a defenseless victim (Olenik-Shemesh, Heiman, & Eden, 2012; Smith el al., 2008). Cyber victimization refers to "peer victimization that occurs via the internet or other forms of electronic media" (Landoll *et al.*, 2015, p. 78). Although traditional bullying has decreased, there has been a significant increase in cyberbullying (Schneider, O'Donnell, Stueve & Coulter, 2012; Suzuki, Asaga, Sourander, Hoven & Mandell, 2012), with as many as one in four students being impacted (Romera, Cano, García-Fernández, & Ortega-Ruiz 2016). Concerns have been raised that cyberbullying may emerge as a new global epidemic as availability and technology increase (Gofin & Avitzour, 2012).

Current research suggests cyberbullying "disproportionately affects youths who are already vulnerable to mental health and behavioral health disparities including members of sexual minorities, girls, and racial and ethnic minorities" (Rice *et al.*, 2015, p. 66). However, much is still unknown about this phenomenon and as Gofin and Avitzour have pointed out "further research is

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needed to understand youth perceptions of bullying, particularly cyberbullying, and its assessment in different populations" (2012, p. 1633). Menesini, Nocentini, and Calussi (2011) addressed the importance of obtaining information to understand the phenomenon of cyberbullying and its severity in a given population to develop specific prevention and intervention strategies. Stoll and Block (2015) also highlighted the need for a deeper understanding to identify adolescents most likely to be targets of cyberbullying in order to develop effective interventions

Previous research has suggested negative mental health outcomes related to cyberbullying among non-clinical populations of adolescents. Mitchell, Ybarra, and Finkelhor (2007) found that adolescents who reported being cyber victimized were three times more likely to report depressive symptoms, delinquency, and substance abuse than those who were not cyber victims. Hinduja and Patchin (2010) found that cyber victims had higher levels of suicidal thoughts and attempts than adolescents who were not cyber victimized. Suzuki *et al.* (2012) also discussed long-term ramifications of cyber victimization, which could include depression and trauma. However, the field currently has very fragmented research results (Hamm *et al.* 2015), in part due to a lack of appropriate measurement instruments (Sticca, Ruggieri, Alsaker, & Perren 2013).

Our aim in this this study was to explore the extent to which cyberbullying was experienced and the degree to which it was associated with depression among adolescents in the inpatient psychiatric hospital setting. To the best of our knowledge, there has been no research on cyberbullying in this population. Our goal was to provide a framework to understand how adolescent psychiatric facilities can improve current assessment procedures and treatment practices. Additionally, the study sought to determine if there were gender differences both in the reported experience and the association of cyberbullying and depression. Given the fact that adolescents in inpatient psychiatric hospital settings would seem to present populations particularly vulnerable to cyberbullying, both in terms of being victims and being adversely affected by it, we hypothesized that we would find a high prevalence of reported experiences of cyberbullying, and that it would be significantly associated with depressive symptoms. The null hypothesis was there is no statistically significant relationship between cyberbullying and depression amongst adolescents admitted to an inpatient psychiatric hospital based on data retrieved from the Cyber-Peer Experiences Questionnaire (C-PEQ) and the Epidemiological Studies-Depression Scale (CES-D).

2. METHODS

A non-experimental descriptive correlational research design was utilized to examine the relationship between cyberbullying and depression among adolescents age 13 to 18 (n = 100) admitted to the inpatient psychiatric hospital. The study was conducted in a single adolescent acute psychiatric unit in central Nebraska. The participants included 70 females and 30 males who were hospitalized over a six-month period. The demographics reflected those of the rural population served by the unit. The participants included three African American or Black (1 female; 2 males), 67 Caucasian or White (44 female; 23 male), and 17 Hispanic (15 female; 2 male), four Native American (3 females; 1 male), four Hispanic and White (4 females; 0 males), one Native American and White (0 females; 1 male), one Hispanic and Native American (1 female; 0 males), one Other (0 females; 1 male), and two participants who left the question blank (0 males; 2 females).

3. ETHICAL APPROVAL AND INFORMED CONSENT

The Catholic Health Initiatives Review Board gave internal approval to conduct the study, in addition to external approval from the Clarkson College Internal Review Board. The participants were required to have a signed parental consent form in order to participate in the survey. In addition, participants individually signed consent forms prior to the researcher obtaining parental consent. All participants had the ability to decline or withdraw from the study at any time. Paper/pencil survey instruments were presented to each participant individually by the researcher and confidentiality was upheld both during and concluding the survey. No names, birthdays, social security numbers or other identifiable information were collected or recorded on the paper forms, and individual survey results remained anonymous. In the event that participation in the survey caused emotional distress,

participants had access to mental health therapists, psychiatric nurses, and were under the care of the psychiatrist in the acute psychiatric facility. Surveys were administered at the conclusion of the participant's stay in the acute inpatient psychiatric facility by the primary investigator. At the time of the study, average stay on the adolescent psychiatric unit was four to five days, which allowed the survey instruments to collect data from the period prior to the hospitalization. Parents/guardians were offered blank copies of the survey instruments that the adolescent was asked to complete, but individual answers and/or results were not revealed.

4. CYBER-PEER EXPERIENCES QUESTIONNAIRE

The Cyber-Peer Experiences Questionnaire (C-PEQ; Landoll, La Greca, Lai, Chan, & Herge 2015) is a 15 tem self-report scale that collects data related to cyberbullying. The C-PEQ was selected due to the instrument's ability to measure both cyber victimization and cyber aggression, as well as the ability to differentiate between cyber victimization and traditional forms of peer aggression, in a field where measurement development has been limited (Landoll *et al.*, 2015). The C-PEQ, in addition to its ability to identify youth who have been cyber victimized, can facilitate the understanding of the precursors and consequences of adolescent cyber victimization, including evaluating the role of cyber victimization in the development of depression among adolescents and allow for the monitoring of interventions.

The C-PEQ collected data related to cyber victimization and cyber aggression based on the previous two-month period, via a five-point Likert scale with 1 = Never, 2 = Once or twice, 3 = A few times, 4 = About once a week, and 5 = A few times a week. Scoring for the C-PEQ consisted of compiling two separate summative scores from all the negative questions. One summative score for online victimization and one summary score from online aggression were compiled, with each summary score ranging from 11 to 55. Positive items such as 3, 8, 11, and 15 were removed from the final analysis. Questions asked, for example, if they had ever sent an embarrassing video of someone else through electronic media (aggression) or had an embarrassing video of them sent through electronic media (victimization).

Another question; asked if the participant ever broke up with a peer they were dating via electronic media (aggression) or had a peer that the participant was dating break up with them via electronic media (victimization). According to Moore (2015), the C-PEQ displayed evidence for internal consistency reliability of .84 for cyber victimization and .88 for cyber aggression. Chan and La Greca (2016) reported the C-PEQ had an internal consistency of .78 for cyber victimization and .63 for cyber aggression.

5. CENTER FOR EPIDEMIOLOGICAL STUDIES-DEPRESSION SCALE

The Center for Epidemiological Studies-Depression Scale (CES-D) was used to acquire data related to depression. The CES-D is a 20 item self-report questionnaire in which each item is indicative of a depressive complaint. Each item is scored 0-3, with a maximum score of 60 (Cuijpers, Boluijt, van Straten, 2008). Questions on CES-D are rated with a severity/frequency scale, in participants rated how they had felt the previous week as 0) rarely or none of the time (less than one day), 1) some or a little of the time (one to two days), 2) occasionally or a moderate amount of time (three to four days), and 3) all the time (five to seven days). The CES-D had four positive non-depressive items, designed to account for self-report bias, which were recoded for the final summative total (Radloff, 1991).

A response rate of 71% was calculated based on the total number of participants (N =100) and those who did not participate for a variety of reasons (n = 40). Twenty-two chose not to participate and were excluded from the study. Additional exclusion criteria were being non-English speaking (n = 3), being a Nebraska State ward, as State law forbids the participation of state wards in research studies (n = 15), having suicidal behavior (n = 0), or being psychotic (n = 0). No parents/guardians withheld consent for their adolescents to participate. The researcher relied on information from the adolescent unit charge nurse and the participant's psychiatrist to determine which patients should be included or excluded from participating in the study. The hospital medical director, the unit psychiatrist, and psychiatric nurses all had the ability to exclude participation of any adolescent where there was an increased risk to cause emotional distress.

6. RESULTS

We found 95% of the sample had experienced some form of cyber victimization and 94% had participated in some form of cyber aggression during the previous two months. Ninety nine percent of females—virtually all—reported experiencing cyber victimization at least once in the previous two months, compared to 87% of males. Furthermore, 97% of females reported participating in cyber aggression at least once in the previous two months, compared to 87 percent of males. In addition, the study sample scored (M = 24.530) on the CES-D which was above the cutoff score of 16 or higher, indicative of probable depression (Kim & Kim, 2001) as well as above 19 which indicates depressed mood (Field *et al.*, 2001). Of the participants (N = 100), 25 (14 females, 11 males) scored below 16 and indicated no depression, seven (six females, 1 male) scored between 16 and 18 which indicated probable depression, and 68 (50 females, 18 males) scored 19 or higher, which indicated depressed mood. In total, 75 out of 100 participants scored probable for depression or having depressed mood.

Similar to Labrague (2014), this study utilized Pearson's correlations coefficient to test the relationship between cyber victimization and depression, cyber aggression and depression, and cyber victimization and cyber aggression. Means and standard deviation data were placed into a database and analyzed using Minitab 17.

According to Wall Emerson (2015), Pearson correlation values ranging from -.5 to -1 or .5 to 1 are considered high. A Pearson correlation suggested there was a mild correlation (r = 0.218, *p* = 0.03) between depression and cyber victimization among the adolescents. Additionally, a Pearson correlation found no significant association between cyber aggression and depression (r = 0.082, p = 0.42). Furthermore, A Pearson correlation indicated there was a high correlation between participants who reported experiencing cyber victimization and participating in cyber aggressive behavior (r = .555, *p* = 0.00).

The gender of participants was also examined to determine what differences existed in the association between cyber victimization, cyber aggression, and depression. Similar to Etchegaray *et al.* (2012), data collected from the C-PEQ and CES-D were compared between males and females, through mean and standard deviation scores. Additionally, two-sample t-tests were conducted to examine the difference in association between gender and cyber victimization, between gender and cyber aggression, and between gender and depression. Females scored significantly higher (t = 4.12, df = 69, p = 0.00) on the C-PEQ victimization scale (M = 25.53) when compared to males (M = 20.10). Females also scored significantly higher (t = 2.36, df = 48, p = 0.02) on the C-PEQ aggression scale (M = 20.31) when compared to males (M = 17.73). Although not significant (t = 1.80, df = 52, p = 0.08), females also scored higher on CES-D (M = 25.529) when compared to males (M = 20.100).

7. DISCUSSION

We found a much higher prevalence of cyberbullying (95% cyber victimization and 94% cyber aggression) among our adolescent psychiatric population than has been found in studies of non-hospitalized adolescents. Indeed, almost all of the adolescents in our hospital reported some involvement in cyberbullying. In a previous study, Juvonen and Gross (2008) found 72% of non-hospitalized adolescents (n = 1454) reported being cyber victimized within the previous year on at least one occasion. In a review of 36 studies involving the prevalence of cyberbullying, Hamm *et al.* (2015) found that the median reported prevalence of cyberbullying was 23%. The study found that reports on the prevalence of cyberbullying ranged from 4.8-73.5 %, largely due to different cyberbullying definitions and use of instruments.

Our findings also suggested a substantial association between cyber victimization and cyber aggression among adolescents who were admitted to the psychiatric facility (r = 0.555, *p* ≤ 0.00), which was supported by previous literature (Sticca *et al.*, 2013; Bauman, Toomey, & Walker, 2013; and Sahin, 2012), of non-hospitalized adolescents. Furthermore, these findings are in accordance with previous research, which suggested a positive association among adolescent psychiatric problems and cyberbullying, with aggressor/victim experiencing the most psychiatric problems (Sourander, *et al.*, 2010). Based on the current findings, prevention and intervention efforts should be developed to address cyberbullying, which include both cyber victimization and cyber

aggression in the acute adolescent psychiatric setting.

We found a moderate association between cyber victimization and depression (r = 0.218) which was similar to previous studies performed on a non-hospitalized populations of adolescents. Rose and Tynes (2015) reported victimization and depression among adolescents (N = 559) over a three year period. In accordance, Kowalski and Limber (2013) also found a moderate association between cyber victimization and depression (r = .29) in their study of adolescents (N = 931). According to Carpenter and Hubbard (2014), "cyberbullying often contributes to the development of clinical disorders" (p. 14). The current findings suggest that there is no statistical difference in the association of cyber victimization and depression between adolescents in an acute inpatient psychiatric setting and the larger non-hospitalized population.

Lastly, there were significant gender differences in the association between cyber victimization and depression and in the association between cyber aggression and depression. These findings suggest that females admitted to an inpatient psychiatric hospital are more likely to have experienced cyber victimization (t = 4.12, df = 99, *p* = 0.00), *and* participated in cyber aggression (t = 2.36, df = 48, *p* = 0.022), than males. Although some research has provided conflicting accounts of the role that gender plays in cyberbullying, our findings are supported by the more recent literature. For example, Khurana, Bleakley, Jordan, and Romer (2015) reported that females were more at risk for cyber victimization than males and suggested the need for interventions targeted specifically for females. Schneider O'Donnell, Stueve, and Coulter (2012) also reported higher rates of cyber victimization among girls. Similarly, Rice *et al.* (2015) also found that females were more likely to be affected by cyber victimization.

8. LIMITATIONS

There are assumption and limitations of the study that must be acknowledged. First, it is important to recognize that the generalizability of the findings is limited due to the study being conducted at one psychiatric hospital in central Nebraska without a diverse sample. Future

research aimed at adolescents in a psychiatric setting should be developed to include a larger population over a longer period. The sample size was limited based on the number of participants from the population who did not participate for a variety of reasons. It is unclear if the 22 individuals who chose not to participate or the 18 who were excluded from the study would have differed significantly from the study group. In addition, the study utilized self-report survey instruments, which might have made the adolescents likely to underreport their own negative social behavior (Chang *et al.*, 2013; Sticca *et al.*, 2013). Lastly, the study cannot establish causation. We cannot not distinguish whether depression causes cyber victimization or cyber victimization causes depression, only that they are associated.

CONCLUSION

In terms of cyber aggression, the present findings conflict with some previous research. For example, Chang *et al.* (2013) found that females were less likely to engage in cyber bullying behavior. Ashiq, Majeed, and Malik (2016) also concluded that females do less cyber bullying compared to males. The current research suggests that females admitted to an inpatient psychiatric setting may be at a higher risk to participate in cyber aggression than non-hospitalized peers. Based on the findings of this study, future research should place emphasis on developing gender specific groups, classes, and assessment tools, due to the differences found between males and females in reference to cyberbullying.

Specific practice implications from the current study can be applied to the psychiatric health care setting. As noted by Carpenter and Hubbard (2014) the first step in stopping cyberbullying is to ask about it and acknowledge that it is occurring. We know that a comprehensive diagnostic evaluation is necessary to establish an accurate diagnosis as well as develop an effective treatment plan (Carpenter & Hubbard, 2014). This study highlights the need for identifying cyberbullying in the assessment as well as addressing it in the development of treatment plans for adolescent patients. Although cyberbullying had been a well-documented problem among adolescents, the present research facility neglected to include it among routine assessment and treatment procedures.

Health care providers need to have an increased awareness of cyberbullying among adolescents, especially those admitted to inpatient facilities. The use of structured assessment instruments can be helpful in screening and identification.

Acute psychiatric facilities must take into account the extremely high prevalence of cyber aggression among females, in addition to the strong correlation between cyber victimization and cyber aggression, to provide more in depth intervention strategies, including identification, education, and treatment for female adolescent patients.

ABOUT THE AUTHORS

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

HUMAN AND ANIMAL RIGHTS

No Animals/Humans were used for studies that are the basis of this research.

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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