The impact of parental monitoring on cyberbullying victimization in the COVID-19 era

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Abstract
Objective: The purpose of the current research was to examine the predictors of cyberbullying victimization among South Korean students during a period in which the coronavirus disease was spreading worldwide. We assessed whether parental guardianship protected against victimization when most people worked from home and school instructions were shifted to online learning.

Methods: We analyzed nationally representative data collected between October 6 and November 13, 2020. Binary logistic regression models were developed based on the Routine Activities Theory theoretical model to investigate the correlates of cyberbullying victimization among participants.

Results: The results showed that respondents’ routine online activities were closely related to victimization, and parental guardianship provided partial protection by reducing non-violent victimization.

Conclusion: Parents could play a critical role in protecting children from cyberbullying victimization. Future research should continue to investigate the impact of parenting on reducing cyberbullying victimization, specifically the effects of different parenting styles and protections.

KEYWORDS
COVID-19, cyberbullying, parental guardianship, routine activities theory, South Korea

The novel coronavirus disease (COVID-19) has wreaked havoc on the global community since its outbreak in December 2019, with over 177 million reported cases (as of June 18, 2021) and claiming more than 3.8 million lives (World Health Organization n.d.). As a response, lockdowns and restrictions on indoor and outdoor activities have been implemented worldwide, transforming the way business and personal tasks are performed. Each sector of society has been heavily affected by the changes and has had to adjust to the “new normal” mode of operation. This has included school instruction shifted to remote learning and non-essential workers performing tasks and holding meetings online (De, Pandey, and Pal 2020).

These social distancing measures enacted during the pandemic’s spread have led to a rise in the number of Internet users and the volume of data transmitted online. As of January 2021, there were over
4.6 billion active Internet users in the world (Statista n.d.). The growing online population has had various implications, including a rise in criminal opportunities. In this research, we examine the pandemic’s impact on cyberbullying victimization among youths. Specifically, the predictors of victimization are assessed by taking into account changes due to the pandemic.

Cybercrimes during the pandemic

The effort to control the spreading pandemic over the past year by limiting human gatherings and interactions has forced people to spend a considerable amount of time in the virtual environment daily. Despite these efforts’ intention to keep people safe and control the disease, unintended negative consequences have arisen. Healthcare and banking systems have been targeted (e.g., impersonation, information leakage, etc.) by offenders who have tried to take advantage of the crisis (Lallie et al. 2021), and as people spend more time online, abundant cybercrime targets have become available (Hawdon, Parti, and Dearden 2020).

Youths are especially vulnerable during crises. It has been suggested that changes made to respond to COVID-19 have presented a tremendous challenge that has had adverse effects on their mental health (Hawke et al. 2020; Liang et al. 2020). Specifically, new patterns of learning and socializing without in-person interaction have placed young people at risk. It has been noted that adolescents turned to social media as their primary mode of communication amid the pandemic’s spread (Jain et al. 2020), suggesting that increased screen time and online activities could expose them to motivated offenders. Based on data showing that adolescents constitute a significant proportion of Internet users and engage in online activities to a greater extent (≈ 69 percent globally) than the general population (≈ 50 percent globally; International Telecommunications Union n.d.), it can be presumed that the pandemic has forced this age group to spend even more time online.

Prevalence of cyberbullying among youth

Bullying is youth that has negative a common issue among consequences for both the offender and the victim. Bullying is defined as “any unwanted aggressive behaviors(s) by another youth or group of youths, who are not siblings or current dating partners, that involves an observed or perceived power imbalance, and is repeated multiple times or is highly likely to be repeated” (Centers for Disease Control and Prevention [CDC] n.d.). Similarly, cyberbullying inflicts intentional and repeated harm via computer and mobile devices (Hinduja and Patchin 2009). Bullying is a widespread problem, with one in five and more than one in six high school students in the United States reporting victimization in school and online, respectively, in 2018 (Basile et al. 2020).

Scholars have linked bullying victimization to various mental and behavioral problems such as suicidal thoughts and attempts (Hinduja and Patchin 2019), school misbehavior and violence (Hay and Meldrum 2010; Nixon 2014), and substance abuse (Elgar et al. 2014). As information and communications technologies continue to advance and youths adapt to their development, their risk of falling victim to cybercrimes continues to increase. Notably, as they spend more time in cyberspace for academic, social, and leisure activities, opportunities for cyberbullying are also likely to rise.

The current research examines the predictors of cyberbullying victimization to suggest viable prevention measures and help adolescents engage in safe online activities. COVID-19 has displaced students’ academic and social lives to the virtual environment, which has resulted in increased screen time. By conducting this research, we hope to suggest cyberbullying victimization measures for use in future emergencies that may require a similar lockdown and subsequent virtual learning and socializing efforts. In the following section, we present our theoretical framework and discuss how the theory’s propositions may apply to the COVID-19 era.
ROUTINE ACTIVITIES THEORY (RAT) AND CYBERBULLYING VICTIMIZATION

RAT proposes that crime is likely to occur when the three elements of a motivated offender, a suitable target, and the absence of a guardian converge in time and place (Cohen and Felson 1979). Although the theory was originally developed to account for increasing crime rates associated with post-World War II lifestyle changes (e.g., economic development in western countries, more women joining the workforce, technological developments, etc.), it has been applied to various forms of cyber victimization, including online fraud and identity theft and varying types of violence in both Western (e.g., Bossler and Holt 2009; Bossler, Holt, and May 2012; Cho et al. 2017; Ngo and Paternoster 2011; Pratt, Holtfreter, and Reisig 2010; Reyns, Henson, and Fisher 2011) and non-Western (e.g., Choi, Cho, and Lee 2019; Paek and Nalla 2015) cultures.

Evidence suggests that online activities that increase target suitability and risk exposure are positively related to cyberspace victimization. To illustrate, both legitimate (e.g., shopping, banking, e-mail, etc.) and deviant activities (e.g., viewing pornography, media piracy) could increase the user’s risk of becoming an identity theft and/or malware infection victim (Bossler and Holt 2009; Holt and Bossler 2013; Leukfeldt 2014; Leukfeldt and Yar 2016; Pratt, Holtfreter, and Reisig 2010; Reyns 2013; Reyns and Henson 2016). Cyberbullying, engaging in chat rooms, blogging, and maintaining a social media account are found to increase victimization (Beyazit, Şimşek, and Ayhan 2017; Bossler, Holt, and May 2012; Holt et al. 2016; Ngo and Paternoster 2011; Reyns, Henson, and Fisher 2011). These online activities may place users in situations in which they might share sensitive information with others (Bossler, Holt, and May 2012).

Furthermore, engaging in online deviance has been shown to increase cyberbullying victimization. For instance, Choi, Cho, and Lee (2019) have found that illegal downloading of copyrighted material is associated with an increased likelihood of cyberbullying victimization. In addition, it has been suggested that interacting with those who harass others in cyberspace predicts online harassment victimization (Bossler, Holt, and May 2012). Involvement in illicit activities and/or associating with those who bully others could place one in proximity and expose him/her to motivated offenders, which is a stronger predictor than target suitability and guardianship (Bossler, Holt, and May 2012).

Impact of guardianship on victimization

Capable guardianship has been noted as the most critical element in predicting criminal victimization as a variable that, by decreasing, increases criminal opportunities (Cohen and Felson 1979). Guardianship can be performed by humans (e.g., parents, police officers, security guards, passersby, etc.) and non-humans (e.g., dogs, security alarms, fences, etc.). However, there is no concrete evidence about the role of guardianship in preventing bullying victimization. Cecen-Celik and Keith (2019) report that while physical security measures such as police officers supervising hallways, access control, and security cameras do not reduce bullying victimization at school, interactionist security such as having a friend or an adult to speak to are associated with lower victimization. Similarly, school rules and effective teacher supervision have been shown to mitigate the risks of non-physical peer victimization (Cho et al. 2017).

Similarly, in relation to the virtual environment, there is little consistency in research findings concerning the influence of capable guardianship on different forms of cyber victimization (Holt and Bossler 2014). Nonetheless, it has been suggested that parental and school supervision can reduce risk. Specifically, effective school rules and teachers treating students with respect and care have been demonstrated to decrease the likelihood of cyberbullying victimization (Cho et al. 2019). It has also been suggested that teachers must be trained to prevent cyberbullying (Espelage and Hong 2017).

In addition to school cyberbullying prevention, parental supervision could be a protective factor in reducing victimization. Particularly, a lack of parental monitoring of children’s online activities and usage is a significant predictor of victimization (Beyazit, Şimşek, and Ayhan 2017). Parenting styles have also been found to protect children from a cyberbullying experience. Illustrating this, support (Yoo 2021) and parenting practices incorporating warmth and reasoning (Martínez et al. 2019) are associated with less
cyberbullying victimization. A positive family relationship plays an affirmative role even when a child is cyberbullied by reducing mental health and other harmful consequences (Elgar et al. 2014).

As lockdowns and social distancing mandates have permeated all aspects of human activities for the past year or so, people have mostly restricted their daily routines to indoor settings and have minimized contact with non-immediate family members. Moreover, remote working and learning have increased the amount of time family members spend together at home, compared to past “normal” days, creating an environment in which children are under closer parental supervision.

This research examines the relationship between guardianship and cyberbullying victimization among adolescents amid the pandemic that has produced an increased level of parental supervision. We attempt to answer the following research questions:

1. What is the most important element in reducing the risk for cyberbullying victimization?
2. Does guardianship provide protection from cyberbullying victimization?
3. Does guardianship have varying effects on different forms of cyberbullying victimization?

METHOD

Research setting and data

South Korea is known for its advanced information and telecommunications technologies. In particular, the country boasts the fastest and cheapest broadband connection worldwide (Falcon 2020), which has allowed the Internet to become a highly accessible commodity. Cyberspace and online activities comprise significant parts of adolescents’ leisure lives. Statistics Korea’s Social Survey 2019 (n.d.) reports that computer games and Internet browsing are the most common pastimes among youths (13 to 19 years old), and about 20 percent of adolescents experienced cyber violence in 2020 (National Information Society Agency [NIA] n.d.). This warrants investigation into the correlates of victimization and ways to protect juveniles in the virtual environment.

We analyzed data obtained from the Cyberviolence Survey 2020 (NIA n.d.), which was conducted by Korean Research International and sponsored and presided over by the Korea Communications Commission and the NIA. The project’s primary purpose was to understand the cybercrime experience among youths and offer viable policies for effective prevention and response.

The survey’s target population was students enrolled in fourth to 12th grades in South Korea, and a stratified sampling method was employed to draw a nationally representative sample. Specifically, schools located in 17 cities and provinces around the country were selected from each stratum (i.e., elementary, middle, and high school) using systematic sampling. Survey participant classes were then randomly selected from each school. The final research sample comprised 4958 students.

The survey took place between October 6 and November 13, 2020, and each questionnaire was completed online to comply with COVID-19 safety guidelines. Survey items regarding Internet usage, the experience of witnessing cyberviolence, victimization and offending experience, and perceived parental supervision and school rules were included in the analyses.

Measurement

Dependent variable

Cyberbullying victimization was measured by asking respondents how frequently they had been a victim of verbal abuse (verbally criticizing or causing emotional harm), defamation (spreading rumors and exaggerated stories), stalking (persistent e-mailing and messaging, and leaving unwanted comments or pictures on a social networking service [SNS] page, blog, etc.), sexual violence (sending unwanted sexual comments,
images, or videos), information leakage (distribution of personal information such as name, home address, school, and pictures without consent), exclusion (not allowing to leave the chatroom and teasing and/or using derogatory remarks), extortion (taking game money, an item, etc., by force) or duress (using force to make and carry out unwanted comments and acts and run errands) during the past year while using the Internet. The original answer options included “never,” “once or twice during the past 6 months,” “once or twice a month,” “once or twice a week,” and “almost every day.” However, due to the vast majority of respondents answering “never” to the question, victimization experience was recoded as a dichotomous variable (0 = no; 1 = yes).

Independent variables

We also analyzed items asking about respondents’ Internet use and online activities to measure their routine online activities. Average daily minutes spent on personal computers, laptops, smartphones, and mobile tablets to use the Internet were summated. Moreover, to examine the effect of online activities that involve interaction with others, a variable asking whether online interaction (online game and SNS) was the primary purpose of Internet usage (0 = no; 1 = yes) was included.

Prior research has suggested a positive relationship between offending and victimization in cyberspace (Ngo and Paternoster 2011). Therefore, participants were asked if they had engaged in any of the offenses described above (i.e., verbal abuse, defamation, stalking, sexual violence, information leakage, exclusion, extortion, or duress) over the past year (0 = no; 1 = yes).

Furthermore, existing research findings have established that increased proximity to offenders by maintaining social media accounts and engaging in chat room and blog activities are positively related to bullying victimization experience (Bossler, Holt, and May 2012; Holt et al. 2016). Additionally, association with harassers and posting sensitive information online increases the risk of harassment victimization online (Bossler, Holt, and May 2012). Proximity to offenders was measured through exposure to risk and the experience of witnessing cyberbullying. Illustrating this, respondents were asked whether they had ever seen a pop-up containing violent, sexually explicit, defamatory, criminal, or misinformative material, which could be a proxy for being exposed to risk. Respondents were given the answer options, “0 = never, 1 = once or twice a year, 2 = once every 3 to 4 months, 3 = once or more per month, and 4 = once or more per week” for each item, and the answers were summated. Witnessing cyberbullying was measured by inquiring about the experience of observing offending or victimization online over the past year (0 = no; 1 = yes).

As for guardianship, parental and school guardianship were assessed. Parental guardianship was measured by asking about parents’ or guardians’ control over the respondents’ Internet usage. Specifically, they were asked if their parents or guardians had installed an application or program that blocked harmful content or monitored their Internet usage history (0 = no; 1 = yes). Moreover, participants were asked if the school had prescribed cyberbullying-related rules (0 = no; 1 = yes).

Analytic strategies

A binary correlation analysis was conducted before proceeding to multivariate analyses. Because the dependent variable was positively skewed with a large number of “0s,” binary logistic regression was employed as the primary multivariate analytic method. In addition to the independent variables, gender and school level (elementary, middle, and high) were included in the analyses as the control variables.

Four models, including one with the overall cyberbullying victimization as the dependent variable and three models predicting different types of cyberbullying victimization, were analyzed to examine the varying effects of guardianship. Victimization was categorized into violent victimization (extortion and duress), non-violent victimization (verbal abuse, defamation, information leakage, and exclusion), and sexual victimization (stalking and sexual violence).
RESULTS

Descriptive statistics

The research sample comprised 2390 (48 percent) female and 2568 male students (52 percent), of whom 1738 (35 percent), 1645 (33 percent), and 1575 (32 percent) were in elementary, middle, and high school, respectively. Regarding cyberbullying victimization during the previous year, about 20 percent of respondents reported that they had been cyberbullied. Non-violent victimization was shown to be more prevalent than violent and sexual victimization.

Participants’ average daily use of the Internet was 15 min. More than half (53 percent) of them used the Internet primarily for online games and SNS, which involved interaction with other users. A vast majority of respondents had never committed (91 percent) or witnessed (91 percent) cyberbullying during the past year. Moreover, it was found that the students in the sample had not been exposed to a high level of risk online ($\bar{x} = 5.21$).

Additionally, respondents reported that they were under neither strict parental supervision nor school rules. It was shown that only 22 percent of the parents or guardians monitored their children’s Internet browsing histories or controlled content, and 65 percent of the schools did not have cyberbullying-related rules (Table 1).

Bivariate and multivariate analyses

Bivariate correlation analyses (Table 2) suggested that aside from parental supervision and school rules, which were marginally correlated with cyberbullying victimization ($p = 0.1$), each independent variable was positively correlated with the dependent variable. Specifically, participation in a cyberbullying offense had the strongest correlation with victimization ($r = 0.39; p \leq 0.001$), followed by the experience of witnessing cyberbullying ($r = 0.27; p \leq 0.001$) and exposure to risk ($r = 0.19; p \leq 0.001$). Before proceeding to multivariate analyses, tolerance levels (each level $\geq 0.78$) and variance inflation factors (each factor $\leq 1.28$) were examined to confirm that there were no multicollinearity issues.

Binary logistic regression models (Table 3) showed that male participants were more likely to be cyberbullied than their female counterparts. Particularly, male students were at a higher risk of experiencing violent (odds ratio (OR) = 2.52; $p \leq 0.001$) and non-violent (OR = 1.19; $p \leq 0.05$) cyberbullying. School level was negatively related to cyberbullying victimization, suggesting that younger students were at a higher risk of being cyberbullied.

Respondents’ routine online activities predicted overall cyberbullying victimization. Among different types of cyberbullying, Internet use (OR = 1.01; $p \leq 0.01$) and participation in online activities that involved interaction (OR = 1.26; $p \leq 0.01$) increased the likelihood of non-violent cyberbullying victimization. Committing a cyberbullying offense was the strongest predictor of cyberbullying victimization. Participation in a cyberbullying offense increased the likelihood of overall victimization by more than seven times (OR = 7.75; $p \leq 0.001$), and it was associated with a greater likelihood of becoming a victim of violent (OR = 4.12; $p \leq 0.001$), non-violent (OR = 8.02; $p \leq 0.001$), and sexual (OR = 4.19; $p \leq 0.001$) cyberbullying.

Proximity to offenders was also positively related to cyberbullying victimization. Both witnessing cyberbullying and exposure to risk increased overall violent, non-violent, and sexual cyberbullying victimization. Some notable findings showed that witnessing cyberbullying had the strongest associations with violent (OR = 4.64; $p \leq 0.001$) and non-violent (OR = 4.03; $p \leq 0.001$) victimization, while risk exposure had a similar effect across all forms of cyberbullying victimization.

Parental supervision was negatively associated with overall (OR = 0.82; $p \leq 0.05$) and non-violent victimization (OR = 0.74; $p \leq 0.01$). However, prescribed cyberbullying-related school rules were not related to any form of cyberbullying victimization.
| Table 1 | Descriptive statistics of the variables analyzed |
|---------|-----------------------------------------------|
|         | N     | Percent | Range | Mean (SD) |
| Socio-Demographic Characteristics |       |         |       |           |
| Gender  |       |         |       |           |
| 0 = Female | 2390 | 48.2    | 0–1   | 0.52 (0.50) |
| 1 = Male | 2568 | 51.8    |       |           |
| School Level | 1–3 | 1.97 (0.82) |
| Elementary School | 1738 | 35.1    |       |           |
| Middle School | 1645 | 33.2    |       |           |
| High School | 1575 | 31.8    |       |           |
| Cyberbullying Victimization |       |         |       |           |
| Overall |       |         |       |           |
| 0 = No | 3982 | 80.3    | 0–1   | 0.20 (0.40) |
| 1 = Yes | 970  | 19.7    |       |           |
| Violent |       |         |       |           |
| 0 = No | 4805 | 96.9    | 0–1   | 0.03 (0.17) |
| 1 = Yes | 153  | 3.1     |       |           |
| Non-Violent |       | 0–1 | 0.18 (0.39) |
| 0 = No | 4052 | 81.7    | 0–1   |           |
| 1 = Yes | 906  | 18.3    |       |           |
| Sexual |       |         |       |           |
| 0 = No | 4703 | 94.9    | 0–1   | 0.05 (0.22) |
| 1 = Yes | 255  | 5.1     |       |           |
| Routine Online Activities |       |         |       |           |
| Daily Internet Use (minutes) |       |         | 0–118 | 15.02 (18.78) |
| Online Interaction |       | 0–1     |           | 0.53 (0.50) |
| 0 = No | 2332 | 47.0    |       |           |
| 1 = Yes | 2626 | 53.0    |       |           |
| Cyberbullying Offense |       | 0–1     |           | 0.09 (0.29) |
| 0 = No | 4489 | 90.5    |       |           |
| 1 = Yes | 469  | 9.5     |       |           |
| Proximity to Offenders |       |         |       |           |
| Exposure to Risk |       | 0–20 | 5.21 (5.74) |
| Cyberbullying Witness |       | 0–1     |           | 0.09 (0.29) |
| 0 = No | 4505 | 90.9    |       |           |
| 1 = Yes | 453  | 9.1     |       |           |
| Guardianship |       |         |       |           |
| Parental |       | 0–1     |           | 0.22 (0.41) |
| 0 = No | 3869 | 78.0    |       |           |
| 1 = Yes | 1089 | 22.0    |       |           |
| School |       | 0–1     |           | 0.35 (0.48) |
| 0 = No | 3207 | 64.7    |       |           |
| 1 = Yes | 1751 | 35.3    |       |           |
**TABLE 2**  Bivariate relationships between variables

|                | 1  | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |
|----------------|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Cyberbullying Victimization | 1  |         |        |        |        |        |        |        |        |        |
| 2. Male        | 0.06*** | 1      |        |        |        |        |        |        |        |        |
| 3. School Level | 0.11*** | 0.03*  | 1      |        |        |        |        |        |        |        |
| 4. Daily Internet Use | 0.07*** | −0.05*** | −0.23*** | 1      |        |        |        |        |        |        |
| 5. Online Interaction | 0.08*** | 0.08*** | −0.06*** | −0.02  | 1      |        |        |        |        |        |
| 6. Cyberbullying Offense | 0.39*** | 0.13*** | −0.08*** | 0.04** | 0.08*** | 1      |        |        |        |        |
| 7. Exposure to Risk | 0.19*** | −0.004 | 0.34*** | −0.07*** | 0.04** | 0.16*** | 1      |        |        |        |
| 8. Cyberbullying Witness | 0.27*** | −0.001 | −0.07*** | 0.03   | 0.04** | 0.19*** | 0.12*** | 1      |        |        |
| 9. Parental Supervision | −0.03 | 0.001  | −0.22*** | 0.09*** | −0.05*** | −0.03  | −0.13*** | 0.01   | 1      |        |
| 10. School Rules | −0.03 | 0.05*** | −0.13*** | 0.06*** | −0.02  | −0.02  | −0.07*** | −0.01  | 0.16*** | 1      |

*p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

**TABLE 3**  Predictors of cyberbullying victimization among participants (N = 4958)

| Variables                      | Overall B (SE) OR | Violent B (SE) OR | Non-violent B (SE) OR | Sexual B (SE) OR |
|-------------------------------|------------------|------------------|------------------------|------------------|
| Socio-Demographic Characteristics |                  |                  |                        |                  |
| Male                          | 0.16 (0.08) 1.17 | 0.92 (0.20) 2.52*** | 0.18 (0.09) 1.19*** | −0.23 (0.14) 0.79 |
| School Level                  | −0.55 (0.06) 0.58*** | −0.81 (0.14) 0.44*** | −0.57 (0.06) 0.57*** | −0.20 (0.10) 0.82* |
| Routine Online Activities     |                  |                  |                        |                  |
| Daily Internet Use            | 0.006 (0.002) 1.01** | 0.005 (0.004) 1.01 | 0.006 (0.002) 1.01** | 0.001 (0.004) 1.00 |
| Online Interaction            | 0.19 (0.08) 1.21* | 0.22 (0.19) 1.25 | 0.23 (0.09) 1.26** | −0.13 (0.14) 0.88 |
| Cyberbullying Offense         | 2.05 (0.12) 7.75*** | 1.42 (0.19) 4.12*** | 2.08 (0.12) 8.02*** | 1.43 (0.16) 4.19*** |
| Proximity to Offenders        |                  |                  |                        |                  |
| Exposure to Risk              | 0.09 (0.01) 1.09*** | 0.08 (0.02) 1.08*** | 0.09 (0.01) 1.09*** | 0.10 (0.01) 1.10*** |
| Cyberbullying Witness         | 1.38 (0.12) 3.98*** | 1.54 (0.19) 4.64*** | 1.39 (0.12) 4.03*** | 1.09 (0.16) 2.97*** |
| Guardianship                  |                  |                  |                        |                  |
| Parental                      | −0.20 (0.10) 0.82* | 0.10 (0.21) 1.11 | −0.31 (0.11) 0.74** | −0.02 (0.17) 0.99 |
| School                        | −0.16 (0.09) 0.85 | −0.15 (0.19) 0.86 | −0.16 (0.09) 0.85 | 0.01 (0.15) 1.01 |
| Nagelkerke R²                 | 0.28             | 0.24             | 0.29                   | 0.16             |

*Note: Entries are standardized coefficients (Bs), standard errors (SEs), and odds ratios (ORs).

*p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

**DISCUSSION**

The current research aimed to examine the predictors of cyberbullying victimization among South Korean youths during the global spread of COVID-19. We applied RAT to cyberbullying victimization by taking the changes that have occurred over the past year or so into account, including most routine activities shifting to cyberspace due to social distancing measures. Therefore, we designed this research based on the presumption that there has been an increase in the number of criminal opportunities available in the virtual environment due to a rise in Internet users who could be exposed as potential targets of cybercrime.
The findings suggested that male students were at a higher risk of becoming victims of violent and non-violent cyberbullying, which corroborated prior research findings from the same cultural context (Yoo 2021) and Hong Kong (Wong, Chan, and Cheng 2014). Additionally, as Aizenkot and Kashy-Rosenbaum (2019) found that cyberbullying was most common among primary school students, the current research suggested that younger students experienced cyberbullying to a greater degree.

The applicability of RAT to online victimization has been substantiated in the literature (e.g., Hawdon et al. 2017; Holt and Turner 2012; Pratt, Holtfreter, and Reisig 2010; Reyns, Henson, and Fisher 2011; Wick et al. 2017), and RAT helped to account for cyberbullying victimization in this research as well. The results of the regression models indicated that the amount of time spent browsing the Internet and engaging in interactive activities online, committing cyberbullying offenses, and exposure to risk factors and witnessing cyberbullying increased the likelihood of being cyberbullied. These findings supported prior research suggesting that proximity and exposure to bullies online (Beyazit, Şimşek, and Ayhan 2017; Bossler, Holt, and May 2012; Holt et al. 2016; Ngo and Paternoster 2011; Reyns, Henson, and Fisher 2011), cyberbullying perpetration (Wong, Chan, and Cheng 2014), and associating with cyberbullies (Bossler, Holt, and May 2012) predicted victimization.

Having committed cyberbullying during the past year was the strongest predictor of victimization. It increased the likelihood of overall victimization more than seven times and significantly impacted each type of cyberbullying victimization. Particularly, it increased the likelihood of non-violent victimization such as verbal abuse, defamation, information leakage, and exclusion by a factor of 8.

Witnessing cyberbullying was the second strongest correlate of cyberbullying victimization, followed by having encountered harmful content while online, including violent, sexually explicit, defamatory, criminal, or misinformative material. These two measures of proximity to offenders were related to higher overall victimization and victimization in each offense category. Furthermore, daily Internet usage and using it primarily for games and SNS (i.e., interaction) placed juveniles at a greater risk of non-violent and overall cyberbullying victimization. However, they were not linked to violent or sexual victimization online.

It has been argued that online presence alone may not be a risk factor for criminal victimization (Holt and Bossler 2008). Based on the findings of the current research, we suggest that engaging in specific online activities such as cyberbullying (Wong, Chan, and Cheng 2014) and those that may put the user close to offenders, including association with other cyberbullies (Bossler, Holt, and May 2012) and participating in other online deviance (Choi, Cho, and Lee 2019) must be avoided to decrease the likelihood of being cyberbullied.

Aside from the factors that may increase victimization, we assessed the relationship between guardianship and cyberbullying during a period in which most people performed their professional duties remotely from home, and school instruction was provided online. Theoretically, as the presence of guardianship is expected to discourage motivated offenders, criminal opportunities can grow if it decreases (Cohen and Felson 1979; Hollis, Felson, and Welsh 2013). Nonetheless, there is little consistency in research results on the impact of guardianship in cyberspace (Holt and Bossler 2014), and the influence of physical guardianship, such as installing anti-virus software, on preventing violent victimization has not been substantiated (Leukfeldt 2014). We found that parental guardianship through blocking harmful content or using an application to monitor Internet usage history decreased overall and non-violent victimization by 18 percent and 26 percent, respectively. However, such guardianship did not reduce violent and sexual victimization, and school guardianship (i.e., cyberbullying-related school rules) did not affect cyberbullying victimization at all.

The data analyzed for the current research were collected through an online survey due to the spread of COVID-19, which could undermine the validity of the findings. A major drawback of online surveys is the inability to verify respondents (Duda and Nobile 2010). It is possible that individuals who are not part of the target population could have completed the questionnaire. Moreover, the cross-sectional data do not allow us to examine causal relationships between the variables included in the analyses. For instance, cyberbullying perpetration could have occurred after experiencing victimization as offending and victimization in cyberspace are suggested to be positively related (Ngo and Paternoster 2011). Despite these limitations, the findings drawn from a nationally representative sample can be generalized to the larger
student populations in the country. Additionally, the data provided sufficient information to answer the research questions regarding the applicability of RAT to cyberbullying among South Korean youth, especially the association between guardianship and victimization.

Based on the findings, we suggest that parents and/or guardians take a proactive approach to help prevent cyberbullying. Mere physical presence at home and installation of target-hardening software may not protect youths from the risk of victimization. In addition to applications and programs that monitor online activities and block harmful content, informing children about the dangers that permeate cyberspace and the importance of engaging in safe online activities could provide more comprehensive protection. Specifically, discussing with children how to avoid harmful websites, programs, and applications and manage personal information could be an effective form of guardianship. Similarly, schools can provide employee training so teachers and staff can counsel and support their students when needed. Regular cyberbullying educational programs designed for both students and school employees could also inform them about the seriousness of the crime and ways to prevent and respond to it collectively.

Effective cyberbullying prevention requires all stakeholders to play an active role. Through education at home and school, children must learn about the importance of refraining from dangerous online activities that could place them close to offenders. Parents and teachers should be able to offer guidance and support for those who have been cyberbullied to mitigate its negative impact (Elgar et al. 2014). Last, the government could provide necessary resources, including funding for cyberbullying prevention programs and a nationwide campaign to raise awareness and support cyberbullying control efforts.

CONCLUSION

COVID-19 has presented the world with unprecedented challenges, and adolescents have been among the heavily impacted with their education and social lives shifted to the virtual environment. An increase in screen time resulting from a lack of in-person interaction and stress induced by prolonged isolation have made youth particularly vulnerable during the crisis. Therefore, it is important to assess the risk factors associated with juveniles spending extended periods online for both educational and social purposes by considering the nature of cyberspace and cybercrime. This could help protect young people from victimization, especially in future events that may bring back similar measures requiring education and social activities to occur in the virtual setting.

In this research, we examined the correlates of cyberbullying victimization among South Korean adolescents amid COVID-19. By analyzing a nationally representative sample and applying RAT as the theoretical framework, this research found that users’ routine online activities, cyberbullying perpetration, and proximity to offenders increased the risk of victimization. Furthermore, parental guardianship through the installation of applications and/or programs to monitor online activities partially affected victimization, while cyberbullying-related school rules had no effects on victimization.

We suggest that parents and/or guardians and schools play an essential role in protecting children from victimization in cyberspace by taking a proactive approach to discuss the issue of cyberbullying, ways to prevent it, and how to report victimization. These recommendations should apply to times of crisis and non-crisis and are especially relevant to situations in which students are isolated and thus lack supervision and care. Finally, future research should continue to examine ways to address cyberbullying effectively by exploring the impact of various forms of guardianship on victimization.

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