

An Investigation of the Effects of Cyberbullying among University Students in Bangladesh: A Cross-Sectional Study

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ABSTRACT

Cyberbullying constitutes a form of online activity characterized by intentional and repetitive actions aimed at causing harm, harassment, intimidation, or humiliation to an individual. It is associated with a host of challenges, such as low self-esteem, social isolation, depression, emotional distress, and poor academic results. With the advent of advanced technology, the ramifications of cyberbullying have escalated considerably. The social and psychological ramifications of cyberbullying on university students in Bangladesh are endeavoured to be examined in this research. The impact of cyberbullying on students' academic performance was also evaluated, and recommendations for enhancing the situation within the relevant domain were portrayed. However, a self-structured questionnaire was constructed to collect data through the survey method. In addition to the survey, a questionnaire was created using email Questionnaire to expand the reach to a broader spectrum of respondents. Total 210 questionnaires were collected for the study using the purposive sampling technique. Both primary data and secondary data have been used to fulfil the objective. Surveys conducted with student victims have been used as primary data, while various articles and reports have been reviewed as secondary data. SPSS Version 22 was employed for data analysis. This research has identified that students are subject to diverse forms of cyberbullying, resulting in a range of

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social, psychological, and academic difficulties. These challenges exert adverse effects on their lives across multiple dimensions. Additionally, the investigation reveals that victims of cyberbullying often confide in peers who are unable to offer practical solutions. This study has embodied some recommendations that will unlock ways to improve this area. The study implies that university authorities should launch extensive awareness efforts and educational programmes to teach students how to prevent and respond to cyberbullying. Universities may need to allocate resources to establish mental health and support services to assist those affected by cyberbullying, as it is evident from this study that the mental health and well-being of students are at stake.

Keywords: Cyberbullying, Academic Excellence, Depression, Psychological effects

BACKGROUND OF THE STUDY

Cyberbullying and cyber harassment are severe types of victimization that expose juveniles to a range of stalking, harassment, illegal, and mocking behaviours. Cyberbullying refers to the act of anonymously posting derogatory comments about an individual, such as a student (Merriam-Webster, 2017). Cyberbullying, or electronic aggressiveness, can happen on various online platforms such as social media, mobile phones, messaging services, and gaming platforms. It encompasses several acts such as disseminating false or fraudulent information, transmitting derogatory content, sharing embarrassing photographs, making threats, engaging in trolling, sending offensive comments, and similar behaviors (UNICEF, 2022). Nevertheless, cyberbullying, also referred to as online bullying, poses a greater risk than offline bullying (Ahmed, 2022). However, a novel manifestation known as cyberbullying is emerging as a pervasive global menace in the 21st century. Over recent years, there has been a notable rise in the incidence of cyberbullying victims, correlating with the proliferation of technology-enabled platforms and services (Le, 2020). The issue has been exacerbated primarily during the global pandemic due to a significant increase in online engagements. It is noteworthy that many of the students lack adequate understanding of online security and possess limited awareness regarding cyberbullying, online aggression, or online harassment. All these unknown activities risk the users (Ahmed, 2022). On the contrary, many parents have found themselves compelled to furnish their children with electronic gadgets due to the closure of educational establishments. Consequently, adolescents have been allowed to engage with diverse electronic devices and squander time (Islam, 2021). It looks like modern technology is generating more pressure on the young through cyberbullying rather than assisting in progress (Faryadi, 2011).

Moreover, a faction utilised the virtual platform as a conduit to the realm of criminal activities in order to accomplish their objectives. They are engaging in a multitude of criminal activities in the online realm, such as human trafficking, drug dealing, conspiracy to commit murder, disseminating leaked examination questions to deceive others, disseminating false and fabricated news, and making inflammatory religious remarks, among others. The unrestrained utilization of technology has also spawned juvenile gangs, posing an escalating menace in Bangladesh. Presently, these juvenile gangs exhibit heightened activity levels across the country and engage in various acts of violence in disparate locales (Islam, 2021). Furthermore, the victims exhibit a preference for isolation, experiencing heightened embarrassment that deters their class participation and adversely affects their academic performance. Additionally, in certain instances, victims may contemplate self-harm or suicide (Socialmediavictims, 2022).

According to a survey conducted by the Cyberbullying Research Center, a staggering 73% of youngsters experience cyberbullying on social media platforms. The platform utilises many social media platforms such as Facebook, Snapchat, Twitter, Instagram, YouTube, Pinterest, TikTok, and others. According to a survey conducted by the Pew Research Center, the prevalence of cyberbullying among teenagers increased from 41% in 2012 to 59% in 2015 (Socialmediavictims, 2022). In contrast, a survey conducted in 2019 by UNICEF reported that 36% of cyberbullying victims in the country fall within the age range of 10 to 13 years old, 36% are between 14 and 15 years old, and 25% are between 16 and 17 years old. In 2016, the BBC performed a survey in various Asian nations, including Bangladesh, which revealed a substantial increase in the number of victims as a result of the widespread use of social media. Women and kids are particularly affected in this regard. According to a study conducted by the International Telecommunication Union (ITU), a United Nations body based in Geneva, Switzerland, the COVID-19 epidemic led to an increase in the number of minors using the internet, hence exacerbating the danger of cyberbullying (Islam, 2021).

However, various social intolerances, violence, harassment, and suicidal intentions have increased vehemently around us due to cyberbullying. Hannah Kimura, a 22-year-old Japanese wrestler who starred in Netflix's popular reality show "Terrace House," committed suicide on 23 May 2020. Before her death, she tweeted several times on social media, mentioning various criticisms from online Terrace House viewers (Islam, 2021). Research undertaken in North America has found that youngsters are more likely to commit suicide as a result of cyberbullying compared to bullying in their schools (Ahmed, 2022). In Vietnam, numerous

instances of cyberbullying have led to victims tragically taking their own lives. A study conducted by the University of Education in Vietnam revealed that around 31% of junior and senior high school students experience cyberbullying, with at least one form of harmful behavior occurring two or more times (Le, 2020). Kim In-hyeok, a professional volleyball player from South Korea, committed suicide, and his dead body was found at his home. The reason it was mentioned is that he received a barrage of criticism over an issue (The Guardian, 2022). Conversely, in the United States, the issue of cyberbullying gained attention following the tragic suicide of Megan Meier, a 13-year-old girl. The crux of the prominent case is that Lori Drew, the neighbor of Meier's old acquaintance, deliberately fabricated a false account on the social networking platform MySpace. Posing as a fictitious 16-year-old boy, Josh flirted with Meier and extracted intimate details of her life. Later, the sweet Josh turns mean to her and abruptly ends their friendship. Following this occurrence, Meier's family discovered that she had died by hanging herself with a belt. After the Meier case, a succession of cases was filed in the United States (Smriti & Nahar, 2020). Shakib Al Hasan's daughter recently experienced cyberbullying after a photo on her Facebook account was shared, leading to the posting of derogatory comments by some individuals. Subsequently, a formal complaint was lodged, leading to the removal of the photograph from Facebook (Rabbi, 2020). Conversely, Bangladeshi actress Ashna Habib Bhabna posted a photograph with her mother on Facebook to commemorate Mother's Day in 2021. This post was subjected to offensive and vulgar remarks (Islam, 2021).

Antika's mother, an anonymous individual, complained regarding her 16-year-old daughter, who, as a student, engaged in social media interactions and formed close connections. Initially, she fostered a friendship with individuals on social platforms, eventually becoming particularly acquainted with a man she encountered on the video-sharing app Likee. Regrettably, the man misrepresented his age, education, and family background to her. Antika, trusting him, shared personal photos and videos, only to realize her error later, albeit too late. Following the realization, Antika terminated the relationship, yet the man proceeded to disseminate the shared content across various social media channels. PCSW has reported that numerous criminals engage in harassing girls via phone calls. Recently, law enforcement authorities uncovered human trafficking operations utilizing TikTok to entice girls with offers of "lucrative employment in India," subsequently coercing them into sex work. A video depicting the torture and sexual assault of a 22-year-old woman in India gained viral attention on social

media. Subsequently, law enforcement in Bangladesh apprehended the syndicate responsible for this crime. According to research, this syndicate has trafficked 50 girls within the last two years, extending its operations to the United Arab Emirates and other Middle Eastern countries. Additionally, it was discovered that Bigo Live was utilized to broadcast illicit performances for paying audiences, leading to the arrest of the alleged agent (Khan & Saad, 2021). Police Cyber Support for Women receives the complaints below.

Table 1: Cyberbullying Victims (Khan & Saad, 2021).

Types of Complaints	Number	Percentage
Faking social media accounts	2819	28.07
Hacking social media accounts	783	7.79
Blackmailing	1008	10.03
Harassment using mobile	697	6.94
Sending nude contents	438	4.36
Others	2104	20.95
Not related to cybercrime	2191	21.82
Total (Nov 16, 2020, to June 15, 2021)	10040	100

In light of this, this study identifies various social and psychological effects of cyberbullying among university students and those effects on students’ performance to give any suggestions to stop this problem.

However, the authors have reviewed several pieces of literature, and a notable body of research (Nixon, 2014; Faryadi, 2011; Akcil, 2018; Juliana, 2010, among others) has been identified, which delineates various facets of cyberbullying within developed nations. Conversely, scant research (Maruf, 2022, underscored cyberbullying among females at the tertiary level; Mustafiz et al., 2021, delineated the repercussions of bullying on university students; Ahmed et al., 2021, illuminated the prevalence and characteristics of bullying in schools; Sarker et al., 2018, highlighted cyberbullying among high school students) has emerged concerning Bangladesh. Furthermore, none of these studies have specifically addressed the ramifications of cyberbullying among university students in Bangladesh from a socio-academic standpoint. This void in research delineates a clear gap which this paper endeavors to address.

RESEARCH OBJECTIVES

The study has set some objectives. Those are given as follows:

- To analyze the various social dynamics and interpersonal relationships affected by cyberbullying among university students.
- To explore the psychological implications of cyberbullying on the mental health and well-being of students.
- To evaluate the correlation between experiences of cyberbullying and academic performance indicators.

RESEARCH QUESTIONS

1. What are the psychological and emotional effects experienced by university students in Bangladesh because of cyberbullying?
2. What interventions and support systems are most effective in addressing and mitigating the impact of cyberbullying on university students in Bangladesh?
3. To what extent does exposure to cyberbullying affect the academic performance and educational outcomes of university students in Bangladesh?

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Bullying is a long-discussed topic among researchers around the world. The term bullying can be traced back to the 1530s. It is an intentional, deliberate, and destructive action by an individual or a group of more powerful individuals to harm others physically and psychologically. It is not confined to harassing someone physically, e.g., kicking, beating, or pushing. However, it also happens verbally, like name-calling, joking, molesting, spreading fake or fabricated news, intimidating, and embarrassing. Bullying has various effects, including low self-esteem, depression, disturbance in eating and sleeping habits, and poor grades, and sometimes victims think of committing suicide (Singh et al., 2018). However, cyberbullying is a violent or intentional action through the internet or smartphone technology, such as hacking or stalking one's social media account; impersonating in a tricky way; using one's photos without consent; telling lies or spreading fake news about a person; sending the disparaging message, posting unpleasant photos or videos; making upsetting phone calls or malicious prank calls; sending unpleasant photos or sexually explicit images or videos of a person without

consent; and taking one's photo/photos or videotaping without their consent to embarrass or threaten them (Khine et al., 2020). A new form of bullying known as cyberbullying was creating massive pressure in society and drew the attention of the concerned authorities at this time since information technology was on the rise. Its severity has increased mainly due to mobile phones and internet availability. Various inappropriate posts hurt them emotionally and affect their studies and activities (Le, 2020). Cyberbullying is regarded as a potential threat based on online technology. Recent research studies have shown that cyberbullying substantially threatens social media platform users, especially young people (Abaido, 2020). It has various social impacts on the victims, like social aloneness, withdrawal from friends, and avoiding social gatherings (Dey & Gupta, 2021). The impact on victims and their families can be extremely distressing. Additionally, it is one of the most prominent sources of stress in an individual's life. Typically, victims of cyberbullying often conceal such incidents from their parents or family members, and there may be conspicuous alterations in the victims' behavior if they are consistently impacted by cyberbullying. Initially, this shift in behavior may not be immediately apparent, but over time, it will become noticeable. Indeed, there will be evident transformations such as a solitary existence, diminished focus on academics, a sense of helplessness, altered social conduct, waning enthusiasm for typical activities, substance abuse, experiencing melancholy, expressing negative thoughts or emotions, contemplating suicide, and other related effects (Peled, 2019; Khine et al., 2020; Ju, 2023). Thus, the literature supports the following hypothesis:

H₁: There is a positive relationship between social impact and cyberbullying Incidents.

The use of modern technology has increased on a large scale globally. Everything is within reach today due to the blessing of technology. It is an effective means of communication. Today, due to the blessing of technology, more than half of the world's people are involved in social media. Problems like cyberbullying are constantly increasing due to uncontrolled and careless use of social media. It has been analyzed as a critical problem amongst youngsters in recent years. It creates various psychological problems like the risk of depression, anxiety, and abuse. It also creates some more psychological pains like feelings of low self-worth, self-harm, feelings of distress, suicidal ideation, suicide attempts, and so on (Dey & Gupta, 2021). Kowalski (2011) defines cyberbullying as the act of using the internet to engage in bullying behavior that results in psychological and emotional difficulties. Olthof (2011) argued that cyberbullying is the

intentional behavior of a person to control another person or group of people. On the other hand, various literature identified that cyberbullying victims generally manifest psychological problems such as loneliness, anxiety, low self-esteem, school phobias, depression, social exclusion, poor academic performance, family problems, low self-esteem, and delinquent behavior (Peled, 2019). A person suffering from cyberbullying gradually turns to addictive substances like smoking or drinking alcohol. In addition, a behavioral change appears, and academic settings are severely affected (Faryadi, 2011); (Walker et al., 2011). It is happening around us on a large scale. Cyberbullying can occur across various digital platforms, such as social media, messaging apps, mobile phones, and gaming platforms. It encompasses a range of harmful activities, including spreading false information, disseminating fake news, sharing embarrassing images, making threats, engaging in trolling, and sending unpleasant messages. Some individuals or groups deliberately and repeatedly engage in these actions, causing harm to others, disrupting their peace of mind, undermining their well-being, eroding their self-confidence, diminishing their moral values, demotivating them from focusing on their studies, inducing indifference, fostering feelings of insecurity, provoking self-harm, inciting anger, instilling fear, and generating feelings of inferiority, among other negative effects. The victims of cyberbullying always try to keep their problems a secret from everyone. However, if anyone is continuously cyberbullied, some abnormalities will be visible in them after some time. Common changes may include social isolation, decreased ability to concentrate on studying, feelings of powerlessness, altered social conduct, loss of interest in typical activities, substance abuse, experiencing melancholy, expressing negative thoughts or emotions, and contemplating suicide, among others. It gives rise to complex issues and is associated with numerous severe emotional, mental, behavioral, and physical consequences (Faryadi, 2011). Thus, the literature supports the following hypothesis:

H₂: There is a positive relationship between psychological impact and cyberbullying incidents.

Cyberbullying has assumed multiple detrimental roles that significantly impact students' academic performance, resulting in their inability to achieve excellence in the academic sphere (Dey & Gupta, 2021). In the university setting, assessing and preventing cyberbullying is necessary because it has emerged as a problem among young people (Faryadi, 2011). The cyberbullying victims had many problems, could not study or do well on tests, and had difficulty adjusting to university. Cyberbullying has detrimental effects on the victims on several

different levels. In this aspect, victims show depression, higher anxiety, lasting behavioral changes, such as feelings of learned helplessness and low self-respect, resignation, and social loneliness, and a predominance of obsessive traits with aggressive attitudes and antipathy. At the academic level, they may face more attention problems, have poor success in their regular activities, have poor academic performance, as well as seem to appear to be indifferent or unmotivated students who refuse to go to class (Aparisi et al., 2021). Nevertheless, the students' ability to concentrate on their studies is hindered by cyberbullying, resulting in a detrimental impact on their academic performance (Juliana, 2010). Under great emotional stress, victims cannot pay attention to their studies, and thus, their academic improvement is adversely affected (Akcil, 2018). Again, cyberbullying is linked with substantial psychological issues among young people, such as despair, poor academic results, low self-esteem, and emotional distress. Cyberbullying is a growing issue in educational settings that endangers students' mental health. Various authorities should raise awareness of this issue globally because a recent survey reveals that more students are becoming victims of cyberbullying (Celik et al., 2012). Another study stated that cyberbullying could impact anxiety, depression, loneliness, self-destruction, and somatic symptoms in adolescents. Cyberbullying also affects victims' subjective well-being. According to a reference, students' academic performance and self-esteem may suffer due to cyberbullying. It can also lead to resentment, hopelessness, aggressive thoughts, and disruption in the study (Husna et al., 2020). Thus, it is necessary to address the cyberbullying experiences of university students by considering the potential negative consequences. In general, evidence shows that cyberbullying is linked to worse physical and mental health and poor academic performance. There is also evidence that students who have been cyberbullied experience different kinds of stress, depression, and anxiety. When things get bad enough, people might consider or try to commit suicide. Cyberbullying makes people feel unsafe and worried, which makes them less interested in class and hurts their grades. Also, being a victim of cyberbullying was linked to more substance abuse, like smoking, drinking too much, or being addicted to drugs (Khine et al., 2020). According to a different study, victims of cyberbullying frequently experience psychological problems like depression, anger, low self-esteem, school phobias, loneliness, and social anxiety (Juvonen et al., 2003; Grene, 2003; Akcil, 2018). Cyberbullying makes a student lose focus on reading, become reluctant to attend class, become frustrated, and withdraw from class exams or studies (Husna et al., 2020). Thus, the literature supports the following hypothesis:

H₃: There is a positive relationship between students’ performance and cyberbullying incidents.

With the support of various literatures, the researcher also considers the country context and have set some indicators to assess various cyberbullying’s impact on the students. Here is the framework.

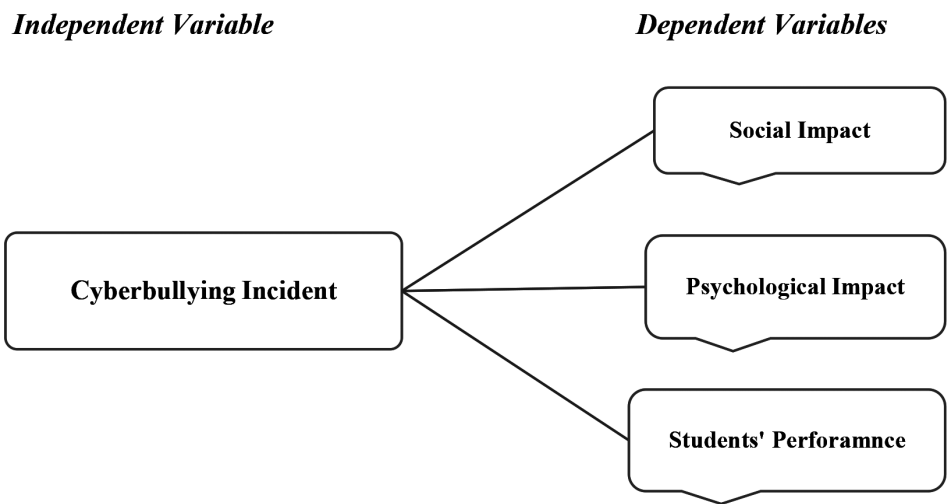


Figure 2: Conceptual Framework, Source: Authors’ compilation

Figure 2 shows that independent variable is cyberbullying, and dependent variables are social impact, psychological impact, and Students’ Performance.

THEORETICAL FRAMEWORK

The spiral of silence theory, developed in 1974, helps explain why bullying victims sometimes feel powerless to speak up. The theory says that the victims become even more alone because they have nowhere to go. Several scholars, however, contend that from the standpoint of online communication, the spiral of silence effect either doesn’t exist or is only marginally effective. According to Chaffee and Metzger (2001), the “spiral of silence” may not have much predictive value in new media. Additionally, Schulz and Roessler (2012) theorized that people could choose the information they receive in the virtual arena, and they believe they are encircled by more like-minded individuals online than in actual environments. In order to reduce the spiral of silence effect on the internet, the projection effect will lessen people’s fear of loneliness and increase their likelihood of expressing themselves online. However, this theory was mainly applied to

political science and public opinion studies. It says that people tend to keep quiet when they think their opinions do not go against what the majority think. They do not speak up because they worry about being ignored and left alone. However, during the first decade of the 21st century, access to and use of information and communication technologies grew a lot, and young people were very interested in taking advantage of this. Later, the international community became anxious about a new phenomenon known as “cyberbullying” (Belsey, 2006). This theory then aims to rationalize the effects of socialization and individuals’ behaviors. It assists in describing why students feel helpless in raising their voices when bullied. It makes the oppressed keep quiet because it gets harder and harder for them to fight back. So, there is a need to find more proactive ways to help people who are bullied online (Abaido, 2020).

RESEARCH METHODOLOGY

Research Design

This study utilised a quantitative approach by employing a survey questionnaire, following the parameters established by Sekaran and Bougie (2016). Basically, the survey research method has been applied with a structured questionnaire. All further essential information has been consolidated from pertinent scholarly journals, books, newspapers, newsfeeds, and online sources. The initial section comprises a range of introductory inquiries, while the subsequent part incorporates five-point Likert-type questions utilising a scale of 5= **Very Often**, 4 = **Often**, 3 = **Sometime**, 2 = **Rare**, and 1 = **Never**. These questions aim to investigate the diverse effects of cyberbullying on university students in Bangladesh, in line with the research objectives.

Students from 10 various public and private universities of Bangladesh are the respondents for the survey. Each university may have its own unique characteristics, including student demographics, campus culture, and technological infrastructure, which can influence the experience of cyberbullying that is why different universities have been chosen.

Sources of Data

The study is based on primary and secondary sources of data.

1. **Primary Data:** Primary data has been collected from the students who only experienced this problem.

2. **Secondary Data:** In conducting this study, a significant emphasis was placed on leveraging secondary data sources, primarily through an extensive review of prior research on the repercussions and impacts of cyberbullying. In addition to academic literature, secondary sources such as newspapers, reports, books, and relevant issues were also scrutinized to enrich the breadth and depth of the study's findings.

Sampling Size with Sample Technique

The study's sample size comprised 210 respondents who reported experiencing cyberbullying perpetrated by individuals or groups through purposive sampling technique. Basically, 260 questionnaires have been distributed and 210 usable questionnaires have been found. The reason to choose this specific sample size lies in the focus on individuals who have encountered cyberbullying incidents. Principally, purposive sampling is a non-probability sampling method wherein researchers exercise their discretion in selecting participants from the population to partake in their surveys. This method enables researchers to sift through responses that are not pertinent to the study's context.

Questionnaire Development

The development of a self-structured questionnaire for investigating cyberbullying and its consequences necessitates a thorough examination of existing literature across diverse disciplines, offering insights into the multifaceted dimensions of this pervasive societal issue. Drawing upon a comprehensive review of prior studies, scholarly articles, reports, and theoretical frameworks, the questionnaire design process seeks to capture the complexity and nuances inherent in cyberbullying dynamics while ensuring the validity, reliability, and relevance of the research instrument. By integrating insights from diverse disciplines and perspectives, the questionnaire design aims to provide a comprehensive and nuanced understanding of cyberbullying phenomena while upholding ethical standards and promoting the well-being of research participants.

Data Collection

The present study adopts a quantitative methodology and relies on the collection of primary data. In order to optimize respondent participation, a multifaceted approach to data collection has been implemented. Alongside the distribution of hard copy questionnaires, a mail questionnaire method has been employed to enhance response rates. These questionnaires have been distributed physically through pertinent individuals to maximize outreach and accessibility to potential respondents. Additionally, a link directing individuals

to the questionnaire has been shared across multiple social media platforms to further broaden the respondent pool. This comprehensive strategy aims to ensure a diverse and representative sample for the study, thereby enhancing the validity and generalizability of the research findings.

Data Analysis Tool

Data has been analyzed by using ‘SPSS’ (Statistical Package for the Social Sciences), version 22.0.

Ethical Consideration

Verbal consent was obtained from the respondents during the data gathering process. The study’s purpose was clearly communicated to the participants to ensure their enthusiastic participation in the survey. No forms of force or coercion have been used, and their privacy has been protected.

Findings of the Study

Demographic information of the respondents

Table 2 presents the demographic distribution of respondents, indicating that 51.9% were female students and 48.1% were male students. Additionally, 53.4% of the students fell within the age range of 18 to 22 years. Moreover, 90% of the respondents reported being unmarried. Furthermore, 32.9% of the students were pursuing master’s degrees, while 31.9% were in their second year of study. It is noteworthy that the majority of the respondents, accounting for 62.9%, were affiliated with BUP, representing the highest proportion in the sample.

Table 2: Demographic information of the respondents

Criteria	Attributes	Frequency (n)	Percentage (%)
Gender	Male	101	48.1
	Female	109	51.9
Age	18-22	112	53.4
	23-27	85	40.4
	28-32	13	6.2
Marital Status	Single	189	90
	Married	21	10

Criteria	Attributes	Frequency (n)	Percentage (%)
Year	First Year	10	4.8
	Second Year	67	31.9
	Third Year	40	19
	Fourth Year	24	11.4
	Masters	69	32.9
Respondents from various universities	BUP	132	62.9
	DU	28	13.3
	JU	11	5.2
	NU	4	1.9
	RU	5	2.4
	BRAC	5	2.4
	IU	6	2.9
	ULAB	6	2.9
	JnU	8	3.8
	UIU	5	2.4

Source: Survey Result of this Study

Cyberbullying Experiences of Victims

Figure 3 illustrates that 152 respondents divulge their encounters with cyberbullying to their friends, while 27 respondents confide in their family members. Additionally, 12 respondents disclose their experiences to relatives, 9 respondents to their parents, 8 respondents to psychologists, and 2 respondents to law enforcement authorities.

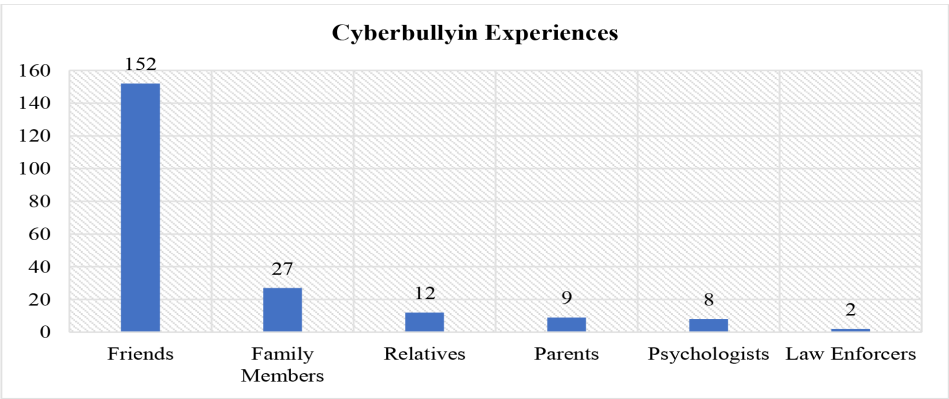


Figure 3: Cyberbullying experiences by the victims

Medium of being cyberbullied

Figure 4 illustrates that a total of 176 respondents on Facebook, 8 respondents on WhatsApp, 7 respondents on Messenger, 5 respondents on Twitter, 5 respondents on Instagram, 5 respondents on YouTube, and 4 respondents via Phone Call were subjected to cyberbullying.

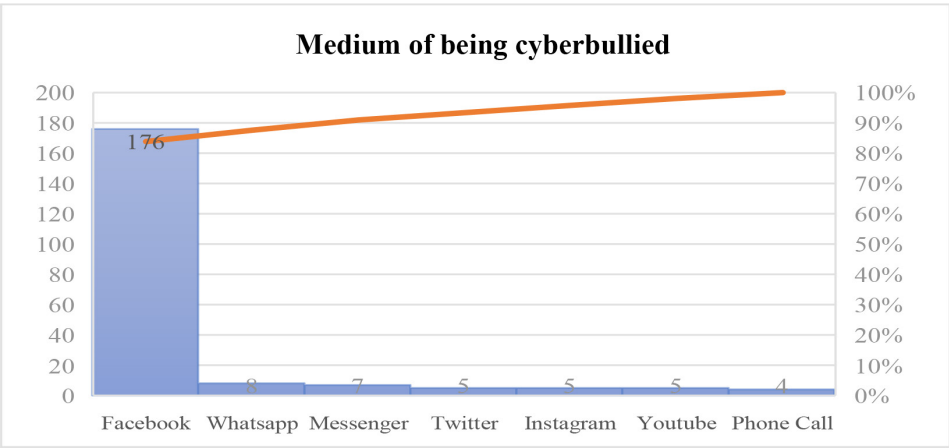


Figure 4: Medium of being cyberbullied.

Form of cyberbullying experienced

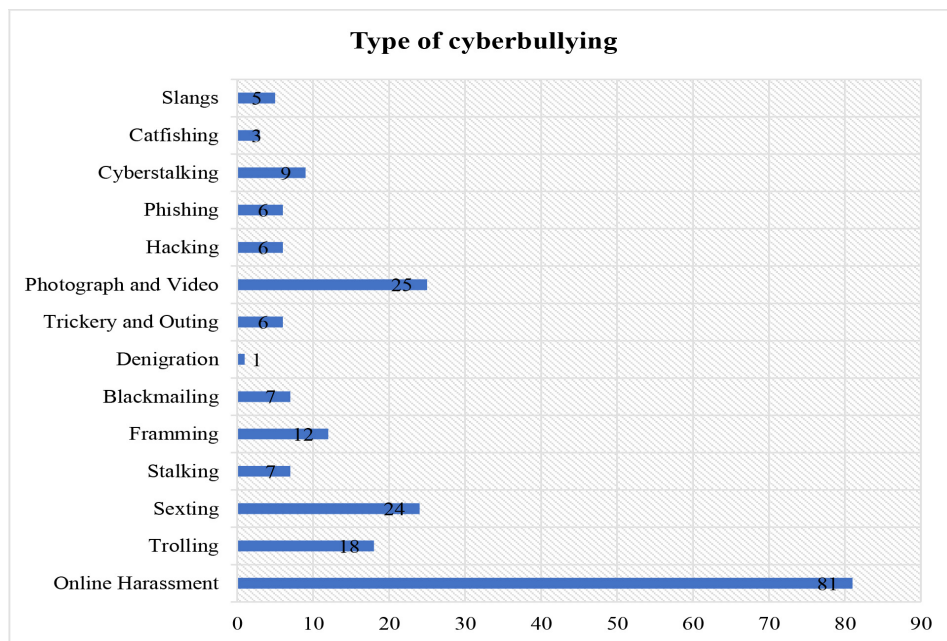


Figure 5: Form of cyberbullying experience.

Figure 5 illustrates that 81 respondents were subjected to cyberbullying via online harassment, 18 respondents via trolling, 24 respondents via sexting, 7 respondents via stalking, 12 respondents via framing, 7 respondents via blackmailing, 1 respondent via denigration, 6 respondents via trickery and outing, 25 respondents via photograph and video, 6 respondents via hacking, 6 respondents via phishing, 9 respondents via cyberstalking, 3 respondents via catfishing, and 3 respondents via slangs.

KMO and Bartlett's Test

The variables must be correlated so that the factor analysis to be appropriate. The null hypothesis is tested using formal statistics like the Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. A number higher than 0.5 is preferred (Malhotra and Dash, 2010).

Table 6: KMO and Bartlett’s Test to validate various impact Cyberbullying.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.914
	Approx. Chi-Square	3125.156
Bartlett’s Test of Sphericity	df	210
	Sig.	0.000

Table 6 shows that approximate chi-square statistics have 210 degrees of freedom and is significant at the 0.05 level. This indicates that the identity matrix is the null hypothesis of the population correlation matrix, which is disproved by Bartlett’s test of sphericity. Bartlett’s test of sphericity therefore yielded a significant result, indicating that the population was not an identity matrix. Therefore, the Bartlett’s Test of Sphericity is significant.

Table 7: Reliability statistics

Variable	Item	Short form	Cronbach’s Alpha	0.914
Social Impact	10	SI	0.919	
Psychological Impact	6	PI	0.804	0.940
Students' Performance	5	SP	0.904	

Cronbach’s Alpha score for the overall measure and each scale is the commonly used reliability statistic to assess if the survey questions consistently produced reliable answers. The scales were assessed using the standard criterion of =0.70 (Hair et al., 1995).

Here, after considering a total of 21 items, in table 7 it is found that the value of Cronbach Alpha coefficient of Social Impact ($\alpha = 0.919$, $p<0.5$), Psychological Impact ($\alpha = 0.804$, $p<0.5$), and Students’ Performance ($\alpha = 0.904$, $p<0.5$) give an idea that all scales have Cronbach’s alpha values of 0.70 or higher, which is acceptable for the developed Scale. It was also expected because all the questions were based on previous literature and expert opinion.

Table 8: Item loading, scale reliability, AVE, and CR

Constructs	Items	Loading	CR	AVE
Social Impact	SI_1	0.703	0.710	0.601
	SI_2	0.697		
	SI_3	0.638		
	SI_4	0.730		
	SI_5	0.624		
	SI_6	0.693		
	SI_7	0.694		
	SI_8	0.769		
	SI_9	0.763		
	SI_10	0.737		
Psychological Impact	PS_1	0.596	0.724	0.540
	PS_2	0.585		
	PS_3	0.735		
	PS_4	0.80		
	PS_6	0.568		
Impact on Students' Performance	AP_1	0.721	0.703	0.517
	AP_2	0.684		
	AP_3	0.745		
	AP_4	0.703		
	AP_5	0.743		

Table 8’s component matrix, which displays correlations, is a representation of the unrotated component analysis factor matrix. These factor loadings show how variables are closely connected to each factor. These factor loadings indicate how closely the variables are related to each factor. Twenty out of twenty-one factors have loaded highly on other factors. The factors are made by the function of observed items by removing the factors with low correlations (those are less than 0.50) that are insignificant. Using Exploratory factor analysis (EFA) techniques, we have to delete some factors because factors loading less than 0.5 did not consider or reproduce.

Here, convergent validity was evaluated to examine the measurement model. Measures of reliability, composite reliability (CR), and the average extracted variance were used to calculate convergent validity (AVE). The loading of each

item on its related construct was used to gauge the reliability of each item. The item loading should, generally, be greater than 0.50 or higher (Hair et al., 2010). All CRs and AVEs in this study should be 0.70 and 0.5 or higher, respectively (Nunnally, 1978; Gefen, Straub, & Boudreau, 2000).

Table 8 shows that both CR and AVEs exceeded 0.70 and 0.50 respectively with the lowest value being 0.703 (CR) and 0.517 (AVE) for impact on students’ performance respectively. Hence, all the conditions of convergent validity were fulfilled.

Dimension Correlation

Table 9: Values of Correlation Coefficient among the variables

		Correlations			
		SI	PI	AC	CB
SI	Pearson Correlation	1			
	Sig. (2-tailed)				
PI	Pearson Correlation	.659**	1		
	Sig. (2-tailed)	.000			
AC	Pearson Correlation	.636**	.650**	1	
	Sig. (2-tailed)	.000	.000		
CB	Pearson Correlation	.687**	.503**	.607**	1
	Sig. (2-tailed)	.000	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Table 9 represents all the correlations between the variables. To proceed with any multiple regression analysis, it is mandatory to check whether dimensions are correlated or not. This table represents that all the variables named social impact, psychological impact and students’ performance are positively correlated to impact of cyberbullying and all are statistically highly significant at a 1% level of significance.

Table 10: Summary of Path Coefficient and Hypothesis Testing of Independent and Dependent Variable

Hypothesis	Path	Pearson correlation coefficient	Standardized coefficients (β)	t Statistic	P-value	Decision
H1	Social Impact> Cyberbullying incident	0.687	0.888	13.648	.000b	Significant
H2	Psychological Impact> Cyberbullying incident	0.503	0.694	8.388	.000b	Significant
H3	Impact on Students' Performance > Cyberbullying incident	0.607	0.694	11.002	.000b	Significant

Hypothesis 1:

It was hypothesized that cyberbullying incidents have a positive effect on social impact. The value is significant at the $p > 0.05$ level. The Pearson correlation coefficient is 0.687.

Hypothesis 2:

It was hypothesized that cyberbullying incidents have a positive effect on the psychological state of the students . The value is significant at the $p > 0.05$ level. The Pearson correlation coefficient is 0.503. It is strongly supported.

Hypothesis 3:

It was hypothesized that cyberbullying incidents have a poitive effect on Impact on Students' Performance. The value is significant at the $p > 0.05$ level. It is strongly supported. The Pearson correlation coefficient is 0.607.

Table 11: Significance test (ANOVAa)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	143.861	1	143.861	186.280	.000b
Residual	160.635	208	.772		
Total	304.495	209			

a. Dependent Variable: Dependent

b. Predictors: (Constant), SI_Sum

Table 11 represents that the p-value has been found to be less than 0.00. That means alternative hypothesis may be accepted. So, it can be concluded that cyberbullying incidents play a negative impact on social impact of the students.

Table 12: Significance test (ANOVAa)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	76.968	1	76.968	70.363	.000b
Residual	227.527	208	1.094		
Total	304.495	209			

- a. Dependent Variable: Dependent
- b. Predictors: (Constant), PI_Sum

Table 12 shows that the p-value has been found to be less than 0.00. That means alternative hypothesis may be accepted. So, it can be concluded that cyberbullying has a negative impact on the psychological impact of the students.

Table 13: Significance test (ANOVAa)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	112.018	1	112.018	121.052	.000b
Residual	192.477	208	.925		
Total	304.495	209			

- a. Dependent Variable: Dependent
- b. Predictors: (Constant), AC_Sum

Table 13 represents that the p-value has been found to be less than 0.00. That means alternative hypothesis may be accepted. So, it can be concluded that cyberbullying plays a negative impact on academic performance of the students.

DISCUSSION AND INTERPRETATION OF THE FINDINGS

The study has established specific objectives aimed at investigating diverse impacts, encompassing social, psychological, and academic dimensions, of cyberbullying among university students in Bangladesh. To conduct this analysis, the study has defined three dependent variables and one independent variable. Upon analyzing the data, the researcher observes that the social impact, psychological impact, and influence on student performance exhibit a significant correlation with the effects of cyberbullying.

The current investigation has disclosed that females constitute the primary demographic affected by cyberbullying. It has been determined that the majority of cyberbullying victims are unmarried and aged between 18 and 27 years. Previous studies have corroborated that girls under the age of 20 are particularly vulnerable to becoming victims (Hossen, 2021). Furthermore, this study indicates that victims of cyberbullying tend to confide in their friends first about their victimization. Numerous global studies have indicated that students are disinclined to share much with their parents but find solace in confiding in their friends (Le, 2020). Additionally, the research underscores that Facebook serves as the primary platform through which cyberbullying occurs. Cyberbullying victims are subjected to various forms of online abuse, with online harassment ranking as the most prevalent, followed by the dissemination of photographs and videos, as well as sexting.

In this investigation, it has been discerned that students encounter a plethora of social, psychological, and academic impediments attributable to cyberbullying. These impediments manifest in diverse manners, notably by inducing anxiety, diminishing self-esteem and self-assurance, instigating anger, diminishing concentration on academic pursuits, and precipitating subpar academic performance and grades. Correspondingly, analogous research indicates that students subjected to cyberbullying frequently encounter academic challenges and initiate or escalate substance consumption such as smoking or alcohol intake (Khine et al., 2020). Comparable research (Alotaibi, 2017) indicates that victims struggle with social integration, experience mental anguish, suffer from illnesses, and encounter academic difficulties.

Prior research, as identified by Hossen (2021), revealed that individuals subjected to cyberbullying may contemplate suicide. However, the findings of the current study suggest that such individuals exhibit a markedly low propensity for suicidal behavior and are less inclined to inflict harm upon themselves because of cyberbullying. This investigation highlights a minimal inclination to experience fear or entertain irrational thoughts regarding engaging in violent acts after experiencing cyberbullying.

CONCLUSION AND RECOMMENDATION

This study explains the various impacts of cyberbullying among university students in Bangladesh. This study revealed that students suffer from various social psychological and academic challenges due to cyberbullying. However, among these challenges, which factor is more intense and which factor is less

intense, for example, about suicide, more students said that they never think about committing suicide or taking drugs because of it, but most of the students agreed to be faced various psychological problems that disrupted their progress. Most cyberbullying victims share their problems with friends and are less likely to share them with family members or other relatives or law enforcers. However, now it has become a social problem. It is clear in this study is that girls are more victims of cyberbullying than boys. Three hypotheses are taken in this study namely social impact and cyberbullying, psychological impact and cyberbullying, and students' performance and cyberbullying and each one produces significant value. This study has made some recommendations that have been made based on the challenges of this study. The broad objective of the study is to investigate various impacts of cyberbullying among the university students of Bangladesh. In light of those broad and specific objectives, the study has set some recommendations that are given as follows.

- Open an online noticeboard so that the affected students will have an opportunity to inform the concerned authorities very easily.
- To create a good rapport between the faculty members and students so that they can monitor the matter well and students can also easily inform the concerned faculty member in case of any untoward incident.
- Setting up booths at various places in the campus so that students can submit their complaints secretly.
- Increasing the number of discipline monitoring committees so that large numbers can be easily monitored.
- Conduct various seminars/workshops/discussion meetings to disseminate students on how to use social media to protect themselves from cyberbullying.
- Hanging up specific information on how to appeal to law enforcement or relevant authorities in case of cyberbullying.

LIMITATIONS AND FUTURE RESEARCH

This study has certain limitations that require attention. The literature indicates that extensive research needs to be conducted on cyberbullying in order to address this societal issue.

This study has a sample size ($N = 210$) that is insufficient to accurately represent this sector.

In the future, it is possible to include additional areas for investigation by using the same variables.

A qualitative study can be done in the future to provide a more comprehensive understanding.

This investigation was conducted at several universities. However, it is possible to integrate this into all universities to accurately depict the situation.

An unequal number of participants from 10 universities located in Dhaka participated here.

This study is limited to a small area; therefore, the findings may not accurately represent the entire country of Bangladesh. This paper can serve as a valuable reference for future research. Regression analysis was performed to determine the association between the variables. Additional statistical methods can be employed while maintaining research as the fundamental framework.

Conflict of Interest: The authors declare that they do not have any conflicts of interest.

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