Iran J Public Health, Vol. 53, No.10, Oct 2024, pp.2271-2278

Original Article

The Influence of Cyber Victimization, Internet Use, and Perception of Cyberbullying-on-Cyberbullying Perpetration among Korean Adults: A National Sample-Based Study

*Se-Ri Park [1], *Sung-Man Bae [1,2]*

1. *Department of Psychology, Graduate School, Dankook University, Cheonan, Republic of Korea*
2. *Department of Psychology and Psychotherapy, Dankook University, Cheonan, Republic of Korea*

***Corresponding Author:** Email: spirit73@hanmail.net

(Received 18 Feb 2024; accepted 15 Apr 2024)

Abstract

Background: Although cyberbullying has emerged as a serious problem even among adults, most researches have been conducted on the adolescents. We aimed to verify the independent effects of cyber victimization, internet use, and the perception of cyberbullying-on-cyberbullying perpetration in South Korea adults.

Methods: The data of 1500, 20s to 50s Korea adults from the 2019 Survey on the Cyberbullying conducted by the National Information Society Agency were used.

Results: A hierarchical multiple regression analysis indicated that cyber victimization and internet use were positively related to cyberbullying perpetration. In particular, the perception of cyberbullying was negatively associated with cyberbullying perpetration.

Conclusion: This study is an early effort to verify the influence of the perception of cyberbullying-on-cyberbullying perpetration. Educating that cyberbullying is an illegal and dangerous behavior is important to prevent cyberbullying perpetration.

Keywords: Cyberbullying perpetration; Cyber victimization; Internet use; Cyberbullying perception

Introduction

Cyberbullying is the act of intentionally and continuously causing damage or discomfort to others through language or video in cyberspace (1-3). Compared to traditional bullying that requires direct interaction, cyberbullying is performed on the basis of anonymity, and with the development of smartphones and social media, there are no spatial and temporal constraints, so lots of people can be experienced cyberbullying (4,5).

According to the 2019 Survey on the Cyberbullying (1), 32.5% of 1,500 adults responded that they had experienced cyberbullying perpetration within the last year, and 48.5% said they had experienced cyber victimization. According to the 2018 Police Statistical Yearbook (4), the number of people arrested for cyber-crimes in 2018 was 60,138. Dividing them by age showed that 8,642 were in their teens; 25,374 in their 20s; 14,324 in their 30s; 7,287 in their 40s; and 5,338 in their 50s and over. Although cyberbullying has emerged as a serious problem even among adults, most research has been conducted on adolescents (6-9).

Cyber victimization has been proposed as one of the major risk factors for cyberbullying perpetration (10-12). According to general strain theory by Agnew (13), people violated experience negative emotions such as depression, anger and are more likely to act aggressively to resolve negative emotions (14,15). In other words, psychological tension is induced in victims of cyberbullying, and to resolve this, they may become perpetrators by externalize negative emotions (16). Various previous studies have proven the relevance between cyberbullying victims and perpetrators. The study of Akbulut and Eristi (10) of 256 students found cyber victimization predicts 23% of cyberbullying perpetration. Balakrishnan (17) identified the positive relationship between victimization experiences and cyberbullying for 17-30 yr old. In particular, a study of 1318 Belgian youths showed that students who experienced cyber victims were 9 times more likely to exhibit cyberbullying perpetration (18).

Another important risk factor for cyberbullying perpetration is internet use (19,20). The more time you spend on the internet, the more you are exposed to cyberbullying (21-23). The results can be explained by opportunity theory that argues even if the motive or tendency to delinquency is strong, it is difficult to occur unless an opportunity is provided (24). Opportunity theory explains that accidental exposure to opportunity can be a major cause of harm. In other words, the more time you spent on the internet, the more means and opportunities you have for perpetration, and the more likely you are to be exposed to cyberbullying (9). Moreover, uncontrolled use of social media is directly related to cyberbullying perpetration (25).

To prevent cyberbullying, it is necessary to understand the risk factors and to find protective factors that can mitigate the influence of risk factors on cyberbullying perpetration. The perception of bullying (or violence) refers to the degree of perception that bullying is a dangerous behavior (26). This has been suggested as an important protective factor to prevent violent behavior (27). As the ability to judge and recognize unethical behavior in the internet space increases, negative behavior such as cyberbullying decreases and correct behavior increases (28). Yahaya et al. (29) examine the influence of perception of bullying of middle school students on bullying. Low perception of bullying was positively related to offending toward others (30). The group who underwent a sexual harassment training program in the workplace increased their sensitivity and perception toward sexual harassment, resulting in decreased sexual harassment behavior (31).

As such, the perception of bullying can be generalized to the field of cyberbullying. In other words, the perception of cyberbullying can decrease the possibility of cyberbullying perpetration (32,33). A lower perception was positively associated with more perpetration (34). Age, gender, race, type of high school attended before college, prior cyber victimization, and previous cyberbullying perpetration engagement influenced college students' perception of cyberbullying. However, the relationship between the two variables should be reconfirmed in samples from other countries.

We aimed to verify the independent impacts of cyber victimization, internet use, and perception of cyberbullying-on-cyberbullying perpetration. According to Hypothesis 1, cyber victimization will positively be associated with cyberbullying perpetration. Hypothesis 2 stated that internet use will positively be associated with cyberbullying perpetration. Hypothesis 3 claimed that the perception of cyberbullying will negatively be associated with cyberbullying perpetration.

Methods

Participants

This study used data from the 2019 survey on the cyberbullying conducted by the National Information Society Agency (NIA). The survey was conducted online on 1,500 adult men and women residing nationwide from Oct 1, 2019, to Nov 23, 2019. The sampling method used population proportional allocation according to gender, age group, personal income, and region. In the population proportional allocation, gender was divided

into male and female, and the age group was divided into four groups: 20s, 30s, 40s, and 50s, and income was divided into eleven groups. Finally, the region was divided into 17 groups, Seoul, Busan, Daegu, Incheon, Gwangju, Daejeon, Ulsan, Sejong, Gyeonggi, Gangwon, Chungbuk, Chungnam, Jeonbuk, Jeonnam, Gyeongbuk, Gyeongnam, and Jeju.

Since this study utilized public data, approval by the Institutional Review Board is not required. In addition, the results processed and analyzed by researchers are independent of NIA.

Measures

Cyberbullying perpetration

This study used a scale developed by the NIA and measured the frequency of cyberbullying perpetration for eight types of cyberbullying. Examples of questions include: "I've been swearing at or offending someone on the internet," "I've spread false or misleading stories about other people on the internet," and "I sent emails or messages or visited blogs and social media and left posts or photos even though the other person doesn't like it." Each question was measured using a 5-point scale (never=1, once or twice in the last 6 months=2, once or twice a month=3, once or twice a week=4, almost every day=5), and the Cronbach Alpha value was found to be 0.972.

Cyber victimization

The cyber victimization scale, developed by the NIA, measured the frequency of cyber victimization for the eight types of cyberbullying. Examples of questions include: "Someone kept sending emails or messages or kept visiting blogs and social media and left posts or photos even though I hated it," "Someone forcibly took away my cyber game money, smartphone data, game items, etc.," and "Someone sent me an erotic article, photo, or video even though I hated it." Each question was measured using a 5-point scale (never=1, once or twice in the last 6 months=2, once or twice a month=3, once or twice a week=4, almost every day=5), and the Cronbach Alpha value was found to be .948.

Internet use

The internet use scale was developed by the NIA, and this study used six types of internet services to measure Internet use. The types of internet services include: 1) SNS (Facebook, Instagram, YouTube, TikTok, etc.), 2) instant messages (Kakao Talk, Line, Facebook Messenger, etc.), 3) Community (cafe, club, etc.), 4) Personal homepage, 5) Email, and 6) online games. Each question was measured using a 4-point scale (not used = 1, less than one hour per day = 2, one hour to less than two hours per day = 3, more than two hours per day = 4), and the Cronbach Alpha value was found to be .673.

Perception of cyberbullying

The perception of cyberbullying scale was developed by the NIA, and it measured the degree of perception for each type of cyberbullying. Examples of questions include: "Actions like swearing at or offending someone on the internet," "Action that prevents other people from going out, swearing, or prevents them from participating in conversations in internet chat rooms or Kakao Talk, etc.," and "The act of forcibly stealing one's opponent's cyber game money, smartphone data, game items, etc. on the internet." The questionnaire asked the participants how problematic they perceived these behaviors to be. Each behavior was measured using a 4-point scale (not problematic= 1, very problematic = 4), and a higher score indicated that cyberbullying is dangerous and illegal. The Cronbach's alpha value was found to be .934.

Demographic variables

The demographic variables used as control variables in this study were gender, age group, and income. Gender was divided into male and female; age group was divided into the 20s, 30s, 40s, and 50s; and income was divided into eleven categories.

Analysis

The data were analyzed using SPSS 23.0 (IBM Corp., Armonk, NY, USA). First, descriptive statistics analysis was conducted to identify the sociodemographic variables of the subjects. Second,

correlation analysis was conducted to test the correlations among variables. Finally, hierarchical multiple regression was used to verify the independent impacts of cyber victimization, internet use, and perception of cyberbullying-on-cyberbullying perpetration.

Results

Descriptive statistics

Demographic characteristics of the 1500 subjects are presented in Table 1. Among the participants, 769 (51.3%) were male and 731 (48.7%) were female. Regarding age, 326 (21.7%) were in their 20s, 347 (23.1%) in their 30s, 410 (27.3%) in their 40s, and 417 (27.8%) in their 50s.

Table 1: Demographic Characteristics *N*=1500

Variable		***N***	***%***
Gender	Male	769	51.3
	Female	731	48.7
Age(yr)	20s	326	21.7
	30s	347	23.1
	40s	410	27.3
	50s	417	27.8
Personal income	1	187	12.5
	2	241	16.1
	3	424	28.3
	4	256	17.1
	5	139	9.3
	6	103	6.9
	7	58	3.9
	8	31	2.1
	9	25	1.7
	10	17	1.1
	11	19	1.3
Cyberbullying perpetration	Yes	488	32.5
	No	1012	67.5
Cyber victimization	Yes	727	48.5
	No	773	51.5

Note, 1=Less than 1 million KRW 2=Less than 1 million to 2 million KRW 3=Less than 2 million to 3 million KRW 4=Less than 3 million to 4 million KRW 5=Less than 4 million to 5 million KRW 6=Less than 5 million to 6 million KRW 7=Less than 6 million to 7 million KRW 8=Less than 7 million to 8 million KRW 9=Less than 8 million to 9 million KRW 10=Less than 9 million to 10 million KRW 11=More than 10 million KRW

Mean, Standard Deviation, and Correlation between Variables

Correlations are presented in Table 2. Cyber victimization was positively correlated with internet use (r=.254, P<.001), and cyberbullying perpetration (r=.522, P<.001). Internet use was positively correlated with cyberbullying perpetration (r=.244, P<.001). However, the perception of cyberbullying was negatively correlated with cyber victimization (r=-.228, P<.001), internet use (r=-.102, P<.001), and cyberbullying perpetration (r=-.333, P<.001).

Table 2: Means, Standard Deviation, and Correlations between Variables

Variable	*1*	*2*	*3*	*4*
1				
2	.254***			
3	-.228***	-.102***		
4	.522***	.244***	-.333***	
M	10.601	12.357	24.343	10.189
SD	5.281	2.942	4.165	5.481

(***P<.001)

Note, 1=Cyber victimization, 2=Internet use, 3=Perception of cyberbullying, 4=Cyberbullying perpetration

Hierarchical multiple regression

As a result of hierarchical multiple regression analysis are presented in Table 3. Cyber victimization, internet use, and perception of cyberbullying had a significant impact on cyberbullying perpetration. However, gender, age, and personal income were not associated with cyberbullying. Specifically, as cyber victimization increased, cyberbullying perpetration increased (β=.773, P<.001), and as internet use increased, cyberbullying perpetration increased (β=.052, P<.01). However, as the perception of cyberbullying increased, cyberbullying perpetration decreased (β=-.123, P<.001). The total amount of explanation for the independent variable for the dependent variable was 71.7%. Looking at the amount of R^2 variation, the explanation amount in step 1 was significant at 2.7% (P<.001). In the second stage, the amount of change in R^2 in cyber victimization and internet were significant at 67.7% (P<.001). In the third stage, the amount of change in R^2 in the perception of cyberbullying was significant at 1.3% (P <.001).

Table 3: Hierarchical Regression Analysis

Independent variables	*Final Model*			
	B	SD	β	t
(constant)	4.107	.705		5.826***
Sex	.174	.160	.016	1.087
Age	-.045	.076	-.009	-.586
Income	.055	.039	.021	1.392
Cyber victimization	.802	.016	.773	48.715***
Internet use	.096	.030	.052	3.246**
Perception of cyberbullying	-.142	.017	-.123	-8.292***
R^2		.717		
Adjusted R^2		.716		

(**P<.01, ***P<.001)

Discussion

The study aimed to determine the independent impacts of internet use, cyber victimization and perception of cyberbullying on adult cyberbullying perpetration. Specifically, the purpose was to verify whether the perception of cyberbullying can serve as a protective factor for cyberbullying perpetration. The discussion of the main results of this study is as follows.

First, all socio-demographic variables did not have a significant impact. Some studies found out that gender (35-37), age (38-40), and personal income (41,42) were related to cyberbullying perpetration, but this study did not show significant results. Anyone can commit cyberbullying perpetration regardless of gender, age, or personal income. Therefore, in order to reduce cyberbullying perpetration, it seems important to select a wide range of eligible for training cyberbullying prevention. This should help majority of people recognize the

seriousness and negative impact of cyberbullying perpetration.

Second, cyber victimization and internet use have a positively related to cyberbullying perpetration. In previous studies, cyber victimization was previously proposed as risk factors for cyberbullying perpetration (10,12,18,43). Appropriate education and intervention for cyber victims should be made accessible beforehand so that cyber victimization does not lead to cyberbullying perpetration.

Internet use can also act as a risk factor for cyberbullying, as in previous studies (19,22,24). As internet use is essential in modern society, an increase in the usage time is inevitable. However, excessive internet use increases the risk of exposure to cyberbullying, suggesting the need for controlled use (12). In the case of adolescents, internet use can be adjusted through a shutdown system or parental supervision. For adults, efforts are needed to help control the use through self-monitoring of internet use and improvement of self-regulation ability.

Third, the perception of cyberbullying was negatively related to cyberbullying perpetration. Perception of cyberbullying can reduce cyberbullying perpetration (28,29,32,34). The perception of cyberbullying is to recognize the negative impacts of cyberbullying on the psychological and emotional state of others (44). It has been emphasized as a protective factor for existing offline bullying and neighboring fields, but there is a lack of empirical evidence that perception of cyberbullying negatively affects cyberbullying perpetration. The results of this study suggest the importance of the perception of cyberbullying in the prevention of cyberbullying perpetration and emphasize its inclusion in the curriculum of cyberbullying (45,46). Specifically, in this study, the independent relevance of the perception of cyberbullying was confirmed even after controlling for major risk factors for cyberbullying perpetration. The perception of bullying can be a significant protective factor in reducing adult cyberbullying, similar to existing offline bullying. Efforts to raise awareness about the perception of cyberbullying through regular education on cyberbullying at the local and national level can be effective in preventing cyberbullying.

The limitations of this study and suggestions for further research are as follows. First, because this study is a cross-sectional design study, the causal relationship between the variables is not clear. Second, in future studies, it is necessary to investigate specific mechanisms for explaining cyberbullying perpetration based on the relationship between the variables identified in this study.

Conclusion

This study explained the independent impacts of cyber victimization, internet use, and perception of cyberbullying on adult cyberbullying perpetration. In particular, perception of cyberbullying has a positive effect on preventing cyberbullying perpetration. Therefore, in order to prevent cyberbullying, it seems important to intervene at individual and social level so that individuals can be aware of cyberbullying perpetration. Future studies should find out whether the effects of previously known risk factors can be directly modulated by the perception of cyberbullying.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

The author(s) received no financial support for the research, authorship, or publication of this article. I would like to thank Editage (www.editage.co.kr) for English language editing.

Conflict of interest

The authors declare that there is no conflict of interests.

References

1. National Information Society Agency (2019). The

Survey on the Cyberbullying.
2. Savage MW, Tokunaga RS (2017). Moving toward a theory: Testing an integrated model of cyberbullying perpetration, aggression, social skills, and Internet self-efficacy. *Comput Hum Behav*, 71: 353-361.
3. Olweus D, Limber SP (2018). Some problems with cyberbullying research. *Curr Opin Psychol*, 19: 139-143.
4. Hamuddin B, Syahdan S, Rahman F, Rianita D, Derin T (2019). Do They Truly Intend to Harm Their Friends? The Motives Beyond Cyberbullying among University Students. *International Journal of Cyber Behavior, Psychology and Learning*, 9(4): 32-44.
5. Menesini E, Nocentini A, Palladino BE, et al (2012). Cyberbullying definition among adolescents: A comparison across six European countries. *Cyberpsychol Behav Soc Netw,* 15(9):455-63.
6. Korean National Police Agency (2018). 2018 Police Statistical Yearbook.
7. Jenaro C, Flores N, Frías CP (2018). Systematic review of empirical studies on cyberbullying in adults: What we know and what we should investigate. *Aggress Violent Behav,* 38: 113-122.
8. Jun D, Kim D (2016). A study on adult's cyberviolence. *Korean J Local Gov Admin Stud*, 30(3): 25-43.
9. Kowalski RM, Limber SP, McCord A (2018). A developmental approach to cyberbullying: Prevalence and protective factors. *Aggress Violent Behav*, 45: 20-32.
10. Akbulut Y, Eristi B (2011). Cyberbullying and victimisation among Turkish university students. *Australasian Journal of Educational Technology*, 27(7): 1155-1170.
11. Francisco SM, Simão AMV, Ferreira PC, das Dores Martins MJ (2015). Cyberbullying: The hidden side of college students. *Comput Hum Behav*, 43: 167-182.
12. Zsila Á, Urbán R, Griffiths MD, Demetrovics Z (2019). Gender differences in the association between cyberbullying victimization and perpetration: The role of anger rumination and traditional bullying experiences. *Int J Ment Health Addict*, 17(5): 1252-1267.
13. Agnew R, White HR (1992). An empirical test of general strain theory. *Criminology*, 30(4): 475-500.
14. Jang H, Song J, Kim R (2014). Does the offline bully-victimization influence cyberbullying behavior among youths? Application of general strain theory. *Comput Hum Behav*, 31: 85-93.
15. Lee J, Lee SS (2014). The effect of cyber victimization on cyber offending and gender differences in testing a general strain theory. *J Youth Stud*, 25(4): 137-158.
16. Lee G, Sanchez M (2018). Cyber bullying behaviors, anonymity, and general strain theory: A study of undergraduate students at a South Eastern University in the United States. *Int J Cyber Criminol,* 12(1): 84-96.
17. Balakrishnan V (2015). Cyberbullying among young adults in Malaysia: The roles of gender, age and Internet frequency. *Comput Hum Behav*, 46: 149-157.
18. Walrave M, Heirman W (2011). Cyberbullying: Predicting victimisation and perpetration. *Child Soc*, 25(1): 59-72.
19. Celik S, Atak H, Erguzen A (2012). The effect of personality on cyberbullying among university students in Turkey. *Eurasian J Educ Res*, 49: 129-150.
20. Musharraf S, Bauman S, Anis-ul-Haque M, Malik JA (2019). General and ICT self-efficacy in different participants roles in cyberbullying/victimization among Pakistani university students. *Front Psychol*, 10: 1098.
21. Eden S, Heiman T, Olenik-Shemesh D (2013). Teachers' perceptions, beliefs and concerns about cyberbullying. *Br J Educ Technol*, 44(6): 1036-1052.
22. Lampridis E (2015). Stereotypical beliefs about cyber bullying: An exploratory study in terms of myths. *Universal Journal of Educational Research*, 3(2): 135-147.
23. Oksanen A, Oksa R, Savela N, Kaakinen M, Ellonen N (2020). Cyberbullying victimization at work: Social media identity bubble approach. *Comput Hum Behav*, 109: 106363.
24. Lee SS (2009). The effects of strain, low self-control, and Internet time use on cyber delinquency: Testing three theories of delinquency. *Korean Crim Rev*, 3: 95-115.
25. Kırcaburun K, Kokkinos CM, Demetrovics Z, Király O, Griffiths MD, Çolak TS (2019). Problematic online behaviors among adolescents and emerging adults: Associations between cyberbullying perpetration, problematic social media use, and psychosocial factors. *Int J Ment Health Addiction,* 17(4): 891-908.

26. Yamawaki N, Ostenson J, Brown CR (2009). The functions of gender role traditionality, ambivalent sexism, injury, and frequency of assault on domestic violence perception: A study between Japanese and American college students. *Violence Against Women*, 15(9): 1126-1142.
27. Lundgren R, Amin A (2015). Addressing intimate partner violence and sexual violence among adolescents: Emerging evidence of effectiveness. *J Adolesc Health*, 56(1 Suppl): S42-50.
28. Kim SH, Park HS (2014). Intrinsic and Extrinsic Factors Impacting Individuals` Cyber Ethics Awareness and Behavior Intention. *The Journal of Information Systems,* 23(1): 111-138.
29. Yahaya A, Ramli J, Hashim S, Ibrahim MA, Rahman RRRA (2009). Teachers and students perception towards bullying in Batu Pahat district secondary school. *Eur J Soc Sci educ res*, 11(4): 643-658.
30. Frisén A, Jonsson AK, Persson C (2007). Adolescents' perception of bullying: Who is the victim? Who is the bully? What can be done to stop bullying. *Adolescence*, 42(168): 749-761.
31. Antecol H, Cobb Clark D (2003). Does sexual harassment training change attitudes? A view from the federal level. *Social Science Quarterly*, 84(4): 826-842.
32. Davison CB, Stein CH (2014). The dangers of cyberbullying. *North American Journal of Psychology*, 16(3): 595-595.
33. Bae SM (2021). The relationship between exposure to risky online content, cyber victimization, perception of cyberbullying, and cyberbullying offending in Korean adolescents. *Child Youth Serv Rev*, 123: 105946.
34. Sobba KN, Paez RA, Bensel TT (2017). Perceptions of cyberbullying: An assessment of perceived severity among college students. *Tech Trends,* 61: 570-579.
35. Erdur-Baker Ö (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media Soc*, 12(1): 109-125.
36. Ortega-Barón J, Buelga S, Cava MJ, Torralba E (2017). Violencia escolar y actitud hacia la autoridad de estudiantes agresores de cyberbullying. *Rev de Psicodidáctica*, 22(1): 23-28.
37. Souza SB, Veiga Simão AM, Ferreira AI, Ferreira PC (2017). University students' perceptions of campus climate, cyberbullying and cultural issues: implications for theory and practice. *Stud High Edu*, 43(11): 2072-2087.
38. Álvarez-García D, Núñez JC, García T, Barreiro-Collazo A (2018). Individual, family, and community predictors of cyber-aggression among adolescents. *Eur J Psychol Appl Legal Context*, 10(2): 79-88.
39. Barlett C, Coyne SM (2014). A meta-analysis of sex differences in cyber-bullying behavior: The moderating role of age. *Aggress Behav*, 40(5): 474-488.
40. Young K, Govender C (2018). A comparison of gender, age, grade, and experiences of authoritarian parenting amongst traditional and cyberbullying perpetrators. *South African Journal of Education,* 38(Supplement 1):S1-S11
41. López-Castro L, Priegue D (2019). Influence of family variables on cyberbullying perpetration and victimization: A systematic literature review. *Soc Sci*, 8(3): 98.
42. Soares S, Brochado S, Barros H, Fraga S (2017). Does cyberbullying prevalence among adolescents relate with country socioeconomic and development indicators? an ecological study of 31 countries. *Violence Vict*, 32(5): 771-790.
43. Lee C, Shin N (2017). Prevalence of cyberbullying and predictors of cyberbullying perpetration among Korean adolescents. *Comput Hum Behav*, 68: 352-358.
44. Grunig JE, Hunt TT (1984). *Managing pub rel*, Holt, Rinehart and Winston.
45. Lee YH, Kim JD, Park JH. (2016). A Study on Development of Common Criteria for Evaluation of Internet Ethics Index. *J Internet Comput Serv,* 17(3): 75-85.
46. Molluzzo JC, Lawler J (2012). A study of the perceptions of college students on cyberbullying. *Information Systems Education Journal*, 10(4): 84.