



Original Article

Problematic Internet use and cyberbullying in university students

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Abstract

Objectives: Problematic Internet use can have a negative impact on the daily lives and communications of teenagers, who constitute the most active user base of the Internet, and can be accompanied by issues such as cyberbullying.

Methods: The quantitative descriptive method was used in this study to examine the relationship between problematic Internet use and cyberbullying among university students. The study group of this research consisted of 883 students studying in the faculty of health sciences of a university in Ankara city center during 2018–2019 academic year. The data were collected using a sociodemographic features data form, Problematic Internet Use Scale (PIUS), and revised cyber bullying inventory-II (RCBI-II). Mann–Whitney U, Kruskal–Wallis H test statistics, and Spearman correlation analysis were used to evaluate the data.

Results: The research found that the problematic Internet use of the participants is on the medium level. Furthermore, it was discovered that 56.4% of the participants participated in cyberbullying, and 66.5% were victims of cyberbullying. There was a positive, middle level, significant relationship between cyberbullying and cyber victimization, as well as a positive, weak, significant relationship between PIUS total score and cyberbullying and cyber victimization. The RCBI-II index score increased in parallel with the participants' PIUS index score.

Conclusion: It is seen that the increase in the duration of Internet use increases the problematic Internet use, and the problematic Internet use increases the frequency of cyberbullying and victimization.

Keywords: Cyberbullying; Problematic Internet use; student; university.

The Internet has become an indispensable network contributing to every aspect of daily life. With the Internet providing convenience to every aspect of life, it can be seen that many activities that individuals can perform face-to-face such as communication, entertainment, shopping, or watching movies are being transferred to the digital world.^[1] It is known that the fastest group to adapt to this situation is the teenagers. The ratio of Internet use is especially high among university students when compared with other age groups.^[2-5]

The negative use of Internet is described as “pathologic internet use” or “internet addiction.”^[6,7] Problematic Internet use is composed of Internet overuse, procrastination, and ignorance of social life resulting from spending long periods on the Internet, behaviors such as anxiousness when there is no

Internet access, and this situation negatively affects the physical and mental health of the individual.^[6,8,9] The problematic use of the Internet caused by its misuse can stem from many different reasons. Foremost among these are points such as teenagers putting the Internet at the center of their lives and them spending a substantial amount of time of the day on the Internet.^[10] In studies conducted on university students, it was determined that problematic Internet use is common and middle-level,^[4,11,12] and the Internet is primarily used for social media, conversations, and gaming and this situation is increasing the risk of problematic Internet use.^[4,13]

Students with problematic Internet use may have an increase in social phobia and generally negative psychological symptoms and there may be an increase in the ratio of behavioral

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disorders.^[11] This situation may also lead up to the cases of cyberbullying and cyber victimization which can be encountered as a communication problem on the Internet.^[14,15] Cyberbullying, defined as intentional and repetitive actions aimed to victimize a person who cannot defend themselves via the use of electronic communication devices,^[16] can be encountered as ridiculing, rude and ill-willed commenting, rumor mongering, and making threatening and aggressive comments on chat websites, e-mails, short messages, social media accounts, websites, and social network platforms such as forums.^[17] It was reported that 30.6%–36.9% of university students had experienced cyberbullying (via e-mails, virtual environments, short messages, social media, or video clips) at least once with the intention of threatening or ridiculing.^[18,19] This experience is explained as cyber victimization. It was determined that there is a significant relationship between cyberbullying/victimization and anxiety, depressive symptoms, suicidal tendencies, and experiencing health problems.^[20-23] It is known that 30% of university students spend 3 h a day online^[24,25] and an increase in Internet use time leads to an increase in cyberbullying.^[26] In the study of Brighi et al.^[27] (2019), was determined that the increase in Internet use time correlates with problematic Internet use and cyberbullying. In studies conducted on young adults with ages varying between 12 and 18 years, it was determined that there is a positive relationship between problematic Internet use and cyberbullying^[28,29] and problematic Internet use increases cyberbullying by 1.66 times and cyber victimization by 2.36 times.^[28] Problematic Internet use and cyberbullying threaten the youth the risks of Internet, and cause many negative academic, social, psychological, and physical consequences. Problematic Internet use and cyberbullying are considered public health problems.^[13,22] The awareness of nurses is very important about this situation, which has negative effects on the health of young people. It is understood that cyberbullying and problematic Internet use indirectly affect each other and develop because of reasons such as the reasons to use the Internet and time spent on the Internet. It can be seen in the literature that there are separate studies conducted on problematic Internet use and cyberbullying/victimization of university students, but most studies regarding these two notions together are concentrated on teenagers in the middle and high school age groups.^[26-31] It is thought that the problematic Internet use and cyberbullying behaviors of university students can be carried into their adult lives, and therefore, it is important to determine the relationship between university students' problematic Internet use and cyberbullying. Accordingly, this research aims to determine the relationship between problematic Internet use and cyberbullying behaviors in university students.

Materials and Method

Type of Research

The main purpose of this study, which employs a descriptive research approach derived from quantitative research

What is known about this topic?

- Problematic Internet use and cyberbullying, which occur due to the wrong and unconscious use of technology, negatively affect the psychological and physical health of young people.

What does this article add to the existing knowledge?

- It has been determined that problematic Internet use and cyberbullying are related to each other. Spending a long time on the Internet affects both problematic Internet use and cyberbullying.

What is the contribution to the field?

- It has been determined that these two concepts, which negatively affect the health of young people, are related to each other. In this context, the importance of guiding young people about safe Internet use becomes evident.

methodologies,^[32] is to examine the relationship between problematic Internet use and cyberbullying behaviors among students enrolled in a faculty of health sciences.

Sample

The population of this research is 1506 students studying in the city of Ankara in the 2018–2019 academic year, at a public university's faculty of health sciences, from the seven departments of nursing, physiotherapy and rehabilitation, nutrition and dietetics, healthcare management, audiology, social services, and exercise and sports sciences.^[33] The study group is composed of 883 students determined by (accessible) convenience sampling.

Data Collection Procedure and Tools

The data for this study were collected between December 2018 and March 2019 by using sociodemographic characteristics data form, Problematic Internet Use Scale (PIUS), and Revised Cyber Bullying Inventory-II (RCBI-II). During the data collection process, a face-to-face survey technique is used.^[32] The longest course interval was determined before the application. The data collection forms were applied to the students in this course break. It took an average of 30 min to fill out the forms.

Sociodemographic Features Data Form

The form consists of ten questions querying the students' age, gender, department of study, years at university, means of Internet access, frequency of use, and the person who was responsible for them being a cyber-victim and/or a cyberbully.

PIUS

PIUS was developed by Ceyhan, Ceyhan ve Gürcan (2007) to measure the problematic Internet use levels of university students for their Internet use levels to be utilized from normal to pathological. A scale based on self-expression; it consists of 33 questions which can be answered on a five-level scale ranging from "completely agree/fitting" to "completely disagree/non-fitting". The scale consists of three subscales which are negative effects of the Internet, social benefit/social comfort, and excessive use. The score that can be received from the scale range from 33 to 165. An increase in final score points to Internet use negatively affecting an individual's life, leading to unhealthiness and Internet addiction. The internal consistency

coefficient of PIUS is determined as 94.^[34] In this research, the internal consistency coefficient of PIUS was determined as 93.

Revised Cyber Bullying Inventory–RCBI-II

The scale, developed by Topçu ve Erdur-Baker (2018) consists of 10 questions with the aim to determine the frequency of cyberbullying and cyber victimization of the youth in the past 6 months. The scores adolescents receive from the “done to me” section of the form measure their cyber victimization experience, and the scores they receive from the “I did it” section measures their cyberbullying experience. The scale is self-expressive and scored with a four-level Likert scale (1=never, 2=once, 3=2–3 times, 4=more than 3 times). The internal consistency coefficient is found to be 0.84 for cyber victimization section and 0.69 for cyberbullying section.^[35] For this research, from the questions in the revised cyber bullying inventory–RCBI-II, participants who chose at least one “2=once” from the “done to me” section are classified as “cyber victims,” and who chose at least one “2=once” from the “I did it” section are classified as “cyberbullies.” On a similar note, participants who chose “never done to me” to the situations presented on the questions are classified as “not victims”, and “never did it” to the situations presented on the questions are classified as “not bullies”. In this research, RCBI-II internal consistency coefficient was determined as 0.79 for cyber victimization section and 0.77 for cyberbullying section.

Statistical Analysis

Descriptive statistics such as percentage, average, standard deviation, minimum, maximum, and mean were used to evaluate the collected data. In the analysis of categorical variables, a Chi-square test was conducted to determine if there was a statistical significance between the ratios of each category. Nonparametric tests were used in the analysis as the data was not normally distributed.

As the data was not normally distributed, spearman correlation analysis was used to analyze the power and direction of the linear relationship between RCBI-II and PIUS. A Mann–Whitney U test was conducted to determine the differences between two independent groups on a continuous variable, and a Kruskal–Wallis H test was conducted for the single factor variant analysis between groups.^[36] In the research, Bonferroni correction was utilized as the number of groups is more than two in the variables of department of study and years at university. Bonferroni correction is calculated with the formula of significance level divided by the number of groups.^[37] The significance level of the Mann–Whitney U test used for determining the difference between the section subvariables after the Bonferroni correction was taken as 0.007. IBM SPSS Statistics 26.00 package program was used for the analysis of the data (IBM Corporation, Armonk, NY, USA).

Ethical Considerations

Before conducting the research, necessary ethical (Ankara Yıldırım Beyazıt University Social and Human Sciences Ethics

Committee /18.05.2018/37) and legal (AYBU, Dean of Faculty of Health Sciences, 27139605-605.01-E.4947/November 16, 2018) permissions were taken. Informed consent from the participants was also taken. The study was conducted in accordance with the declaration of Helsinki.

Results

The average age of the participants in the research was 21.7 ± 1.6 (minimum: 19; maximum: 34). 84.7% of the students were female, 15.3% of the students were male. It was determined that 39.1% of the participants were enrolled in nursing, 17.3% in physiotherapy and rehabilitation, 14.0% in audiology, and 39.0% of the are 1st year students. The vast majority (97.2%) of students used the Internet via mobile phones and 58.4% of them spent on average more than 3 h on the Internet (Table 1). Not listed on the table, students used Internet weekly at an average of 6.9 ± 0.4 days and spent an average of 4.49 ± 2.51 h a day online.

It was determined that 56.4% of students showcased cyberbullying behavior, and 66.5% experienced cyber victimization. The percentage of students stating that they knew the person

Table 1. Sociodemographic, Internet use and cyberbullying/victimization-related features (n=883)

Features	n	%
Gender		
Female	748	84.7
Male	135	15.3
Department		
Nursing	345	39.1
Physiotherapy	153	17.3
Audiology	124	14.0
Nutrition and dietetics	116	13.1
Social services	64	7.2
Sport sciences	53	6.0
Healthcare management	28	3.2
Grade		
1 st	344	39.0
2 nd	273	30.9
3 rd	202	22.9
4 th	64	7.2
Internet access tools*		
Computer	553	62.6
Mobil phone	858	97.2
Tablet	204	23.1
Internet cafe	36	4.1
Daily time spent on the Internet		
0-3 h	367	41.6
Over 3 h	516	58.4

* More than one answer was given to the question. Percentages were evaluated over n numbers.

they were cyberbullying and knew the person who cyberbullied them was 3.2% (Table 2).

The students' RCBI-II cyberbullying score average was 12.67±3.90, and cyber victimization score average was 13.60±4.54. From PIUS subscales, the score participants received from excessive problematic Internet use was 17.07±3.43, social benefit/social comfort was 20.63±7.51, and from negative effects of the Internet was 33.64±13.99, adding up to a PIUS total score of 71.35±21.13. According to these results, the students scored higher than average in excessive use subscale and scored below average in social benefit/social comfort and negative effects of the Internet subscales (Table 3).

There was no statistically significant difference between problematic Internet use and the students' gender, years at university, and means of Internet access (p<0.05). There was a statistically significant difference between PIUS total score and department of study (H=13.578; p=0.035). A Mann-Whitney U test was conducted to determine within which groups this difference lies (p<0.007). There was a statistically significant difference between PIUS total score and social services department-sports sciences department (U=121.472;

p=0.004) and nutrition and dietetics department-sports sciences department (U=133.368; p=0.005). There was a statistically significant difference between PIUS total score, and time spent on Internet, cyberbullying, and cyber victimization (U=79886.000, p<0.001; U=65937.500, p<0.001; U=56974.500, p<0.001, respectively) (Table 4). There was a statistically significant difference between PIUS subscale social benefit/social comfort and department of study (H=16.152, p=0.013). There was a statistically significant difference between time spent on Internet and PIUS subscales excessive use of Internet, social benefit/social comfort, and negative effects of Internet (U=910.00 p<0.001; U=80941.50; p<0.001; U=40695.500 p<0.001, respectively) (Table 4).

There was no statistically significant difference between the students' gender, department of study, years at university, means of access to Internet, time spent on Internet, and cyberbullying (p>0.05). There was a statistically significant difference between gender and cybervictim experience (p<0.05) and it was determined that male students (77.0%) experience cyber victimization more often than female students (64.6%) (Table 5).

There was a positive, middle-level relationship between the scores received from the cyberbullying and cyber victimization sections of RCBI-II (r=0.651; p<0.001). It was determined that there is a positive, weak relationship between PIUS total scores and RCBI-II cyberbullying section (r=0.362; p<0.001) and PIUS total scores and RCBI-II cyber victimization section (r=0.340; p<0.001). The scores students received from PIUS correlated in parallel with the scores they received from RCBI-II (Table 6).

There was a statistically significant, positive, and weak relationship between cyberbullying and cyber victimization, and problematic Internet use subscale (r=0.233, p<0.001; r=0.24, p<0.001, respectively). There was a statistically significant, positive, and weak relationship between cyberbullying and cyber victimization, and social benefit/social comfort subscale (r=0.309, p<0.001; r=0.294, p<0.001, respectively), and negative effects of the Internet subscale (r=0.353, p<0.001; r=0.318 p<0.001, respectively) (Table 6).

Table 2. According to RCBI-II, the distribution given regarding the characteristics of recognizing the cyber bully and cyber victim, the person who is cyberbullied and the person or persons who cause cyber victimization

Cyberbullying/victimization (based on score from RCBI-II)*	n	%
Cyber bully	498	56.4
Cyber victim	587	66.5
Recognizing the cyberbullying person		
Yes	28	3.2
No	855	96.8
Getting to know the cause of cyber victimization		
Yes	28	3.2
No	855	96.8

*RCBI-II: Revised cyber bullying inventory-II.

Table 3. PIUS and RCBI-II score (n=883)

Scale	Minimum score	Maximum score	Mean/SD
PIUS			
Excessive use of the Internet	6	26	17.07±3.43
Social benefit of the Internet	10	50	20.63±7.51
Negative consequences of the Internet	17	85	33.64±13.99
PIUS total score	33	157	71.35±21.13
RCBI-II			
Cyber bullying	10	35	12.67±3.90
Cyber victimization	10	35	13.60±4.54

SD: Standard deviation; PIUS: Problematic Internet Use Scale; RCBI-II: Revised cyber bullying inventory-II.

Table 4. Comparison of the characteristics of PIUS and sociodemographic. Internet use and cyberbullying/victimization

Features	PIUS Sub-Dimensions						PIUS General Total	
	Excessive use of the Internet		Social benefit of the Internet		Negative consequences of the Internet		M/SD	Analysis
	M/SD	Analysis	M/SD	Analysis	M/SD	Analysis		
Gender								
Female	17.05±3.38	U=48085.500 p=0.376	19.89±7.02	U=47159.00 p=0.222	33.33±12.75	U=46799.000 p=0.176	70.71±20.66	U=45446.500 p=0.064
Male	17.20±3.69		20.84±8.14		35.34±13.99		74.86±20.33	
Department								
Nursing	16.91±3.57	H=9.092 p=0.168	20.51±7.28	H=16.152 p=0.013**	34.53±14.33	H=8.155 p=0.227	70.40±20.38	H=13.785 p=0.032**
Physiotherapy	17.49±3.44		21.47±7.28		33.77±11.76		73.64±20.45	
Audiology	16.91±3.15		19.63±6.16		30.95±11.52		70.66±18.43	
Nutrition and Dietetics	18.09±4.16		23.67±8.38		32.67±11.52		78.79±24.26	
Social Services	16.89±3.60		20.23±9.30		34.03±13.78		69.89±25.24	
Sport Sciences	16.81±3.08		19.73±7.74		34.24±12.01		69.25±22.08	
Healthcare Management	17.01±2.52		20.78±8.47		32.35±12.44		71.46±22.72	
Grade								
1 st	17.08±3.24	H=6.157 p=0.104	20.55±7.56	H=0.149 p=0.985	33.83±13.15	H=2.462 p=0.482	71.79±21.59	H=4.713 p=0.194
2 nd	17.28±3.60		21.04±7.37		32.42±11.64		72.63±20.71	
3 rd	16.90±3.52		20.36±7.54		34.96±13.95		69.25±21.24	
4 th	16.64±3.34		20.12±6.37		33.60±14.17		70.21±17.43	
Internet access tools*								
Computer	17.13±3.53	U=88145.00 p=0.396	20.80±7.53	U=86060.50 p=0.157	34.05±13.35	U=89076.500 p=0.554	71.99±21.69	U=87991.50 p=0.375
Mobil phone	17.05±3.41	U=9363.500 p=0.277	20.69±7.52	U=10723.50 p=0.999	33.70±13.03	U=10166.00 p=0.656	71.46±21.19	U=9806.500 p=0.465
Tablet	17.36±3.65	U=64947.50 p=0.175	20.85±6.91	U=64603.00 p=0.145	33.54±13.31	U=67229.00 p=0.525	71.38±19.57	U=67460.00 p=0.573
Internet cafe	16.47±4.12	U=13199.50 p=0.170	22.30±6.27	U=13101.00 p=0.152	35.75±11.90	U=13100.50 p=0.152	75.75±20.12	U=12874.50 p=0.114
Daily time spent on the Internet*								
0-3 h	16.67±3.34	U=910.00 p<0.001*	18.94±6.82	U=80941.50 p<0.001*	34.28±13.32	U=90701.00 p=0.286	68.01±19.61	U=79942.50 p<0.001*
Over 3 h	17.36±3.46		20.82±7.78		33.18±12.75		73.72±21.86	
Cyberbullying/victimization (Based on score from RCBI-II)*								
Cyber bully	17.01±3.42	U=93893.500 p=0.598	21.13±7.42	U=94773.000 p=0.771	33.63±13.10	U=94803.50 p=0.777	75.56±22.01	U=66279.500 p<0.001*
Cyber victim	16.99±3.45	U=83340.500 p=0.321	21.23±7.16	U=86594.00 p=0.937	33.78±13.23	U=86393.00 p=0.893	75.67±20.62	U=56884.000 p<0.001*

SD: Standard deviation; PIUS: Problematic Internet Use Scale; RCBI-II: Revised cyber bullying inventory-II; U:Mann-Whitney U test; H: Kruskal Wallis H Test; *p<0.01, **p<0.05.

Table 5. Comparison of RCBI-II and sociodemographic, Internet usage and cyberbullying/victimization characteristics

Features	Cyber bullying		Analysis *		Cyber victimization		Analysis *	
	Cyber Bully n (%)	Non-Cyber Bully n (%)	χ^2	p**	Cyber Victim n (%)	Non-Cyber Victim n (%)	χ^2	p**
Gender								
Female	413 (55.2)	335 (44.8)	2.793	0.095	483 (64.6)	265 (35.4)	7.973	0.005
Male	85 (63.0)	50 (37.0)		104 (77.0)	31 (23.0)			
Department								
Nursing	187 (54.2)	158 (45.8)	2.6855	0.847	227 (65.8)	118 (34.2)	6.421	0.378
Physiotherapy	93 (60.8)	60 (39.2)		104 (68.0)	49 (32.0)			
Audiology	69 (55.6)	55 (44.4)		79 (63.7)	45 (36.3)			
Nutrition and Dietetics	32 (60.4)	21 (39.6)		42 (79.2)	11 (20.8)			
Social Services	38 (59.4)	26 (40.6)		45 (70.3)	19 (29.7)			
Sport Sciences	63 (54.3)	53 (45.7)		74 (63.8)	42 (36.2)			
Healthcare Management	16 (57.1)	12 (42.9)		16 (57.1)	12 (42.9)			
Grade								
1 st	191 (55.5)	153 (45.5)	4.182	0.243	226 (65.7)	118 (34.3)	0.704	0.872
2 nd	148 (54.2)	125 (45.8)		179 (65.6)	94 (34.4)			
3 rd	126 (62.4)	76 (37.6)		139 (68.8)	63 (31.2)			
4 th	33 (51.6)	31 (48.4)		43 (67.2)	21 (32.8)			
Internet Access Tools								
Computer	304 (55.0)	249 (45.0)	1.223	0.269	363 (65.6)	190 (34.4)	0.464	0.496
Mobil Phone	484 (56.4)	374 (43.6)	0.002	0.967	570 (66.4)	288 (33.6)	0.27	0.870
Tablet	115 (56.4)	89 (43.6)	0.000	0.993	131 (64.2)	73 (35.8)	0.609	0.435
Internet cafe	25 (69.4)	11 (30.6)	2.597	0.107	28 (77.8)	8 (22.2)	2.150	0.143
Daily Time Spent on the internet *								
0-3 h	207 (56.4)	160 (43.6)	0.000	0.998	239 (65.1)	128 (34.9)	0.518	0.457
Over 3 h	291 (56.4)	225 (43.6)			348 (67.4)	168 (32.6)		

RCBI-II: Revised cyber bullying inventory-II; *Pearson ki square test; **p<0.05.

Table 6. Spearman correlation analysis for the relationship between RCBI-II and PIUS

	Cyber bullying	Cyber victimization	PIUS total score	Excessive use of the internet	Social benefit of the internet	Negative consequences of the internet
Cyber bullying	0.651*					
PIUS total score	0.362*	0.339*				
Excessive use of the internet	0.233*	0.245*	0.724*			
Social benefit of the internet	0.309*	0.294*	0.830*	0.640*		
Negative consequences of the internet	0.353*	0.318*	0.940*	0.009	0.025	

PIUS: Problematic internet use scale; RCBI-II: Revised cyber bullying inventory-II; * $p < 0.001$.

Discussion

In Türkiye, more than 77 million people access the Internet via mobile phones and use the Internet daily for a total of 7 h and 29 min.^[38,39] In this research, it was determined that the majority of the students access the Internet via mobile phones, access the Internet nearly every day, and spend approximately 4.5 h on the Internet daily. Even though their daily Internet use time is lower than the population mean, it can be observed that they access the Internet every day. The average time spent on the Internet daily is similar to OECD countries' average of daily use in 14–24-year-old population.^[40]

An increase in time spent on the Internet may result in problematic Internet use.^[41] In this research, the percentage of teenagers spending more than 3 h or more on the Internet daily were found to be higher than a similar study conducted in Türkiye.^[42] There was a statistically significant relationship between an increase in time spent on Internet and problematic Internet use. On a similar note, in Oktan's (2015) study, it was determined that university students spending 3 h or more daily on the Internet increases problematic Internet use.^[43] It appears that an increase in the time teenagers spend daily on the Internet results in problematic Internet use.

The average total scores the students received from PIUS and its subscales are higher than similar studies.^[12,44] However, it was determined that problematic Internet use by students was at a middle level. The students, similar to Yıldırım and Taştan's (2020) study, received high scores from PIUS excessive use subscale.^[45] Even though the PIUS of male students were found to be higher in this research, it can be seen from the literature that there is not a statistically significant relationship between gender and problematic Internet use.^[45,46] It was reported that the relationship between gender and PIUS total score is statistically significant and problematic Internet use is higher on male students than female students.^[47] Even though the data regarding the results between gender and problematic Internet use are different, it can be said that males are more prone to problematic Internet use.

It has been determined that the scores received from PIUS are similar in all levels of years at university and there is no statistically significant difference between them. In İkiz, Savcı,

Asisi and Yörük's (2015) study, it has been reported that there is a difference between years at university and scores received from PIUS and its subscales, and freshman and senior students are more prone to problematic Internet use because of reasons such as adaptation to school or graduation.^[48] It was determined that there is a statistically significant difference between the department of study and problematic Internet use, and students studying at Sports Sciences department have a higher score of problematic Internet use than other students. As Özşaker, Dorak, Vurgun and Uludağ (2016) state, students studying at sports sciences department having more free time activities and this leading to an increase in time spent on Internet, may have resulted in problematic Internet use.^[46]

It is reported that in university students cyberbullying can vary between 7.7–43.3%,^[49-51] and cyber victimization can vary between 7 and 58.4%.^[49,52-56] In this research, it was determined that cyberbullying and cyber victimization percentages are higher than in similar studies 3.2% of students who are cyberbullies and cyber victims knew the person they bullied or were bullied by. It can be seen that cyberbullying and cyber victimization by people of no acquaintance is extremely high. It is thought that this situation is related to communicating with people of no acquaintance via platforms on the Internet and being open to the general public on platforms on the Internet such as social media sites.

It was determined that gender creates a statistically significant difference with cyber victimization and male students experience more cyber victimization than female students ($p < 0.05$). Similarly, İldırım, Çalici and Erdoğan (2017) report that there is a statistically significant difference between gender and cyber victimization and the ratio of male students experiencing cyber victimization is higher than female students.^[57] Saleem, Khan and Zafar (2021) and Uysal, Duman, Yazıcı and Şahin (2014) determined that the ratio of cyberbullying is higher for male students, and there is not a statistically significant difference between gender and cyberbullying.^[58,59] Even though cyber victimization scores are higher depending on the department of study and years at university, it does not create a statistically significant difference with cyberbullying and cyber victimization ($p > 0.05$).

There was a statistically significant difference between cy-

berbullying, cyber victimization, and problematic Internet use ($p < 0.05$). It can be seen that problematic Internet use increases the possibility of cyberbullying and experiencing cyber victimization. There is a positive correlation between cyberbullying and cyber victimization, and problematic Internet use and its subscales. Similarly, Gámez-Guadix, Borrajo, and Almendros (2016) state that problematic Internet usage forms a basis for cyberbullying behavior.^[60] In studies conducted on middle and high school students, it is similarly determined that there is a positive and statistically significant relationship between problematic Internet use and cyber victimization.^[61] Increasing problematic Internet use of students may result in them gravitating towards cyberbullying behaviors.

It was determined that there is a statistically significant, positive relationship between cyberbullying and cyber victimization, similar to study of Durak and Sarıtepeci (2020).^[62] It can be seen that as problematic Internet use increases in parallel with cyberbullying. Increase in problematic Internet use increases the frequency of cyberbullying behaviour and as a result, increases the prevalence of cyber victimization. Even though it has been reported that university students may be more prone to cyberbullying and cyber victimization for reasons such as stress resulting from starting university, and the thought of being obliged to solve the situation alone when confronted with cyberbullying,^[49,54,63] no studies directly examining the relationship between problematic Internet use and cyberbullying in university students had been found, making comparing the findings more difficult.

Limitations

This was a single-center study and limited to group health science faculty students.

Conclusion

In this research, it was determined that the PIIUS scores the university students received are higher when compared with the literature, and an increase in time spent on Internet increases problematic Internet use. In accordance with the findings reached in this research;

The frequency of cyberbullying and cyber victimization increases as problematic Internet use increases. It is known that there is an insufficient amount of research regarding cyberbullying in university students, and cyberbullying prevention and intervention efforts are conducted with kids and adolescents. However, as it can be seen from the findings of this research, the percentages of cyberbullying and cyber victimization in university students are high, paralleling their problematic Internet use. In this direction, it is advised that more studies examining the relationship between problematic Internet use and cyberbullying in university students should be conducted. Nurses have interventions for problematic Internet use.^[64,65] It is thought that the problematic Internet usage and the cyberbullying relationship will guide nurses to prevent preventive and interventional studies. It is advised that

the topics of problematic Internet use increasing with rising Internet use and the topics of cyberbullying and cyber victimization which problematic Internet use may bring with itself, should be addressed seriously, knowledge and awareness of students regarding these topics should be expanded, and necessary respective institutions should be formed for them to reach anytime. Organizing university-based seminars regarding secure Internet use to prevent cyberbullying stemming from problematic Internet use is advised. Campus areas with enabling students to perform various activities, such as sports, clubs, tours, and handicrafts, to develop and enrich the social life of students may be utilized to prevent them from spending long times on the Internet, problematic Internet use, and cyberbullying and cyber victimization.

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