Introduction

Bullying is often defined as being an aggressive, intentional act or behaviour that is carried out by a group or an individual repeatedly and over time against a victim who cannot easily defend him or herself (Olweus, 1993). The acts of bullying range from physical violence (i.e. kicking, pushing), verbal violence (i.e. naming or threatening), relational (e.g. social exclusion) to emotional violence such as causing rumours, alienation/isolation. The increasing use of computers and mobile phones among youth had made online communication the most popular communication. The shift from traditional communication to online communication had created a new form of bullying, cyberbullying. Cyberbullying is defined as ‘An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself’ (Smith et al., 2008). Cyberbullying involves sending or posting harmful or cruel text of images using the Internet or other digital communication devices such as cell phones. It can involve stalking, threats, harassment, impersonation, humiliation, trickery and exclusion. Research on cyberbullying has been presenting inconsistent findings due to the lack of consensus agreement on the definition of the phenomenon (Olweus and Limber, 2018).

Due to its difference with traditional form of bullying (Bossler et al., 2012; Burton et al., 2013) such as limitless network of audience, anonymity of the aggressor,
and minimal constraints on time and space in which bullying can occur, cyberbullying is an emerging health concern among adolescents (Selkie et al., 2016). Previous studies show alarming prevalence of this new type of bullying. For instance, a study of 3767 high school students found that 11% of students were bullied via the Internet and 7% were bullying their friends as well as being victims of cyber bullying at least once within a few months before the time of research (Kowalski and Limber, 2007). Other studies even showed higher prevalence, 21% of participants experience any type of cyberbullying perpetration in the last 30 days (Patchin and Hinduja, 2010). A recent study among Korean adolescents showed that 34% of the respondent students were involved in cyberbullying as bullies (6.3%), victims (14.6%), or both bullies and victims (13.1%) (Lee and Shin, 2017).

The consequences of cyberbullying can be serious such as depression and suicide (Ang and Goh, 2010; Patchin and Hinduja, 2010). However, as research on cyberbullying is at an early state in developing countries like Vietnam, updated information about prevalence of cyber bullying and how victims deal with this type of bullying is not yet available. Therefore, this study is conducted to learn about experiences and practices to cope with cyberbullying among high school students in Hanoi as well as to explore the association between the average time of Internet used per day among high school students in Hanoi, Vietnam, and the risk of being cyberbullied. The results of the study will provide evidence for the development of appropriate coping strategies to reduce the negative impact of online bullying, especially on the student age group.

Methods

Study setting

This study employed a cross-sectional design. Study subjects included students aged 13–18 years old at some secondary schools and high schools in Hanoi in 2018.

Sample size and sampling method

The sample size estimation was applied for one proportion with relative precision, in which \( p = 0.34 \) (used the prevalence from the recent Korean study (Lee and Shin, 2017)), \( \varepsilon = 20\% \) (due to the limited resource, we used relative precision of 20% to allow for a feasible sample size), nonresponse rate=20%. The needed sample size for this study was 224 subjects. Respondent-driven sampling method was applied to invite participants to the study. In the first group, 30 high school students were selected to participate, each of these students was asked to invite their two friends to participate in the study, and the sampling process continues like this for four rounds (a total 240 invitations were sent out). In total, 215 students had completed the electronic questionnaire (response rate of 89.5%).

Data collection

Data were collected through monkey survey in Google Forms. The content and interface of the electronic questionnaire were designed and tested so that the audience could answer on media such as smartphones, tablets and computers. The survey form included basic information about demographics factor, Internet usage, experiences of cyberbullying and coping strategies.

Measurements

Cyberbullying was measured by the tool from the research of Patchin and Hinduja (2010). This tool applied Likert-type scale (with four levels, never, rarely, sometimes, often) and checked for six forms of experience: (1) being called in slang words, made fun of, mocked on the Internet, via text messages; (2) received rude or upsetting messages/photos; (3) being isolated or detached from your online group; (4) being spread false rumours of you on the Internet or by phone; (5) being posted upsetting messages/photos/videos online about you and (6) being threatened, stigmatized about your actions online or over the phone. A person was identified to experience cyberbullying within the last 12 months if he or she experienced one of the six forms on an occasional or frequent basis.

Coping after being cyberbullied. The studies based on the research work of Hana Machackova et al. (2013) on coping strategies for victims of cyberbullying examined four main coping strategies: (1) sharing information (share with parents and seek their advice/share with teachers and seek their advice/seek advice from friends/find advice online / report it to the page administrator none of the options above); (2) using psychological means to overcome (think that it was actually nothing serious/think such things simply happen on the Internet/ think that such things could not hurt you/ decide to not pay attention to that and ignore it/ think that it was only happening online, it wasn’t actually real/none of the options above); (3) retaliation (do something similar or similar to that person over the Internet or phone/do something similar to that person in real life/save evidence for revenge later/none of the options above); or (4) circumvention (removing the bully’s profile from the contact list/ deleting your profile on the site you were bullied/blocking the account so the bully could not reach you/ none of the options above).

Other information collected were demographic information (gender and grade) and characteristics of Internet usage such as devices to access Internet (whether student use mobile/personal computer or public computer), frequency
to use Facebook, frequency to use Instagram, and time to use Internet per day (over 3 hours/from 1–3 hours/under 1 hour).

**Data analysis**

In this study, descriptive statistics were used to display distributions of key variables. Bivariate analysis (cross-tab and $\chi^2$) was applied to compare the prevalence of cyberbullying among different groups. Multivariate model for logistic regression was used to examine the association between time of Internet usage per day and risk of being cyberbullied. A $p$ value $<0.05$ was regarded as statistically significant. Statistical analyses were performed using SPSS version 20.

**Ethics**

Ethical clearance, including confidentiality of the participants’ consents and information, was approved by the Human Research Ethics Committee at Hanoi University of Public Health.

**Results**

**Characteristics of study population**

Table 1 presents the characteristics of the study objects. Among 215 participants, female students made up the majority with 66%. In terms of academic level, more than 40% of students were in 10th grade and 38.1% in 8th grade, but only two (0.9%) 12th graders participated in this study. The majority of students (74.9%) used mobile phones to access the Internet and 44.7% used the Internet for more than 3 hours a day. Regarding the frequency social media usage, nearly 80% used Facebook everyday; Similarly, nearly 60% of students used Instagram daily, but also about 13.5% of students have never used the social network.

**Experiences of cyberbullying**

Table 2 provides information on some forms of cyberbullying. The main form of bullying was students being called in slang, made fun of, mocked on the Internet/via text message. Specifically, 67/215 students (31.2%) were bullied in this form. Next, 22.3% of students were reported to have been bullied by spreading false statements or rumours online or by phone. The study also found that students were less likely to be bullied by posting upsetting online messages/pictures/videos of them (7.9%) or being threatened or stigmatized for their actions online or by phone (8.8%).

Figure 1 shows the proportion of victims of bullying. Of the 215 students who participated in the study, 47% said they had witnessed their friends being cyberbullied. Along with that, 45.1% occasionally or frequently experienced at least one of the six forms of cyberbullying listed in Table 2. Notably, 14.4% said that they were regularly bullied online.

**Online time and higher risk of cyberbully victimization**

Figure 2 presents the percentage of being cyberbullied during the last year by average daily Internet time. This percentage increased significantly as the time of Internet usage increased ($\chi^2$ test, $p<0.05$). The prevalence of being cyberbullied was highest (i.e. 54.2%) among the groups with longest time of daily Internet usage (over 3 hours/day).

Table 3 presents the multivariate logistics model examining the adjusted association between online time and risk of cyberbully victimization. Controlling for other variables (i.e. grade, gender, daily use of Facebook, daily use of Instagram), online time still showed a significant association with the risk of being cyberbullied. Compared to adolescent who used Internet less than 1 hour per day, adolescent who used Internet over 3 hours per day had significant higher risk (odds ratio (OR) = 2.76, $p<0.05$). In addition to online time, adolescent who used Instagram daily also had higher risk of being cyberbullied compared to those did not use daily.

**Coping with cyberbullying**

Table 4 presents practices of coping with cyberbullying among students who have experienced this type of bully. Regarding the method of sharing the bullying information, over 60% of students seek advice from friends but very few students shared it with their teachers for advice. As for using psychological measures to overcome, 58.8% chose not to pay attention to and ignored it; 35.1% considered it as nothing serious. Nine of 215 students saw it as an online incident, not real. Along with that, students also used retaliation as one of the ways to respond to cyberbullying. Specifically, 23.7% saved evidence for revenge later, and only 8 of 215 students did something similar to their cyberbully in real life. Using circumvention measures is the last form of response. Specifically, 54.6% of students chose to block the account so that the bully cannot contact him, but only 13.4% of students chose to delete their profile on the website where they were bullied.

**Discussion**

Cyberbullying at school age is on the rise and getting much attention from the community. Research results show that 45.1% of students are victims of at least one of the forms of online bullying during the last 12 months. This prevalence was higher than some previous studies which reported prevalence of 11% (Kowalski and
Limber, 2007) or prevalence of 21% (Patchin and Hinduja, 2010). However, a recent systematic review about the prevalence of cyberbullying indicated that the prevalence of cyberbullying victimization can vary significantly across different studies due to two main reasons, the inconsistency in measurement of cyberbullying (i.e. different studies used different definition) and the variation in the time period reporting cyberbullying (i.e. some studies used 30 days, some used 6 months, and some used last year (Selkie et al., 2016)). This study used the timeframe of 12 months and the measurement of cyberbullying from Patchin & Hinduja. The systematic review also confirmed that for timeframe of 12 months, the prevalence of cyberbully victim can range from 4.3% to 40.6% (Selkie et al., 2016). So the slightly higher rate of cyberbullying reported in this study may be due to the use of different assessments. This study used online survey form; the respondents of the study therefore are more likely to use Internet more frequently.

Previous studies had established a link between the use of the Internet and risk of cyberbullying victimization, and those students who use the Internet more appear to be at greater risk of experiencing at least some cyberbullying. For instance, one study reported that at least 3 hours of Internet use per day was associated with both cyberbully perpetrator and victim (Rice et al., 2015). Our study also confirmed this link by demonstrating a dose-response association between time of Internet usage and risk of cyberbullying victimization.

Our research also found that many students did not know good practices to cope with online bullying. Therefore, many people chose to bypass it, typically by not paying attention to it and ignoring it (58.8%) or dodging the culprit by blocking the account so that they can no longer be contacted (54.6%). The prevalence of adolescent knowing how to cope with online cyberbullying was low

\[\text{Table 1. Characteristics of study objects.}\]

| Characteristics | \(n = 215\) | % |
|-----------------|-----------|---|
| Gender          |           |   |
| Male            | 73        | 34 |
| Female          | 142       | 66.0 |
| Grade           |           |   |
| Grade 8         | 82        | 38.1 |
| Grade 9         | 17        | 7.9 |
| Grade 10        | 90        | 41.9 |
| Grade 11        | 17        | 7.9 |
| Grade 12        | 9         | 4.1 |
| Devices to access the Internet | | |
| Mobile phone    | 161       | 74.9 |
| Personal computer | 48     | 22.3 |
| Public computer  | 1         | 0.5 |
| Other           | 5         | 2.3 |
| Facebook        |           |   |
| Daily           | 168       | 78.1 |
| Occasionally    | 46        | 21.4 |
| Never           | 1         | 0.5 |
| Instagram       |           |   |
| Daily           | 123       | 57.2 |
| Occasionally    | 63        | 29.3 |
| Never           | 29        | 13.5 |
| Daily Internet time |       |   |
| Over 3 hours    | 96        | 44.7 |
| From 1–3 hours  | 99        | 46.0 |
| Under an hour   | 20        | 9.3 |

\[\text{Table 2. Forms of cyberbullying.}\]

| Forms of cyberbullying | Yes, \(n\) (%) | 95\% CI |
|------------------------|----------------|---------|
| Being called in slang words, made fun of, mocked on the Internet, via text messages | 67 (31.2) | (25.0–37.4) |
| Received rude or upsetting messages/photos | 24 (11.2) | (7.0–15.4) |
| Being isolated or detached from your online group | 22 (10.2) | (6.2–14.3) |
| Being spread false rumours of you on the Internet or by phone | 48 (22.3) | (16.8–27.9) |
| Being posted upsetting messages/photos/videos online about you | 17 (7.9) | (4.3–11.5) |
| Being threatened, stigmatized about your actions online or over the phone | 19 (8.8) | (5.0–12.6) |

CI, confidence interval.
Chi et al.

while the consequences of cyberbullying proven to be significant (Sampasa-Kanyinga et al., 2014). Cyberbullying can be anonymous and unlimited by time/place, so the victim feels escape is impossible. Cyberbullying can reach large number of audients quickly so the victim can feel more isolated (Bossler et al., 2012; Burton et al., 2013).

Thus, school and society need to have intervention dedicated to cyberbullying preventions, which help increasing level of awareness towards this issue as well as equip students with knowledge/practices on how to cope with this increasing form of bully.

All the results should be interpreted with consideration of study limitations. First, the study was conducted in Hanoi only so the research results can only reflect the situation in urban areas, mainly large cities with similar characteristics and conditions to Hanoi. Second, this study applied online survey; thus, the participants would have access to Internet, and their Internet usage may be higher compared to general population of adolescents.

Conclusion

Research shows that the prevalence of cyberbullying victimization in Hanoi was high, and student’s practices to cope with this new form of bullying were not efficient. Online time had dose-response association with risk of cyberbullying. More attention is needed to increase level of society/school awareness to prevent cyberbullying in Hanoi.

Acknowledgements

The authors are grateful to high school students in Hanoi for their acceptance to provide information to complete this study.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship and/or publication of this article.

ORCID iDs

Vu Thi Hoang Lan https://orcid.org/0000-0001-8528-357X
Nguyen Thuy Linh https://orcid.org/0000-0002-9233-1143

Table 3. Multivariate logistics model for the association between time of Internet usage per day and risk of being cyberbullied.

| Variable                                      | Coefficient | p value | OR    | 95% CI for OR |
|-----------------------------------------------|-------------|---------|-------|---------------|
| Gender (female vs. male)                      | -0.19       | 0.56    | 0.83  | 0.44          | 1.56          |
| Grade (high school vs. secondary school)      | 0.26        | 0.42    | 1.29  | 0.69          | 2.41          |
| Daily use of Facebook                        | 0.53        | 0.20    | 1.71  | 0.76          | 3.38          |
| Daily use of Instagram                       | 0.78        | 0.02*   | 2.18  | 1.16          | 4.11          |
| Time of Internet usage per day               |             |         |       |               |
| 1–3 hours vs. less than 1 hour               | 0.42        | 0.43    | 1.52  | 0.54          | 4.28          |
| 3 hours or more vs. less than 1 hour         | 1.01        | 0.05    | 2.76  | 1.00          | 7.78          |

OR, odds ratio; CI, confidence interval.
Italicized values are significant at *p < 0.05.

Table 4. Coping methods among students who have experienced cyberbullying.

| Form                                    | n = 215 | %   |
|-----------------------------------------|---------|-----|
| Sharing information                      |         |     |
| Share with parents and seek their advice| 23      | 23.7|
| Share with teachers and seek their advice| 8      | 8.2 |
| Seek advice from friends                | 59      | 60.8|
| Find advice online                      | 21      | 21.6|
| Report it to the page administrator     | 30      | 30.9|
| Using psychological means to overcome   |         |     |
| Think that it was actually nothing serious| 34     | 35.1|
| Think such things simply happen on the Internet| 31   | 32.0|
| Think that such things could not hurt you| 33     | 34.0|
| Decide to not pay attention to that and ignore it| 57 | 58.8|
| Think that it was only happening online, it wasn’t actually real| 9 | 9.3 |
| Retaliation                             |         |     |
| Do something similar or similar to that person over the Internet or phone| 11 | 11.3|
| Do something similar to that person in real life| 8 | 8.2 |
| Save evidence for revenge later         | 23      | 23.7|
| Circumvention                           |         |     |
| Removing the bully’s profile from the contact list| 22 | 22.7|
| Deleting your profile on the site you were bullied| 13 | 13.4|
| Blocking the account so the bully could not reach you| 53 | 54.6|
References

Ang RP and Goh DH (2010) Cyberbullying among adolescents: The role of affective and cognitive empathy, and gender. Child Psychiatry and Human Development 41(4): 387–397.

Bossler AM, Holt TJ and May DC (2012) Predicting online harassment victimization among a Juvenile population. Youth & Society 44(4): 500–523.

Burton KA, Florell D and Wygant DB (2013) The role of peer attachment and normative beliefs about aggression on traditional bullying and cyberbullying. Psychology in the Schools 50(2): 103–115.

Kowalski RM and Limber SP (2007) Electronic bullying among middle school students. The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine 41(6 Suppl. 1): S22–S30.

Lee C and Shin N (2017) Prevalence of cyberbullying and predictors of cyberbullying perpetration among Korean adolescents. Computers in Human Behavior 68: 352–358.

Machackova H, Cerna A, Sevcikova A, et al. (2013) Effectiveness of coping strategies for victims of cyberbullying. Cyberpsychology: Journal of Psychosocial Research on Cyberspace 7(3): 5.

Olweus D (1993) Bullying at School: What We Know and What We Can Do. Oxford: Blackwell.

Olweus D and Limber SP (2018) Some problems with cyberbullying research. Current Opinion in Psychology 19: 139–143.

Patchin JW and Hinduja S (2010) Cyberbullying and self-esteem. The Journal of School Health 80(12): 614–621; quiz 622–624.

Rice E, Petering R, Rhoades H, et al. (2015) Cyberbullying perpetration and victimization among middle-school students. American Journal of Public Health 105(3): e66–e72.

Sampasa-Kanyinga H, Roumeliotis P and Xu H (2014) Associations between cyberbullying and school bullying victimization and suicidal ideation, plans and attempts among Canadian schoolchildren. PLoS ONE 9(7): e102145.

Selkie EM, Fales JL and Moreno MA (2016) Cyberbullying prevalence among United States middle and high school aged adolescents: A systematic review and quality assessment. The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine 58(2): 125–133.

Smith PK, Mahdavi J, Carvalho M, et al. (2008) Cyberbullying: Its nature and impact in secondary school pupils. Journal of Child Psychology and Psychiatry, and Allied Disciplines 49(4): 376–385.