7-4-2022

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Routledge
Taylor & Francis Group

Victims & Offenders

An International Journal of Evidence-based Research, Policy, and Practice

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/uvao20

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To cite this article: Jaeyong Choi, Brandon Dulisse & Sungil Han (2022) Assessing the Overlap between Cyberstalking Victimization and Face-to-face Sexual Victimization among South Korean Middle and High School Students, Victims & Offenders, 17:5, 660-678, DOI: 10.1080/15564886.2022.2029785

To link to this article: https://doi.org/10.1080/15564886.2022.2029785

Published online: 16 Jun 2022.

VICTIMS & OFFENDERS
2022, VOL. 17, NO. 5, 660–678
https://doi.org/10.1080/15564886.2022.2029785

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Assessing the Overlap between Cyberstalking Victimization and Face-to-face Sexual Victimization among South Korean Middle and High School Students

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ABSTRACT

While there is a growing empirical literature on victimization in the virtual world, limited scholarship has examined the potentially overlapping relationship between cyberstalking victimization and face-to-face sexual victimization. The current study uses data from a sample of 7,109 middle and high school students in South Korea to investigate the extent to which the overlap exists between cyberstalking victimization and face-to-face sexual victimization. Additionally, we examine whether the two forms of victimization are the outcome of the same underlying mechanisms. The results from bivariate probit models show a significant degree of overlap between cyberstalking victimization and face-to-face sexual victimization. Being a female, a high level of parental strain, and a high level of school disorder are significantly associated with the joint occurrence of the two forms of victimization. Our findings highlight the importance of crime prevention policies that focus on familial and school factors.

KEYWORDS

Cyberstalking victimization; sexual victimization; parental strain; school disorder; bivariate probit analysis

Introduction

In the current digital age, cyberstalking and other cybercrimes continue to increase in frequency as more and more interactions between individuals occur on the Internet. This development coupled with increased cases of personal information leaks such as social media profiles has culminated into a phenomenon of cyberstalking; yielding a dearth of novel scholarly activity in a previously understudied area of victimization research (e.g., Henson & Reyns, 2016; Kabiri et al., 2021; Marcum et al., 2017; Reyns et al., 2018; Short et al., 2015; Van Baak & Hayes, 2018). Victims of cyberstalking can experience psychologically and physically negative consequences, including depression, modified eating patterns, anxiety, and cessation of employment (Worsley et al., 2017). According to Fissel and Reyns (2020), the negative consequences associated with cyberstalking victimization are primarily school-, work-, social-, or health-related; causing justifiable increases in fear and other lasting emotional responses that can destabilize these areas of the victim's life (see, Baum et al., 2009; Dreßing et al., 2014). It is, therefore, imperative to examine determinants or possible mechanisms under cyberstalking victimization.

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To fill the gap, recent research into cyberstalking has included theoretical testing and explanations (Reyns et al., 2018, 2011; Welsh & Lavoie, 2012), which has naturally evolved into forays examining methods related to the control and prevention of these cybercrimes (Reyns, 2010; Tokunaga & Aune, 2017). In addition, a line of studies has argued that cyberstalking is not distinct from the traditional form of stalking/harassment; rather there is considerable overlap between both regarding the predictors and negative consequences of each (Nobles et al., 2014; Sheridan & Grant, 2007). As people are more involved in activities in the virtual world and the difference between the real and virtual world becomes marginal while getting intertwined, aggression in the cyberworld may be part of a larger violence nexus related to in-person psychological, physical, and sexual violence (Marganski & Melander, 2018). For instance, the negative consequences of cyberstalking and face-to-face sexual victimization often share some similarities while also possessing unique attributes indicative of the physical or digital medium through which each victimization occurs. This is particularly troubling, as both victim groups are less likely to engage in professional or informal help-seeking behaviors than other types of victims (Fisher et al., 2016; Fissel, 2021).

The current study integrates the two lines of academic research – cyberstalking victimization and face-to-face sexual victimization – to address two research questions. Initially, we make connections between cyberstalking victimization and face-to-face sexual victimization. Despite the differences between the two forms of victimization – especially with respect to the nature of the contact (i.e., virtual contact and face-to-face contact) – victims offline and online may share many of the same characteristics. However, it remains unclear whether there is any significant overlap between these two forms of victimization. Although previous literature has provided a wide range of factors characterizing cyberstalking and face-to-face sexual victimization, surprisingly victimology research in each area has revealed similar theoretical variables useful in explaining both forms of victimization. That said, to date, researchers have not examined what variables contribute to the co-occurrence of cyberstalking victimization and face-to-face victimization. The current study seeks to examine whether there is an overlap in the risk factors for both forms of victimization. These research questions are explored using nationwide data from a sample of 7,109 middle and high school students in South Korea.

Literature review

Cyberstalking victimization

One of the most difficult issues in the social science may stem from defining newly observed phenomena in such a way that a construct can be appropriately measured for repeatable testing. Such is the challenge with newly defined criminal acts from digital interactions like cyberstalking. To date, there is a lack of consensus or universally acknowledged definition or criteria for cyberstalking behaviors (Kobets & Krasnova, 2018; Wilson, Sheridan, & Garratt-Reed, 2021). In an analysis of studies measuring cyberstalking, Wilson and colleagues (2021) found that 70% of studies did not include any timeframe requirements in which the behaviors were required to occur, and only 30% included victim fear as a criterion.

Although an overall definition of cyberstalking remains inexact and fluid, there are characteristics that most studies agree upon using when measuring this construct. To begin, cyberstalking requires the monitoring and harassment of a victim using some technological platform. Next, this communication involves repeated attempts to harass the victim through a variety or combination of threats, blackmail, sexual or romantic propositions, catfishing attempts, and coercion or manipulation. For instance, in their analysis of 33 studies operationalizing cyberstalking, Wilson and colleagues (2021) conclude that in order to create reliable and valid conclusions about cyberstalking victimization, future measures should incorporate: (1) unwanted behaviors, (2) repetition, (3) duration and timeframe, (4) fear and intent, and (5) severity of the effects.

There are factors that have been demonstrated as being associated with cyberstalking victimization. In general, cyberstalking victims tend to be female, less educated, unemployed, and more likely to be in a relationship (Dreßing et al., 2014; Kraft & Wang, 2010). In addition, female victims are also disproportionately more likely to be younger and current students (Reyns et al., 2012). This is not surprising as electronic communication is a common – if not preferred – method used by young adults. In addition to demographic characteristics, cyberstalking victims also are more likely to possess certain personality traits and unique life experiences. Multiple studies have previously found that low self-control was predictive of higher levels of online sexual victimization due to the increased engagement of online routine activities that increase exposure/risk and elevate the likelihood of victimization, such as unfiltered chat rooms and social media sites that allow personal pictures and private direct messaging (Bossler & Holt, 2010; Kabiri et al., 2020a; Leukfeldt & Yar, 2016; Reyns et al., 2018; Welsh & Lavoie, 2012). Contrastingly, studies have also found that higher levels of parental connectedness (Doty et al., 2018), parental monitoring of online activity and access (Khurana et al., 2015), and even gender stereotyping (Van Baak & Hayes, 2018) are all inversely related to being a victim of various forms of cyberharassment.

Face-to-face sexual victimization

Unlike cyberstalking, face-to-face sexual victimization has had the aid of decades of research examining the causal mechanisms and factors associated with victimhood. Similar to cyberstalking, most victims of face-to-face sexual victimization (Krebs et al., 2009; Tjaden & Thoennes, 2006) and victims of physical stalking incidents (Reyns et al., 2016) tend to be female rather than male. In addition, victims of sexual assault tend to have lower levels of self-control and engage in riskier lifestyles/activities (Franklin et al., 2012; Tillyer et al., 2016, 2010). A cursory analysis of risky lifestyles/activities can be problematic though, as the current victimization literature points to a variety of lifestyle decisions and activities that significantly increase the chances of sexual assault victimization. For example, in some studies, students with weak attachments to school or teachers were more likely to be victimized (Wilcox et al., 2006, 2009), while others have shown that involvement in school sports and formal activities increased risk for repeated forms of sexual assault (Tillyer et al., 2016). Whereas it is clear that any exposure to a motivated offender will increase the chances of victimization, the causal mechanisms behind sexual victimization and repeat victimization remain less clear.

Recently, new inquires into these mechanisms have uncovered new factors associated with sexual victimization. For example, experiencing childhood physical, sexual (Miron & Orcutt, 2014) and paternal emotional abuse (Cunningham et al., 2019), unhappy or unstable family situations (Finkelhor et al., 1990), and childhood neglect (Widom et al., 2008) while growing up have all been shown as significant predictors of later sexual victimization (Assink et al., 2019). Within the school setting, hostile school climate (e.g., involvement in fights, bullying, and peer relationship problems see, Wei & Chen, 2012), heavy drinking environments (Reyns et al., 2016; Testa et al., 2010), having ADHD (Snyder, 2015), and attachment to delinquent peers and engaging in criminal behavior (Stogner et al., 2014; Tillyer et al., 2010) have also been found to contribute to being a victim of physical and sexual victimization. Studies have also found that females identifying as bisexual or lesbian are significantly more likely than those identifying as heterosexual to be victims of sexual assault (Martin et al., 2011), generating new inquiries into the role of sexual orientation and victimization.

There has been a general neglect of research on the relationship between school-related variables and online victimization conceivably caused by the perception that victimization in cyberspace may be too dissimilar to other contexts where physical interaction occurs, such as schools. For this reason, the following research is necessary to test whether or not online victimization can be related to face-to-face victimization events. When examining online victimization, the school setting may be important for two reasons. Initially, it may cultivate a culture among students conducive to deviance and crime, including sexual offenses and harassment of known school peers. Furthermore, potential offenders should possess – in theory – more criminal opportunities because the digital environment is traditionally less monitored and supervised.

Similarities and differences between cyberstalking victimization and face-to-face sexual victimization

In order to better understand the factors associated with cyberstalking victimization, it is first necessary to distinguish the similarities and differences between online and physical sexual harassment and victimization. Some researchers argue that cyberstalking is not fundamentally different from traditional and proximal pursuit behavior (Sheridan & Grant, 2007) since many of the traits and characteristics of the offenses and offenders are similar. One reason is that most stalking and sexual harassment offenses (online and physical) are committed against targeted victims whom the offender knows as either an acquaintance or current/former intimate partner (Dreßing et al., 2014; Siddique, 2016; Smith et al., 2017). Furthermore, it has been resiliently established that most offenders are men (Fansher & Randa, 2019; Kaur et al., 2021), while a strong majority of victims are young women (Dreßing et al., 2014; Moriarty & Freiberger, 2008; Reyns et al., 2011, 2012; Siddique, 2016; Tjaden & Thoennes, 1998). These offenses between male offenders and female victims that are often known to each other can be the result of a myriad of offending dynamics such as obsession, hyperintimacy, excursion of power/control in a relationship, jealousy, and desperation (Abbey et al., 2004; Dye & Davis, 2003; Nicastro et al., 2000; Spitzberg & Hoobler, 2002).

Another important similarity is that there appears to be an overlap in factors associated with cyberstalking and physical stalking/harassment victimization. In a study by Reyns et al. (2012), the authors found that being female, younger, nonwhite, non-heterosexual, and non-single were all disproportionately linked to being more likely to experience cyberstalking; which is consistent with physical harassment/stalking and sexual victimization as well (Cantor et al., 2015; Martin et al., 2011; Tjaden & Thoennes, 1998). Personality traits like low self-control have also been found to increase the likelihood of being a victim of both cyberstalking (Reyns et al., 2018) and forms of sexual victimization (Franklin et al., 2012; Tillyer et al., 2016, 2010). This is partly because individuals with low self-control are more likely to engage in more risky behaviors that allow or attract motivated offenders while simultaneously reducing guardianship by ignoring or neglecting protective factors online and offline. Lastly, a number of similar environmental factors have been shown to both increase the likelihood of online and offline victimization with the most influential being familial relationships (Cunningham et al., 2019; Doty et al., 2018; Finkelhor et al., 1990) and school attachment and behavior (Reyns et al., 2012; Tillyer et al., 2016; Wilcox et al., 2006, 2009).

The established overlap between cyberstalking and other forms of physical harassment/stalking and sexual victimization has led some to infer that risk factors for these forms of victimization may be universal (Sheridan & Grant, 2007) and that cyberstalking may actually be a subset of stalking (Nobles et al., 2014). Based on semistructured interviews of sexual assault survivors, Clevenger and Navarro (2021) revealed that all of the victims of sexual assaults in their study suffered from cybervictimization (e.g., cyberstalking, image-based abuse, or sextortion) because offenders use cyberspace to retaliate against and punish them. Although their study was focused more on cybervictimization that followed the sexual assault, it is possible that offenders may use multiple platforms (e.g., cyberspace) and methods to control the targets of their violence.

The similarities between physical harassment/stalking and sexual victimization provide evidence of an association, but others have suggested that cyberstalking remains a unique crime with unique predictors (see, Bocij, 2002). For one, cyberstalking and online harassment are much more common than their physical counterpart and occur in larger proportion with perpetrators who are strangers to the victim (Finkelhor et al., 2000). This may be mostly due to the greater chance of interacting with strangers combined with an increased ability to remain anonymous for a motivated offender in the cyberworld (Reyns, 2010). Along those same lines, individuals who spend more time on the Internet and use social media outlets like Facebook, Twitter, and others were more likely to be victims and perpetrators of cyberstalking (Strawhun et al., 2013). The rapid advancement of technological devices designed to communicate intimate details of an individual's life on a public platform has indeed shown a strong correlation with the rise of cyberstalking in adolescents (see, Navarro et al., 2016).

It is not simple time spent online that can disproportionately increase the chances of cyberstalking victimization compared to offline forms of sexual victimization. In fact, studies examining the proliferation of social network interaction have found that females are twice as likely to be victimized online, with that probability increasing the more social network accounts an individual opens and the number of daily posts that an individual makes (Henson et al., 2011). Some have speculated that this

is attributable to increased opportunities for motivated offenders since there are more avenues/methods for offenders to contact potential victims (Reyns, 2010). Furthermore, the temporal ordering of whether or not one form of stalking/harassment can predict the other is an important question to the relevance of this study. In fact, Reyns and Fisher (2018) recently found that being stalked offline significantly increases the likelihood of being stalked online, but not vice-versa and only for females. These results suggest that differences in offline stalking or other forms of sexual victimization may follow, evolve, or continue onto a digital forum, leading to an overlap of victimization incidents worthy of further inquiry.

In particular, the current study aims to examine these mechanisms and their potential overlap between online and offline victimization in the context of South Korean adolescent youth. There are a couple of reasons why this demographic is ideal for study. First, cyberstalking and other forms of physical, sexual victimization are more common among adolescents and current students as both perpetrators and victims (Evers et al., 2020; Pereira & Matos, 2016). In fact, most initial episodes of cyberstalking occur between the ages of 12 and 17 within a current or former romantic relationship (Marcum & Higgins, 2019; Marcum et al., 2017). The differences between adolescent and adult sexual victimization are vital, and often due to the unique influences and contexts that adolescents experience (e.g., school setting, parental involvement, deviant peer groups, new relationships, substance use) (Livingston et al.,2007; Marcum et al., 2017; Pereira & Matos, 2016). Second, compared to students of Western origin, Korean students spend a majority of their time awake in a school setting or doing school work (Choi & Dulisse, 2021; Choi & Kruis, 2019) and spend more time online (Heo et al., 2014; Kim et al., 2006). These characteristic traits and environmental contexts illustrate South Korean adolescents as an ideal demographic from which to observe whether or not cyberstalking and other forms of physical, sexual victimization are the outcome of the same underlying mechanisms.

Current study

The current study is intended to answer two research questions. The initial question focuses on uncovering any overlap between cyberstalking victimization and face-to-face sexual victimization. The next question involves identifying any factors that may account for the co-occurrence of the two forms of victimization online and offline. More specifically, the current study aims to answer the following two questions: (1) Is there a recognizable and substantial overlap between cyberstalking victimization and face-to-face sexual victimization? (2) What variables, if any, explain the joint occurrence between cyberstalking victimization and face-to-face sexual victimization? Considering that cyberstalking victimization and face-to-face sexual victimization share conceptual components, it is expected that common predictors should exist. Assessing the overlap between these two types of victimization is important not only because it can shed light on the conceptual and empirical links between them but also because findings can be used to develop future evidence-based prevention and intervention programs for both forms of victimization.

Methodology

Data

The data for the current study are based on the Korean Youth Victimization Survey, a large cross-sectional study of 7,109 middle and high school students in South Korea. Data were collected through the self-report survey by the Korean Institute of Criminology from August 25th 2014 to September 17th 2014 (Hong & Yeon, 2015). The survey instrument included questions about various types of online and offline victimization. The target population of the survey was middle (1,804,189) and high school students (1,893,303) in South Korea in 2014. A nationwide multi-stage stratified cluster sampling was used to collect a nationally representative sample of middle and high school students in South Korea. In 2014, there were 3,216 middle schools and 2,336 high schools. A total of 158 schools (77 middle schools and 81 high schools) agreed to participate in the survey, and two classes were selected at each school. The survey was conducted using an online website that ensures the anonymity of participants. Table 1 presents the demographic information of participants. The sample was, on average, 15 years of age at the time of the survey (SD = 1.17, range 13–18), and about 53% of the participants were female.

Dependent variables

The two outcomes are the focus of the current study. The first dependent variable is cyberstalking victimization, here measured by a binary indicator of cyberstalking victimization. Specifically, participants were asked whether they had experienced unwanted and repeated contact that caused anxiety or fear through e-mail, online messages, blogs, or social network services in the past year. Cyberstalking victimization was coded as a dummy measure (0 = *no*, 1 = *yes*), indicating whether a student had ever experienced any cyberstalking described above during the previous year. Descriptive statistics showed that 0.73% of the participants had experienced cyberstalking victimization.

The second outcome variable is face-to-face sexual victimization. This variable was measured with five questions asking if they had experienced each of the following forms of sexual victimization in the past year: (1) sexual assault, (2) attempted sexual assault, (3) severe and forceful touching or kiss, (4) intentional and unwanted touching, and (5) sexual harassment through words or body languages. Response options for five questions were no/yes. Coded as a dichotomous variable, face-to-face sexual victimization indicates whether a respondent had experienced any of the five forms of sexual crime. Table 1 shows that 3.45% of the students reported at least one form of face-to-face sexual victimization.

Table 1. Descriptive statistics.

	Mean or %	SD	Range
Female	53	–	0–1
Age	15.44	1.17	13–18
Low self-control	21.29	4.28	9–36
Parental strain	6.25	2.46	3–12
Parental attachment	14.86	3.64	5–20
Teacher attachment	7.44	2.37	3–12
School disorder	5.02	1.85	3–12
Guardianship	4.76	1.67	2–8
Cyberstalking victimization	0.73	–	0–1
Face-to-face sexual victimization	3.45	–	0–1

Independent variables

Low self-control

This scale captures various components of low self-control described by Grasmick et al. (1993). Low self-control was measured using eight items on a four-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree), where higher scores reflect lower self-control: (1) I engage in risky behavior for fun; (2) I give up when things get complicated; (3) Other people better stay away from me when I am really angry; (4) I do not think much about future, (5) I do things that are exciting today with little concerns about tomorrow; (6) I am more interested in things that are happening right now than things that will happen later; (7) I like doing things with more immediate rewards than rewards in the future; and (8) I like doing things however I want to even if it inconveniences others. Responses to these eight statements were summed to create a low self-control scale. Reliability analysis yielded a Cronbach's alpha of 0.77, showing high internal consistency across the items.

Parental strain

To measure parental strain, a three-item self-report scale was created by reflecting several forms of stress caused by parents. Participants were asked to indicate to which they agree or disagree with the following statements: (1) I am stressed because of my parents' pressure on my grade; (2) I am stressed because of arguments with my parents; and (3) I am stressed because of my parents' excessive involvement in my life. Response options ranged from 1 (strongly disagree) to 4 (strongly agree). The summed score on these three items was used to construct a parental strain scale. The scale's reliability was high (Cronbach's alpha = 0.87).

Parental attachment

Our measure of parental attachment includes five questions about the respondent's positive perceptions of the relationships with parents: (1) My parents try hard to spend more time with me; (2) My parents always show me affection and love; (3) My parents and I understand each other well; (4) I often share my thoughts with my parents; and (5) I often talk to my parents. The questions were answered on a four-point Likert-type scale (1 = strongly disagree to 4 = strongly agree). A multi-item composite measure of parental attachment was computed using the sum of the responses with a Cronbach's alpha of 0.94. Higher scores of this variable reflect higher levels of parental attachment.

Teacher attachment

This variable was measured using a three-item scale. Students were asked to indicate their agreement with the following items on a four-point Likert-type scale ranging from 1 (completely disagree) to 4 (completely agree), where higher scores indicate higher levels of attachment to teachers: (1) I can talk to my teacher about my worries; (2) My teacher usually show me love; (3) and I want to be like my teacher. Responses were summed to all the statements to create the teacher attachment scale. The Cronbach's alpha indicated high reliability (Cronbach's alpha = 0.88).

School disorder

The school disorder scale was created using three items asking respondents to rate the degree to which they agree or disagree with the following three statements: (1) There are many delinquent students in my school (2) There are many crimes happening in my school, such as robbery, stealing, and assault; (3) There are many dark and unmanaged places in my school. The responses were recorded on a four-point Likert-type scale (1 = strongly disagree to 4 = strongly agree). The scale was created by summing so that higher scores indicate higher levels of school disorder. The computed alpha score (Cronbach's alpha = 0.78) exceeded an acceptable level of internal consistency.

Guardianship

Guardianship was measured using two items that were responded to on a four-point Likert-type scale ranging from 1 (completely disagree) to 4 (completely agree) to capture users' safety measures during outside activities. Students were asked to rate their agreement with the following items: (1) When I go back home after school, I usually move with other people; and (2) When I go to a private academy, reading room, or other places for meeting, I usually move with other people. Responses were summed, and higher scores reflect higher levels of guardianship. The reliability test score was high (Cronbach's alpha = 0.78).

Control variables

Two demographic variables were included. Age represents a continuous measure based on the age of the participant at the time of the survey. The gender of the student is coded as female = 1 and male = 0.

Analytic strategy

As indicated earlier, two variables are used as outcome variables in this study. Cyberstalking victimization and face-to-face sexual victimization are considered as the product of the same underlying mechanisms; therefore, the current study treats them as joint outcomes. A two-stage analytic strategy was employed. Initially, the unadjusted bivariate probit model without independent variables and control variables is tested to estimate the overlap between cyberstalking victimization and face-to-face sexual victimization. The estimation of rho from this model indicates the correlation between the outcome variables while considering the common error term between them (Greene, 2012). Once it is found that there is a significant overlap between these two outcome variables, a bivariate probit analysis is conducted for the joint modeling of the two separate dichotomous outcomes that examines the effects of covariates on the co-occurrence of them.

Findings

The first stage of our analyses is to examine the overlap between cyberstalking victimization and face-to-face sexual victimization. Table 2 presents the results from the unadjusted bivariate probit model. The estimate of rho was statistically significant, suggesting that there is considerable overlap between the two outcomes. In other words, the covariance between the error terms for cyberstalking victimization and face-to-face sexual vcitmization is large and statistically significant.

Table 2. Unadjusted bivariate probit estimates of the joint occurrence of cyberbullying victimization and face-to-face sexual victimization.

	Cyberstalking victimization		Face-to-face sexual victimization	
	b	(*SE*)	*b*	(*SE*)
Constant	−2.44***	0.05	−1.82	0.03
Rho (ρ)	0.52***	0.06		
Likelihood-ratio test of Rho (ρ)			52.24***	
N			7,109	

*** = $p < .001$

Table 3. Bivariate probit models for cyberbullying victimization and face-to-face sexual victimization.

	Cyberstalking victimization		Face-to-face sexual victimization	
Variables	*b*	(*SE*)	*b*	(*SE*)
Female	0.38**	0.12	0.13*	0.06
Age	−0.14**	0.05	−0.002	0.03
Low self-control	0.02†	0.01	0.01	0.01
Parental strain	0.06**	0.02	0.03**	0.01
Parental attachment	0.02	0.02	−0.003	0.01
Teacher attachment	−0.02	0.02	−0.01	0.01
School disorder	0.11***	0.03	0.13***	0.02
Guardianship	−0.05	0.03	−0.01	0.02
Constant	−1.99*	0.85	−2.83***	0.47
N			7,109	
Likelihood-ratio test of Rho (ρ)			33.092***	

† = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Next, a bivariate probit model with covariates was estimated. Table 3 shows the results from the bivariable probit model for cyberstalking victimization and face-to-face sexual victimization. Female students are more likely to experience both cyberstalking and face-to-face sexual crime. Parental strain is positively and significantly associated with the risk for cyberstalking victimization and face-to-face victimization. Additionally, those who are exposed to higher levels of school disorder have a higher likelihood of cyberstalking victimization and face-to-face sexual victimization. While age is a significant predictor for cyberstalking victimization, it is not significantly associated with face-to-face sexual victimization. Low self-control was marginally significant in predicting cyberstalking victimization, but this association was not observed in relation to face-to-face sexual victimization.

Taken together, the results from a series of bivariate probit regression models indicated that there a significant overlap between the two forms of victimization, and the predictors of the two outcomes are very similar. Being female, parental strain, and school disorder explain some of this overlap.

Discussion

There exists a growing empirical literature identifying factors associated with cyberstalking victimization and face-to-face sexual victimization. Scholars have consistently argued that factors related to increased risk for cyberstalking victimization include: low self-control (Kabiri et al., 2021; Reyns et al., 2018), parenting practices (Doty et al., 2018; Khurana et al., 2015), peer-related variables (Bossler & Holt, 2010; Ngo & Paternoster, 2011; Reyns et al.,

2016) and guardianship (Kabiri et al., 2020a; Leukfeldt & Yar, 2016) among others. Similarly, a fair amount of research has been conducted in uncovering factors associated with face-to-face sexual victimization. These studies have revealed that face-to-face sexual victimization is commonly associated with low self-control (Franklin et al., 2012; Tillyer et al., 2016, 2010), parenting practices (Cunningham et al., 2019; Finkelhor et al., 1990; Miron & Orcutt, 2014; Widom et al., 2008), school-related variables (Tillyer et al., 2010; Wei & Chen, 2012; Young et al., 2009), peer-related variables (Assink et al., 2019; Stogner et al., 2014), and guardianship (Fisher et al., 2010; Snyder, 2015; Stogner et al., 2014). In short, previous research reveals that similar primary causes are related to cyberstalking victimization and face-to-face sexual victimization. Accordingly, the current study examined an overlap between the two forms of victimization and whether risk factors identified in previous research can explain the co-occurrence of them. Our research, using data from a sample of middle school and high school students, yielded three key findings.

Notably, a statistically significant overlap of cyberstalking victimization and face-to-face sexual victimization was observed among South Korean adolescents. This finding suggests that obsessive pursuit behaviors that occur in cyberspace should not be viewed as irrelevant to sexual violence based on face-to-face contact because they may not be completely independent or mutually exclusive. In fact, as the digital space continues to proliferate with new social platforms creating avenues and outlets for pursuant behaviors, the probability for unwanted and/or threatening interactions that begin online will only continue to grow. Regardless of the motive of the potential offender, these new social networks allow those who wish to be anonymous to stay anonymous in many cases, increasing the potential for aggressive and abusive communications that may bleed into the physical space. Therefore, it would be important for researchers to continue to develop and assess the joint modeling of cyberstalking and face-to-face sexual victimization – perhaps with longitudinal data in an effort to test the temporal ordering and influential magnitude of each victimization incident on the other. If in fact one type of stalking or victimizing behavior is truly influencing the other, there are massive theoretical and practical implications relating to education and prevention.

Additionally, the results indicated that there were several common predictors of both cyberstalking victimization and face-to-face sexual victimization. Female students were more likely to be exposed to the risk of these forms of victimization, which is congruent with research that has previously demonstrated that females are more likely to be targets of both cyberstalking and sexual violence (Breiding, 2014; Kaur et al., 2021). Additionally, parental strain emerged as a significant risk factor of both forms of victimization. This result is also congruent with other empirical research showing that unfavorable family factors, such as family discord and emotional abuse/neglect, are predictive of cyberstalking victimization and sexual victimization (Fineran & Bolen, 2006; Kabiri et al., 2020a; Kaltiala-Heino et al., 2016). However, not all parent-related variables were significantly associated with the risk of the two forms of victimization. For example, parental attachment did not serve as a protective factor of these outcomes. Another notable finding involved the significant associations between social disorder and the two dependent variables. Some previous studies have highlighted that school-related measures (e.g., attachment to the teacher, commitment to education, or school activities) are important considerations in understanding face-to-face sexual victimization (Cass, 2007; Tillyer et al., 2010). However, little is known regarding the relationship between school-related variables and cyberstalking

victimization. Also, research has yet to examine the extent to which school disorder is related to co-occurrence between cyberstalking victimization and face-to-face sexual victimization. The current study provides support for continued efforts to understand the role of school institutions in understanding online and offline victimization among adolescents.

Lastly, the results are suggestive of the differential roles of some predictors regarding the two outcome variables. Although age was negatively and significantly associated with cyberstalking victimization, this significant relationship was not observed in the model involving face-to-face sexual victimization. It is possible that older individuals are more familiar with the use of technology, allowing them to take more precautions for their safety and security in the cyberworld, thus reducing their vulnerability while increasing guardianship. It is also possible that motivated offenders target younger victims, since they may be more likely to use technology more freely and with more trust for the security measures already in place. The concept of personal guardianship may be particularly relevant to this possible connection. Scholars have found that Internet users' ability to handle, block, restrict, and report unwanted online messages are less likely to fall victim to cyberstalking (Kabiri et al., 2020a; Ybarra et al., 2007); all of which tend to occur as a user becomes more familiar and confident in the technology they are engaging in over time. This may be partly due to previous efforts to educate and make young adults aware of the potential dangers of freely disseminating personal information through social networking mediums.

Another variable that uniquely accounted for cyberstalking victimization was low self-control. Considering that previous studies have shown that low self-control is a key predictor of both outcomes (Franklin et al., 2012; Kabiri et al., 2021; Reyns et al., 2018; Tillyer et al., 2010), the inconsistent result may reflect the unique context in which the sample of the current study is embedded. Notably, the findings emerged among a sample of Korean students. Korean middle and high school students spend a large amount of time at their schools; it is generally not optional for students to leave these settings without special permission. Researchers have argued that low self-control can heighten the risk of face-to-face sexual victimization through increased exposure to motivated offenders and reduced guardianship; this argument may be applicable to many countries, such as the United States. However, Korean schools provide a very structured and protected environment monitored and supervised by teachers and school police officers (Han & Connell, 2020). If students are not allowed to leave this setting for most of their time at school, the potential effect of low self-control on victimization may be diminished or nullified. On the other hand, students are still allowed to use smartphones and computers at their schools; thus, opportunities to encounter potential offenders in cyberspace are still present and may be more likely to occur in this domain. In fact, this finding may suggest that cyberstalking or face-to-face victimization is a product of access and opportunity, rather than the type of contact. For example, if South Korean students are less likely to be victimized face-to-face but more likely to be cyberstalked, it may be a product of where they spend their time unsupervised, rather than the motivation of offenders of how they are being stalked. Further studies should consider the cultural context of their victimization setting when attempting to disentangle this possible relationship. Although some aspects of the relationship between low self-control and these forms of victimization require further study, the current article illuminates the importance of cross-sectional data in this line of research to advance our knowledge in victimology.

Policy implications

The findings of the current study complement recent victimology research examining various factors associated with cyberstalking victimization and face-to-face sexual victimization by showing that while some factors commonly explain the co-occurrence of the two forms of victimization, other factors uniquely explain the phenomena. The pattern of findings indicates that efforts to understand the overlap between some online and offline victimization hold the potential to prevent further victimization among individuals. Specifically, this article suggests that the role of schools is critical to reducing the risk of cyberstalking victimization and face-to-face sexual victimization (Marcum & Higgins, 2019). Although it is critical to implement training programs for students and educators to help them learn about different types of offenses (e.g., warning signs and negative outcomes of victimization), programs to improve and maintain social and physical disorder around the schools should be emphasized and developed (Low & Van Ryzin, 2014; Ttofi & Farrington, 2011). For example, previous research has shown that several programs are indeed effective in changing the social norms and school environments that promote sexual violence, including bystander intervention programs, social norming campaigns, or awareness programs (Banyard et al., 2007; Moynihan et al., 2015).

In addition and consistent with other areas of victimization research, age is inversely related with cybervictimization and harassment. Thus, it is important that programs designed to prevent both cyber and face-to-face victimization should be focused on the public education and protection of younger targets, through familiar and frequent mediums used by adolescents. If adolescents are more likely to interact, be harassed, and thus victimized online, it reasons that educational and preventative programs should be more readily accessible on digital platforms like social media, communication apps, and/or streaming services. More widespread visibility on the prevention of cybervictimization may also act as a deterrent effect for potential offenders, as the same platforms that can provide access for cyberharassment behaviors are simultaneously offering information and education on tactics such as target hardening and increasing surveillance (Reyns, 2010). Additionally, more evidence-based family/parent training should become available for parents to support positive interactions between parents and children, which subsequently reduces the risk of cyberstalking victimization and face-to-face sexual victimization (McCoy et al., 2020; Piquero et al., 2016). Finally, the current study echoes Clevenger and Navarro's (2021) emphasis on the policy efforts to train criminal justice professionals to increase their understanding of the relationship between face-to-face victimization and cybervictimization. Criminal justice professionals should be updated on technology-facilitated victimization as well as the reoccurring victimization that arises from repeat episodes of cyberharassment (Clevenger & Navarro, 2021). By incorporating education, training, and programmatic changes within police departments and other areas of the criminal justice system, criminal justice professionals can direct more appropriate resources that are specifically tailored to the victim experience.

This paper shows that continued work is necessary not only on the overlap between different forms of victimization online and offline but also on what theoretical frameworks can be helpful to account for this co-occurrence between them. Despite its contributions, the present study is not without limitations. To start, the data used in this study were cross-sectional, which makes it hard to establish temporal order between variables that may

appear to be causal. In addition, some important variables were not considered in our models. For example, risky lifestyles have been found to be associated with the risk of various types of interpersonal violence (Hayes et al., 2021; Kabiri et al., 2020a; Mustaine & Tewksbury, 2002). However, the current study did not consider these variables in our study due to limited data and the difficulties in developing measures for routine activities that would overlap from the virtual world to the real world. More scholarly work is needed to provide conceptual and operational overlaps between cyberstalking victimization and face-to-face sexual victimization. Given that cyberstalking victimization is a growing threat in this technology-oriented society and that face-to-face sexual victimization remains a constant social problem, researchers should continue to investigate these issues. Integrating findings from different strands of work may shed light on overlooked relationships between these online and offline forms of victimization.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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