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Determination of Cyber Victimization and Bullying Levels and Factors Affecting Them Among Nursing Students: A Cross-Sectional Study

Hemşirelik Öğrencilerinde Siber Mağduriyet ve Zorbalık Düzeyleri ile Bunları Etkileyen Faktörlerin Belirlenmesi: Kesitsel Bir Çalışma

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ABSTRACT

Aim: *This study aimed to assess the levels of cyberbullying and cyber victimization among nursing students and to identify the variables that may influence these phenomena.*

Material and Method: *This cross-sectional study was conducted with 276 nursing students from a nursing faculty of a state university between May and June 2023. The data were analyzed using the descriptive statistics, independent groups t-test and one-way ANOVA test.*

Results: *The participants' average age was 20.48 ± 1.47 years, with 94.2% being female. Cyberbullying and cyber victimization average scores were 25.84 ± 4.14 and 29.53 ± 6.70, respectively. Significant differences were found in cyber victimization scores based on age and class level, with 18-year-old students and higher-class levels reporting higher victimization ($p < 0.05$). Additionally, students who knew someone who engaged in, or experienced cyberbullying had higher cyberbullying and cyber victimization scores. No significant differences were observed based on gender or weekly internet usage.*

Conclusion: *The findings highlight the need for targeted interventions to prevent cyberbullying and support victims among nursing students. These interventions could include educational programs to raise awareness, support services for victims, and strategies to reduce the normalization of cyberbullying behaviors. Further research is needed to explore the complex relationships between demographic factors and cyberbullying behaviors.*

Keywords: *Cyberbullying, Cyber Victimization, Nursing Students, Mental Health, Cross-sectional Study*

ÖZET

Amaç: *Bu çalışma, hemşirelik öğrencilerinin siber zorbalık ve siber mağduriyet düzeylerini değerlendirmeyi ve bu fenomenleri etkileyebilecek değişkenleri belirlemeyi amaçlamıştır.*

Gereç ve Yöntem: *Bu kesitsel çalışma, Mayıs ve Haziran 2023 tarihleri arasında bir devlet üniversitesinin hemşirelik fakültesinde öğrenim gören 276 hemşirelik öğrencisi ile gerçekleştirilmiştir. Veriler, tanımlayıcı istatistikler, bağımsız gruplar t-testi ve tek yönlü ANOVA testi kullanılarak analiz edilmiştir.*

Bulgular: *Katılımcıların ortalama yaşı 20.48 ± 1.47 yıl olup, %94.2'si kadındır. Siber zorbalık ve siber mağduriyet ortalama puanları sırasıyla 25.84 ± 4.14 ve 29.53 ± 6.70 olarak bulunmuştur. Yaş ve sınıf düzeyine göre siber mağduriyet puanlarında anlamlı farklılıklar bulunmuş olup, 18 yaşındaki öğrenciler ve üst sınıf düzeyler daha yüksek mağduriyet bildirmiştir ($p < 0.05$). Ayrıca, çevresinde siber zorbalık yapan veya siber zorbalığa maruz kalan birini tanıyan öğrenciler, daha yüksek siber zorbalık ve siber mağduriyet puanlarına sahipti. Cinsiyet veya haftalık internet kullanımı temelinde anlamlı farklılıklar gözlenmemiştir ($p > 0.05$).*

Sonuç: *Bulgular, hemşirelik öğrencileri arasında siber zorbalığı önlemeye yönelik hedeflenmiş müdahalelerin ve mağdurları desteklemenin gerekliliğini vurgulamaktadır. Bu müdahaleler, farkındalığı artırmaya yönelik eğitim programlarını, mağdurlara yönelik destek hizmetlerini ve siber zorbalık davranışlarının normalleşmesini azaltacak stratejileri içerebilir. Demografik faktörler ve siber zorbalık davranışları arasındaki karmaşık ilişkileri keşfetmek için daha fazla araştırmaya ihtiyaç vardır.*

Anahtar Kelimeler: *Siber Zorbalık, Siber Mağduriyet, Hemşirelik Öğrencileri, Ruh Sağlığı, Kesitsel Çalışma.*

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INTRODUCTION

Technology advancements have led to a steady change in communication channels and an increase in the usage of virtual platforms. This has brought both opportunities and challenges, one of which is the growing prevalence of cyberbullying. There are certain challenges to this new mode of communication, such as a lack of non-verbal cues, misinterpretation of messages, and the potential for misuse of virtual platforms. The issue of cyberbullying in the virtual world is one of these challenges. The systematic review highlighted, the majority of internet users are students, and this group is particularly vulnerable to cyberbullying (Yosep et. al., 2023).

Bullying refers to a pattern of aggressive behavior where an individual deliberately and repeatedly inflicts harm or discomfort on another person. It may manifest through physical actions, verbal expressions, or more covert behaviors. According to Smith et al. (2008), cyberbullying is the act of someone hurting another person physically, socially, or psychologically over the internet. Cyberbullying can take many different forms, including derogatory remarks, threats, jokes, slander, or the sharing of private information via emails, websites, social media platforms, messaging apps, or other channels (Kowalski et. al., 2014).

The harm experienced by individuals who are targeted by these hostile actions in the digital sphere is referred to as cyber victimization. The definition of cyber victimization is when people or groups are exposed to upsetting behaviors in virtual environments that cause them to suffer material or moral harm (Arıcak et. al., 2012; Karaca et. al.,2021). When someone experiences bullying behavior and is unable to defend themselves against it, they become a cyber victim (Seçkin, 2017; Yaman et. al., 2011). There are similarities and differences between traditional bullying and cyberbullying. The primary distinction between the two is that the perpetrators of bullying utilize technology, and it is exceedingly challenging to identify and apprehend those who engage in bullying within virtual environments.

Cyberbullying has numerous negative repercussions, notably for mental health. According to Stevens et al. (2021), cyberbullying victims suffer from a variety of mental health disorders, including anxiety, sadness, suicide ideation, and panic attacks. Bullying behaviors in adolescents have been connected to difficulties making friendships, poor academic performance, family conflicts, sleep disorders, and feelings of loneliness (Wang, 2021). Similarly, workplace cyberbullying among nurses has been linked to higher stress, burnout, and an intention to quit (Park and Choi, 2019). Research on undergraduate nursing students reveals further aspects of this problem. Rababah et al. (2024) found that nursing students with lower health literacy are more likely to experience bullying and cyberbullying victimization, underlining the protective effect of health. Furthermore, a cross-sectional study of nursing students in Saudi Arabia discovered that cyberbullying and cybervictimization are significantly associated with depression, low self-esteem, internet addiction, and anxiety, implying a complex link between mental health issues and online harassment (Albikawi, 2023). Similarly, El-Fayoum Univerity's research on nursing and non-nursing students found that the most generally reported emotional impact of cyberbullying was anger, followed by fear, grief, and loneliness (Hassan et al., 2019).

Cyberbullying and victimization are especially significant for nursing students because of their dual responsibilities as students and future healthcare professionals. Nursing students face particular stresses, such as strong academic demands, clinical training, and the obligation for patient care. These pressures may exacerbate the psychological effects of cyberbullying, causing disruptions in academic and clinical performance (Cestari et al., 2017; Magnavita & Chiorri, 2018; Pulido et.al, 2012; Alzayyat &Al-Gamal, 2014). Furthermore, understanding the mechanics of cyberbullying is critical for future nurses as they develop empathy, communication skills, and techniques to support patients who may be victims of online harassment (Yosep et. Al., 2023). Addressing cyberbullying and its implications in nursing school can not only improve students' well-being, but also equip them to deal with comparable difficulties in their professional practice.

Cyberbullying is a fast increasing problem in the digital era, with serious psychological and social consequences. Adolescents and young people, including nursing students, are especially sensitive to its impacts since they use technology and online platforms so extensively.

Cyberbullying has been associated with anxiety, sadness, low self-esteem, stress, and, in severe cases, suicide ideation, as well as scholastic difficulties and impaired social interactions (Amin et. al., 2024; Carpenter & Hubbard, 2014). Psychiatric nurses play an important role in reducing the impacts of cyberbullying by raising awareness, encouraging resilience, and designing intervention programs. They can promote safe internet use, open discussion about online experiences, and positive online conduct by working with parents, educators, and school officials (Williams, and Godfrey, 2011). School-based preventative strategies are also vital for addressing cyberbullying and its implications in educational settings.

While cyberbullying has been extensively studied in youth, few studies have focused on nursing students, who are especially vulnerable owing to academic expectations and professional socialization. This study seeks to address this gap by investigating the prevalence and impact of cyberbullying and cyber victimization among nursing students, with the objective of informing targeted treatments and establishing preventive policies in nursing education.

Research Questions

1. What are the levels of cyberbullying and cyber victimization among nursing students?

2. Do cyberbullying and cyber victimization levels differ based on demographic factors?

3. Do cyberbullying and cyber victimization levels vary among students who know someone engaging in or experiencing cyberbullying or cyber victimization?

MATERIAL AND METHODS

Research Type

The cross-sectional study was conducted through an online survey with a nursing faculty of a state university between May and June 2023.

Study Population and Sample

The study population consists of 757 students currently enrolled at a nursing faculty of a state university. The target sample size was calculated using the Raosoft sample size calculator, based on a population of known size (757 students), a 90% confidence interval, and a 5% margin of error, resulting in a required sample size of 271 students. The study was completed with 276 students (36.5% of the population) who voluntarily agreed to participate and provided complete responses to the survey. Responses from 6 participants who incorrectly answered validation questions, included to ensure response accuracy, were excluded from the analysis. The sample was derived using simple random sampling, as all students in the known population had an equal chance to participate, and voluntary responses were accepted.

The independent variables are gender, age, grade level, average weekly internet usage, perception of being a cyberbully, perception of being a cyber victim, presence of individuals in their surroundings who engage in cyberbullying, and presence of individuals in their surroundings who are victims of cyberbullying. The dependent variables are the levels of cyberbullying and cyber victimization.

Data Collection Tools

Data collection involved the use of a descriptive information form and the Cyber Victim and Bullying Scale (CVBS).

Descriptive Information Form: This form consists of 10 questions regarding demographic characteristics such as age, gender, education, and class level, as well as cyber victimization and bullying (Albikawi, 2023; Alrajeh et. al., 2021; Çetin et. al., 2011).

Cyber Victim and Bullying Scale: This study utilized the "Cyber Victim and Bullying Scale" developed by Çetin et. al. (2011) to assess cyberbullying and victimization levels among high school students. The scale consists of 22 items divided into two subscales: cyber victimization and cyberbullying, each with three factors: cyber verbal bullying (items 1–7), hiding identity (items 8–12), and cyber forgery (items 13–22). Participants report their cyber victimization status using a five-point Likert scale in the "It Happened to Me" section, ranging from "Always (5)" to "Never (1)". Similarly, they respond to the degree of their involvement in cyberbullying behaviors in the "I Did It" section, also using a five-point Likert scale ranging from "Always (5)" to "Never (1)". The scale allows for the calculation of both total scores and subscale scores. The total score ranges from 22 to 110, with higher scores indicating greater levels of cyberbullying or victimization. The subscale scores range from 7 to 35 for cyber verbal bullying, 5 to 25 for hiding identity, and 10 to 50 for cyber forgery. There is no predetermined cut-

off score for the scale. Instead, higher scores reflect increased levels of cyberbullying behaviors or victimization. The internal consistency coefficients for both the cyber victimization and cyberbullying scales were found to be 0.89. For this study, the Cronbach's alpha was calculated as 0.85 for cyber victimization and 0.76 for cyberbullying.

Data Collection

The data collection process was conducted between May and June 2023. The survey was distributed using Google Forms, and the data collection link was shared in WhatsApp groups created by the school for communication with students. Students who voluntarily agreed to participate accessed and completed the data collection tools via the provided link. Prior to the data collection process, necessary permissions were obtained to ensure compliance with ethical guidelines.

Table 1. Participants' Demographic Characteristics and Views on Cyberbullying and Cyber Victimization (n=276)

Characteristics	M ± SD	Min	Max
Age	20.48 ± 1.47	18	24
		n	**%**
Age	18	28	10.1
	19	50	18.1
	20	61	22.1
	21	61	22.1
	22	55	19.9
	23	17	6.2
	24	4	1.4
Gender	Female	260	94.2
	Male	16	5.8
Class level	1st year	98	35.5
	2nd year	55	19.9
	3rd year	75	27.2
	4th year	48	17.4
Internet Usage per Week	Less than 5 hours	30	10.9
	6-10 hours	67	24.3
	11-15 hours	73	26.4
	16 hours or more	106	38.4
Heard of Cyberbullying	Yes	266	96.4
	No	10	3.6
Heard of Cyber Victimization	Yes	232	85.6
	No	39	14.4
Believes They Have Engaged in Cyberbullying	Yes	5	1.8
	Undecided	23	8.3
	No	248	89.9
Believes They Have Experienced Cyber Victimization	Yes	55	20.3
	Undecided	62	22.9
	No	154	56.8
Knows Someone Who Engages in Cyberbullying	Yes	61	22.1
	Undecided	61	22.1
	No	154	55.8
Knows Someone Who Has Experienced Cyber Victimization	Yes	108	39.9
	Undecided	61	22.5
	No	102	37.6

Min: Minimum; Max: Maximum; M: Mean; SD: Standard deviation.

Ethical Considerations

Before the study was started, written permissions were obtained from the administrations of the university (Date: 03.01.2023 and Number: E-66181794-604.01.02--200378) whose students were to be included in the study's sample. Written approval was obtained from Scientific Research Ethics Committee (Date: 14.03.2023 and Approval number: 2023/97). Students were informed about the study on the first page of the online form, which included an informed consent

statement. Only those who read and agreed to participate by providing their consent were included in the study. Permission to use the "Cyber Victim and Bullying Scale" was obtained from the scale's developer via email correspondence prior to the data collection process.

Statistical Analysis

Data analysis was conducted using IBM SPSS Statistics 27.0 software, with a 95% confidence interval applied for statistical evaluations. The skewness coefficient was -0.45, and the kurtosis coefficient was 1.23, both of which fall within the acceptable range of +3 to -3, indicating that the data followed a normal distribution (Hopkins and Weeks, 1990). Consequently, parametric methods such as independent samples t-test and ANOVA were used for statistical analyses. For categorical variables, frequency (n) and percentage (%) were provided, while for numerical variables, mean (M), standard deviation (SD), minimum, and maximum statistics were given. Independent groups t-test and one-way ANOVA tests were used in the study. The comparison of Cyber Victim and Bullying Scale scores with demographic characteristics and work information was conducted using independent groups t-test and one-way ANOVA test. Type 1 error was accepted as $p<0.05$.

RESULTS

The demographic characteristics of the participants revealed an average age of 20.48±1.47, with the majority being female (94.2%) and 35.5% being first-year students. Additionally, 38.4% of the participants reported using the internet for 16 hours or more per week. A significant portion of the participants indicated awareness of the concepts of cyberbullying (96.4%) and cyber victimization (85.6%). While 89.9% of the participants believed they had not engaged in cyberbullying, 56.8% reported experiencing cyber victimization. Furthermore, 22.1% of the participants noted the presence of individuals engaging in cyberbullying in their environment, and 39.9% reported knowing individuals who had experienced cyber victimization (Table 1).

Table 2. Mean Scores of Cyber Victim and Bullying (n=276)

Scale	Min	Max	M	SD
Total Cyberbullying	22.00	42.00	25.84	4.14
Cyber Verbal Bullying	7.00	18.00	8.76	2.31
Hiding Identity	5.00	15.00	6.56	1.89
Cyber Forgery	10.00	14.00	10.51	0.88
Total Cyber Victimization	22.00	51.00	29.53	6.70
Cyber Verbal Victimization	7.00	22.00	9.46	3.19
Hiding Identity	5.00	15.00	8.01	2.50
Cyber Forgery	10.00	24.00	12.05	2.61

Min: Minimum; Max: Maximum; M: Mean (Ortalama); SD: Standard deviation.

The average cyberbullying score among participants was 25.84 ± 4.14, and the average cyber victimization score was 29.53 ± 6.70 (Table 2).

Table 3 presents the scores obtained from the Cyber Victim and Bullying Scale and its subscales based on the characteristics of the students. When analyzed by age groups, it was observed that the total cyber victimization scores and the hiding identity subscale scores of 18-year-old students showed a significant difference compared to other students ($F = 3.196$, $p < 0.05$). Analyses conducted across class levels indicated that the total cyber victimization scores ($F = 4.020$, $p = 0.008$), hiding identity ($F = 6.985$, $p < 0.001$), and cyber forgery ($F = 5.143$, $p = 0.002$) subscale scores increased as students progressed through their classes ($p < 0.05$). There was no significant relationship between gender and internet usage duration in relation to the scores of the Cyber Victim and Bullying Scale and its subscales ($p > 0.05$).

Participants who believed that there were individuals engaging in cyberbullying in their surroundings had higher total and subscale scores for both cyberbullying and cyber victimization compared to other participants ($p < 0.05$). Students who believed they had experienced cyber victimization had higher total scores and subscale scores for cyber victimization compared to other students ($p < 0.05$). Additionally, participants who reported knowing individuals

who had experienced cyber victimization had higher total scores for cyberbullying ($F = 3.504$, $p = 0.031$) and cyber victimization ($F = 27.937$, $p < 0.001$) compared to other students. This group also scored statistically higher on the subscales of cyber victimization compared to other students (Table 4) ($p < 0.05$).

DISCUSSION

The aim of this study was to determine the levels of cyberbullying and cyber victimization among nursing students and to examine whether these levels differ based on certain variables. The average scores for cyberbullying and cyber victimization were 25.84±4.14 and 29.53±6.70, respectively. Considering that the maximum possible score for each scale is 110, the average scores of the students can be considered low. In a study conducted by Gönültaş (2022), it was found that cyberbullying and cyber victimization were quite prevalent among university students, with rates of 57% and 68%, respectively. Similarly, Albikawi (2023) found that 20.67% of nursing students experienced cyberbullying and 17.32% experienced cyber victimization. The lower scores for cyberbullying and cyber victimization in this study may reflect differences in cultural, institutional, or educational factors affecting students' experiences and reporting behaviors.

The average scores for the cyber victimization scale varied by age, with 18-year-old students scoring higher than other students ($p < 0.05$). The higher scores among 18-year-olds suggest that this age group may be more prone to cyber victimization. Recent studies indicate that young adolescents are at a higher risk of cyberbullying due to their increasing online presence and limited experience in managing online conflicts. The transition from adolescence to adulthood is a significant developmental process, and the situational crisis of starting university may increase stress levels among students. The literature discusses that stress or tension can be both a result and a cause of cyber or traditional bullying (Yildiz Durak and Saritepeci, 2020; Albikawi, 2023; Ramadan et al., 2024).

In this study, no statistically significant difference was found between gender and the average scores for cyberbullying. However, it should be noted that there was a significant imbalance in the gender distribution of the sample, with females representing the vast majority of participants (94.2%). This imbalance may have contributed to the lack of significant differences between genders. The literature presents diverse findings regarding gender. Gönültaş (2022) reported that cyberbullying and cyber victimization scores were higher among males compared to females. Similarly, a study by Çimke and Cerit (2021) on university students indicated that male students had higher cyberbullying and cyber victimization scores. On the other hand, according to the Pew Research Center (2022), females are more likely to experience cyber victimization compared to males. Hassan et al. (2019) emphasized that females tend to report more intense emotional consequences such as anger and fear after experiencing online harassment. The difference between the findings of this study and the existing literature may be attributed to the gender imbalance in the sample or to cultural and contextual factors that influence how cyberbullying and victimization are perceived and reported. These results highlight the importance of further research with more balanced gender distributions to explore the relationship between gender, cyber victimization, and cyberbullying.

While the cyberbullying scores of students did not vary by class level, the average scores for the subscales of cyber victimization increased with higher class levels. Gönültaş (2022) did not find a significant difference between classes. Çimke and Cerit (2021) also reported no differences in cyberbullying and cyber victimization scores based on class levels. However, Rababah et al. (2024) indicated that first-year nursing students reported lower levels of health literacy, which may contribute to less awareness and lower reporting of cyberbullying and cyber victimization. The higher scores for cyber victimization as classes progress in this study may be related to increased awareness and reporting of the issue among students as they advance in their education. Participants who believed they had experienced cyber victimization had higher average scores on the cyber victimization scale and its subscales compared to other participants. However, the same students also had higher average scores on the cyberbullying scale compared to those who did not believe they had experienced cyber victimization. This finding suggests that individuals who experience cyber victimization may also engage in cyberbullying behaviors.

Table 3. Mean Scores of Cyber Victim and Bullying by Participants' Demographics (n=276)

	Cyberbullying				**Cyber Victimization**			
	Cyber Verbal	Hiding Identity	Cyber Forgery	Total	Cyber Verbal	Hiding Identity	Cyber Forgery	Total
Demographics								
Gender								
Female	8.72 ± 2.26	6.56 ± 1.84	10.52 ± 0.89	25.80 ± 4.05	9.33 ± 3.09	8.07 ± 2.48	12.08 ± 2.63	29.48 ± 6.61
Male	9.44 ± 3.08	6.56 ± 2.68	10.50 ± 0.82	26.50 ± 5.56	11.50 ± 4.13	7.19 ± 2.74	11.63 ± 2.31	30.31 ± 8.24
t	-0.914	-0.007	0.068	-0.498	-2.061	1.365	0.676	-0.396
p	0.374	0.994	0.946	0.625	0.056	0.173	0.499	0.697
Age								
18 (1)	9.29 ± 2.40	6.32 ± 1.19	10.64 ± 0.83	26.25 ± 3.74	9.68 ± 3.61	7.43 ± 2.33	11.57 ± 2.41	28.68 ± 7.44
19 (2)	8.38 ± 2.13	5.94 ± 1.39	10.38 ± 0.67	24.70 ± 3.28	8.70 ± 2.60	6.66 ± 1.97	11.12 ± 2.09	26.48 ± 4.97
20 (3)	8.79 ± 2.37	6.70 ± 2.20	10.51 ± 0.96	26.00 ± 4.63	9.75 ± 3.40	8.02 ± 2.45	12.26 ± 2.57	30.03 ± 6.91
21 (4)	9.00 ± 2.47	6.92 ± 1.92	10.57 ± 0.94	26.49 ± 4.41	9.39 ± 3.33	8.43 ± 2.26	12.34 ± 2.68	30.16 ± 6.67
22 (5)	8.42 ± 1.82	6.65 ± 2.08	10.64 ± 0.99	25.71 ± 3.97	9.42 ± 2.96	8.89 ± 2.72	12.35 ± 2.64	30.65 ± 6.86
23 and above (6)	9.14 ± 3.02	6.62 ± 1.88	10.19 ± 0.60	25.95 ± 4.48	10.43 ± 3.36	8.52 ± 2.82	12.71 ± 3.39	31.67 ± 6.69
F	1.049	1.733	1.193	1.152	1.094	**5.515**	2.145	**3.196**
p	0.389	0.127	0.313	0.333	0.364	**< 0.001***	0.060	**0.008**,**
Post hoc tukey						2 < 3, 4, 5, 6		2 < 4, 5, 6
Class level								
1	8.77 ± 2.32	6.29 ± 1.59	10.49 ± 0.76	25.54 ± 3.85	9.35 ± 3.24	7.40 ± 2.25	11.50 ± 2.14	28.24 ± 6.44
2	8.51 ± 1.91	6.65 ± 2.08	10.51 ± 0.94	25.67 ± 4.06	9.29 ± 3.10	7.49 ± 2.49	11.75 ± 2.43	28.53 ± 6.32
3	8.92 ± 2.55	6.67 ± 2.08	10.49 ± 0.88	26.08 ± 4.52	9.67 ± 3.28	8.59 ± 2.52	12.28 ± 2.86	30.53 ± 6.91
4	8.81 ± 2.37	6.83 ± 1.89	10.60 ± 1.05	26.25 ± 4.25	9.56 ± 3.12	8.98 ± 2.56	13.19 ± 2.94	31.73 ± 6.71
F	0.341	1.153	0.205	0.439	0.212	**6.895**	**5.143**	**4.020**
p	0.795	0.328	0.893	0.725	0.888	**< 0.001***	**0.002****	**0.008****
Post hoc tukey						1< 3, 4 2 < 4	1 < 4 2 < 4	1 < 4

Internet Usage per Week								
Less than 5 hours	8.70 ± 1.60	6.93 ± 2.05	10.53 ± 0.82	26.17 ± 3.53	9.83 ± 3.67	8.30 ± 2.45	11.53 ± 2.22	29.67 ± 7.02
6-10 hours	8.48 ± 2.07	6.63 ± 1.77	10.52 ± 0.91	25.63 ± 3.82	8.78 ± 2.51	7.79 ± 2.59	12.09 ± 2.52	28.66 ± 6.26
11-15 hours	8.70 ± 2.44	6.47 ± 1.97	10.37±0.81	25.53 ± 4.33	9.88 ± 3.73	8.18 ± 2.68	12.36 ± 2.74	30.41 ± 7.35
16 hours or more	9.01 ± 2.53	6.47 ± 1.86	10.60 ± 0.92	26.08 ± 4.38	9.50 ± 3.00	7.96 ± 2.35	11.97 ± 2.69	29.43 ± 6.43
F	0.766	0.554	1.028	0.375	1.594	0.425	0.759	0.809
p	0.514	0.646	0.381	0.771	0.191	0.735	0.518	0.490

F: Anova, t: t-test, *$p < 0.001$ **$p < 0.05$

Table 4. Mean Scores of Cyber Victim and Bullying by Participants' Characteristics (n=276)

	Cyberbullying				**Cyber Victimization**			
	Cyber Verbal	Hiding Identity	Cyber Forgery	Total	Cyber Verbal	Hiding Identity	Cyber Forgery	Total
Characteristics								
Heard of Cyber Victimization								
Yes	8.73 ± 2.31	6.48 ± 1.84	10.51 ± 0.89	25.72 ± 4.09	9.51 ± 3.28	7.99 ± 2.50	12.13 ± 2.69	29.63 ± 6.85
No	9.03 ± 2.41	7.05 ± 2.19	10.56 ± 0.88	26.64 ± 4.49	9.18 ± 2.78	7.82 ± 2.48	11.69 ± 2.17	28.69 ± 6.18
t	-0.740	-1.734	-0.333	-1.276	0.592	0.395	0.953	0.798
p	0.460	0.084	0.739	0.203	0.555	0.693	0.341	0.426
Believes They Have Experienced Cyber Victimization								
Yes	9.33 ± 2.60	6.75 ± 1.59	10.58 ± 0.98	26.65 ± 4.20	11.82 ± 4.01	9.33 ± 2.43	14.20 ± 3.18	35.35 ± 7.22
Undecided	8.98 ± 2.12	7.18 ± 2.36	10.73 ± 1.06	26.89 ± 4.47	10.18 ± 3.30	8.90 ± 2.73	12.55 ± 2.88	31.63 ± 7.08
No	8.49 ± 2.26	6.25 ± 1.74	10.42 ± 0.76	25.16 ± 3.89	8.33 ± 2.17	7.10 ± 2.04	11.10 ± 1.61	26.54 ± 4.37
F	**3.044**	**5.724**	2.921	**5.268**	**31.812**	**25.705**	**37.692**	**53.486**
p	**0.049****	**0.004****	0.056	**0.006****	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***
Knows Someone Who Engages in Cyberbullying								
Yes	9.87 ± 2.83	7.16 ± 2.03	10.70 ± 0.94	27.74 ± 4.65	11.97 ± 4.00	8.97 ± 2.54	13.48 ± 2.82	34.41 ± 6.99
Undecided	8.90 ± 1.88	7.02 ± 2.19	10.77 ± 1.16	26.69 ± 3.91	10.02 ± 3.07	8.95 ± 2.72	12.52 ± 2.81	31.49 ± 6.87
No	8.27 ± 2.08	6.14 ± 1.58	10.34 ± 0.67	24.75 ± 3.66	8.25 ± 2.05	7.27 ± 2.13	11.31 ± 2.15	26.82 ± 4.97
F	**11.346**	**9.312**	**7.453**	**14.337**	**39.576**	**17.462**	**18.400**	**40.343**
p	**< 0.001***	**< 0.001***	**0.001****	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***
Knows Someone Who Has Experienced Cyber Victimization								
Yes	9.25 ± 2.47	6.65 ± 1.78	10.65 ± 1.02	26.55 ± 4.06	10.77 ± 3.75	8.67 ± 2.57	12.95 ± 3.10	32.39 ± 7.20
Undecided	8.74 ± 2.05	6.75 ± 2.01	10.49 ± 0.85	25.98 ± 4.22	9.69 ± 3.10	8.39 ± 2.55	12.00 ± 2.31	30.08 ± 6.50
No	8.28 ± 2.22	6.36 ± 1.96	10.40 ± 0.73	25.05 ± 4.12	7.94 ± 1.67	6.97 ± 2.05	11.16 ± 1.83	26.07 ± 4.56
F	**4.681**	0.981	2.085	**3.504**	**24.401**	**14.591**	**13.483**	**27.937**
p	**0.010****	0.376	0.126	**0.031****	**< 0.001***	**< 0.001***	**< 0.001***	**< 0.001***

F: One way Anova, t: student t-test, * $p < 0.001$, **$p < 0.05$

The literature includes studies indicating that learned violent behavior can be used against others as a coping mechanism for stress, leading to a vicious cycle of violence (Varol and Öz, 2023; Bushman et. al., 2020). Yosep et al. (2023) also emphasized the importance of resilience-building and adaptive coping strategies in reducing the negative effects of cyberbullying, which could help break this cycle.

Participants who reported the presence of individuals engaging in cyberbullying in their environment had higher average scores on both the cyberbullying and cyber victimization scales and their subscales compared to those who did not report such presence. The prevalence of cyberbullying in the environment may lead to the normalization of these behaviors among students. Consequently, students may begin to perceive these behaviors as normal and engage in them themselves (Allen et. al., 2018). Furthermore, Yosep et al. (2023) suggested that school-based programs involving teachers, nurses, and parents collaboratively could help raise awareness and reduce the prevalence of cyberbullying in such environments.

Limitations

Despite being statistically significant, the sample size of 276 students might not accurately reflect the entire population of nursing students outside of one university. Therefore, the findings might not be generalizable to all nursing students. Another limitation of the study is the low number of male participants, which may have affected the analysis of gender-based differences in cyberbullying and victimization levels. Additionally, the research depends on self-reported information gathered via online questionnaires. Response biases, such as the social desirability bias, may cause individuals to answer in a way that is more positive than what is true.

CONCLUSION

This study assessed the levels of cyberbullying and cyber victimization among nursing students and evaluated certain variables that may be related to these behaviors. According to the study, the scores for cyberbullying and cyber victimization did not vary by gender or the amount of time spent on the internet. However, it was determined that the prevalence of cyber victimization increased with higher class levels. Additionally, the presence of individuals who engage in cyberbullying or have experienced cyber victimization in the participants' surroundings contributed to higher scores in cyber victimization and cyberbullying. This finding underscores the influence of the university environment on cyberbullying and highlights the potential for normalized behaviors to perpetuate a vicious cycle.

As with other types of aggression, exposure to cyberbullying behaviors negatively impacts mental health (Alrajeh et. al., 2021; Li et. al., 2022). A key contribution of this study is its focus on nursing students, a population often underrepresented in cyberbullying research. These findings underscore the need for targeted interventions in nursing education, including awareness programs and strategies to manage cyberbullying behaviors. Universities should also establish support services for students experiencing cyber victimization to mitigate its impact.

Future research should explore cultural and institutional factors influencing cyberbullying behaviors and examine the long-term consequences for nursing students' mental health and academic performance.

Ethics Committe Approval

Ethics committee approval was received for this study from the Gulhane Scientific Research Ethics Committee (Date: 14.03.2023, Approval Number: 2023/97).

Author Contributions

Idea/Concept: B.V., A.K., Z.Y., H.K., M.A., L.N.Ö.; Design: B.V., A.K., Z.Y., H.K., M.A., L.N.Ö.; Supervision/Consulting: B.V.; Analysis and/or Interpretation: B.V., A.K., Z.Y., H.K., M.A., L.N.Ö.; Literature Search: B.V., A.K., Z.Y., H.K., M.A., L.N.Ö.; Writing the Article: B.V., A.K., Z.Y., H.K., M.A., L.N.Ö.; Critical Review: BV.

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Conflict of Interest

The authors have no conflict of interest to declare.

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REFERENCES

Albikawi, Z. F. (2023). Anxiety, depression, self-esteem, internet addiction and predictors of cyberbullying and cybervictimization among female nursing university students: a cross

sectional study. *International Journal of Environmental Research and Public Health*, 20(5), 4293. doi: 10.3390/ijerph20054293

Alrajeh, S. M., Hassan, H. M., Al-Ahmed, A. S., Alsayed Hassan, D. (2021). An investigation of the relationship between cyberbullying, cybervictimization and depression symptoms: A cross sectional study among university students in Qatar. *PloS One*, 16(12), e0260263. doi: 10.1371/journal.pone.0260263

Allen, J. J., Anderson, C. A., Bushman, B. J. (2018). The general aggression model. *Current Opinion in Psychology*, 19, 75-80. doi: 10.1016/j.copsyc.2017.03.034

Alzayyat, A., & Al-Gamal, E. J. I. N. R. (2014). A review of the literature regarding stress among nursing students during their clinical education. *International nursing review*, 61(3), 406-415.

American Psychological Association. (n.d.). Bullying. APA.org. Retrieved December 26, 2024, from https://www.apa.org/topics/bullying

Amin, S. M., Mohamed, M. A. E. S., Metwally El-Sayed, M., & El-Ashry, A. M. (2024). Nursing in the digital age: The role of nursing in addressing cyberbullying and adolescents mental health. *Journal of Psychiatric and Mental Health Nursing*. doi: 10.1111/jpm.13085

Barlett, C. P. (2023). Cyberbullying as a learned behavior: theoretical and applied implications. *Children*, 10(2), 325. doi: 10.3390/children10020325

Bushman, B. J., Anderson, C. A., Allen, J. J. (2020). General aggression model. *In The International Encyclopedia of Media Psychology* (pp. 1-9). doi: 10.1002/9781119011071.iemp0154

Carpenter, L. M., & Hubbard, G. B. (2014). Cyberbullying: implications for the psychiatric nurse practitioner. *Journal of Child & Adolescent Psychiatric Nursing*, 27(3). doi: 10.1111/jcap.12079

Cestari, V. R. F., Barbosa, I. V., Florêncio, R. S., Pessoa, V. L. M. D. P., & Moreira, T. M. M. (2017). Stress in nursing students: study on sociodemographic and academic vulnerabilities. *Acta paulista de enfermagem*, 30, 190-196. doi: 10.1590/1982-0194201700029

Çetin, B., Yaman, E., Peker, A. (2011). Cyber victim and bullying scale: A study of validity and reliability. *Computers & Education*, 57(4), 2261-2271. doi: 10.1016/j.compedu.2011.06.014

Çimke, S., Cerit, E. (2021). Social media addiction, cyberbullying and cyber victimization of university students. *Archives of Psychiatric Nursing*, 35(5), 499-503. doi: 10.1016/j.apnu.2021.07.004

Gönültaş, M. (2022). Cyber bullying and victimization among university students. *International Journal of Psychology and Educational Studies*, 9(2), 297-307. doi: 10.52380/ijpes.2022.9.2.441

Hassan, H. E., Sheha, E. A. A. E. M., Gamel, W. M. A., & Arafa, A. E. E. (2019). Online harassment and cyberbullying victimization and its emotional impacts among female nursing and non-nursing students. *American Journal of Nursing Research*, 7(2), 102-108. doi: 10.12691/ajnr-7-2-1

Hopkins, K. D., Weeks, D. L. (1990). Tests for Normality and Measures of Skewness and Kurtosis: Their Place in Research Reporting. *Educational and Psychological Measurement*, 50, 717-729. doi: 10.1177/001316449050400

Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., Lattanner, M. R. (2014). Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, 140(4), 1073. Doi:10.1037/a0035618

Li, C., Wang, P., Martin-Moratinos, M., Bella-Fernandez, M., Blasco-Fontecilla, H. (2022). Traditional bullying and cyberbullying in the digital age and its associated mental health problems in children and adolescents: a meta-analysis. *European Child & Adolescent Psychiatry*, 1-15. doi: 10.1007/s00787-022-02128-x

Magnavita, N., & Chiorri, C. (2018). Academic stress and active learning of nursing students: A cross-sectional study. *Nurse Education Today*, 68, 128-133. doi: 10.1016/j.nedt.2018.06.003

Park, M., Choi, J. S. (2019). Effects of workplace cyberbullying on nurses' symptom experience and turnover intention. *Journal of Nursing Management*, 27(6), 1108-1115. doi: 10.1111/jonm.12779

Pew Research Center. (2022). Teens and Cyberbullying 2022. Retrieved from https://www.pewresearch.org/internet/2022/12/15/teens-and-cyberbullying-2022/

Pulido-Martos, M., Augusto-Landa, J. M., & Lopez-Zafra, E. (2012). Sources of stress in nursing students: a systematic review of quantitative studies. *International Nursing Review*, 59(1), 15-25. doi: 10.1111/j.1466-7657.2011.00939.x

Rababah, J., Al-Hammouri, M. M., & Awawdeh, A. (2024). The association between undergraduate nursing students' health literacy and bullying and cyberbullying victimization. *Journal of professional nursing*, 52, 15-20. doi: 10.1016/j.profnurs.2024.03.002

Ramadan, O. M. E., Alruwaili, M. M., Alruwaili, A. N., Elsharkawy, N. B., Abdelaziz, E. M., El Badawy Ezzat, R. E. S., El-Nasr, E. M. S. (2024). Digital Dilemma of Cyberbullying

Victimization among High School Students: Prevalence, Risk Factors, and Associations with Stress and Mental Well-Being. *Children*, 11(6), 634. doi: 10.3390/children11060634

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry*, 49, 376-385. doi: 10.1111/j.1469-7610.2007.01846.x

Stevens, F., Nurse, J. R., Arief, B. (2021). Cyber stalking, cyber harassment, and adult mental health: A systematic review. Cyberpsychology, Behavior, and Social Networking, 24(6), 367-376. doi: 10.1089/cyber.2020.0253

Varol, B., Öz, F. (2024). 10-12 Yaşlarındaki Öğrencilerin Saldırganlık Eğilimi ve Etkileyen Ailesel Faktörler.*Yaşam Boyu Hemşirelik Dergisi*, 5(1): 98-114. doi: 10.29228/llnursing.72752

Wang, L. (2021). The effects of cyberbullying victimization and personality characteristics on adolescent mental health: an application of the stress process model. *Youth & Society*, 1-22. doi: 10.1177/0044118X211008

Williams, S. G., Godfrey, A. J. (2011). What is cyberbullying & how can psychiatric-mental health nurses recognize it?. *Journal of Psychosocial Nursing and Mental Health Services*, 49(10), 36-41. doi: 10.3928/02793695-20110831-03

Yildiz Durak, H., Saritepeci, M. (2020). Examination of the relationship between cyberbullying and cyber victimization. *Journal of Child and Family Studies*, 29, 2905-2915. doi: 10.1007/s10826-020-01768-4

Yosep, I., Hikmat, R., Mardhiyah, A. (2023). Nursing intervention for preventing cyberbullying and reducing its negative impact on students: a scoping review. *Journal of Multidisciplinary Healthcare*, 16, 261-273. doi:10.2147/JMDH.S400779