Original Article

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Links to Cyberbullying of Risky Online Behavior and Social Media Addiction among Students in Grades 7–9 in Bangkok

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Abstract:

Objective: This present study examined the connections regarding cyberbullying, risky online behavior and social media addiction, among 7th–9th grade students in Bangkok; Thailand.

Material and Methods: A cross-sectional survey was conducted, using a self-report questionnaire consisting of: demographic data, cyberbullying, risky online behavior and the Social Media Addiction Screening Scale (S-MASS), involving 3,667 students.

Results: Cyberbullying involvement was significantly associated with almost all risky online behaviors. The three riskiest behaviors, according to the odds ratios, were disclosing personal information (odds ratio (OR)=3.7, 95% confidence interval (CI) [2.7, 5.1]), making appointments to meet with online strangers (OR=3.0, 95% CI [2.1, 4.2]), and having conversations with online strangers (OR=2.6, 95% CI [2.3, 3.0]). Additionally, cyberbullying involvement exhibited a strong association with the high-risk category of social media addiction (OR=4.4, 95% CI [3.3, 5.8]). Furthermore, all subgroups of cyberbullying, including cyber-victims, cyberbullies, bystanders and the combined subgroups, demonstrated associations with almost all risky online behaviors. Moreover, the high risk category of social media addiction, with the combined subgroup, exhibited the highest odds ratio.

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Conclusion: Cyberbullying involvement was found to be associated with risky online behavior and social media addiction among middle school students in Bangkok.

Keywords: adolescent, cyberbullying, internet addiction disorder, risk-taking, Thailand

Introduction

Since cyberbullying became a significant issue, following a teenage victim's suicide in the United States in 1990, it is still a progressing social and medical challenge; especially given the inevitable dependency on online activities. Recently in 2023, the term: 'cyberbullicide' has just been addressed in the American Academy of Psychiatry and the Law to raise concerns of increasing adolescent's suicide cases related to cyberbullying[1].

Prominent areas of cyberbullying investigation include: prevalence, predictive factors, impacts on different domains of well-being, and effectiveness of interventions. Findings in each area vary across cultural contexts, time, population, and measurement tools. More studies have been conducted in Western or developed countries than in Eastern or developing countries[2,3]. Hence, continuing efforts in academic and implementational research is crucial for cyberbullying prevention and mitigation.

Bullying is defined as: occasions where the perpetrators willingly create hurtful experiences upon victims, verbally, physically, or socially. Several forms of traditional bullying are observed; for instance, calling others mean names, teasing in hurtful ways, kicking, pinching, exclusion from groups, and spreading of false rumors, so that victims are viewed negatively or are disapproved by peers: such occasions usually present in a repeated manner[4-7]. Cyberbullying, sometimes recognized as a subset of bullying, is defined as bullying that occurs online, frequently on social networking sites and gaming platforms. Forms and scale of insults are central to cyberbullying's uniqueness from traditional bullying. In addition to verbal language, perpetrators can use embarrassing pictures or videos to make fun of or spread false information about their victims[4,6,7]. Social networking sites also allow perpetrators to easily tap into victims' personal information to use against the victims themselves. Not only does the repetition remain prominent in cyberbullying, rude comments, false information and embarrassing medias stay and get shared, without social boundaries, in a short period of time. Therefore, cyberbullying can cast more hurtful experiences and more severe negative impacts on victims[4,7].

The prevalence varies across studies; yet it is showing an upward trend, especially during the coronavirus disease 2019 (COVID-19) pandemic. A systematic review published in 2015, found that 6.5% to 35.4% of adolescents were associated with cyberbullying[2]. Later in 2017, another systematic review showed a wider range of cyberbullying victimization from 1.0% to 61.1% as well as the perpetration rate; which was 3.0% to 39.0%[8]. Recent studies have found an increase in cyberbullying prevalence during the COVID-19 pandemic in some countries. For instance, studies from China reported a 70.0% increase in cyberbullying among children. In European countries, 44.0% of pre-pandemic cyberbullying victims reported an increase in the severity of cyberbullying during the pandemic. In contrast, a recent Canadian study report a reverse trend of 17.0% reduction in cyberbullying during the pandemic[9,10]. This could lead to interesting discoveries and hints for effective cyberbullying intervention.

Many risk factors, both demographic and psychological, have been reported to be associated with cyberbullying in adolescents[11]. Peer influence can increase the

rate of risky online behavior; additionally, low academic achievement has been found to be associated with both being a cyberbully and a victim of it. However, the associations between cyberbullying and other demographic factors; including gender, age, ethnicity and socio-economic status, are inconclusive. Regarding psychological factors, low self-esteem is associated with being a cyber-victim. Moreover, depression and suicide are related to and also predictive of being a cyber-victim, in addition to a lack of empathy being related to and also predictive of being a cyberbully. Self-image has also been associated with being a cyber-victim; for example, obesity in girls and "looking" gay in boys. Problematic internet use is another factor associated with cyberbullying, and this involves the bullies themselves, as well as cyber-victims and cyberbully-victims[12].

Previous studies indicated that risky online behavior was associated with cyberbullying involvement, including cyberbullies, cyber-victims, and cybervictim-bullies among adolescents[13-17]. Specifically, posting personal details was associated with cyberbullies and cyber-victims[14,17]. Furthermore, sharing passwords with others was associated with cyberbullies, cyber-victims, and cybervictim-bullies[15,16]. Moreover, accepting friend requests from strangers and meeting face-to-face with an online stranger were associated with cyber-victims[15,17], while contacting online friends to meet in person was associated with cyberbullies[14]. Although several studies have examined the association between risky online behavior and cyberbullying, most studies have focused on only a few risky online behaviors and some subgroups, mainly cyberbullies and cyber-victims.

In terms of social media addiction, many studies support positive correlations between internet addiction, cyberbullying perpetration and cybervictimization[18-21]. Studies also suggest that problematic internet use and smartphone addiction tend to predict cyberbullying perpetration[22,23]. Some studies established that one's time spent online using social media is associated with cyberbullying involvement, including perpetration, victimization, and by-standing[24,25], as well as that participating in more social networking sites is associated with increased cyberbullying involvement over time[26]. In addition, social media has been shown to have a stronger effect on both cyberbullying perpetration and cyber-victimization than other media platforms, including the internet and electronic media[13]. Furthermore, problematic social media use has been associated with cyberbullying perpetration[27]; hence, these previous findings suggest that social media addiction may be associated with cyberbullying involvement. However, only a few studies have examined the associations between social media addiction, or problematic social media use and cyberbullying.

Due to the limited number of studies on the associations between various risky online behaviors and each cyberbullying subgroup, particularly bystanders, as well as the scarcity of research on the connections between social media addiction and cyberbullying, this study aimed to examine the associations between various risky online behaviors and each subgroup of cyberbullying. These subgroups include cyberbullies, cyber-victims, bystanders, and combined subgroups. Additionally, this study sought to explore the associations between social media addiction and each subgroup within cyberbullying, encompassing: cyberbullies, cyber-victims, bystanders, and combined subgroups.

This study focused on middle school students because the highest frequency of cyberbullying victimization occurred in 7th and 8th grades[28], and victims of cyberbullying experienced poor mental health, psychological distress, suicidal ideation, and suicidal attempts more frequently in middle school than in high school[29]. Data were collected from schools in Bangkok, due to adolescents in urban areas having greater access to the internet and social media compared to adolescents in rural areas.

Material and Methods

Participants

This survey was conducted among students from nine public secondary schools in Bangkok; including five co-educational schools and two boys' schools and two girls' schools; from November to December 2017. The schools were selected using a convenient sampling method based on their collaboration with Siriraj Hospital in school mental health programs. To be eligible for the study, students had to be in grades 7-9 at the time of data collection and to be able to understand Thai. Students who refused to participate in the study or did not complete the questionnaire were excluded. The research assistants promoted the research project by visiting every grade 7-9 classroom in each school. Subsequently, they distributed quick response (QR) codes of the questionnaire to all students for scanning and completion within the classroom: all students had mobile phones.

Sample size was calculated by the formula for estimating a finite population proportion[30]:

$$n = \frac{Np(1-p)z^2_{1-\frac{\alpha}{2}}}{d^2(N-1)+p(1-p)z^2_{1-\frac{\alpha}{2}}}$$

Population size (N)=the number of students in grades 7-9 in Bangkok=1,200,973[31].

Proportion (p)=the prevalence of cyberbullying among Thai youth=8.1%[32].

Error (d)=1%

Alpha (a)=0.05

Thus, the calculated sample size was 2,853 people, with an allowance for 10% incomplete data, resulting in a final sample size of 3,138 people.

Materials

The questionnaire in this study was self-reported and consisted of four sections. Focus-group questionnaire testing was conducted by one of the authors, who holds a master's degree in Child Psychology and has experience in group interviewing, with ten 7th-9th graders, comprising both male and female students from one of the participating schools to ensure a coherent and reliable understanding of the phenomena. Once consolidated, the questionnaire was prepared.

Section 1: demographic data

Section 2: risky online behavior

This section aimed to collect general information concerning internet and social network use, in terms of the frequency, duration, purpose, privacy, and encounters with strangers, so as to find the correlations among these things and cyberbullying.

Section 3: cyberbullying

There were five parts in this section.

1. In-person bullying experiences within the past six months: Participants rated frequency of being bullied in person in different ways as: "never", "less than once a week", "more than once a week", and "almost every day".

2. Cyberbullying experiences within the past six months: Participants were asked whether they had encountered cyberbullying, which was defined as: "cyberbullying is when someone repeatedly makes fun of another person online or repeatedly picks on another person through email or text messages, or when someone posts something online about another person that they do not like." Responses were categorized into four ranges: 1) not at all, 2) less than once a week, 3) more than once a week, and 4) almost every day. Specific questions to categorize participants as bullies or victims were: "How often did you commit cyberbullying in the past six months?" and "How often did you get cyber-bullied in the past six months?" Responses falling into ranges 2-4, determined if the participants were cyberbullies and/or cyber-victims. Participants who shared or "liked" when noticing messages, pictures, or video clips of others being cyberbullied were categorized as bystanders.

3. Factors involving cyberbullying: participants were asked to rate the frequency of risky behaviors online in three categories: revealing personal information, interacting with online strangers, and breaking online privacy.

4. Consequences of cyberbullying: participants responded "yes" or "no" to consequence items, which include emotional (e.g., anger, depressed, rage) and behavioral (e.g., school absence, insomnia) consequences.

5. School environment factors: participants were asked to rate their perceptions towards safety and support at school e.g., feeling enjoyment at school, feeling secure at school, being rescued by teachers when being bullied, and getting extra academic support when needed.

Section 4: The Social Media Addiction Screening Scale (S-MASS)

S-MASS, a self-reported test developed by Chanpen et al. in 2014, measures the level of social media addiction, and classifies responders into three levels: having a low risk, moderate risk, or high risk of addiction. S-MASS's Cronbach's alpha is 0.90[33].

Procedure

All eligible students were approached and informed about this study, either in their class or in their monthly grade assembly by the investigating team. The students that provided consent then received the questionnaire and a short description of what cyberbullying means in this questionnaire.

Data were analyzed using Statistical Package for the Social Science 18 for Windows, adopting a 95% (p-value≤0.05) significance level. For prevalence, which is descriptive analysis, the mean and standard deviation were calculated by using the chi-square and ANOVA tests. The statistical significance of risk factors on the outcome variables was tested with a logistic regression analysis. For categorical variables that had more than two items, a multinomial logistic regression analysis was calculated.

Ethic approval

Ethics approval was obtained from the Siriraj Institutional Review Board: certificate of approval number Si 018/2017.

Results

Demographic data (Table 1)

Table 1 Demographic data

Demographic Data	N (%)
Gender	
Male	1,776 (48.4)
Female	1,891 (51.6)
Age (years)	
M=13.4, S.D.=1.0, Median=13.0	
<13 years	670 (18.3)
13-14 years	2,451 (66.8)
>14 years	546 (14.9)
Grade	
7^{th}	1,159 (31.6)
8^{th}	1,147 (31.3)
9^{th}	1,361 (37.1)
School type	
Co-educational schools	1,039 (28.3)
Boys' schools	1,367 (37.3)
Girls' schools	1,261 (34.4)
Living arrangement	
Living with father	3,020 (82.4)
Living with mother	3,282 (89.5)
Living with grandparents	1,283 (35.0)
Living with other relatives	898 (24.5)
Frequently-used social media platforms	
YouTube	3,036 (82.8)
Line	3,013 (82.2)
Facebook	2,731 (74.5)
Instagram	1,814 (49.5)
Twitter (X)	888 (24.2)
Others	262 (7.1)
Average daily use of social media (hours)	
M=4.8, S.D.=3.3, Median=4.0	
Cyberbullying involvement	
Involved	2,243 (61.1)
Cyberbullies-only	192 (5.2)
Cyber-victims-only	282 (7.7)
Bystanders-only	478 (13.0)
Combined type	1,291 (35.2)
Not involved	1,424 (38.8)

The response rate was 70.9%. Among a total of 3,667 survey respondents: 48.4% were male, and the mean age was 13.4 years old. Of all the respondents, 38.8% reported no involvement in cyberbullying, 7.7% were cyber-victims only, 5.2% were cyberbullies only, 13.0% were bystanders only, and 35.3% were involved in more than one type of cyberbullying (the combined group).

Cyberbullying behavior

In the six months before the survey, 37.8% of the respondents had been cyberbullied (victims only and combined), while 34.6% had cyberbullied others (bullies only and combined). The frequently reported means of cyberbullying in both groups included: making fun of people's names and ignoring and/or editing photos to make them look shameful. Most of the cyber-victims reported negative consequences of being cyberbullied; including anger (64.9%), feeling depressed and anxious (46.8%), and having an urge to get revenge (37.7%). In addition, 39.1% of the respondents shared or "liked" when noticing messages, pictures, or video clips of others being cyberbullied.

Risky online behavior (Table 2)

The studied adolescents reported very high rates of risky online behavior including revealing personal information, interacting with strangers, and breaking online privacy. it was found that almost all of the risky online behavior was associated with cyberbullying involvement. The highest odds ratio for each behavior, except making appointments online to meet with strangers, was in the combined subgroup.

Social media addiction (Table 3, Figure 1)

It was found that 15.9% of the adolescents were in a high-risk group for social media addiction, while 46.2% were in a moderate-risk group. The adolescents in both the moderate-risk and high-risk groups were associated with cyberbullying involvement. Specifically, adolescents in the high-risk group were associated with every subgroup of cyberbullying, while those in the moderate-risk group were associated with only bystanders and the combined subgroups. When examining the mean social-media-addiction screening scale scores in each group of cyberbullying, it was found that the scores increased from the cyberbullies subgroup – to the cyber-victim subgroup – to the bystander subgroup – to the combined subgroup in a linear fashion.

Discussion

Risky online behavior and its association with cyberbullying involvement

The rates of several risky online behaviors in this study are comparable to those in previous studies. For example, the rates of adolescents using their real first and last name, having online "friends" they did not actually know, and meeting up with strangers were 81.2%, 55.8%, and 6.4% in this study. This was similar to 71.3%, 59.9%, and 8.7% in an Italian study (Vismara et al., 2017), respectively. The rate of sharing device-accessing passwords with others was 48.0% in this study, whilst in a Canadian study it was 32.1%[16]. This suggests that risky online behavior among adolescents is prevalent across both regions and cultures.

The finding that most of the studied risky online behavior, particularly involving revealing personal information on social media and interacting with online strangers, is associated with cyberbullying involvement, which is in line with the basic conclusion of previous studies[14–17]. The additional behaviors that were found to be associated with cyberbullying involvement in this study included tending to always believe that online news was true and letting others use one's device while still logged in on one's social media account. In addition to leaving one's social media accounts logged in after using public computers and not always turning on privacy settings. This indicates that any behavior leading to breaking online privacy – is not limited to sharing passwords with others as reported in previous studies[15,16], and is associated with cyberbullying involvement.

Table 2 Association of risky online behaviors and cyberbullying involvement

Risky online behavior	N (%)	Cyberbullying involvement (N=2,243) OR (95% CI)	Cyber-victims (N=282) OR (95% CI)	Cyberbullies (N=192) OR (95% CI)	Bystanders (N=478) OR (95% CI)	Combined (N=1,291) OR (95% CI)
Revealing personal information						
Personal-information disclosure	3,476 (94.8)	3.7 (2.7, 5.1)**	2.3 (1.3, 4.2)**	2.1 (1.0, 4.2)*	2.0 (1.3, 3.2)**	8.7 (5.1, 14.9)**
Recording videos of yourself and then posting them on social media	1,196 (32.6)	2.5 (2.2, 2.9)**	1.9 (1.4, 2.5)**	1.9 (1.4, 2.7)**	2.1 [1.7, 2.7)**	3.0 (2.5, 3.5)**
Using your real image as a profile picture	3,174 (86.6)	2.2 (1.9, 2.7)**	2.2 (1.4, 3.3)**	0.9 (0.6, 1.3)	2.3 (1.6, 3.1)**	2.8 (2.2, 3.6)**
Interacting with online strangers						
Making appointments online to meet strangers	234 (6.4)	3.0 (2.1, 4.2)**	2.3 (1.3, 4.0)**	3.7 (2.1, 6.5)**	1.6 (1.0, 2.7)	3.6 (2.5, 5.1)**
Having conversations with online strangers	1,719 (46.9)	2.6 (2.3, 3.0)**	1.9 (1.5, 2.5)**	1.9 (1.4, 2.6)**	2.1 (1.7, 2.6)**	3.2 (2.7, 3.7)**
Accepting friend requests from strangers	2,205 (60.1)	2.3 (2.0, 2.7)**	1.6 (1.2, 2.0)**	1.5 (1.1, 2.0)**	2.5 (2.0, 3.1)**	2.7 (2.3, 3.2)**
Your social media "friends," including strangers	2,048 (55.8)	2.1 (1.8, 2.4)**	1.4 (1.1, 1.8)*	1.6 (1.2, 2.1)**	1.9 (1.6, 2.4)**	2.6 (2.2, 3.0)**
Breaking online privacy						
Letting others use your device while still logged in on your social media accounts	2,381 (64.9)	2.5 (2.2, 2.9)**	1.4 (1.1, 1.8)*	2.3 (1.6, 3.1)**	1.8 (1.4, 2.2)**	3.6 (3.0, 4.2)**
Tending to always believe that online news is true	3,480 (94.9)	2.2 (1.6, 3.0)**	1.4 (0.8, 2.3)	1.1 (0.6, 2.0)	2.2 (1.3, 3.7)**	3.0 (2.0, 4.5)**
Leaving your social media accounts logged in after using public computers	1,026 (28.0)	1.9 (1.6, 2.2)**	1.7 (1.3, 2.3)**	1.0 (0.7, 1.4)	1.7 (1.4, 2.2)**	2.2 (1.9, 2.6)**
Letting others know your device-accessing passwords	1,759 (48.0)	1.3 (1.2, 1.5)**	1.4 (1.1, 1.8)*	1.2 (0.9, 1.6)	1.1 (0.9, 1.4)	1.5 (1.3, 1.7)**
Not knowing how to enable privacy settings	728 (19.9)	0.6 (0.6, 0.8)	0.7 (0.5, 1.0)	0.6 (0.4, 0.8)	0.8 (0.6, 1.1)	0.6 (0.5, 0.7)
Not always having your privacy setting turned on, even though you know how to set it up	1,503 (41.0)	1.2 (1.1, 1.4)**	1.0 (0.8, 1.4)	1.2 (0.9, 1.7)	1.2 (1.0, 1.5)	1.3 (1.1, 1.5)**
Not knowing how to remove your name tags from photos	1,080 (29.5)	0.5 (0.4, 0.5)	0.7 (0.5, 0.9)	0.7 (0.5, 0.9)	0.6 (0.4, 0.7)	0.4 (0.3, 0.4)

CI=confidence interval, *p-value<0.05, **p-value<0.01

Table 3 Associations between social media addiction and cyberbullying involvement

S-MASS	Total (N=2,222) N (%)	Cyberbullying involvement (N=1,268)		Cyber-victims (N=181)		Cyberbullies (N=114)		Bystanders (N=271)		Combined (N=702)	
		N (%)	OR (95% CI)	N (%)	OR (95% CI)	N (%)	OR (95% CI)	N (%)	OR (95% CI)	N (%)	OR (95% CI)
Low-risk	843 (37.9)	366 (28.8)	(ref)	78 (43.1)	(ref)	45 (39.5)	(ref)	84 (31.0)	(ref)	159 (22.6)	(ref)
Moderate-risk	1,026 (46.2)	630 (49.7)	2.1 (1.7, 2.5)**	78 (43.1)	1.2 (0.9, 1.7)	49 (43.0)	1.3 (0.9, 2.0)	140 (51.7)	2.0 (1.5, 2.7)**	363 (51.7)	2.7 (2.2, 3.5)**
High-risk	353 (15.9)	272 (21.5)	4.4 (3.3, 5.8)**	25 (13.8)	1.9 (1.1, 3.1)*	20 (17.5)	2.6 (1.5, 4.7)**	47 (17.3)	3.3 (2.1, 5.1)**	180 (25.6)	6.7 (4.9, 9.2)**

S-MASS=Social Media Addiction Screening Scale, CI=confidence interval, *p-value<0.05, **p-value<0.01

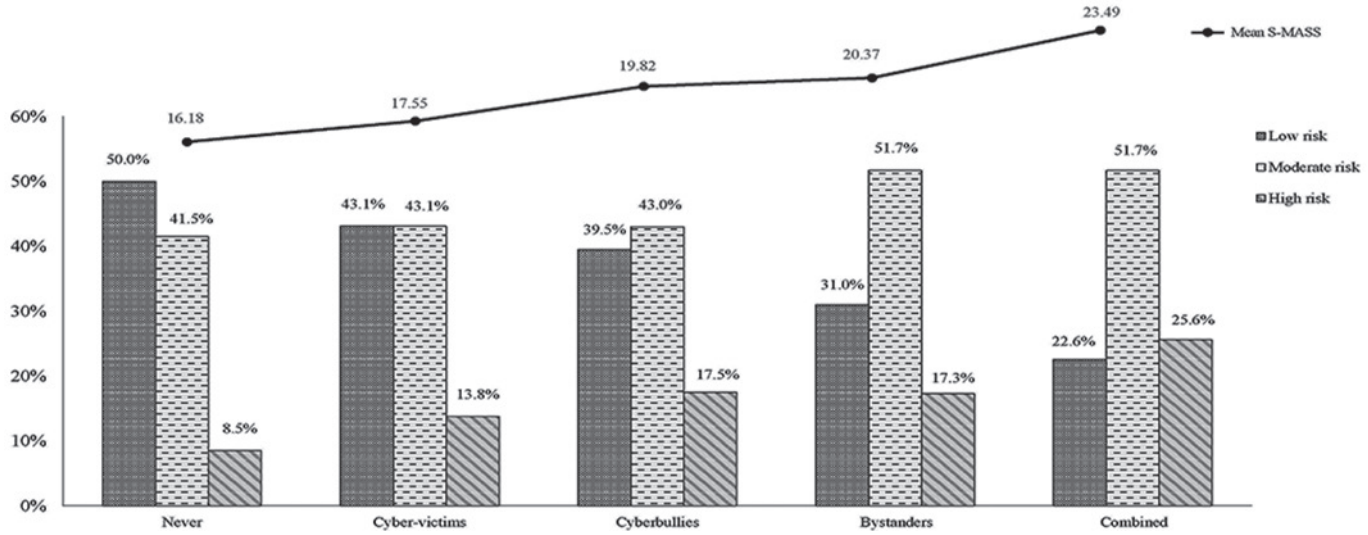

Figure 1 Social media addiction and cyberbullying involvement

Regarding the types of cyberbullying and risky online behavior, it was found that the most risky online behaviors were associated not only with cyberbullies and cyber-victims, which were investigated in most of the previous studies but also with bystanders and the combined subgroups. Moreover, the highest odds ratio was in the combined subgroup for almost all of the risky online behaviors.

Associations between cyberbullying and social media addiction

As hypothesized, adolescents in the high-risk group for social media addiction were associated with cyberbullying involvement. One possible explanation is that adolescents tend to easily share their personal information on social media, because, at that age, they are eager to display their identities and to fit in with peers[34,35]. Also, they feel compelled to express their opinions online[36]. These behaviors can lead to negative interactions, such as receiving or giving unduly negative comments, which then led to conflicts. Spending excessive time online, as in social media addiction, increases the risk of negative interactions and conflict, which may lead to cyberbullying[20].

This study demonstrates that the risk of social media addiction increases in a linear fashion, from the cyber-victim subgroup – to the cyberbullies subgroup – to the bystander subgroup – to the combined subgroup. This finding is consistent with a more recent study reporting that social media addiction predicts cyberbullying behaviors among adolescents[37]. The bystander subgroup may spend more time following and sharing information on social media than the cyber-victims and cyberbullies subgroups, so they are more at risk of social media addiction. The combined subgroup may be involved in more online activities than other subgroups, as a result, they have the highest risk of social media addiction.

Strengths

The highlight of this study is its comprehensive examination of risky online behavior, which covers a much broader spectrum than previous studies. Additionally, this study explores risky online behavior and social media addiction within distinct subgroups of cyberbullying, particularly the bystanders subgroup. Previous studies often focused only on cyberbullies and cyber-victims subgroups. Furthermore, this study emphasizes the examination of the population in grades 7-9, where cyberbullying rates are high. Previous studies often examined a wide range of demographics, rather than targeting specific groups.

Limitations

There are some limitations of this study. First, it used a self-report questionnaire, so some sensitive data, such as that regarding cyberbullying, risky online behavior, and social media addiction, may be under-reported. Secondly, it may be difficult for some participants to stay focused on completing the questionnaire, which consisted of 77 items, and this may have affected the reliability of their responses. Thirdly, the questionnaire in this study is mostly self-developed by the authors and is not based on internationally standardized questionnaires. Therefore, there may be limitations in comparing the research findings with other studies. Forth, the participants were selected using a convenient sampling method, so they may not represent the entire student population in Bangkok. Moreover, all the participants were students from large schools in urban areas. This population may not reflect rural or lower-income populations, so any generalization from these findings to those populations is limited. Furthermore, the participants in this study were limited to students only in grades 7-9, representing only a subgroup of adolescents rather than the entire age range. Fifth, the temporal relationships of cyberbullying, both with risky online behavior and with

social media addiction, cannot be determined due to its cross-sectional study design. Finally, interpretation of data collected in 2017 should be carefully conducted as social media platforms evolve fast. Thus, the forms and domination of each form of cyberbullying might have changed, affecting findings based on survey questions created earlier.

Implications

The findings that the rates of risky online behavior were relatively high among the studied adolescents and that such behavior was significantly associated with all groups of cyberbullying involvement are troubling. Public awareness of these facts should be raised, and safe online behavior, such as protecting one's personal information online, avoiding online contact with strangers, and keeping one's passwords safe from others should be promoted. On the other hand, correlation between cyberbullying and risky online behaviors can be used to create a sense of urgency among families and schools, by informing them that cyberbullying might be early signs of more serious events that they are of more concern; such as contacting strangers. In addition, the finding that more than half of the studied adolescents were at risk of social media addiction, which was associated with all groups of cyberbullying involvement, indicates that social media addiction is pervasive and should be a target of intervention to decrease cyberbullying among adolescents.

Conclusion

The prevalence of cyberbullying is high among middle school students in Bangkok. All subgroups of cyberbullying, particularly the combined group, are significantly associated with risky online behavior and social media addiction. Further research should clarify the connections between cyberbullying involvement and risky online behavior, along with social media addiction. Such studies should also be conducted in different populations, for example, adolescents in rural areas and those of a lower socio-economic status, and by using the standardized measurement of cyberbullying and its subgroups. Furthermore, the effects of interventions to prevent risky online behavior and the role of social media addiction in cyberbullying should be investigated.

Conflict of interest

The authors declare no conflict of interest.

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