

Evaluation of the Relationship Between Cyberbullying Perpetration and Cyber Victimization With Social Media and Game Addiction Among Youth

Gençlerde Siber Zorbalık ve Siber İstismar ile Sosyal Medya ve Oyun Bağımlılığı Arasındaki İlişkinin Değerlendirilmesi

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ABSTRACT

Objective: Both cyberbullying perpetration and cyber victimization are becoming an increasingly important problem among adolescents with the development of technology. It is suggested that there are many factors in the emergence of cyberbullying. This study, it is aimed to evaluate the relationship between cyberbullying and victimization, social media addiction, and game addiction.

Material and Methods: A total of 537 adolescents aged 10-18 were included in our cross-sectional study. Participants filled out the sociodemographic data form, social media addiction scale, game addiction scale, and cyberbullying scale.

Results: In our study, both cyber perpetrators (0.021) and cyber victims ($p < 0.001$) were more frequent in girls. While social media addiction scores were higher in cyber victims ($p = 0.020$), gender (OR [Odds Ratio] = 0.09 CI [Confidence interval]: [0.04- 0.23]) and game addiction score were found to be predictors. (OR = 1.09 CI: [1.03-1.16]).

Conclusion: Social media and game addiction seem to be especially related to cyber victimization. Although a causal relationship could not be revealed in our study, it is thought that it may be useful to increase the awareness of adolescents about cyberbullying during gaming and using social media, which have an important place in their lives, and to evaluate the groups with addiction in terms of cyber victimization.

Key Words: Adolescence, Cyberbullying perpetration, Cyber victimization

ÖZ

Amaç: Teknolojinin gelişmesiyle birlikte, hem siber zorbalığı uygulama hem de siber istismara uğrama, ergenler arasında giderek artan önemli bir problem haline gelmiştir. Siber zorbalığın ortaya çıkmasında birçok faktör olduğu ileri sürülmektedir. Bu çalışmada siber zorbalık ve istismar ile sosyal medya bağımlılığı ve oyun bağımlılığı arasındaki ilişkinin değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntemler: Çalışma kesitsel nitelikli olup, çalışmaya 10-18 yaş aralığında toplam 537 ergen dahil edilmiştir. Katılımcılar sosyodemografik veri formu, sosyal medya bağımlılığı ölçeği, oyun bağımlılığı ölçeği ve siber zorbalık ölçeğini doldurmuştur.



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Bulgular: Çalışmamızda kızlarda hem siber zorbalık ($p=0.021$) hem de siber mağduriyet ($p<0.001$) daha sıkı. Siber zorbalığa uğrayanlarda sosyal medya bağımlılığı skoru daha yüksek olup ($p=0.020$), siber istismar için cinsiyet (OR [Odds Ratio]= 0.09 GA [güven aralığı]: [0.04-0.23]) ve oyun bağımlılığı puanı yordayıcı olarak bulunmuştur. (OR=1.09 GA: [1.03-1.16]).

Sonuç: Sosyal medya ve oyun bağımlılığı özellikle siber istismar ile ilişkili görünmektedir. Çalışmamızda nedensel bir ilişki ortaya konulamamakla birlikte, ergenlerin yaşamlarında önemli bir yere sahip olan sosyal medya kullanımı ve oyun oynama sırasında siber zorbalığa karşı farkındalıklarının artırılmasının ve bağımlılık saptanan grupların siber istismar açısından değerlendirilmesinin yararlı olacağı düşünülmektedir.

Anahtar Sözcükler: Ergenlik, Siber zorbalık, Siber istismar

INTRODUCTION

Cyberbullying is thought to be a special form of traditional bullying (1). It includes all the behaviors such as the abuse of power systematically by a person or people using information and communication technologies or causing harm technically or relationally (2-3). A standard definition becomes difficult due to the uncertainty of the repetitive nature and power imbalance in the traditional definition of bullying (2). Nevertheless, the concept of cyberbullying, which negatively affects both the physical and mental health of youths, is gaining importance recently (4).

Exposure to cyberbullying a person or group with digital technologies is defined as cyber victimization and the person being bullied is called the cyber victim. Additionally, the person doing the bullying is the perpetrator, cyberbullying perpetration is the aggressive and hostile individual or group behaviors through technology to harm or inconvenience others (5-6).

Many methods such as short messages, e-mails, websites, and online game sites mediate cyberbullying (7). With the advancement of technology, accessing these methods becomes easier for youths both who bully and who have been bullied, and the methods can change over time. Studies reveal that the frequency of online communication, the time spent online, and the use of social networks are associated with cyberbullying (8,9). This condition suggests the relationship between cyberbullying and its technology addictions.

Technology addictions are defined as behavioral addictions that involve human-machine interactions (10). Although there are concepts such as social media addiction, game addiction, and internet addiction in the literature, in DSM 5, only internet gaming disorder is included (11-14). It has been defined as a disorder characterized by the presence of at least five of signs of mental preoccupation with internet games, signs of withdrawal and tolerance, inability to control entering internet games, loss of interest in hobbies other than internet games, continuing excessive use despite the presence of psychosocial problems, deceiving others about the amount of playing, using games to alleviate or eliminate a negative mood, endangering job, education, or career opportunities (14). Although addiction to social networks is not included in the diagnosis manuals, it is stated in the literature that it was characterized by withdrawal symptoms and tolerance observed in behavioral addictions, excessive involvement with social networks, loss of control,

deterioration in interpersonal relationships, and relapse symptoms (11).

Youths with technological addiction such as gaming or social media addiction stay longer in online environments (15). Based on the literature data, it has come to mind that when addicted youth encounter cyber victims and cyber perpetrators on social media and in games, they may not be able to avoid it due to their addictive characteristics. Additionally, it has been shown that screen time increases during the pandemic both during and after the closure of schools (16). In the available literature, no study was found in which both game addiction and social media addiction were evaluated together during the post-pandemic normalization period. Therefore, this study, it was aimed to evaluate the relationship between both social media and game addiction with the cyberbullying perpetration and cyber victimization among youth during the postpandemic normalization period.

METHOD

Sampling and Procedure

This research was carried out as the "Evaluation of Cyberbullying and Cyber Victimization among Adolescents" part of the "Safe Internet Use among Adolescents and Internet Addiction After the Pandemic" project. Ethics committee approval of the study was obtained from the Gulhane Faculty of Medicine, Scientific Research Ethics Committee in 2021 (2021-409). Following the approval of the ethics committee, adolescents, aged 10-18 years, in 10 youth centers affiliated to the Provincial Directorate of Youth and Sports, which were determined within the scope of the project, and of whom informed consent was obtained themselves and their families were included. Adolescents whose consent could not be obtained from themselves or their parents and who were not able to read and write at a sufficient level were excluded from the study. Finally, 537 adolescents were included in the study. The participants were asked to fill out the sociodemographic data form, the cyberbullying scale, the social media addiction scale, and the game addiction scale.

Data Collection Tools

Sociodemographic data form: In the form designed by the researchers, the age, gender, age of the parents, education level, number of people in the family, monthly mean income level, time spent on the phone/tablet/computer, the purpose

of using the phone, tablet/computer, the information of used social media accounts were asked.

Cyberbullying scale: In the scale with a total of 16 items, which was developed by Stewart et al. (17), the total internal consistency coefficient, was calculated as 0.87. In the first two multiple-choice questions, it was asked whether the person had been bullied in various ways, whether he had bullied someone or not, and in the next 14 questions, it is evaluated whether he had been bullied with a 5-point Likert type scale and the validity and reliability of the scale in Turkish were conducted by Kuçuk, Inanici, and Ziyalar (18).

Social media addiction scale for adolescents: This is a 5-point Likert type scale and there are no reverse-scored items. A minimum of 9 points and a maximum of 45 points can be obtained in the scale, which consists of a total of 9 items. The high total score calculated indicates that the social media addiction of the individual is high, and the low score indicates that the addiction is low. Its development, validity, and reliability study was carried out by Ozgenel et al. in 2019 (19). The scale has a single-factor structure and has no cut-off value.

Game addiction scale for adolescents (short form): The scale was developed by Lemmens, Valkenburg, and Peter in 2009 (20), and the validity and reliability of the scale in adolescents aged 12-19 were conducted by Anli and Taş. The scale consists of 9 items in total. It is a 5-point Likert type and has no cut-off value. It has a single-factor structure (21).

Statistical analysis

SPSS 21.0 package program was used in our study. The Chi-square test was used for the analysis of qualitative data, and Fisher’s exact test was used in cases where the necessary assumptions were not met. The Kolmogorov Smirnov test was used to evaluate the normal distribution, and the variables showing normal distribution were compared with the Student’s t-test and those not with the Mann-Whitney u test. Spearman test was used in correlation analysis. The significance value was accepted as 0.05.

RESULTS

Sociodemographic Data

The median age and interquartile range of the participants were 15 (13-16) years. The age range is between 10 and 18. 199 (37.1%) were female and 335 (62.4%) were male.

Cyber Victimization

According to our results, 36 (18.1%) of the girls and 10 (3%) of the boys experienced cyber victimization at least once and cyber victimization was statistically more frequent in girls (p<0.001). The mean age of the cyber victims was 15.347 (SD=1.934) years while it was 14.418 (SD=1.935) years for those who had

Table I: Sociodemographic characteristics of cyber victims

	Cyber Victimization		p
	No	Yes	
Age*	14.418 (1.935)	15.347 (1.934)	0.001
Gender†			<0.001
Girl	163 (81.9)	36 (18.1)	
Boy	324 (97.0)	10 (3.0)	
Mother’s education level†			0.903
Lower than high-school	129 (90.8)	13 (9.2)	
High-school or higher	314 (90.5)	33 (9.5)	
Mother’s job†			0.908
Not working	322 (91.2)	31 (8.8)	
Working	150 (90.9)	15 (9.1)	
Father’s education level†			0.705
Lower than high-school	86 (89.6)	10 (10.4)	
High-school or higher	357(90.8)	36 (9.2)	
Father’s job†			0.494
Not working	20 (95.2)	1 (4.3)	
Working	449 (90.9)	45 (9.1)	
Mean monthly income†			0.552
<3000TL	49 (92.5)	4 (7.5)	
3000-10.000TL	252 (89.7)	29 (10.3)	
>10.000TL	149 (92.5)	12 (7.5)	

*: Mean(SD), †: n(%)

Table II: Social media addiction and game addiction data of cyber victims.

	Cyber Victimization Mean (SD)		p
	No	Yes	
Social media addiction score	16.904 (7.34)	19.087 (7.18)	0.020
Game addiction score	15.692 (6.63)	18.174 (8.28)	0.054

never experienced cyber victimization and the age of cyber victims were statistically significantly older (p=0.001).

In our study, no statistically significant difference was found in terms of the education status of their parents, employment status, and monthly mean income of the parents of adolescents who experienced cyberbullying at least once. Details are presented in Table I.

The Role of Social Media Use and Gaming in Cyber Victimization

It was evaluated whether adolescents used social media and for what purposes they used technological devices the most. Although there was no statistically significant difference in terms of cyber victimization between adolescents having and not having social media accounts (p=0.054). Cyber victims were statistically significantly less likely to use technological devices for gaming than those who had never experienced cyber victimization (p=0.015). No significant differences were found for internet surfing (0.440) and for using social media accounts (p=0.283) between cyber victims and others. No significant difference was found between cyber victims and others in terms of time spent in front of the screen (p=0.260).

Table III: Sociodemographic features of cyberbullying perpetrators

	Cyberbullying Perpetration		p
	No n(%)	Yes n(%)	
Mother's education level			
Lower than high-school	139 (97.9)	3 (2.1)	0.765
High-school or higher	337 (97.1)	10 (2.9)	
Mother's job			
Not working	347 (98.3)	6 (1.7)	0.127
Working	158 (98.5)	7 (4.2)	
Father's education level			
Lower than high-school	93 (96.9)	3 (3.1)	0.726
High-school or higher	383 (97.5)	10 (2.5)	
Father's job			
Not working	21 (100.0)	0 (0.0)	1.000
Working	481 (97.4)	13 (2.6)	
Mean monthly income			
<3000TL	51 (96.2)	2 (3.8)	0.719
3000-10.000TL	275 (97.9)	6 (2.1)	
>10.000TL	156 (96.9)	5 (3.1)	

Table IV: Social media addiction, gaming addiction and cyberbullying data of cyberbullying perpetrators

	Cyberbullying Perpetration		p
	No	Yes	
Social media addiction score*	17.024 (7.36)	20.000 (6.35)	0.055
Game addiction score*	15.837 (6.77)	19.000 (8.40)	0.173
Cyberbullying score*	20.416 (8.16)	28.769 (8.92)	<0.001

*Mean(SD)

It was observed that the social media addiction score of cyber victims was found to be statistically significantly higher ($p=0.020$) and no significant difference was found in terms of game addiction score ($p=0.054$) between cyber victims and those who have never experienced cyber victimization. Details are presented in Table II.

Cyberbullying Perpetration

Cyberbullying perpetration rate was found to be 4.5% ($n=9$) in girls and 1.2% ($n=4$) in boys and was significantly higher in girls ($p=0.021$). While the mean age of cyberbullying perpetrators was 15.538 (SD=2.106) years, the mean age of those who never did cyberbully was 14.472 (SD=1.942) years and there was not a significant difference between the two groups in terms of age ($p=0.054$). Also, no differences were found in terms of mother and father's education level, mean monthly income, and working status, and the details are presented in Table III.

Role of Social Media Use and Gaming in Cyberbullying Perpetration

There were no differences between cyberbullying perpetrators and those who did not cyberbully, in terms of using technological devices for gaming ($p=0.465$), internet surfing ($p=0.440$), using social media accounts ($p=0.283$), and the

time spent in front of the screen ($p=0.293$). Also, cyberbullying perpetrators and those who have never been cyberbullied were compared; no difference was observed in terms of social media addiction scores ($p=0.055$) and game addiction scores ($p=0.173$), details are presented in table IV. Nevertheless, the cyberbullying scale scores of cyberbullying perpetrators were statistically significantly higher ($p=0.001$) (Table IV). The rate of cyberbullying perpetrators who had previous experience of cyber victimization was 84.6%, ($n=11$) while those who had no experience of cyber victimization were 15.4% ($n=2$), which was statistically significant ($p<0.001$).

When the relationship between social media addiction, game addiction, and cyberbullying scores were examined by Spearman correlation analysis, a positive correlation was found between cyberbullying scale score and game addiction ($r=0.320$ $p<0.001$) and social media addiction ($r=0.375$ $p<0.001$) scale score. Similarly, social media addiction and game addiction scale scores showed a positive correlation ($r=0.433$, $p<0.001$).

Logistic Regression Analysis

The enter binary logistic regression model was used to reveal the predictive factors in cyber victimization. Age, gender, mean monthly income, mother's education level, father's education level, screen time, game addiction, and social media addiction scores were included in the model that was created to determine the predictors of cyber victimization (Nagelkerke $R^2=0.214$). In the created model, gender (OR=0.09 CI: 0.04-0.23 $p<0.001$) and, game addiction scores were found to be predictive (OR=1.09 CI:1.03-1.16 $p=0.001$).

DISCUSSION

In the study that aimed to evaluate the relationship between cyberbullying and social media and game addiction, both cyberbullying perpetration and cyber victimization were observed more frequently in female adolescents. Also, in the cyber victims, while the use of phones, tablets, and computers for gaming was significantly lower, their social media addiction scores were found to be high. For cyber victimization, the increase in game addiction scores and gender were found to be predictors. In addition, a weak positive relationship was observed in social media addiction, game addiction, and cyberbullying scores.

The frequency of cyberbullying perpetration and cyber victimization varies within countries and years (22). In a meta-analysis published in 2019, the frequency of lifetime cyber victimization was reported as 7.02% and the frequency of cyberbullying perpetration as 3.45% (23). In our study, closely, while the lifetime prevalence of cyberbullying perpetration was 2.4%, the frequency of experiencing cyber victimization at least once in a lifetime was 8.6%. On the other hand, in a study evaluating the frequency of cyberbullying in primary school age in Turkey, it was reported that 27% were cyber victims

and 18% were cyberbullies, a frequency quite above our study data. In the literature, it is stated that the generalizability of the obtained data was low, for different reasons such as the terminological differences used in the studies evaluating the frequency of cyberbullying perpetration and cyber victimization, the evaluation method used, and the quality of the studies (24,25). In addition, it should be noted that the data obtained in our sample cannot be generalized to the whole society, since our study was conducted in youth centers where activities such as sports, arts, and language education are offered to youths.

When the relationship between gender and cyberbullying was evaluated, it has been shown in the studies that while being cyberbullied was more common in girls, cyberbullying was more common in boys (22,26,27). Following the literature, cyber victimization was higher among girls in our study. However, unlike the literature, the frequency of cyberbullying perpetration was found to be higher in female adolescents. Considering that being a cyber victim is one of the leading risk factors for cyberbullying perpetrators, it comes to mind that the frequency would be higher because girls more frequently use bullying behavior to other people for reasons such as identification with the aggressor, modeling, and behavioral mimicry (28-30).

In our study, it was determined that social media addiction scores were higher in those who experienced cyber victimization. Consistent with the result of our study, in a study involving adolescents aged 11-15 from 42 countries, it was revealed that experiencing cyber victimization showed a strong and consistent relationship with problematic social media use (31). From a clinical point of view, an individual with an addiction may be exposed to this behavior repeatedly on social media platforms, which is one of the most widely used areas for cyberbullying (32). The reasons can be explained as a loss of control over the use of social networks and continuing to use despite negative consequences when faced with cyberbullying (11). Considering that experiencing cyberbullying plays a mediating role between the use of social networks, suicide attempts, and mental problems, the relationship between social media addiction and cyberbullying becomes even more important (33).

When the game addiction scores and using purposes of technological devices were evaluated, it was seen that cyber victims used their technological devices less for playing games. However, at the same time, game addiction scores were found to be an important risk factor for cyber victimization.

Although this condition seems inconsistent, it has been revealed that the most common methods used by adolescents to cope with cyberbullying are avoidance and seeking social support (34). While these strategies can be used in individuals who do not have game addiction or internet gaming disorder, it has not been determined which strategies are used in individuals who lose control while gaming and cannot stop playing games despite the problems they experience. This may

result in adolescents with a game addiction not being able to get away even if they experience cyberbullying. The data from the literature have shown that online game addiction increases the risk of cyberbullying perpetration and cyber victimization at the same time (35).

Our study is one of the studies evaluating the relationship between both game addiction, social media addiction, and cyberbullying in secondary and high school students in Turkey. The strength of our study is that the data was collected from a wide age range, including both secondary and high school students in the post-pandemic normalization period. It is aimed that our study will contribute to the literature on game addiction data and it has been evaluated together with game addiction and social media addiction scores. Although it is known that it measures two different concepts, it is thought that evaluating the social media and game addiction variables together will contribute to the literature, since multi-player games have become huge social interaction environment, and applications defined as social networks are platforms where games and game-related interactions are shared (36,37). In our study, which included social media addiction and game addiction different from the other studies, it was found that game addiction, which was not significant in the basic statistics, was a predictor in the last logistic regression model. In addition, during the pandemic, considering that the time of playing games and the rate of technological addictions may increase due to reasons such as the duration of staying at home and in quarantine, it may be useful to evaluate the relationship between cyberbullying and technological addiction in the post-pandemic period (38,39).

However, our study has some limitations. Since our study data was collected from Ankara, it limits its generalizability to Turkey. In terms of gender, the participants were not equally distributed, and the frequency of boys was high. In addition, the absence of a determined cut-off value in the scales used does not allow the data to be compared in groups with and without addiction.

CONCLUSION

Cyberbullying perpetration and cyber victimization is an important problem among adolescents which is especially seen more commonly in adolescents with technological addictions such as social media addiction and game addiction. Therefore, it may be useful to evaluate cyberbullying behaviors and being cyberbullied in detail during the evaluation of technological addictions.

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