Original Research Article

# Prevalence of Cyberbullying Perpetration and Cyberbullying Victimization among Nursing Students in Jordan

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## Abstract

**Introduction:** Cyberbullying is a form of bullying or harassment carried out online with the intent to harm others mainly using social media sites.

**Objective:** To investigate cyberbullying prevalence and associated factors among nursing students in Jordan.

**Methods:** A descriptive, cross-sectional study was conducted. A convenience sample of 428 Jordanian nursing students from three private Jordanian universities was involved in the study. Data were collected in 2022 using the sociodemographic characteristics sheet, cyberbullying perpetration (CBP) scale; and cyberbullying victimization (CBV) scale. Multiple linear regression analysis was performed to identify variables associated with the CBP and CBV scores.

**Results:** About 30.1% of the students were not involved in any cyberbullying, while 8.6% were categorized as cyberbullying perpetrators only, 20.4% as victims only, and 40.9% were categorized as cyberbullying perpetrators and victims at the same time. Visual /sexual perpetration and verbal/written victimization were the most prevalent forms of cyberbullying among the studied nursing students. Increasing age was associated with a decreased CBP ($P < 0.05$) and CBV ($P < 0.01$), while male gender was associated with increased cyberbullying perpetration ($P < 0.01$).

**Conclusions:** The prevalence of cyberbullying among nursing students in the current study was alarming. The study showed that age was negatively associated with CBP and CBV while being male was associated with increased CBP. Future research may want to consider using a longitudinal research design with more testing variables and a more comprehensive examination of potential causes and impacts of cyberbullying in nursing students. The development of specific policies to combat cyberbullying among Jordanian nursing students is also recommended.

## Introduction

Over time, the internet's quick global expansion and the proliferation of social networking sites (SNS) have given university students a universal, affordable, and easily accessible platform to connect with one another, form strong social bonds, and introduce a fresh approach to education. However, it also prompts worries among researchers, scientists, and professionals on the possibility that cyberspace could be exploited to carry over traditional bullying practices into the virtual realm (Musharraf & Haque, 2018; Yubero et al., 2017). Higher education now requires the use of SNS due to its many benefits, which include improved educational innovation, equity in the classroom, accessibility,

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flexibility, communicability, efficiency, and global reach (Xie et al., 2020) Furthermore, the use of social media platforms is associated with the development of closer relationships and collaborations, which deepens one's social networks (Sutcliffe et al., 2018).

Conversely, negative aspects of social media and communication technology could include online harassment, sexting and messaging, lack of focus, a decline in intellectual capacity, loneliness, stress, fatigue, emotion suppression, anxiety, and Facebook depression (Kaur & Bashir, 2015; Pittman & Reich, 2016; Yoon et al., 2019). Cyberbullying is the deliberate use of digital technologies to intentionally cause harm or discomfort to others (Yosep et al., 2023).

One of the most frequently mentioned negative consequences of utilizing social media and the internet is cyberbullying, which puts victims at risk for aggressive behaviors, feelings of loneliness, disillusionment, and mistrust, as well as self-harm (Kowalski et al., 2014). Despite the vast differences between the real world and the internet, some cyberbullying situations have the potential to turn violent when the victims feel there are no other options for resolving their issues (Peng et al., 2019).

Cyberbullying can take many different forms, such as sending mean, harassing, or derogatory messages; starting rumors on social media platforms; sharing offensive or embarrassing content online; purposefully removing someone from a group chat; sending them nude or private images without their consent; sending them a malicious link; creating a false online persona to harass them; hacking their account information and using it under false pretenses; and making unsolicited or prank phone calls (Musharraf & Haque, 2018; Smith et al., 2008). Because of its unique characteristics, cyberbullying is more harmful than typical bullying and has long-lasting impacts. (Sam et al., 2019; Slonje et al., 2013; Yubero et al., 2017).

Those who are the targets of cyberbullying may become socially isolated and uncomfortable (Katz et al., 2014). Cyberbullying has even been shown to cause suicide in certain cases (Bauman et al., 2013). According to data from a study by Musharraf and Haque (2018), university students who were victims of cyberbullying reported having less mental health than their peers.

During the COVID-19 pandemic in Jordan, some legal issues associated with cyberbullying incidences were raised. These incidents involved some people who contributed to COVID-19 transmission such as "Al-Khanasri driver" and "Irbid wedding". Each of these incidents was widely circulated by the public via social media platforms in a way that negatively affected the people mentioned above. Consequently, under Jordanian cybercrime legislation, any individual who transmits or publishes anything via a network or information system, including pornographic material or the sexual exploitation of others, faces a minimum sentence of three to twelve months in prison and a maximum fine of three thousand to five thousand Jordanian dinars (Jordan Cybercrime legislation, 2020).

Cyberbullying on social networking sites is a growing social problem that has received a lot of scholarly attention (Chan et al., 2021). It is essential to conduct research to determine the prevalence of cyberbullying perpetration and victimization among nursing students, given the extensive use of technology in universities for both administrative and educational objectives.

To date, there have been limited reports of cyberbullying in Jordanian nursing students. Recent literature emphasized the alarming prevalence of cyberbullying in Jordanian university students from various specialties (Awawdeh et al., 2023). However, nursing students are experiencing an increase in communication with colleagues and public through SNS through which cyberbullying can occur (Zhu et al., 2021).

Bullying on social networking sites has garnered scholarly interest from a wide range of disciplines and may be one of the enduring social challenges. Over the past ten years, the number of publications on the topic has increased. The number of publications reached a peak between 2014 and 2016, averaging over ten per year, and has since steadied at four to five per year. Many studies on SNS bullying have been published in the psychology literature (50%) followed by the information systems/computer sciences literature (20%) and the communication literature (7%). Research on SNS bullying has been multidisciplinary (Chan et al., 2021).

## Review of Literature

Social media platforms and applications have become more widely available, and their rapid advancements in communication technology have undoubtedly made it easier for people to meet their daily needs such as communication, working, and studying. Additionally, they help users communicate more easily by enabling the sharing of private messages, thoughts, feelings, pictures, and videos (Sutcliffe et al., 2018). In this sense, nursing students may use social media platforms to communicate with their friends, family, classmates, and educators regarding personal, academic, and professional matters or to amuse themselves (Al-Shdayfat, 2018; Pimmer et al., 2018); to support and encourage their formal and informal learning (Dwamena et al., 2016); to develop a professional nursing identity through learning about nursing profession and nursing research (Ferguson et al., 2016); and to share their information and experience as students to educate the others about the significance of the profession. Yet, a lot of nursing schools encourage their students to use internet-connected devices for research and learning (Higginson, 2017); consequently, a growing number of nursing students are exposed to cyberspace (Kim & Choi, 2021). However, while engaging in these activities, they may become the target of cyberbullying (Alharbi et al., 2020).

Unfortunately, researchers and educators are taking notice of cyberbullying as it has grown to be a global public health concern. In contrast to traditional bullying, it is characterized

by anonymity, spatiotemporal nature, and strong propagation, which can have negative effects on victims' physical and mental health, including suicidal thoughts and feelings of loneliness (Fang et al., 2020; Harb et al., 2021). While a growing number of research studies have attempted to gauge the prevalence of cyberbullying among students, most of the research on the topic has been done on adolescents (Watts et al., 2017). For example, a survey conducted in the United States in 2014 by Zalaquette and Chatters among 604 university students revealed that 19% of them had been the victim of cyberbullying. In research done among 1925 students at a Canadian university, Faucher et al. (2014) discovered a somewhat higher prevalence of cyberbullying (24.1%). Moreover, Spanish and Turkish university students had higher rates of cyberbullying prevalence (54% and 59.8%, respectively), compared to those in the US and Canada (Elipe et al., 2015; Turan et al., 2011). Asian nations exhibit varying prevalence rates of cyberbullying victimization among university students. For instance, of 508 university students who took part in the study by Musharraf and Haque (2018) in Pakistan, 25% identified as victims of cyberbullying. According to a Qudah et al. (2019) study, 20.7% of Saudi Arabian university students reported having been the victim of cyberbullying. According to a scoping review study, nursing interventions have the potential to effectively lower the prevalence of cyberbullying (Yosep et al., 2023). These interventions are concentrated on enhancing resilience in order to raise students' awareness of cyberbullying as well as resilience and adaptive coping in order to lessen the harmful effects of cyberbullying.

This review of the literature shows that different university students around the world experience cyberbullying at different rates. Apart from that, not much research has been done on cyberbullying in Jordan; in particular, social media platforms have been utilized by Jordanian nursing students for academic purposes, particularly during and after the COVID-19 pandemic. Thus, the current study aims to investigate cyberbullying prevalence and associated factors among nursing students in Jordan.

## Research Objectives

The study has the following specific objectives:

1. To determine the prevalence of cyberbullying perpetration and victimization among nursing students.
2. To identify potential factors associated with cyberbullying perpetration and victimization among nursing students.

# Methodology

## Research Design

This study employed a descriptive cross-sectional research design.

## Sample

The target population was all Jordanian nursing students. The accessible population included nursing students at the selected universities. A convenience sampling technique was employed to recruit the study participants from three private universities in Jordan. These three universities were selected because of their comparability in terms of the number and characteristics of their nursing students. In addition, these universities were comparable with respect to their geographical location and online learning platforms. The private universities were targeted in this study because they are well-equipped with online resources and online learning infrastructure. In addition, the private universities widely use information and communication technologies to help students in knowledge acquisition from websites and SNS which could increase the possibility of students' engaging in SNS. The selected universities provide two nursing programs: baccalaureate and master's.

The sample size was estimated using G power (version 3.1.5) that met 90% power, medium effect size, alpha 0.05, and by adding 10% of the sample. A total of 343 participants were shown to be needed. However, researchers distributed 500 questionnaires to address the possibility of a low response rate. Of them, 428 participants returned completed questionnaires.

## Inclusion/Exclusion Criteria

The inclusion criteria were 1) Jordanian, 2) studying nursing at any degree (Bachelor and Postgraduates), 3) studying at a private university. No specific exclusion criteria were imposed for students' selection. However, students who did not use the internet during the past 30 days would not be eligible to participate in the study.

## Study Instruments

*Socio-Demographic Questionnaire.* The Socio-demographic questionnaire was used to identify the characteristics of the participants including gender, age, student level, and marital status.

*Cyberbullying Perpetration Scale (CBPS).* This scale was developed by Lee et al. (2017) to assess cyberbullying perpetration. It contains 20 items divided into three subscales 1) nine items for verbal/ written perpetration 2) six items for visual/ sexual perpetration 3) five items for social exclusion perpetration. Each item was rated on a 5-point Likert scale ranging from 1 = not at all to 5 = very often. The respondents are asked to rate how often they have cyberbullied someone during the past 30 days (e.g., "I have sent someone means text messages on the mobile phone to harm the person". The higher total scores indicated greater tendencies to carry

out aggressive or harmful behavior directed at an individual using any form of electronic communication.

*Cyberbullying Victimization (CBV) Scale.* This scale was developed by Lee et al. (2017) to assess cyberbullying victimization (CBV). It includes 27 items divided into three subscales 1) 10 items for verbal/ written victimization 2) 10 items for visual/ sexual victimization 3) seven items for social exclusion victimization. Respondents are asked to indicate how often they have been cyberbullied by others during the past 30 days (e.g., "I have been sent threatening statements via e-mail or text". Each item was rated on a 5-point Likert scale ranging from 1 = not at all to 5 = very often.

*Translation and Pilot Testing.* After obtaining the approval from the authors and the developers of the scales used in the current study (Jangup Lee, Neil Abell, and Jennifer L. Holmes), the researchers translated the research instrument from English into Arabic language by following the World Health Organization guidelines (WHO, 2020) for translation; First, the English version of the questionnaire was translated into Arabic by a native Arabic-speaking translator. After that, the translated Arabic version of the questionnaire was evaluated and approved by a panel of experts. Then, the questionnaire was sent to a native English speaker to complete the backward translation. Once this portion was completed, the translators met and compared both versions before being forwarded to a board of experts who confirmed tool validity. Finally, a pilot study was conducted to verify the instrument's reliability and to assess the objectivity, feasibility, relevance, and applicability of the research tool. Thirty students from the nursing faculty were selected to take part in the pilot questionnaire before distribution for data collection. The respondents revealed that the questionnaire was clear and took an average of 20 min to complete it. Cronbach's alpha was used to test the internal consistency of the investigated tools. The Cronbach-alpha reliability for CBP was 0.81 and for the CBV was 0.92.

## Data Collection

An online questionnaire was developed using Google Forms. After obtaining the IRBs from the participating universities, the researchers contacted nursing faculty deans and faculty members in the participating universities to help in the process of questionnaire distribution to potential nursing students. An electronic link was sent to participants formally via e-mail. Moreover, an electronic link to the online survey was distributed directly to students through class representatives. Out of 500 questionnaires distributed, 428 were completed and returned with no missing and included in data analysis. Data collection was completed between July and September 2022.

## Statistical Analysis

Data were analyzed using IBM SPSS, Version 25. Data are presented as mean, standard deviation, and frequency. Linear regression analysis was performed to identify the demographic variables associated with the CBP and CBV scores. Findings were considered significant if $p < 0.05$.

## Ethical Considerations

Ethical approval was obtained from the Institutional Review Board (IRB) at Zarqa University (approval number: 11/ 2021). The consent form was included in the introduction part of the questionnaire, which contains the full description of the study; its purpose; and participants' rights. Students' confidentiality was assured as no identifying data was collected. Participation in this study was voluntary, and students had the right to withdraw even after they were consented in the first instance. Collected data were stored in a password-protected smart device that could be accessed only by the research team.

## Results

A sample of 428 nursing students completed the study. Table 1 presents the sociodemographic status of the studied participants. Among the participants, 312 (72.9%) were females and 257 (60%) aged between 18–29 years. The sample was predominantly of participants who studied Bachelor program of nursing (n = 398, 92.9%). Moreover, more than half of the participants (n = 249, 58.2%) were unmarried.

During the past month, about one-third of participants (n = 129, 30.1%) reported not being involved in cyberbullying, 124 (29%) reported being victimized by someone in the cyber world without being involved in cyberbullying perpetration, and 175 (40.9%) were categorized as cyberbullying perpetrators and victims at the same time. Table 2 shows that "visual\sexual perpetration" had the highest mean (12.36), while "social exclusion perpetration" had the lowest mean (9.00). The average overall CBP score was (25.77), showing a smaller tendency to engage in damaging

**Table 1.** Socio-Demographic Characteristics of the Study Participants.

|  | Variables | Frequency (n) | Percent (%) |
|---|---|---|---|
| Gender | Male | 116 | 27.1 |
|  | Female | 312 | 72.9 |
| Age (years) | 18–29 | 257 | 60 |
|  | 30–39 | 171 | 40 |
| Student level | Undergraduate | 398 | 92.9 |
|  | Postgraduate | 30 | 7.1 |
| Marital status | Unmarried | 249 | 58.2 |
|  | Married | 179 | 41.8 |

**Table 2.** Means and Standard Deviations of Cyberbullying Perpetration (CBP) Subscales Score.

| Domain | M | SD |
|---|---|---|
| Social Exclusion Perpetration | 9.00 | 3.96 |
| Verbal/Written Perpetration | 10.90 | 3.54 |
| Visual/Sexual Perpetration | 12.36 | 2.151 |
| Total Bullying Perpetration (CBP) | 25.77 | 8.33 |

**Table 3.** Means and Standard Deviations of the Cyberbullying Victimization (CBV) Subscales Score.

| Domain | Mean | SD |
|---|---|---|
| Verbal/Written Victimization | 15.41 | 6.59 |
| Social Exclusion Victimization | 9.87 | 4.31 |
| Visual/Sexual Victimization | 12.36 | 4.488 |
| Total Cyber Bullying Victimization (CBV) | 37.64 | 14.55 |

actions directed against an individual or a group through electronic communications technology. Table 3 illustrates that "Verbal/Written Victimization" received the highest mean (15.41), while "Social Exclusion Victimization" had the lowest mean (9.87). The average overall CBV score was (37.64), showing that the level of cyberbullying victimization is low among the studied sample.

A multiple linear regression analysis was used to estimate Cyberbullying perpetrators (CBP) based on gender, age, student level, and marital status. The overall regression model was significant, $F_{(4, 427)} = 3.785$, $P < 0.001$, R squared $= 0.168$ which indicates that the variables explained 16.8% of the variance in the CBP score (Table 4). The results of multiple linear regression analysis revealed that increasing age was associated with a decreased CBP score by 2.680 while being male was associated with cyberbullying perpetrators' score [$\beta = -2.471$, 95% confidential interval (CI)= ($-4216$- $-0.619$)].

A multiple linear regression analysis was used to estimate Cyberbullying Victimization (CBV) based on gender, age, student level, and marital status. The overall regression model was significant, $F_{(4, 427)} = 3.080$, $P < 0.001$, R squared $= 0.198$ which indicates that the variables explained 19.8% of the variance in the CBV score (Table 5). The results of multiple linear regression analysis revealed that increasing age was negatively associated with cyberbullying victimization score [$\beta = -5.093$, 95% confidential interval (CI) = ($-8.740$- $-1.446$)].

## Discussion

The current study investigated the prevalence of cyberbullying perpetration and cyberbullying victimization among nursing students in Jordan. With the rapid development of internet information technology, cyberbullying incidences

**Table 4.** Multiple Linear Regression Analysis Exploring Possible Predictors of CBP Score.

| | Unstandardized Coefficients | | | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|
| | B | Std. Error | P-value | Lower Bound | Upper Bound |
| (Constant) | 28.249 | 2.635 | 0.000 | 23.069 | 33.429 |
| Gender (Female) | -2.417 | .915 | 0.009 | -4.216 | -.619 |
| Age | -2.680 | 1.059 | 0.012 | -4.762 | -.597 |
| Education level | 1.792 | .987 | 0.070 | -.149 | 3.733 |
| Marital status | 1.253 | .862 | 0.147 | -.441 | 2.946 |

**Table 5.** Multiple Linear Regression Analysis Exploring Possible Predictors of CBV Score.

| | Unstandardized Coefficients | | | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|
| | B | Std. Error | P-value | Lower Bound | Upper Bound |
| (Constant) | 43.338 | 4.616 | 0.000 | 34.265 | 52.411 |
| Gender | -2.488 | 1.602 | 0.121 | -5.638 | .661 |
| Age | -5.093 | 1.855 | 0.006 | -8.740 | -1.446 |
| Education level | 2.077 | 1.730 | 0.230 | -1.323 | 5.477 |
| Marital status | 1.002 | 1.509 | 0.507 | -1.965 | 3.969 |

as a new type of attack have become common. The general idea is that cyberbullying typically involves threatening, hurtful, or embarrassing posts, or messages on social media, gaming platforms, or via text (Ryoo et al., 2015).

In terms of the student profile, the results of the current study revealed that the age of most of the study subjects ranged from 18–29 years. This is not surprising since this is the ideal age for college learning. In terms of gender, there were more females than their male counterparts. This situation is attributed to the fact that in the past; the nursing profession depended on the female workforce more than males, so women have a higher opportunity and are willing to study than men. This result agrees with the findings of the study conducted by Yang et al. (2022) who studied the same in China and found that most participants were female undergraduate students.

Concerning the prevalence of cyberbullying among the studied participants, the current study indicated that most of the surveyed students reported being cyberbullying perpetrators—victims. This could be due to the fact that victims are likely to vent their emotions through cyberbullying and become perpetrators themselves, contributing to a vicious cycle. In addition, the study participants are students at private universities that provide access to a variety of online technologies that could increase their risk for becoming cyberbullying victims or perpetrators. The result in this

regard agrees with Dou et al. (2020), who found a positive correlation between cyberbullying victimization and cyberbullying perpetration among university students.

By investigating the prevalence of Cyberbullying Perpetration among the surveyed nursing students, visual \sexual perpetration behavior receives the highest mean followed by Verbal/Written Perpetration then social exclusion perpetration. That means that visual /sexual perpetration was the most prevalent form of aggression in cyberbullying among the studied nursing students as reported by them. This outcome is alarming as students who experience sexual perpetration could need professional psychological counseling services to address the possible negative cognitive and psychological impacts of cyberbullying. Previous research reported two common types of cyberbullying: visual and written-verbal behaviors, with visual behaviors being more severe than written and verbal acts (Macaulay et al., 2022). On the contrary, Machimbarrena and Garaigordobi (2018) reported that insulting messages were the most prevalent forms of cyberbullying.

The current study findings indicated that verbal/written Victimization" receives the highest mean followed by Visual/Sexual Victimization then Social Exclusion Victimization. That means that verbal/written Victimization was the most prevalent form of aggression in cyberbullying among the studied nursing students as reported by them. This goes in hand with Bharati et al. (2021) who found that a high proportion of nursing students experienced bulling through repeated receiving harmful, threatening, or sexually suggestive text messages, embarrassing photos or videos, and repeated online phone calls. Similar findings were noted in university students in Hong Kong who experienced cyberbullying by receiving threatening, insulting, harassing, and teasing messages, photos, or videos (Xiao & Wong, 2013). In the same context, a study conducted in midwestern universities in the United States also indicated that about one-fourth reported that someone had sent them threatening or insulting text messages.

In fact, although SNS presents easy-to-use and helpful platforms for university students to communicate with peers, establish social ties, and access educational resources, they also facilitate cyberbullying perpetration (Sheikh et al., 2023). Within the context, the current study results regarding possible predictors of CBP and CBV revealed that increasing age was associated with a decreased CBP and CBV, while being male was associated with increasing cyberbullying perpetration.

This result reflects that older students are less more likely to involve in aggressive or harmful behavior directed at an individual using any form of electronic communication. This could be due to the fact that old-aged students have more experience in using technology and social media whether online or offline to conduct their assignments and more able to avoid cyberbullying.

Historically, there is inconsistency in literature regarding the link between gender and cyberbullying (Pontes et al., 2018). However, research has shown that female students are more likely to be bullied than being cyberbullying perpetrators (Salmon et al., 2018). The same was emphasized by various researchers who found that male students are more likely to be cyberbullying perpetrators than their female counterparts (Bauman & Baldasare, 2015; Sheikh et al., 2023).

## Strengths and Limitations

Although the current study provided new knowledge into the Jordanian nurse students' cyberbullying phenomenon, the study results should be interpreted carefully given the current methodological limitations. First, because this study was descriptive cross-sectional, it provided data about possible correlations but not causation. Second, the current study included a convenience sample of nursing students only of private universities; cyberbullying perpetration and victimization in nursing students from governmental universities is unknown. Regardless of the noted limitations, the current study provided an important step towards a better understanding of cyberbullying in nursing students.

## Implications for Practice

The study's findings may aid in the development of an anti-bullying programs at Jordan's nursing schools that aim to modify the mindsets and actions of both perpetrators and victims in order to raise awareness of cyber ethics and lessen bullying of nursing students. Additionally, the findings may assist policymakers in strengthening penalties for cyberbullying perpetrators and in educating students about these consequences through a campaign that raises awareness of the issue.

Recently, information technology has been considered an integral part of the learning process among nurse students. This indicates that cyberbullying situations cannot be totally avoided or resolved. However, various aspects should be addressed to improve the use of information technology by students safely and wisely. These aspects may include conducting comprehensive digital literacy courses for students that cover basic computer skills, internet use, and responsible use of social media including their ethical considerations. In addition, there is a need to increase the student's awareness regarding cybersecurity such as managing passwords and reporting any concerns to teachers. Finally, there is a need to foster collaboration between parents, teachers, and students to create an environment supportive of the responsible use of technology.

## Conclusions

The current study is among the first to explore the prevalence of cyberbullying among nursing students in Jordan. It was found that the prevalence of cyberbullying among nursing

students in the current study was alarming. In addition, based on the study findings, it can be concluded that increasing age was associated with a decreased CBP and CBV, while being male was associated with increased cyberbullying perpetration. The findings could guide nurse educators and university administrators in developing specific intervention programs or policies to combat cyberbullying among Jordanian nursing students and to help students avoid participating in cyberbullying. Future research may want to consider using a longitudinal research design with more testing variables and more comprehensive examination of potential causes of cyberbullying in this population. Moreover, future research could also consider sampling students from governmental universities given that it was out of study scope.

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