Personal and Witnessed Cyber Victimization Experiences Among Adolescents at the Beginning of the COVID-19 Pandemic

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Accepted: 8 August 2022 / Published online: 13 August 2022
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Abstract
Personal experiences with cyber victimization among adolescents have been consistently associated with well-being problems. Few studies have examined the impact of witnessing cyber victimization on adolescent well-being. The current study examines adolescents’ personal and witnessed experiences with cyber victimization during the beginning stages of the coronavirus disease 2019 (COVID-19). The main aim of the study is to test whether witnessing cyber victimization incidents among peers strengthens or weakens the association between personal cyber victimization incidents and adolescents’ feelings of anxiety. Adolescents from the United States were recruited via social media site advertisements. An online survey was completed by 992 adolescents (\(M_{\text{age}} = 16.09, \text{SD} = 1.24\)) from ethnically diverse backgrounds (49% White, 18% Asian/Asian-American, 14% Latinx, 9% Black/African-American, and 10% Other). The key results revealed a significant moderating role of witnessed cyber victimization incidents. Among adolescents who witnessed low levels of cyberbullying, the more they were personally cyber victimized, the higher their levels of anxiety. However, for adolescents who witnessed higher levels of cyberbullying incidents, the association between personal cyber victimization and anxiety was not significant. The findings suggest that adolescents who personally experience cyber victimization may feel less alone in their plight and thus, less anxious if they also witness others being targeted online.

Keywords Cyber victimization · Peer victimization · Anxiety · Adolescence · COVID-19 pandemic

Introduction
Cyber victimization experiences among adolescents, such as name-calling on social media sites like Instagram or threats via text messaging, have been linked to psychosocial problems (Chu et al., 2018; Espinoza, 2015; see Fisher et al., 2016, for a review). Although peer victimization at school and online share some commonalities, cyber victimization is uniquely related to psychosocial problems, over and above the impact of traditional peer victimization (Landoll et al., 2015). By definition, cyber victimization takes place in online settings or via text messaging (Tokunga, 2010), thus, these incidents are often observed by others. However, few studies have examined the impact of witnessing cyber victimization. Additionally, the extent to which adolescents personally experienced or witnessed cyber victimization among their peers during the COVID-19 pandemic is also unknown. Several studies find that due to the school closures and social distancing recommendations in place at the beginning of the pandemic, time spent online increased among adolescents (Chen et al., 2021; Ellis et al., 2020). The use of online communication tools have been used as a coping strategy for adolescents to manage their anxiety during the pandemic (Cauergbe et al., 2021), however, the increased time online may also increase their vulnerability to cyber victimization. Although there is not currently enough evidence to determine whether cyber victimization rates among adolescents increased during the pandemic, research has shown that cyber victimization incidents occurring during this period are related to adolescent well-being (e.g., Schunk et al., 2022). The current study examines how personal and witnessed cyber victimization experiences are related to adolescent’s feelings of anxiety during the beginning of the COVID-19 pandemic. Specifically, this study tests whether witnessing cyber victimization strengthens or weakens the association between personal cyber victimization and adolescent’s anxiety.

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Cyber victimization studies have primarily focused on identifying the antecedents and consequences to involvement as a perpetrator or victim. Research is now increasingly examining the role of bystanders and how witnessing cyber victimization may impact adolescents. Studies have shown that witnessing peer victimization at school is related to well-being problems such as anxiety (e.g., Midgett & Doumas, 2019; Nishina & Juvonen, 2005), with only a couple of studies to date examining the impact of witnessing cyberbullying (Doumas & Midgett, 2020; Wright et al., 2018). A small study of 130 middle school students in the United States showed that adolescents who witnessed cyberbullying reported more depression, anxiety, and somatic complaints compared to those who did not witness cyberbullying (Doumas & Midgett, 2020). A longitudinal study with 1,090 adolescents in the United States found that witnessing cyberbullying predicted depression and anxiety one year later. Additional analyses revealed that adolescents with high levels of empathy who witnessed cyberbullying reported more depression compared to adolescents with lower empathy (Wright et al., 2018). The authors note that the learned helplessness theory (Seligman, 1975) may explain why witnessing cyber victimization leads to depression and anxiety as adolescents may feel a lack of control during the cyberbullying incident. Observing victimization incidents among peers may be impactful for a variety of reasons, but no studies have examined how witnessing cyberbullying may alter the association between personally experiencing cyber victimization and adolescent’s anxiety. Learned helplessness theory and adolescents’ own fears about becoming the next victim may suggest that for adolescents targeted online, also witnessing cyber victimization, may lead to higher anxiety. That is, there may be a cumulative impact of both personally experiencing and witnessing victimization. Conversely, witnessing cyber victimization may be helpful for adolescents who are victims themselves because this may lead adolescents to view it as relatively common and reduce its personal nature. Across two studies of daily school bullying among sixth-grade students, Nishina and Juvonen (2005) found that students reported increases in humiliation and anger when they personally experienced bullying, but did not witness these incidents. No buffering effect of witnessing peer victimization on feelings of anxiety was found. Anxiety is a prevalent psychosocial problem among youth in Western countries (Ollendick et al., 2002) that impacts their social and academic functioning (e.g., Mikami et al., 2011; Weidman et al., 2015). Thus, it is important to better understand the role that cyber victimization plays in adolescent’s reports of anxiety.

The current study capitalizes on a large, ethnically diverse sample of adolescents in the United States to better understand associations between cyber victimization and feelings of anxiety during a unique period at the start of the COVID-19 pandemic when schools were closed and teens were largely limited to interacting with peers online. While some researchers have hypothesized that the pandemic and corresponding school closures may have protected children and adolescents from school bullying (Chawla et al., 2021), it is unknown if cyber victimization was occurring early in the pandemic when school closures occurred. The current study provides descriptive data about the frequency and demographic differences in reports of cyber victimization during this unique period. The main aim guiding the current study is to test whether witnessing cyber victimization incidents among peers strengthens or weakens the association between personal cyber victimization incidents and adolescents’ anxiety.

Method

Participants and Procedure

Adolescents between the ages of 14 to 18 were recruited from Facebook and Instagram. There were 992 participants (59% female; $M_{\text{age}} = 16.09, SD = 1.24$) who met the eligibility criteria and completed the online survey. Due to the online convenience sampling design, response rate details are not available. Demographic characteristics of the sample are presented in Table 1. The participants lived in the United States and 50 states were represented, with most participants living in California (15%), Florida (7%), Texas (6%), Virginia (5%) and New York (4%). Participants were asked about their schoolwork expectations due to COVID-19 and the most common response was that their school organized online classes and assignments (54%) and that the school sent online assignments but there were no classes (35%). Thus, a majority of the sample was engaged in distance learning.

Advertisements placed on social media sites targeted users between the ages of 14 to 18 in the United States. Clicking on the advertisement took potential participants to a study information and assent page. The study was run across six phases; during each phase an advertisement ran for 2 weekdays. The phases spanned from April 15, 2020 to May 18, 2020. Given that some aspects of adolescents’ experiences with COVID-19 may have changed as the pandemic progressed, the models control for study phase. The study did not involve more than minimal risk, and a waiver of parental consent was approved (study protocol approved by the author’s university IRB). After completing the 20-min survey, participants interested in a digital $8 gift card were taken to a separate survey to provide their email address.
Measures

Demographic controls included questions about participants’ sex, grade, and ethnic background. Additional study controls included participants’ COVID-19 concerns and prior year cyber victimization. To assess COVID-19 concerns, adolescents were asked: How concerned do you feel about Coronavirus (COVID-19)? with the response options ranging from 1 (not at all concerned) to 5 (extremely concerned). The development of these items was grounded on previous research and similar cyber victimization measure has been used in previous adolescent studies (e.g., Espinoza, 2018).

Prior Year Cyber victimization was assessed with four items about personal online incidents. These questions started with the text: Below are some situations that other teens said have happened to them while they were online (e.g., Instagram, Snapchat) or text messaging. We want to know if any of these things happened to you in the last year. The four items include: (1) has someone ever called you names or insulted you while online or in a text message, (2) has someone ever threatened you, physically, or otherwise, online or in a text message, (3) has someone ever shared embarrassing or private pictures of you online (or in a text message), and (4) has someone ever shared private information about you or copied and posted a private message (e.g., in an email or text message) of yours so other people could see it, without your permission, online. Response options range from 1 (never) to 5 (more than 12 times); higher scores indicate more experiences with cyber victimization (α = 0.75). The development of these items was grounded on previous research and a similar cyber victimization measure has been used in previous adolescent studies (e.g., Espinoza, 2018).

Personal and Witnessed Cyber victimization Experiences

After answering questions about their personal cyber victimization experiences across the last year, adolescents were asked to think back to the last few weeks since their school closed due to the pandemic. To assess personal cyber victimization incidents, a single item asked: How often have these negative events happened (such as being called names or insulted online)? To assess witnessed experiences during the beginning of the pandemic, adolescents were asked to think back to the last few weeks and answer how often they have seen negative online events such as being called names or insults online happening to others. For both items, the response options ranged from 1 (never) to 5 (more than 12 times).

Anxiety

Seven items from the Generalized Anxiety Disorder measure (GAD-7; Spitzer et al., 2006) were utilized to assess adolescent anxiety. Adolescents are asked if they have been bothered by each of the seven symptoms over the past two weeks. Three sample items include: feeling nervous, anxious or on edge, worrying too much about different things, and trouble relaxing. The items are rated on a 4-point scale ranging from 1 (not at all) to 4 (nearly every day). Higher scores indicate more anxiety (α = 0.91). Numerous studies have demonstrated that the GAD-7 is valid and appropriate for use among adolescents (e.g., Bernd et al., 2008; Tiirikainen et al., 2019).

Analysis Plan

SPSS Version 27 (IBM SPSS Statistics) was used to run the study analyses. To first explore demographic differences among the key study variables, a set of sex (2) X grade (5) X ethnicity (5) analyses of variance were run. Additionally, bivariate correlations were run to examine associations among the key variables. The conservative Bonferroni correction was applied to account for the multiple comparisons and reduce the potential for Type 1 errors in the bivariate correlations (i.e., the threshold level of significance was adjusted based on 10 correlation coefficients calculated as: 0.05 / k (10) = 0.005 α level). The hierarchical regression model controlled for adolescent sex (dummy coded; girls as reference group), ethnic group (dummy coded; White adolescents as reference group), COVID-19 related concerns, study phase and prior year cyber
victimization. Step 2 included the personal cyber victimization and witnessed cyber victimization variables. These variables were centered to reduce multicollinearity in the linear regression with both lower and higher order variables (Afshartous & Preston, 2011). The interaction term between personal and witnessed cyber victimization was entered at step 3.

Results

Descriptive Data

When asked to report how often they have been cyber victimized since their school closed at the start of the pandemic, 21% of adolescents reported experiencing these incidents at least once (with over 5% reporting more than 4 incidents). Additionally, 36% of adolescents reported that they witnessed cyberbullying since their school closed (with 13% reporting they witnessed more than 4 incidents). Paired sample t-tests revealed that the mean differences for the two cyber victimization factors differed, \( t(962) = -9.57, p < 0.001 \). Analyses of variance were run to test for differences in reports of recent personal and witnessed cyber victimization incidents, and anxiety, based on adolescent’s sex, grade, and ethnicity. A main effect for grade level emerged in reports of personal cyber victimization during the pandemic, \( F(4, 972) = 3.21, p = 0.01, \eta = 0.014 \). Eighth grade students reported more recent cyber victimization (\( M = 1.48, SD = 0.82 \)) compared to twelfth grade students (\( M = 1.22, SD = 0.54 \)). No differences were found for witnessed cyber victimization incidents. For adolescent anxiety, significant differences based on sex, \( F(1, 946) = 17.17, p < 0.001, \eta = 0.019 \), and ethnicity emerged, \( F(4, 946) = 3.06, p = 0.02, \eta = 0.013 \). Females (\( M = 2.59, SD = 0.07 \)) reported more anxiety than males (\( M = 2.19, SD = 0.07 \)). Adolescents from White (\( M = 2.46, SD = 0.04 \)) and Other (\( M = 2.58, SD = 0.12 \)) ethnic backgrounds reported more anxiety than Asian/Asian-American adolescents (\( M = 2.14, SD = 0.09 \)). Grade was not significant, nor were the interactions. Table 2 presents the means, standard deviations, and bivariate correlations for the key variables. Among the prior-year cyber victimization, personal and witnessed cyber victimization and anxiety variables, all of the correlations are positive and significant. For example, the correlation analyses revealed that adolescents who reported more personal and witnessed cyber victimization also reported more anxiety.

Associations Between Cyber Victimization and Adolescent Stress

The final hierarchical regression model assessing the role of personal and witnessed cyber victimization in adolescents’ anxiety accounted for 18% of the variance, \( F(12, 945) = 17.52, p < 0.001 \). As shown in Table 3, among the controls, girls reported more anxiety than boys, and White students reported more anxiety than Asian and Asian-American students. The more COVID-19 concerns that adolescents reported the more anxiety they felt, and the more cyber victimization they experienced in the prior year, the greater their anxiety. After accounting for the controls, the main effects of recent personal cyber victimization experiences and witnessed victimization experiences were not significant; however, their interaction was significant. Simple slope tests showed that among adolescents who witnessed low levels of cyberbullying, the more they were personally cyber victimized, the more anxiety they reported.

Table 2 Bivariate Correlations, Mean, and Standard Deviations Among the Study Variables

|          | 1       | 2       | 3       | 4       | 5       |
|----------|---------|---------|---------|---------|---------|
| 1. COVID-19 Concerns | -0.03   |         |         |         |         |
| 2. Prior-Year Cyber Victimization |         | -0.54*  |         |         |         |
| 3. Personal Cyber Victimization |         |         | -0.17*  |         |         |
| 4. Witnessed Cyber Victimization |         |         |         | 0.46*   |         |
| 5. Anxiety | 0.18*   | 0.30*   | 0.17*   | 0.15*   |         |
| Mean     | 3.15    | 1.46    | 1.30    | 1.55    | 2.40    |
| Standard Deviation | 1.03    | 0.67    | 0.69    | 0.89    | 0.88    |

* \( p < .001 \)

Table 3 Hierarchical Regression Model Predicting Adolescent Anxiety

|                      | \( \beta \) | \( t \)      |
|----------------------|------------|-------------|
| **Step 1**           |            |             |
| Sex                  | -0.34      | -5.82***    |
| Grade                | -0.01      | -3.00       |
| Asian                | -0.29      | -3.97***    |
| Black                | -0.16      | -1.69       |
| Latinx               | -0.02      | -2.23       |
| Other                | 0.03       | 0.29        |
| COVID-19 Concerns    | 0.13       | 5.01***     |
| Study Phase          | -0.02      | -0.96       |
| Prior Year CV        | 0.35       | 7.30***     |
| **Step 2**           |            |             |
| Personal CV          | 0.09       | 1.63        |
| Witnessed CV         | 0.04       | 1.07        |
| **Step 3**           |            |             |
| Personal CV X        | -0.07      | -2.11*      |
| Witnessed CV         |            |             |
| Personal CV X Witnessed CV | 0.03 | -0.96       |

CV cyber victimization. Reference groups for dummy control variables: female and White adolescents

\( ^* p < .05; ^* * p < .01; ^* * * p < .001 \)
Among adolescents who witnessed high levels of cyberbullying, the association between personal cyber victimization and anxiety was not significant ($p > 0.05$).

**Discussion**

Adolescents have dealt with uncertainty and stress during the pandemic due to the unique stressors brought on by the changes to daily life (Buzzi et al., 2020; Hawke et al., 2020). Some adolescents were not only dealing with the pandemic, but also ongoing challenges such as peer victimization. The current study revealed that about one in five adolescents were victimized online and a little more than one in three adolescents witnessed cyber victimization at the beginning of the pandemic. Numerous studies documented that at the onset of the pandemic, adolescents increasingly relied on texting and social media to connect with peers (Cauberghe et al., 2021; Ellis et al., 2020). Although there are positive aspects to connecting online with peers (Espinoza & Hernandez, 2022; Weinstein, 2018; Wu et al., 2016), increased time online is linked to a greater likelihood of cyber victimization (e.g., Sampasa-Kanyinga & Hamilton, 2015). Thus, these findings highlight that although school closures may have led to protection from school bullying (Chawla et al., 2021), for some adolescents’ peer victimization may have continued in the cyber context.

The key study findings revealed that adolescents who personally experience cyber victimization report feeling less anxiety if they also witness their peers being targeted online compared to adolescents who are victimized and do not witness similar incidents among peers. That is, when adolescents witnessed others being victimized online, their feelings of anxiety did not increase, even when they had personally experienced a similar victimization experience. These results extend prior school bullying (Nishina & Juvonen, 2005) and adolescent sexual harassment research (Li & Craig, 2020) that has found a buffering effect of witnessing victimization incidents. Li and Craig (2020) found that the positive relationship between victimization and both shame and depression was weakened among teen girls who witnessed high levels of victimization. The authors explain that adolescents who do not witness sexual harassment frequently may perceive these victimization experiences to be rare and thus, feel more isolated. Given that adolescents largely rely on their peers as sources of social influence and to provide them with self-knowledge and esteem information (Brown et al., 2008; Tillfors et al., 2012), it may not be surprising that peers experiences, and whether those experiences match their own, play a role in how they process personal incidents with cyber victimization. Schacter and Juvonen (2019) examined whether friend victimization across the middle school years buffered or intensified the link between adolescent’s victimization and adjustment problems. One set of findings showed that students who faced more victimization than usual, reported more depressive symptoms and made more self-blaming attributions. However, these victimization-adjustment associations were weaker among students whose friends were also more victimized across middle school. These findings support the ‘shared plight hypothesis,’ which states that when students are victimized, it can be adaptive when their friends or peers have gone through a similar social experience. Indeed, the current findings suggest that witnessing victimization among peers may reduce adolescents’ feeling that they are the “only one” being targeted and thus, attenuate feelings of anxiety when they are cyber victimized.

[Fig. 1](#) **Witnessed Cyber Victimization Moderates Link Between Personal Cyber Victimization and Anxiety.** Note. CV = cyber victimization.
Implications and Limitations

It is important to note that, as would be expected, the lowest anxiety levels were among teens who both reported low or no personal cyber victimization as well as low or no witnessed cyber victimization. Thus, the goal is to reduce peer victimization incidents overall so that fewer adolescents are experiencing and witnessing these events. A recent review and meta-analysis revealed that across intervention types such as whole-school-based programs and classroom programs, educational interventions are effective in reducing cyberbullying victimization (albeit the effect sizes tend to be small; Ng et al., 2020). In order to promote better adjustment and well-being outcomes among adolescents who are experiencing cyber victimization, one promising route for intervention efforts may be to address perceived norms. That is, given the growing literature showing that adolescents who experience their victimization as rare or isolating incidents may be at increased risk for well-being problems, it is important to ensure that adolescents do not feel alone in their victimization. Promoting adaptive social comparisons that allow adolescents to recognize that they are not alone in their plight may be a viable goal (Schacter & Juvonen, 2019) to add to existing peer victimization interventions.

Overall, there is a need for future research to examine the impact of witnessing cyber victimization among youth (Wright et al., 2018). The current study highlights the importance of going beyond studying personal or witnessed incidents of cyber victimization in isolation as these experiences likely interact in meaningful ways. Future research should assess how adolescents respond to witnessed incidents. One study found that the vast majority of adolescents who witnessed peer victimization (e.g., in-person physical, cyber) indicated that they intervened in some way, such as telling the bully to stop (Bauman et al., 2020). It is important to examine how specific responses to witnessing cyber victimization may further strengthen or weaken the buffering role that was found in the current study. It may be the case that some adolescents intervene to defend the victim. Still, they may also be intervening to reduce their own distress and restore their emotional equilibrium (Bauman et al., 2020). Furthermore, given that sex differences have been found in terms of how adolescents respond when they witness victimization (e.g., Meter & Card, 2015), it will be important for future research to consider sex differences as well, particularly when examining links with feelings of anxiety. The more complex interplay between personal and witnessed peer victimization incidents across school and cyber contexts should also be further explored. Some evidence suggests that bystanders may retain their roles across the two contexts (Quirk & Campbell, 2014). However, whether the impact of personal and witnessed incidents at school and online are similar remains unknown.

The current findings should be interpreted within the context of some limitations. First, the data are cross-sectional and thus, there are directionality and causality considerations with the conclusions drawn. Research shows support for bi-directional relationships between peer victimization and internalizing problems (Forbes et al., 2019). More specifically, a recent study specifically revealed bidirectional associations between cyber victimization and anxiety (Forbes et al., 2019). Future studies testing the moderating role of witnessing cyber victimization in relation to internalizing problems should use a longitudinal approach. Another limitation is that there may have been some bias in adolescent’s reports of prior year cyber victimization versus reports of cyber victimization since the start of the pandemic due to the different phrasing that was utilized across the survey items. Additionally, although recruiting participants via social media sites permitted for a large and diverse sample of adolescents across the U.S., it resulted in a convenience sample. The results may not generalize to adolescents’ experiences in other countries or those who do not engage with social networking sites. Online recruitment and data collection methodology is increasingly being used and given adolescent’s prevalent use of online tools, such methodologies have been found to be suitable for adolescent research (McInroy, 2016). Finally, although a strength of this study is studying cyber victimization during a unique period at the start of the pandemic when youth were largely interacting online, future research should examine if the findings replicate outside of the unique pandemic period.

Conclusions

In sum, this study extends research on witnessed incidents of cyber victimization. As an interpersonal stressor, peer victimization is associated with well-being problems (La Greca & Lai, 2014) but when teens witness cyber victimization, the realization that “I am not the only one” may alleviate some anxiety. The descriptive findings regarding experiences with personal and witnessed cyber victimization provide insight into the various stressors that adolescents are managing during the pandemic and with the return to in-person schooling when school peer victimization rates are likely to rise again. This is significant for school personnel to be aware of as students transition to in-person learning following a challenging developmental period.

Declarations

Research Involving Human Subjects  This study was approved by the California State University, Fullerton Institutional Review Board (IRB # HSR-19–20-334).

Conflicts of Interest  The corresponding author states that there is no conflict of interest.

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