Cyberbullying and its associated factors among junior high school students in Hue city

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Abstract

Introduction: The rapid and widespread use of the Internet has created a foundation for the increase in cyberbullying behaviors among school-age children. Hence, comprehensive understanding factors influencing cyberbullying will contribute towards future health policy to improve adolescent health. **Objectives:** To describe the prevalence of being cyberbullying and its related factors among junior high school in Hue city. **Methods:** A cross-sectional study was conducted in 1082 junior high school students in Hue City in November 2022. Students participated in self-fulfilling out a prepared set of questions that included information on subject matter characteristics, Internet usage characteristics, family, living environment, and school issues, and used a cyberbullying scale to assess the prevalence of being cyberbullying. Logistics regression models were performed to identify the potential determinants of being cyberbullying. **Results:** The prevalence of being cyberbullying among junior high school in Hue city were 28.4%. The most common form of cyber-bullying is being made up, being gossiped about things that are not true online or over the phone (56.0%). Logistics regression analysis revealed that female (OR = 1.38; 95%CI: 1.02 - 1.89), level of being beaten by relatives from time to time or more (OR = 1.89; 95% CI:1.32 - 2.74), school bullying (OR = 4.49; 95% CI:3.18-6.36), Internet addiction (OR = 2.63; 95% CI: 1.64 - 4.24), having friends who are members of a school gang group (OR = 1.60; 95% CI: 1.13 - 2.30), that living area also occurs fight and quarels (OR = 1.41; 95% CI: 1.02 - 1.97), this area has many social catastrophes (OR = 1.62; 95% CI:1.20 - 2.20), playing with friends in the neighborhood who commit acts of catching others (OR = 1.72; 95%CI: 1.11 - 2.67) significantly associated with being cyberbullying. **Conclusion:** The prevalence of cyberbullying and its detrimental effects on students highlight the importance of collaboration between parents and schools. This can involve implementing strategies to promote responsible and fostering open communication to ensure students use the internet safely and constructively.

Keywords: cyberbullying, student, sIAT.

1. BACKGROUND

Bullying is an issue of concern in society, especially in the school environment. Rapid expansion of Information and communiations technology (ICT) which was 3.4 billion people were using the Internet globally and Vietnam was estimated to reach 65.7 million in 2021 [1] has brought with its a concerning increase in cyberbullying among school children. School bullying has existed for a long time, but cyberbullying is a pressing public health concern due to its close link to the behavior, mental health, and development of students in the digital age [2], [3].

Cyberbullying is the use of online platforms and digital communication tools to repeatedly intimidate, threaten, or cause harm to another person [4]. A poll was released that one in three young people in 30 countries said they have been a victim of online bullying, with one in five reporting having skipped school due to cyberbullying and violence by UNICEF

and the UN Special Representative of the Secretary-General (SRSG) on Violence against Children [5]. In Vietnam, 34.3% was the prevalence of at least one form of being cyberbullying reported by TVCong et al. [6]. Others in 2021 reported that this prevalence of cyberbullying was 36.5% [7].

Cyberbullying poses a serious threat to students' well-being, leaving them vulnerable to long-term issues like anxiety, insomnia, depression, and even suicide [8],[9]. Junior high school students are particularly vulnerable to cyberbullying due to the significant physical and psychological changes they experience during this time. They strongly desire fair treatment and, like adults, want privacy in certain areas of their lives. This makes it challenging for adults to monitor their use of technology and social media, hindering the recognition and timely intervention of cyberbullying. Determinants of cyberbullying are varied cross different settings.

A comprehensive understanding of the factors is crucial for planning targeted strategies for the development of health care and promotion activities. Vietnam has had a number of studies on cyberbullying, however within the scope of our search, studies conducted at junior high schools in Thua Thien Hue province are still limited. For all reasons mentioned, the aim of this study was to describe the prevalence of being cyberbullying and its related factors among junior high school in Hue city.

2. METHODS

2.1. Study setting: 4 randomized junior high in Hue city in November 2022.

2.2. Study participants:

A cross-sectional study was carried out in junior high school student, residing in Hue city. Exclusion criteria included the students/their parents refused to participate in the survey.

2.3. Sample size and sampling:

The sample size was calculated by using the formula to estimate population ratios:

$$n = Z^2_{(1-\alpha/2)} \frac{p*(1-p)}{d^2}$$

With α = 0.05, $Z^2_{(1-\alpha/2)}$ = 1.96, d = 0.05, p = 0.365 [6].

Since the cluster sampling method is used during the sampling process, therefore, the sample size is multiplied by a design factor of 2.5. Plus 10% of the sample size to prepare for missing data or case refusals. Therefore, the minimum sample size for the study was 979 students. In fact, the study was conducted on 1082 students (response rate 93.11%).

The participants were recruited based on a multi-stage random sampling method. There is total 40 junior high schools in Hue city. In the initial stage, four schools were randomly selected among 40 schools in Hue city. In the second stage, 245 students (from 7th grade to 9th grade) were randomly selected in chosen schools after which a list of students in each school was made. Finally, using PPS sampling, we randomly selected students. The final sample study was 1082 participants.

2.4. Measurement instruments

The seft-reported questionnaire was divided into four parts: socio-demographic characteristics, Internet usage characteractic and family and environmental factors and scale to identify being cyberbullying.

Demographic and socioeconomic characteristics were identified via the questionnaire including age (year of birth), sex (men and women), living arrangement and economic status, academic achivement. Household economic condition was categorized into poor, sub-poor and medium and above by using the national poverty line for urban areas.

A cyberbullying scale was used to assess the level of experience as a victim of cyberbullying in the previous 30 days. This cyberbullying scale adapts the original work of Patchin and Hinduja (USA) with selected items and additional elements, providing a tool to measure respondent experiences across six distinct forms of online bullying [4], [15] with Cronbach alpha was 0.74. The following items were included in this survey: (1) being called mean names/teased in a hurtful way; (2) being sent rude messages/pictures; (3) being left out/ignored by a group of friends; (4) having lies or rumors spread about you; (5) being put online the messages/photos/video about you; and (6) being threatened through communication technologies (cellphone, computers, email, and the Internet.). The possible responses to these questions were "never," "once or twice," "a few times," "many times," or "every day." The final response regarding cyberbullying was recorded as a "yes" for an answer of at least once for any experience of cyberbullying or "no" for an answer indicating no experience.

Internet addiction variable was used the s-IAT scale developed by Pawlokowski et al. to assess the level of Internet addiction includes 12 questions rated on a 5-point Likert scale from 1 (rarely) to 5 (always). The cut-off point of this scale was 36 to acess the group of Internet addiction. The Vietnamese version of s-IAT is a valid and reliable instrument to assess IA in Vietnamese population with a Cronbach's alpha of 0.87 [10].

Family and enviromental factors was accessed by seft-developed questionnair.

2.5. Data analysis

Data were summarized using frequency and percentage for categorical data. Chi-square test was performed to compare the differences of characteristics between Students with and without being cyberbullying. Logistics regression model was used to examine the association between the dependent variable (being cyberbullying) and the independent variables with 95% confidence interval. All statistics significance level was set at 0.05. Data analysis was performed on SPSS 20.0.

2.6. Ethical considerations:

The research was authorized by the Scientific Council of the University of Medicine and Pharmacy,

Hue University (Decision No. 3695/QĐ-DHYD). The general information of the study was given to each participant with verbal briefing and explained on the first page of the questionnaire. All the enrolled participants agreed to cooperate with the investigators after the purpose of the research was explained.

All participants' identities remained secured and anonymous by using ID numbers.

3. RESUTLS

Of a total of 1082 junior high school students, the study included more women (50.8%) than men (49.2%). More than 85% of students achieve good academic performance and maintain good conduct classification. Additionally, the majority (85.7%) live with both parents. More than half (58.5%) of students spend at least 2 hours per day to using Internet. The prevalence of Internet addition was 9.2%. (Table 1)

Table 1. Demographic characteristics of participants (n = 1082)

Characteristics		n	%
Sex	Men	532	49.2
	Women	550	50.8
Academic performance	Very good and above	485	44.8
	Good	445	41.1
	Average	152	14.0
Conduct classification	Excelence	882	81.5
	Good	147	13.6
	Average	53	4.9
Living situation	Parents	927	85.7
	Only fathers or mothers	111	10.3
	Neighbor	31	2.9
	Brothers/sisters	13	1.2
Household economic condition	Medium and above	992	91.7
	Sub-poor	51	4.7
	Poor	39	3.6
Internet addiction	Yes	100	9.2
	No	982	90.8
Frequency of Internet using	No	7	0.6
	Less than 2 hours/day	442	40.9
	At least 2hours/day	633	58.5
Total		**1082**	**100.0**

Table 2. Situation of being cyberbullying among junior high school in Hue (n = 1082)

Being Cyberbullying	Men n (%)	Woman n (%)	Total n (%)
Yes	133 (25.0%)	174 (31.6%)	307(28.4%)
No	399(75.0%)	376(68.4%)	775(71.6%)
Total	**532**	**550**	**1082**

Table 2 highlights the prevalence of being cyberbullying as over a quarter (28.4%) of students experience it. The prevalence of being cyberbulying among women was higher than that among men (31.6% vs 25.0%)
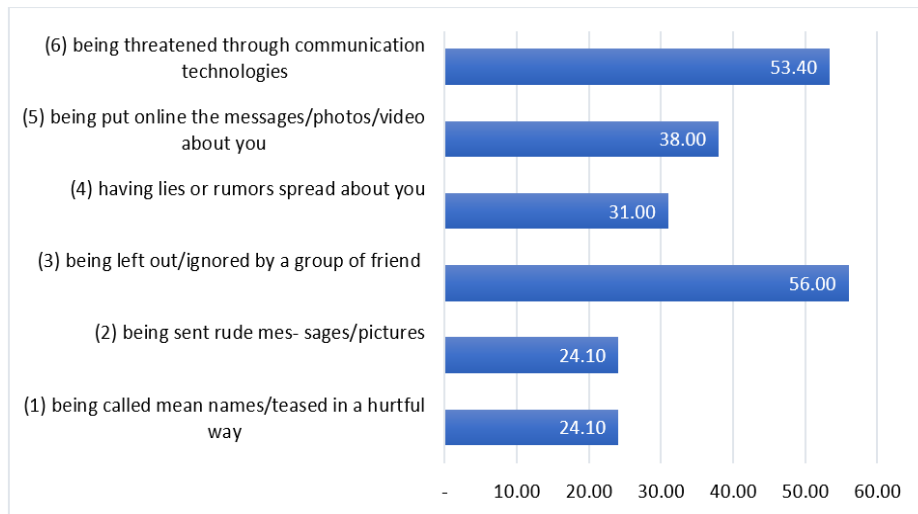
Figure 1. Prevalence of six distinct forms of being cyberbullying

According to Figure1, the most common form of cyberbullying (56.0%) involves students being threatened through communication technologies.

Table 3. Associations between participants' characteristics and being cyberbullying via multivariate logistics regression analysis (n = 1082)

Independent variables		Being cyberbullying		
		AOR	95% CI	p
Sex	Men	1	-	0.040
	Woman	1.385	1.015 - 1.890	
Frequence of being scolding	Never/Rarely	1	-	0.001
	Often/always	1.897	1.321 - 2.725	
Having bad friend	No	1	-	0.009
	Yes	1.609	1.127 - 2.298	
Fighting in living area	No	1	-	0.039
	Often/always	1.417	1.018 - 1.970	
Social's vices in living area	No	1	-	0.002
	Often/always	1.625	1.200 - 2.200	
Internet addiction	No	1	-	< 0.001
	Yes	2.635	1.637 - 4.242	
Being school bullying	No	1	-	< 0.001
	Yes	4.496	3.177 - 6.361	
Had neighbor having violent behavior	No	1	-	0.015
	Yes	1.721	1.110 - 2.670	

The logistics regression models included variables that significantly differentiated the studied population in terms of being cyberbullying. Table 3 represents the findings from logistics regression models on being cyberbullying and its potential factors among junior high school. The model shows men (aOR = 1.39, 95% CI: 1.02 - 1.89), often/always being scolding (aOR = 1.90, 95% CI: 1.32 - 2.73), had bad friends (aOR = 1.61, 95% CI: 1.23 - 2.30), having fighting in living area (aOR = 1.42, 95% CI: 1.02 -

1.97), having social's vices in living area (aOR = 1.63, 95% CI: 1.20 - 2.20), had Internet addiction (aOR = 2.64, 95% CI: 1.64 - 4.24), being school bullying (aOR = 4.50, 95% CI: 3.18 - 6.36), and had neighbor having violent behavior (aOR = 1.72, 95% CI: 1.11 - 2.67) were prone to being cyberbullying.

4. DISCUSSION

The findings from the present study carried out on 1082 junor high school in Hue city showed prevalence of being cyberbullying among the students (28.4%). Additionally, gender, Internet addiction, school bullying, some factors in family and living enviroments were identified to be associated with being cyberbullying.

Our result presented that the prevalence of being cyberbullying in this study was higher than those in Vietnam, which were 13.5% in Thua Thien Hue and Can Tho [11]. The development of the internet and electronic devices in recent years has likely contributed to the rise of online violence among students. Increased internet access and usage may make students more vulnerable to these experiences.

On the contrary, our research results (36.5%) was lower than the results of research on middle and high school students in Ho Chi Minh City in 2020 [6]; in Long An in 2017 was 40.7%. The reason may be from different assessment tools. The prevalence of being cyberbullying in this study compared to studies conducted in some other countries is not completely equivalent due to the use of different measurement scales. There was lower than results conducted in Majorca (Spain) [19], in China, over 2590 students was 44.5% [17]. Compared with the reseach by Nagata et al. in the United States in 2022, which surveyed 9,429 students aged 11 - 12 years old [12]. These findings highlight a concerningly high prevalence of bullying in Vietnam. While students are the ones who use and are greatly influenced by the Internet, especially during the transition of learning to online during the COVID-19 epidemic. The Internet presents two key governance challenges: regulating online content and promoting responsible use of time online.

The most common forms of cyberbullying include spreading rumors online or over the phone (56%) and being called slang names or made fun of (53.4%). These behaviors can seriously damage a victim's reputation. While some teasing among students is normal, repeated and intentional hurtful behavior can have a devastating impact on the person being bullied. Meanwhile the study conducted by Pham Thi Thu Ba et al. in 2016 [10] found that students were frequently bullied through nicknames, teasing, and online or phone harassment which was the most common form (17.6%). This rate was lower than our results, this difference may be due to subjects, sample size.

Factors associated between participants' characteristics and being cyberbullying

The multivariate logistics regression model demonstrated sex, Internet addiction, school bullying, some factors in family and living enviroments were important risk factors.

Women was associated with being cyberbullying compared to men. It is possible that girls are considered the weaker, then, it was eay to become subjects of being cyberbullying. This result is similar to Nagata Jason M 's research, in detail that the rate of men becoming victims of cyberbullying was lower than women (aOR = 0.80; 95%CI: 0.68 - 0.94) [12]. Biswas et al.'s study also found a statistically significant association that women have a significantly higher risk of being cyberbullying than men (RRR = 1.1; 95% CI: 1.00 - 1.11) [2].

Studies have found a significant link between students who are frequently scolded or physically disciplined by relatives and an increased risk of cyberbullying (OR = 1.89; 95%CI: 1.32 - 2.73). In fact, research by Nguyen Thanh Thoang indicates that these students are nearly twice as likely to face online harassment (p < 0.05) [13]. Violence and strained family relationships can lead children to become withdrawn and isolated. This isolation may cause them to seek connection online, where they become more vulnerable to cyberbullying. Therefore, it's crucial for families to adopt positive parenting methods and avoid excessive scolding or physical punishment to minimize the chances of online bullying.

Friendship plays a significant role in students' lives, and conflicts within friend groups can leave students vulnerable to online bullying. Research indicates that strained friendships significantly increase the risk of cyberbullying and even self-harm (RRR = 1.42; CI: 95% 1.29 - 1.56) [2]. To address this issues, parents, teachers, and schools should foster positive group experiences and activities. This helps strengthen student relationships, builds essential skills, and can potentially reduce the risk of cyberbullying.

Research indicates that students living in areas with frequent social problems like fighting were

more likely to experience being cyberbullying. Compared to their peers in safe areas, they have a 1.63 times higher chance (OR = 1.63, 95%CI: 1.20 - 2.20). Similarly, those who encounter occasional social challenges are also at increased risk 1.41 times than others (OR = 1.42, 95%CI: 1.02 - 1.97). This highlights the significant impact of the social environment on being cyberbullying, as confirmed by Duong Thi Huynh Mai's research [7]. Social evils, including fighting and low educational attainment, can negatively impact students both within the school and online, raising their vulnerability to mental health concerns.

Our research shows a strong connection between Internet addiction and victim of cyberbullying. Students with internet addiction were 2.64 times more likely to experience being cyberbullying compared to those without addiction (OR = 2.64, 95%CI: 1.64 - 4.24). This finding aligns with other studies, such as one by Duong Thi Huynh Mai et al. [7] which found that internet-addicted students were 1.71 times more likely to develop being cyberbullying than their non-addicted peers (p < 0.05). Additionally, research suggests a link between internet addiction and increased risk of cyberbullying [14]. Students with internet addiction may withdraw from real-life relationships and spend more time online, potentially exposing them to harmful online interactions. Therefore, it's crucial for parents and schools to work together to educate students about responsible internet use and help them maintain healthy relationships. This collaborative effort can help mitigate the risks associated with internet addiction and promote positive mental health.

Our research identified a concerning trend that students who have experienced traditional bullying at school were 4.50 times more likely to be victims of cyberbullying compared to those who havenot (OR = 4.50, 95%CI: 3.18 - 6.36). This highlights the unfortunate reality that bullying doesnot stop at the schoolyard. The online environment, often difficult to control, can further amplify the challenges faced by these students, making it more complex to deal with and resolve the issue.

This study had some limitations. Firstly, the use of self-reported data through questionnaires can introduce bias due to potential issues with recall and social desirability. Secondly, the cross-sectional design limited our ability to establish causal relationships between variables. This design allows us to observe associations at a single point in time, but cannot definitively demonstrate that one variable causes the other. Thirdly, the focus on students experiencing being cyberbullying, excludes both perpetrators and individuals who experience both cyberbullying and victim of cyberbullying. All of them limited our understanding of the complex interactions between these variables. Then, future research will investigate adolescent coping behaviors in response to cyberbullying.

5. CONCLUSION

The findings from the present study carried out on 1082 junor high school in Hue city showed prevalence of being cyberbullying among the students (28.4%) Additionally, gender, Internet addiction, school bullying, some factors in family and living enviroments were identified to be associated with being cyberbullying. These findings suggest that intervention programs should be developed to address the growing trend of cyberbullying and mitigate its negative impact on students' physical and mental well-being.

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