ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

The Investigation of Predictors of Cyber Bullying and Cyber Victimization in University Students

Üniversite Öğrencilerinde Siber Zorbalık ve Siber Mağduriyetin Yordayıcılarının İncelenmesi

Gizem AKCAN[a], Erdinç ÖZTÜRK[b]

[a]Bartın University Faculty of Art, Department of Psychology, Bartın, TURKEY
[b]İstanbul University-Cerrahpaşa Institute of Legal Medicine and Forensic Sciences, Department of Social Sciences, İstanbul, TURKEY

ABSTRACT Objective: The aim of the present study is to determine the predictors of cyber bullying and cyber victimization in university students. Moreover, whether cyber bullying and cyber victimization scores of the participants differ or not in terms of gender and marital status was examined. **Material and Methods:** The participants of the study were 300 (150 females and 150 males) university students who were studying in different departments in state and private universities in Istanbul and the ages of the participants were between 18 and 35 years. Demographic Information Form, Cyber Bullying/Cyber Victimization Scales and Young Internet Addiction Scale were applied to the students. **Results:** According to the findings of this study, gender, marital status and internet addiction as together had predictive value on cyber victimization in university students. It was also found that gender, marital status, internet addiction and age as together had significantly predicted cyber bullying scores of the participants. Furthermore, cyber victimization scores of males were higher than females; however, there was no significant difference between females and males in terms of cyber bullying. Additionally, it was found that there was no significant difference between married and single subjects in terms of cyber victimization, but single subjects were more prone to make cyber bullying than married ones. **Conclusion:** Cyber bullying and cyber victimization seem to be widespread all over the world. It is stated that prevention and coping programs should be organized in order to protect students from the negative effects of cyber bullying and that the participation of school staff, family and community in these programs is very important. Individuals need to be educated on the use of the internet and mobile phones, and taught how to cope with cyber bullying.

Keywords: Cyber victimization; cyber bullying; internet addiction; cyber psychology; cyber pathology

ÖZET Amaç: Bu çalışmanın amacı, üniversite öğrencilerinde siber zorbalık ve siber mağduriyet değişkenlerinin yordayıcılarının incelenmesidir. Ayrıca bu çalışmada, katılımcıların siber zorbalık ve siber mağduriyet puanlarının cinsiyet ve medeni durum açısından farklılık gösterip göstermediği incelenmiştir. **Gereç ve Yöntemler:** Bu araştırmanın katılımcılarını, İstanbul'da devlet üniversitelerinde ve özel üniversitelerde farklı bölümlerde okuyan 300 (150 kadın ve 150 erkek) üniversite öğrencisi oluşturmaktadır ve katılımcıların yaşları 18 ile 35 arasındadır. Katılımcılara, Demografik Bilgi Formu, Siber Zorbalık/ Siber Mağduriyet Ölçekleri ve Young İnternet Bağımlılığı Ölçeği uygulanmıştır. **Bulgular:** Bu çalışmanın bulgularına göre, cinsiyet, medeni durum ve internet bağımlılığı değişkenleri birlikte üniversite öğrencilerinde siber mağduriyeti yordamaktadır. Ayrıca, cinsiyet, medeni durum, internet bağımlılığı ve yaş değişkenlerinin birlikte üniversite öğrencilerinin siber zorbalık puanlarını anlamlı derecede yordadığı bulunmuştur. Bunların yanı sıra, erkeklerin siber mağduriyet puanları kadınlardan daha yüksektir; ancak, kadınlar ile erkekler arasında siber zorbalık açısından anlamlı bir fark bulunamamıştır. Bunlara ek olarak, evli ve bekar insanlar arasında siber mağduriyet açısından anlamlı bir fark bulunmazken, bekar bireylerin evli bireylere oranla daha fazla siber zorbalık yaptıkları görülmüştür. **Sonuç:** Siber zorbalığın ve siber mağduriyetin tüm dünyada oldukça yaygın olduğu görülmektedir. Öğrencileri siber zorbalığın olumsuz etkilerinden korumak açısından önleme ve başa çıkma programlarının düzenlenmesinin gerektiği ve okul personelinin, ailenin ve toplumun bu programlara katılımının oldukça önemli olduğu belirtilmektedir. Bireylerin internet ve cep telefonu kullanımı konusunda eğitilmeleri ve siber zorbalık ile karşılaştıklarında bu durum ile nasıl başa çıkacaklarının öğretilmesi gerekmektedir.

Anahtar Kelimeler: Siber mağduriyet; siber zorbalık; internet bağımlılığı; siber psikoloji; siber patoloji

The internet has become very popular in the lives of especially the young and they use the internet as a very important communication and information sharing tool commonly. Although internet use has positive aspects such as benefits for learning and positive effects on social relations, it has also some risks like internet addiction, cyber bullying and cyber victimization.[1] Yellowlees and Marks also supported that beside the benefits of the internet, it can lead to some problems due to being easily accessible by everyone.[2] According to Kim and Kim those problems related with internet can be listed as excessive and untrustable information, cyber crimes and internet addiction.[3]

Guana and Subrahmanyam described excessive internet use as 'internet addiction' that is one of the most negative facets of youths' online activities.[1] Internet addiction is defined as a state of inability to control internet use and it leads to serious deterioration in mental and social functioning.[4,5] Internet addiction is mentioned as a new and often unrecognized clinical disorder that affects the internet use, control ability, relational, professional and social skills of the user and cause problems.

Furthermore, Griffith reported that internet addiction is a sort of technological addiction and it is a subdimension of behavioral addiction.[6] Günüç and Kayri said that technological addictions are behavioral based addictions like eating, gambling, sex, etc. Besides, technological addictions also include media addiction, television addiction, mobile phone addiction, computer addiction and internet addiction.[7]

Internet addiction is especially very common among youth and it is comorbid with other psychiatric disorders like anxiety, depression, shyness, loneliness, problems in interpersonal relations and self-consciousness.[8] Adolescents chat, share information via messages and spare lots of time in the internet. The symptoms of internet addiction or patholgic/ unhealty internet use are common among adolescents and daily lives of youth are affected negatively because of excessive internet use.[9] It was found that people who were internet addicted spend more time in the internet and they thought about the internet as more reliable. Young supported that internet addicts stay online for pleasure averaging 38 hours or more per week, largely in chat rooms, and accordingly their families, relationships, and careers are shattered.[10]

Trolley, Shields and Hanel supported that electronic communication technology provides some opportunities to make life easier and has positive effects on learning processes of students, but on the other side, it can cause exposure to dangerous interactions that can affect cognitive and emotional health of students negatively.[11] Cyber bullying behavior is one of the dangerous interactions of communication technologies that cyber bullies harm others as wilfully and repeatedly.[12]

It can be said that cyber bullying is a kind of online bullying or traditional bullying that cyber bullies show aggressive behaviors recurrently and over time towards a victim who can not defend him or herself easily. Belsey reported that cyber bullyies intend to harm others by using information and communication technologies especially like e-mail, cell phones and pager text messages, instant messaging, defamatory personal web sites, and defamatory online personal polling web sites hostilely and repeatedly.[13]

Cyber victimization is another problem caused by technological developments. Arıcak, Kınay and Tanrıkulu defined cyber victimization as to be subjected to harmful behaviors, in a technical or relational manner, via information and communication technologies and an individual or group, a personal or legal personality experiences victimization as financially or morally because of these behaviors.[14] Patchin and Hinduja found in their study that nearly 30% of the adolescent participants were cyber victims that they experienced cyber victimization as having been ignored, disregarded, nicknamed, threatened, mocked by others.[12]

There are some demographic and behavioral risk factors related to cyber bullying and cyber victimization.[15] According to Wolak, Mitchell and Finkelhor, excessive internet use is one of the behavioral risk factors for children that can lead to cyber bullying and cyber victimization.[16] In addition, Sengupta and Chaudhuri supported that children who are prone to be cyber victim are less aware of the risks associated

with certain uses of the internet that they share their passwords with others or talk with unknown individuals in their offline lives.[17]

Ybarra, Mitchell, Wolak and Finkelhor supported that internet addiction predicts cyber bullying that excessive internet use can lead to cyber bullying.[18] It can be thought that students continue to cyber bullying to relax, feel more positive themselves, enjoy their time, fun, laugh, be acceptable by their friends via joking, have power in friendships. Besides, frequency of the internet use also predict cyber victimization and increased internet use is also associated with increased problems with bullies.[19] The duration and frequency of the internet use are the signs of internet addiction. So, when the duration and frequency of internet use increase, people are more prone to face with cyber crimes.

According to the the results of the research conducted by Serin, students who used internet five hours and more in a day showed more cyber bullying behaviors and experienced more cyber victimization than other students who used internet less than five hours *(Serin H. [Cyber bullying/cyber victimization in adolescents and opinions of teachers and education administrators on these behaviors]. Yayımlanmamış Doktora Tezi. İstanbul: İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü; 2012).* Similarly to these findings, researchers supported that students who used internet excessively shared more negative information or experienced such kinds of behaviours in terms of increasing time of internet use.[20-22] That's why, they had more potential to be cyber bullies or cyber victims. Peker and Eroglu also reported that male students whose internet use is three hours or more are more prone to experience cyber bullying and cyber victimization.[23]

In addition, another risk factor for cyber bullying and cyber victimization is considered as gender. Li reported that gender plays a significant role on cyber bullying and cyber victimization.[24] However, there is no gender difference in cyber-displaced aggression among young adults.[25] According to the results of some researches, male students are more prone to be both cyber bullies and cyber victims than female students.[26-28] Pellegrini, Bartini and Brooks also

determined that cyber bullying and cyber victimization should be predicted by gender.[29]

Furthermore, Cetin, Peker and Eroglu found that the risk for being cyber bully and cyber victim increased with increased internet addiction and this led to decrease in life satisfaction in students.[23,30] Besides, Cetin, Peker, Eroglu and Citemel reported that people who do not have enough satisfaction in their social relationships try to achieve this satisfaction via relationships in cyber environment.[31]

Hinduja and Patchin posited in their research that girls have significantly more potential than boys to be either cyber victims or cyber bullies.[15] However, Akcan and Ozturk found that boys got higher scores on cyber bullying scale than girls.[32] As parallel to this finding, Peker, Eroglu and Ada also supported that boys have more tendency to be cyber bullies than girls.[33] It can be said that there are different views on the effects of gender on cyber bullying that some of the studies suggested that girls bully more than boys, but some of them supported that cyber bullying does not differ significantly with regard to gender.[15,34]

According to the results of some studies, cyber victimization scores of boys and girls are significantly different that when compared to girls, boys experience more cyber victimization.[32,35] Acordingly, Wolak, Mitchell and Finkelhor also found in their study that boys got higher scores on cyber victimization scale than girls.[16] However, on the contrary to these findings, Mesch reported that girls are exposed to more cyber victimization than boys.[36] Moreover, some of the studies showed that boys and girls do not differ significantly in terms of cyber victimization.[22] The reason of the different findings related to the effects of gender on cyber crimes can be related with different types of bullying that cyber bullying involves relational bullying types.[37]

Researchers showed that cyber bullying and cyber victimization are also predicted by age.[38,39] Mishna, Khoury-Kassabri, Gadalla and Daciuk indicated that older students are more likely to both bully others and to be bullied by others as online.[40] Similarly, Ybarra and Mitchell also supported that as age increases, the probability of being cyber bully increases in children.[41] Khoury-Kassabri pointed that

despite the decrease in the particular forms of aggressive behaviors like school bullying with age, older students are prone to apply other forms such as cyber bullying and dating violence that may happen outside of the school.[42] Although, young adults do not differ from each other in terms of age, younger ones were more tendency to take part in cyber bullying activities (i.e. victims and perpetrators) than the older participants.[43]

There are different views on the relationship between age and cyber bullying. It was found in the research that although victimization decreases with age, bullying does not significantly change with age *(Ilhan-Alper S. [Bullying in primary education]. Yayınlanmamış Yüksek Lisans Tezi. Bursa: Uludağ Üniversitesi, Sosyal Bilimler Enstitüsü; 2008).* Sargın suggested that cyber bullying is not limited with age that it can be seen in almost every age groups.[44] Correspondingly, some researches demonstrated that age and cyber bullying are not significantly related with each other.[12-16,45]

Furthermore, Mesch found that average of age is higher in youth who reported that they experienced more cyber victimization than other youth who reported that they did not experience victimization.[36] It can be said that the likelihood of being victim increases as age grows because, internet use of youth changes with increased age, youth can attend more events in where they can face with unknown people in the internet, and so the risk for being victim increases accordingly. Similarly, it was found in the research conducted by Smith et al. among English youth that older people experience more cyber bullying and cyber victimization than youngers.[46]

Besides, according to the results of some studies, marital status plays an effective role on cyber victimization.[47] Akbulut and Eristi suggested that in comparison to married participants, single ones have more problems with cyber victimization.[48] Akbulut, Sahin and Eristi supported that perceived availability of the victim is important to be preferred by bullies as victims, that's why being single is more risky to be cyber victim than being married.[19] Kılıcer, Ozeke and Coklar found in their study that married people had more positive attitudes than single ones

in social media.[47] However, Ngo and Paternoster said that marital status has no effect on the probability of being victim in cyberspace.[49]

Cyber bullying and cyber victimization are phenomenon that have only recently gained attention.[38] The findings revealed that being cyber victim and bully rates have been highly increased in students.[40] Several risk factors were common among students to involve in cyber bullying and experience cyber victimization. The aim of this study is to investigate the predictor role of gender, marital status and internet addiction on cyber bullying and cyber victimization in university students.

MATERIAL AND METHODS

PARTICIPANTS

This study was applied to 300 (150 females and 150 males) university students who were studying in different departments in the state and private universities in Istanbul. Random sampling procedure was employed to select the participants and the voluntary nature of the participation was clearly explained to the participants prior to distributing the scale. The participants were between 18 and 35 years of age. In the first stage of the study, the students read the "Informed Consent Form" which explains the purpose of the study and then they voluntarily carried out the applications after approval of this form. In this study, only informed consent form was used and there was no ethics committee approval.

MEASURES

Demographic Information Form, Cyber Bullying/ Victimization Scales and Young Internet Addiction Scale were applied to the students *(Bayraktar F. [The role of internet use in adolescent development]. Yüksek Lisans Tezi. İzmir: Ege Üniversitesi, Sosyal Bilimler Enstitüsü; 2001).*[14] Demographic Information Form was developed by the researchers.

DEMOGRAPHIC INFORMATION FORM

Demographic Information Form was developed by the researchers to get information about age, gender, marital status and income level of the participants.

CYBER BULLYING AND CYBER VICTIMIZATION SCALES

Cyber Bullying and Cyber Victimization Scales were developed by Arıcak, Kınay and Tanrıkulu.[14] The scales consist of 24 questions. A 4 point Likert scale was used to determine the frequency of cyber bullying behaviors and the scale includes those four points: "never", "sometimes", "often", "always". Yes/no type questions were also used to determine cyber victimization. The variance of the cyber bullying scale was found to be 50.58% and Cronbach's alpha reliability coefficient was 0.95. Similarly, Cronbach alpha value of the cyber victim scale was 0.89 and the variance was 30.17%.

YOUNG INTERNET ADDICTION SCALE

Internet Addiction Test (IAT) developed by Young consists of 20 items with a six-point Likert scale ranging from "rarely" to "always."[50] Scores are between 20-180. Higher scores reflect higher level of internet addiction. Bayraktar adapted it to Turkish and Cronbach's alpha reliability coefficient was found as 0.91 *(Bayraktar F. [The role of internet use in adolescent development]. Yüksek Lisans Tezi. İzmir: Ege Üniversitesi, Sosyal Bilimler Enstitüsü; 2001).*

PROCEDURE AND DATA ANALYSIS

To analyze the data, SPSS 17.0 program was used. Descriptive statistics, such as frequency analysis were employed to get demographic information like age and marital status. Independent samples t test was used to investigate the differences in university students' experience of cyber bullying and cyber victimization in terms of gender and marital status. Moreover, the relationships between cyber bullying, cyber victimization, internet addiction and age were analyzed by Pearson correlational analysis. Gender and marital status are categorical variables and they were used as dummy variables in the regression analysis. A dummy variable is a numeric variable that represents categorical data, such as gender, race, political affiliation, etc. and the dummy variables is the main way that categorical variables are included as predictors in statistical and machine learning models. Multiple linear regression analysis was applied to investigate the predictor role of gender, marital status and internet addiction on cyber bullying and cyber victimization in university students.

RESULTS

Totally, 300 (150 males and 150 females) students were participated in the study. The age of the participants varied between 18 and 35, and the participants had a mean age of 20.2 years (SD=1.7 years). Of the participants, 23% were married and 77% were single (Table 1).

According to the results of this study, females and males significantly differ from each other in terms of cyber victimization (p<0.05). Cyber victimization scores of males ($\bar{X}$= 44.21) were higher than females ($\bar{X}$= 42.88) (Table 2). Besides, Cohen's d was found to be 0.29. Females and males differ by 0.29 standard deviation in terms of cyber victimization and it can be said that the effect size is medium (0.2 <d <0.8), p*<0.05.

However, there was no significant difference between females and males in terms of cyber bullying (p>0.05). Cyber bullying scores of the participants did not differ in terms of gender (Table 3).

Furthermore, there was no significant difference between married and single subjects in terms of cyber

TABLE 1: Percentage of marital status.

Marital Status	N	%
Married	69	23
Single	231	77

TABLE 2: Differentiation of cyber victimization in terms of gender.

Gender	N	$\bar{X}$	S	sd	t	p	Cohen's d
Females	143	42.88	4.61	290	2.51	0.01	0.29
Males	149	44.21	4.46				

p*<0.05.

TABLE 3: Differentiation of cyber bullying in terms of gender.						
Gender	N	X̄	S	sd	t	p
Females	138	25.45	3.35	274	0.94	0.34
Males	138	25.10	2.90			

p*<0.05
p>0.05

TABLE 4: Differentiation of cyber victimization in terms of marital status.						
Marital Status	N	X̄	S	sd	t	p
Married	65	44.30	3.60	289	1.41	0.15
Single	226	43.40	4.73			

p>0.05

TABLE 5: Differentiation of cyber bullying in terms of marital status.							
MaritalStatus	N	X̄	S	sd	t	p	Cohen's d
Married	63	24.76	1.83	189.14	2.22	0.02	0.26
Single	212	25.48	3.33				

p*<0.05.

victimization (p>0.05). Cyber victimization scores of the participants did not differ in terms of marital status (Table 4).

There was a significant difference between married and single subjects in terms of cyber bullying (p<0.05). Cyber bullying scores of single subjects ($\overline{X}$=25.48) were higher than married ones ($\overline{X}$= 24.76) (Table 5). Besides, Cohen's d was found to be 0.26. Married and single subjects differ by 0.26 standard deviation in terms of cyber bullying and it can be said that the effect size is medium (0.2 <d <0.8),

Besides, first of all, Pearson correlation analysis was applied to determine the significance of the relationships between variables before applying regression analysis. According to the results of this study, cyber victimization was significantly related with cyber bullying and internet addiction. However, there was no significant relationship between cyber victimization and age. Moreover, cyber bullying was significantly related with internet addiction and age; internet addiction was also significantly related with age (Table 6).

According to Table 6, there was a significant and negative relationship between cyber victimization

TABLE 6: Pearson correlation analysis.				
Variables	1	2	3	4
1. Cyber Victimization	-			
2. Cyber Bullying	-0.15*	-		
3. Internet Addiction	-0.28**	0.13*	-	
4. Age	0.05	-0.19**	-0.30**	-

p** < 0.01,   p*<0.05.

and cyber bullying (r=- 0.15, p*=0.013), internet addiction (r=- 0.28, p**=0.000). There was a significant and positive relationship between cyber bullying and internet addiction (r= 0.13, p*=0.026). Besides, age was not significantly correlated with cyber victimization (r= 0.05, p=0.013), but significantly and negatively correlated with cyber bullying (r=-0.19, p**=0.002). Furthermore, there was a significant and negative relationship between internet addiction and age (r=-0.30, p**=0.000).

Age was not significantly correlated with cyber victimization (r=0.05, p=0.013), so it was not included to the linear regression analysis to determine the predictors of cyber victimization. According to the results of this study, gender, marital status and in-

TABLE 7: Multiple lineer regression analysis as predictiors of cyber victimization.					
Variables	**B**	**Std. Error**	**β**	**t**	**p**
Constant	44.59	1.38	-	32.31	$p<0.001$
Gender	1.52	0.51	0.16	2.97	$p<0.001$
Marital Status	-0.67	0.61	-0.06	-1.09	0.27
Internet Addiction	-0.08	0.01	-0.29	-5.15	$p<0.001$

$R=0.33$ $R^2=0.11$ $F_{(3,286)} = 12.22$ $p= 0.01$

TABLE 8: Multiple regression analysis as predictiors of cyber bullying.					
Variables	**B**	**Std. Error**	**β**	**t**	**p**
Constant	27.59	1.49		18.47	$p<0.001$
Gender	-0.43	0.37	-0.07	-1.16	0.24
Marital Status	-0.19	0.47	-0.02	-0.41	0.68
Internet Addiction	0.02	0.01	0.09	1.57	0.11
Age	-0.64	0.25	-0.17	-2.55	0.01

$R=0.21$ $R^2=0.04$ $F_{(4,269)} = 3.31$ $p= 0.01$

ternet addiction were found to have a significantly predictive value on cyber victimization in university students. These three variables as together predicted 11 % of the variance in cyber victimization ($R=0.33$, $R^2=0.11$, $p<0.05$) (Table 7).

Furthermore, according to the results of this study, gender, marital status, internet addiction and age were found to have a significantly predictive value on cyber bullying in university students. These variables as together predicted 4% of the variance in cyber bullying ($R=0.21$, $R^2=0.04$, $p<0.05$) (Table 8).

DISCUSSION

Technological developments and the cyber world provide lots of opportunities to young people to communicate with others as well as opportunities for learning and self-exploration.[24,51] Researchers suggested that although technological advances in the field of information and communication provide new, comfortable and useful places to get information, there are lots of problems caused by technological developments such as cyber bullying and cyber victimization.[52] It was also supported that although cyber interactions provide many advantages like social support, identity exploration, and cross-cultural interac-

tions, they lead to some problems for youth such as cyber bullying and spending more time in online than ever before.[24]

The aim of the study was to determine the predictors of cyber bullying and cyber victimization in university students. According to the results of this study, gender, marital status and internet addiction as together had a significantly predictive value on cyber victimization in university students. Moreover, it was found that gender, marital status, internet addiction and age as together had a significantly predictive value on cyber bullying scores of the participants. Cyber victimization scores of males were found to be higher than females; however, there was no significant difference between females and males in terms of cyber bullying. It was found that there was no significant difference between married and single subjects in terms of cyber victimization, but cyber bullying scores of the participants differed significantly in terms of marital status. Besides, there was no relationship between age and cyber victimization; however, younger participants were more prone to be cyber bully than older ones.

Internet use has become widespread among youth.[53] In parallel to the findings of this study, Ybarra and Mitchell supported that daily intensive in-

ternet use is an important predictor of being cyber bully or cyber victim.[41] Moreover, Erdur-Baker and Kavsut suggested that there is a positive relationship between the use of communication sources based on the internet and being cyber bully or cyber victim.[54]

Similarly, Wolak, Mitchell and Finkelhor found that youth, victimized online, spent more time in the internet.[16] Furthermore, Slovak and Singer reported that youth victimized through the internet were more likely to talk with unkonown people in comparison with youth who were not victimized.[55] Accordingly, Peker, Eroglu and Ada found that the duration of weekly internet use predicts cyber victimization.[33] Roland said that males who use the internet 3 hours or more in a day are more prone to be cyber victims.[56]

According to another result of this study, cyber victimization scores of males were higher than females; however, there was no significant difference between females and males in terms of cyber bullying. Some of the studies in the literature support this finding that boys and girls do not differ significantly in terms of cyber bullying.[15] As parallel to the findings of this study, studies showed that boys and girls significantly differ in terms of cyber victimization that boys are more prone to be cyber victim than girls.[35,36] Wolak, Mitchell and Finkelhor also suggested that boys experience more cyber victimization than girls.[16] Furthermore, Ozbay found that the cyber victimization scores of the boys were higher than girls *(Ozbay A. Ergenlerde siber zorbalık, siber mağduriyet, aleksitimi ve öfke ifade etme biçimleri arasındaki ilişki. Yayımlanmamış Yüksek Lisans Tezi. İstanbul: Fatih Üniversitesi, Sosyal Bilimler Enstitüsü; 2013).* Baran, Keskin and Genc reported that boys and girls have different socializing processes in Turkey and it can be another reason of the difference on the research findings.[37] It is known that there are gender typed behaviors in Turkey. Girls are brought up under discipline and controlling their aggressive attitudes is expected from girls. It can be said that girls can not behave aggressively in daily life and that's why they try to compensate this situation with cyber bulliying. When boys harm girls in daily life, girls can not behave aggressively towards them; however, they can re-

venge from boys in the cyber environment. So it can be thought that girls are more prone to be cyber bullies and boys are more prone to be cyber victims in the cyber places.

However, there are different findings on gender differences regarding cyber bullying. Some researchers reported that girls have higher levels of cyber bullying, whereas others suggested that boys are more likely to involve in bullying in the cyber context.[24,46,57,58] On the other hand, some studies showed that there is no gender difference in terms of cyber bullying.[15] Similarly to the results of this study, Wright and Li supported that boys and girls were equally likely to engage in cyber bullying.[59]

Another result of this study showed that there was no significant relationship between age and cyber victimization in university students; but cyber bullying was predicted by age. The findings of this research showed that there was a negative relationship between age and cyber bullying that older people had less tendency to be cyber bully. Accordingly, Demir and Seferoglu reported that there is a significant difference in cyber bullying in terms of age.[60] Moreover, researchers found that participants under 25 years of age were more likely to be cyber bully than those over 35 years of age.

Statistical results of Turkey Statistics Corporation showed that youth whose ages are between 16 and 24 have more risk to be cyber victim. The conditions that lead to cyber bullying emerge in school and cyber bullying experiences continue both in the school and outside of the school.[52] It is supported that even if cyber bullying occurs outside of the school, negative situations that are experienced in the school are the reasons of cyber bullying experiences emerge outside of the school. Ayas and Horzum reported that negative school experiences are the basis of cyber bullying.[52] So, it can be thought that if school problems disappear, the risk for cyber bullying will decrease. That's why, it can be said that when people are older, their school problems decrease or disappear and accordingly, the risk for cyber bullying will decrease with age. However, Genc and Aksu reported that students whose ages are higher are more prone to be cyber bully than youngers.[61] Besides, some re-

searchers supported that cyber bullying is not restricted by age and may emerge in every age groups.[38,48]

Similarly to the findings of this study, most of the researches also showed that there was no significant difference in cyber victimization scores of the adolescents in terms of age.[12] Furthermore, according to the results of the research conducted by Dalmaz with 329 university students, there was no relationship between age and cyber victimization *(Dalmaz E. [Investigation of the relationship between cyber bullying/victimization, depression and anxiety in university students]. Yüksek Lisans Tezi. İstanbul: Haliç Üniversitesi Sosyal Bilimler Enstitüsü; 2014).* It can be said that every one who use the internet has the risk for cyber victimization.

In this study, cyber victimization and cyber bullying scores of the participants in terms of marital status were also investigated. It was found that there was no significant difference between married and single subjects in terms of cyber victimization; however, cyber bullying scores of single people were higher than married ones. Similarly to the finding of this study, Ngo and Paternoster suggested that marital status has no effect on the likelihood of being victim in cyberspace.[49] However, Kılıcer, Ozeke and Coklar reported that marital status plays an important role on victimization.[47] It was supported that single people have more problems with victimization in comparison to married ones, because single people are perceived as more accessible than married ones by bulliers.[19,48] According to Loukaitou-Sideris, family factors like family conflicts and marital problems have an important effect in victimization.[62] Furthermore, in parallel to the finding of this study, Kılıcer, Ozeke and Coklar found in their study that married people had more positive attitudes than single ones in social media.[47] It can be thought that single people are more prone to be cyber bully than married ones.

LIMITATIONS

Although randomly selected sample of youth were participated in the present study, there were several limitations of this study. First is that the findings were obtained from a small sample size and thus the generalizability of these findings were limited. Another limitation is that technological addictions also include media addiction, television addiction, mobile phone addiction, computer addiction. In this study, only internet addiction was investigated. Besides, only the role of gender, age and marital status were investigated in this study. However, culture and soci-economic status of the students can be effective on internet addiction, cyber bullying and cyber victimization. This study was applied to university students who studied in different departments in state and private universities in Istanbul. Maybe there can be cultural differences between students from different cities.

CONCLUSION

Cyber crime problem has been very common worldwide.[63] This study found that single and younger internet addicts were more prone to be cyber bullies; whereas, male internet addicts were more prone to be cyber victims. It is clear that cyber bullying and cyber victimization lead to many personal difficulties like psychosocial problems, aggression and academic problems.[64,65]

Akcan and Ozturk suggested that developing programs to prevent cyber bullying and cope with the negative effects of it is very important for students.[32] Li also emphasized that participation of the school personnel, family and society to preventing and coping programs is essential.[24] Moreover, providing information to students about the characteristics and effects of cyber bullying can be effective to prevent cyber bullying.

It can be said that educating children and youth about using internet and mobile phones is very important. In addition, children and youth need to be informed about how to deal with bullying during the use of internet and mobile phones. Adults, especially parents and teachers, have a great responsibility in this process of awareness. Adults, namely parents and teachers, should be as knowledgeable as youth about use and security of the internet in order to provide supervision to youth. Because, educating youth instead of banning them can be effective to prevent cyber bullying and raising awareness and responsibility of youth. Students should be encouraged to use internet

labs in schools instead of unsupervised internet cafes because it will be much easier to control the use of the internet at school or home environment. It is clear that preventing the problems in the beginning, instead of waiting the progress of them, is more efficient to protect students towards cyber bullying.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that pro- vides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

REFERENCES

1. Guan SS, Subrahmanyam K. Youth internet use: risks and opportunities. Curr Opin Psychiatry. 2009;22(4):351-6. [Crossref] [PubMed]

2. Yellowlees PM, Marks S. Problematic internet use or internet addiction? Comput Human Behav. 2007;23(3):1447-53. [Crossref]

3. Kim S, Kim R. A study of Internet addiction: status, causes, and remedies. J Korean Home Econ Assoc Engh Ed. 2002;3(1):2.

4. Kalaitzaki AE, Birtchnell J. The impact of early parenting bonding on young adults' Internet addiction, through the mediation effects of negative relating to others and sadness. Addict Behav. 2014;39(3):733-6. [Crossref] [PubMed]

5. Lee J, Hwang JY, Park SM, Jung HY, Choi SW, Kim DJ, et al. Differential resting-state EEG patternassociated with comorbid depression in Internet addiction. Prog Neuropsychopharmacol Biol Psychiatry. 2014;50:21-6. [Crossref] [PubMed]

6. Griffith M. Internet addiction: does it really exist? In: Gackenback J, ed. Psychology and the Internet: Intrapersonal, Interpersonal, and Transpersonal Implications. 1st ed. San Diego: Academic Press; 1998. p.61-75.

7. Gunuc S, Kayri M. The profile of Internet dependency in Turkey and development of Internet addiction scale: study of validity and reliability. H.U. Journal of Education. 2010;39:220-32.

8. Ozturk O, Odabasıoglu G, Eraslan D, Genc Y, Kalyoncu O.A. [Internet addiction: clinic and treatment]. J Depend. 2007;8:36-41.

9. Ceyhan AA. Predictors of problematic Internet use on Turkish university students. Cyberpsychol Behav. 2008;11(3):363-6. [Crossref] [PubMed]

10. Young KS. Caught in the Net: How to Recognize the Signs of Internet Addiction--and a Winning Strategy for Recovery. 1st ed. New York: Wiley; 1998. p.256. [Crossref]

11. Trolley B, Shields L, Hanel C. School cyberbullying: description, assessment, and therapeutic intervention. J Technol Couns. 2008;5.

12. Patchin JW, Hinduja S. Bullies move beyond the schoolyard: a preliminary look at cyberbullying. Youth Violence Juv Justice. 2006;4(2):148-69. [Crossref]

13. Belsey B. Cyberbullying: An emerging threat to the "always on" generation; 2006. Retrieved February 19, 2019. [Link]

14. Arıcak OT, Kınay H, Tanrıkulu T. [The first psychometric findings of the cyber bullying scale]. J Educ Fac. 2012;9:101-14.

15. Hinduja S, Patchin JW. Bullying, cyberbullying, and suicide. Arch Suicide Res. 2010;14(3):206-21. [Crossref] [PubMed]

16. Wolak J, Mitchell KJ, Finkelhor D. Does online harassment constitute bullying? An exploration of online harassment by known peers and online-only contacts. J Adolesc Health. 2007;41(6 Suppl 1):S51-8. [Crossref] [PubMed]

17. Sengupta A, Chaudhuri A. Are social networking sites a source of online harassment for teens? Evidence from survey data. Child Youth Serv Rev. 2011;33(2):284-90. [Crossref]

18. Ybarra ML, Mitchell KJ, Wolak J, Finkelhor D. Examining characteristic and associated distress related to Internet harassment: findings from the Second Youth Internet Safety Survey. Pediatrics. 2006;118(4):e1169-77. [Crossref] [PubMed]

19. Akbulut Y, Sahin YL, Eristi B. Cyberbullying victimization among Turkis online social utility members. J Educ Techno Soc. 2010;13(4):192-201.

20. Burnukara P, Uçanok Z. [A Descriptive Study on Opportunities of Adolescents' Use of Information and Communication Technologies and Cyberbullying]. Toplum ve Sosyal Hizmet. 2010;21(2):47-62.

21. Ozturk C. [Investigation of Cyber Bullying Tendencies of 8th Grade Students in Terms of Various Variables: The Case of Adapazarı District of Sakarya Province] Journal of Interdisciplinary Education: Theory and Practice. 2019;1(1):76-90.

22. Topçu C, Erdur-Baker O, Capa-Aydin Y. Examination of cyberbullying experiences among Turkish students from different school types. Cyberpsychol Behav. 2008;11(6):643-8. [Crossref] [PubMed]

23. Peker A, Eroglu Y. [Internet addiction as a predictor of cyberbullying and victimization in male students]. Sunbul AM, Sahin I, editörler. 4. Uluslararası Bilgisayar ve Öğretim Teknolojileri Sempozyumu, Tam Metin Kitabı. Konya: Selcuk Üniversitesi; 2010. p.862-7.

24. Li Q. Bullying in the new playground: research into cyberbullying and cyber victimisation. Australas J Educ Technol. 2007;23(4):435-54. [Crossref]

25. Wright MF, Li Y. Kicking the digital dog: a longitudinal investigation of young adults' victimization and cyber-displaced aggression. Cyberpsychol Behav Soc Netw. 2012;15(9):448-54. [Crossref] [PubMed]

26. Hoover JH, Olsen GW. Teasing and Harassment: The Frames and Scripts Approach for Teachers and Parents. 1st ed. Bloomington, IN: National Educational Service; 2001. p.124.

27. Pellegrini AD, Bartini M. A longitudinal study of bullying, victimization, and peer affiliation during the transition from primary school to middle school. Am Educ Res J. 2000;37(3):699-725. [Crossref]

28. Nabuzoka D. Teacher ratings and peer nominations of bullying and other behaviour of children with and without learning difficulties. Educ Psychol. 2003;23(3):307-21. [Crossref]

29. Pellegrini AD, Bartini M, Brooks F. School bullies, victims, and aggressive victims: Factors relating to group affiliation and victimization in early adolescence. J Educ Psychol. 1999;91(2):216-24. [Crossref]

30. Cetin B, Peker A, Eroolu Y. [Internet addiction and life satisfaction as predictors of cyberbullying and victimization in female students]. Keser N, Baytekin B, editörler. 1. Uluslararası Kadın ve Sağlık Kongresi Kongre Kitabı; 2010. p.181-6.

31. Cetin B, Peker A, Eroglu Y, Citemel N. [Cognitive distortions about relationships as a predictor of cyberbullying: a preliminary study for adolescents]. Int J Educ Sci. 2011;3:1064-80.

32. Akcan G, Ozturk E. The investigation of predictors of cyberbullying and cyber victimization in university students. Forensic Res Criminol Int J. 2017;4:1-4. [Crossref]

33. Peker A, Eroglu Y, Ada S. [The investigation of predictors of cyberbullying and cybervictimization in adolescents]. Abant Izzet Baysal Universitesi Egitim Fakultesi Derg. 2012;185-206.

34. Eroglu Y, Aktepe E, Akbaba S, Isık A, Ozkorumak E. [The investigation of prevalence and risk factors associated with cyber bullying and victimization]. Egitim ve Bilim. 2015;40(177): 93-107. [Crossref]

35. Ozturk E, Akcan G. Preventing and coping strategies for cyber bullying and cyber victimization. World Academy of Science, Engineering and Technology. Int J Soc Behav Educ Econ Bus Ind Eng. 2016;10:1771-4.

36. Mesch GS. Parental mediation, online activities, and cyberbullying. Cyberpsychol Behav. 2009;12(4):387-93. [Crossref] [PubMed]

37. Baran B, Keskin E, Genc S. [Investigation of pre-service teachers' bullying and bullying on Facebook according to some variables]. J Instr Tech Teach Educ. 2014;3:34-43.

38. Tokunaga RS. Following you home from school: a critical review and synthesis of research on cyberbullying victimization. Comput Human Behav. 2010;26(3):277-87. [Crossref]

39. Smith PK, Mahdavi J, Carvalho M, Tippett N. An Investigation Into Cyberbullying, its Forms, Awareness and Impact, and the Relationship Between Age and Gender in Cyberbullying. Res Brief No. RBX03-06. London: DIES; 2006. p.3.

40. Mishna F, Khoury-Kassabri M, Gadalla T, Daciuk J. Risk factors for involvement in cyber bullying: victims, bullies and bully-victims. Child Youth Serv Rev. 2012;34:63-70. [Crossref]

41. Ybarra ML, Mitchell KJ. Youth engaging in online harassment: associations with caregiver-child relationships, Internet use, and personal characteristics. J Adolesc. 2004;27(3):319-36. [Crossref] [PubMed]

42. Khoury-Kassabri M. The relationship between staff maltreatment of students and bully-victim group membership. Child Abuse Negl. 2009;33(12):914-23. [Crossref] [PubMed]

43. Balakrishnan V. Cyberbullying among young adults in Malaysia: the roles of gender, age and Internet frequency. Comput Human Behav. 2015;46:149-57. [Crossref]

44. Sargın N. A study on bullying tendencies among preadolescents. J Educ Learn. 2017;6(4):209-16. [Crossref]

45. Beran T, Li Q. The relationship between cyberbullying and school bullying. J Stud Wellbeing. 2007;1(2):15-33. [Crossref]

46. Smith PK, Mahdavi J, Carvalho M, Fisher S, Russell S, Tippett N. Cyberbullying: its nature and impact in secondary school pupils. J Child Psychol Psychiatry. 2008;49(4):376-85. [Crossref] [PubMed]

47. Kılıcer K, Ozeke V, Coklar AN. [Investigating social media users' cyber behaviors from the perspective of human values]. Dumlupınar Univ J Soc Sci. 2018;56.

48. Akbulut Y, Eristi B. Cyberbullying and victimisation among Turkish university students. Australas J Educ Technol. 2011;27(7):1155-70. [Crossref]

49. Ngo FT, Paternoster R. Cybercrime victimization: an examination of Individual and situational level factors. Int J Cyber Criminol. 2011;5(1):773-93.

50. Young KS. Internet addiction: the emergence of a new clinical disorder. Cyberpsychol Behav. 1998;1(3):237-44. [Crossref]

51. Cassidy W, Jackson M, Brown KN. Sticks and stones can break my bones, but how can pixels hurt me? Students' experiences with cyber-bullying. Sch Psychol Int. 2009;30:383-402. [Crossref]

52. Ayas T, Horzum MB. Exploring the teachers' cyber bullying perception in terms of various variables. Int Online J of Educ Sci. 2011;3(2): 619-40.

53. Erdur-Baker O, Yerin-Guneri O, Akbaba-Altun S. [How information and communication technologies affect children and young people].

MEB, 1. Şiddet ve Okul: Okul ve Cevresinde Cocuğa Yonelik Siddet ve Alınabilecek Tedbirler. Uluslarası Katılımlı Sempozyum; 2006. p.28-31.

54. Erdur-Baker O, Kavsut F. [Cyber bullying: a new face of peer bullying]. Eurasian J Educ Res (EJER). 2007;27:31-42.

55. Slovak K, Singer JB. School social workers' perceptions of cyberbullying. Child Sch. 2011;33:5-16. [Crossref]

56. Roland E. Bullying, depressive symptoms and suicidal thoughts. Educ Res. 2002;44(1):55-67. [Crossref]

57. Kowalski RM, Limber SP. Cyber bullying among middle school students. J Adolesc Health. 2007;41:22-30. [Crossref] [PubMed]

58. Erdur-Baker O. Cyberbullying and its correlation to traditional bullying, gender, and frequent and risky usage of Internet-mediated communication tools. New Media Soc. 2010;12:109-25. [Crossref]

59. Wright MF, Li Y. The association between cyber victimization and subsequent cyber aggression: the moderating effect of peer rejection. J Youth Adolesc. 2013;42(5):662-74. [Crossref] [PubMed]

60. Demir O, Seferoglu SS. [The investigation of the relationship of cyber bullying with cyber loafing, Internet addiction, information literacy and various other variables]. Online J Technol Addict Cyberbullying. 2016;3(1):1-26.

61. Genc G, Aksu MB. An investigation of bully victim behaviors of general high school students in terms of some variables. GU Gazi Fac Educ J. 2010;30.

62. Loukaitou-Sideris A. Hot spots of bus stop crime: the importance of environmental attributes. J Am Plann Assoc. 1999;65:395-411. [Crossref]

63. Campbell MA. Cyberbullying: an old problem in a new guise? Aust J Guid Couns. 2005;15(1):68-76. [Crossref]

64. Dehue F, Bolman C, Vollink T. Cyberbullying: youngsters' experiences and parental perception. Cyberpsychol Behav. 2008;11:217-23. [Crossref] [PubMed]

65. Beran T, Li Q. Cyber-harrasment: a new method for a behavior. Journal of Educational Computing Research. 2005;32(3):137-53. [Crossref]