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An Investigation of Relationship Between Digital Game Addiction, Peer Bullying and Sportsmanship Attitudes of Secondary School Pupils

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Abstract

The aim of this study is to investigate the relationship between the concepts of peer bullying and sportsmanship, which are considered as factors related to digital game addiction, which is an important problem for secondary school students. When the relevant literature is reviewed, it is observed that the literature has studies on "addiction to digital games" and "bullying", but studies that deal with the concepts of "digital game addiction, peer bullying, and sportsmanship" are few. This study was designed according to the quantitative research model and a relational screening pattern was applied accordingly. The subjects of this research consist of 1088 students studying in the 2021 to 2022 academic year. The method of "stratified sampling and maximum variation sampling" was applied for selecting suitable subjects. Necessary data were collected through Demographic Information Form, Digital Game Addiction for Children, Peer Bullying Detection, and Sportsmanship Behavior Scales in Physical Training Class. In this study, the SPSS 20.0 Statistical Package Program was used to assess the obtained data. T-test and one-way Analysis of Variance (ANOVA) Tukey Test Statistics and Pearson Correlation and Multiple Regression methods of analysis were used along with descriptive statistical methods for analysing applicable data. As a result of the analyzes made, it was seen that the relationship between the scale scores of the participants was statistically significant. However, it can be said that digital game addiction is an important predictor of peer bullying and so it negatively affects interpersonal social relations in terms of sportsmanship.

Keywords: Digital game, Peer bullying, Sportsmanship, Secondary school, Pupils

Ortaokul Öğrencilerinin Dijital Oyun Bağımlılığı, Akran Zorbalığı ve Sportmenlik Davranışları Arasındaki İlişkinin İncelenmesi

Öz

Bu çalışmanın amacı, ortaokul öğrencileri için önemli bir sorun olan dijital oyun bağımlılığı ile ilgili faktörler olarak değerlendirilen akran zorbalığı ve sportmenlik kavramları arasındaki ilişkiyi incelemektir. Literatür incelendiğinde, dijital oyun bağımlılığı ile akran zorbalığı arasındaki ilişkiyi inceleyen araştırmaların olduğu ancak dijital oyun bağımlılığı, akran zorbalığı ve sportmenlik arasındaki ilişkiyi alan araştırmaların oldukça sınırlı olduğu görülmüştür. Bu çalışma nicel araştırma modeline göre tasarlanmıştır. Buna göre ilişkisel tarama deseni uygulanmıştır. Bu araştırmaya katılan denekler, 2021-2022 eğitim-öğretim yılında öğrenim gören 1088 öğrenciden oluşmaktadır. Uygun deneklerin seçiminde "tabakalı örnekleme ve maksimum çeşitlilik örnekleme" yöntemi uygulanmıştır. Gerekli veriler beden eğitimi dersinde Demografik Bilgi Formu, Çocuklar için Dijital Oyun Bağımlılığı, Akran Zorbalığı Tespiti ve Sportmenlik Davranışı Ölçekleri aracılığıyla toplanmıştır. Bu çalışmada elde edilen verilerin değerlendirilmesinde SPSS 20.0 İstatistik Paket Programı kullanılmıştır. Elde edilen verilerin değerlendirilmesinde SPSS 20.0 istatistik paket programı kullanılmıştır. Normallik sınavına göre, normal dağılım gösteren veriler için parametrik testlerden yararlanılmıştır. Buna göre verilerin analizinde, tanımlayıcı istatistiksel metotlarla birlikte t testi ve tek yönlü varyans analizi (ANOVA) ve Tukey test istatistikleri, Pearson Correlation ve çoklu regresyon analizleri kullanılmıştır. Yapılan analizler sonucunda katılımcıların ölçek puanları arasındaki ilişkinin istatistiksel olarak anlamlı olduğu görülmüştür. Bununla birlikte dijital oyun bağımlılığının akran zorbalığının önemli bir yordayıcısı olduğu ve bu nedenle sportmenlik açısından kişiler arası sosyal ilişkileri olumsuz etkilediği söylenebilir.

Anahtar kelimeler: Dijital oyun, Akran zorbalığı, Sportmenlik, Ortaokul, Çocuk

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INTRODUCTION

The digital games that have been structured and become widespread with the emerging ones are gradually replacing traditional games, and these neoteric games lead to some physical, mental, social, and cognitive troubles unlike traditional games (Akçay and Çolaklar, 2015; Erboy and Akar Vural, 2010; Green and Bavelier, 2003; Horzum, 2011; Torun, 2015). Changing features have revealed the concept of "digital game addiction", which is the exorbitant and uncontrolled use of digital games, particularly in young ones (Irmak and Erdoğan, 2016). The digital game addiction can be identified as the inability of individuals to control their playing habits and continuing to play despite the troubles it causes (Lemmens et al., 2009). It is claimed, therefore, that the addictive type of behavior experienced especially in preschool and school children has a significant impact on attention, success, decline in academics, nutrition, inactivity, excessive weight gain, sleep weights, loneliness, excessive anxiety, aggressive attitudes and social conflicts (Göldağ, 2019; Griffiths, 2005; Irmak and Erdoğan, 2016).

The primary criticism of digital games is the factor of violence and addiction settled in the contents of relevant games. Especially the addiction aspects arising from violent digital games cause many problems in daily life. According to Espelage and Swearer (2003), one of the reasons for the emergence of bullying is the emergence of aggression in digital environments. Çıngı (2018) argues that the best-selling games and even the ones breaking sales records worldwide are taken into consideration, nearly every single second of such games contains blood, broken bones, broken limbs, punctured bodies, cut or severed heads, zombies, terrifying aliens each one different from other, drugs, mafia, fights, arms, thieves, witches, and many other elements of violence.

The transformation of these violence factors in digital games into attitudes acquired by youngsters over time deepens the relevant issue gradually. It has been revealed in many studies that bullying and aggression in individuals through increase in addiction to digital games (Aktaş, 2018; Gentile et al., 2004; Greitemeyer and Mügge, 2014; Güvendi et al., 2019; Gökbulut 2020; Hazar and Ekici, 2021; Karaaslan, 2015; Kılıç 2019; Polman et al., 2008).

Taneri (2020) claims bullying attitudes in children increase due to the increase in digital game addiction. The peer bullying, thus, emerges as a prominent element in shaping social relations, particularly among school-age children. The "peer bullying" was defined by Tatum (1992) as a desire to intentionally harm somebody standing to them and ensure him or her suffer through stress, and he also stressed that this concept was not just a desire, but an unfavorable attitude pattern. Rigby (2020), who emphasizes that the desire to harm another person does not only qualify the person as a bully, claims also that the bullying, use at the end of the sentence, is the continuity of an action the of power imbalance between a bully and victim the aggressor's visibly enjoying his/her such a behaviour, and also the feeling himself/herself as.

The concept of fair play, which can be assumed as the opposite of the concept of bullying, has an important place in structuring interpersonal relations on healthier keystones. The fair-play is, according to Yıldırım (2005), people's creating their own internal structure and shaping their behaviours correctly and regularly by considering other individuals, even during prevailing unfavorable circumstances. In this context, an athlete should never think of exhibiting adverse,

sarcastic, or mischievous attitudes even if he/she will lose a competition. According to Pehlivan (2004), a person who has made fair play a philosophy of life, has adopted this idea not only in sports activities, but also in all areas of life where feasible opportunities exist. Such an individual, also known as a “gentleman” around him/her, does not interfere with the freedoms and rights of people and displays respectful and reassuring behaviors.

In this context, the “bullying and fair-play”, which appear as two different concepts and attitudes, play a decisive role in the social relations of school children. The fundamental aim of schools is to create behavioral alterations in individuals in line with certain targets. One of the target acquisitions that should be included in curriculums applied in schools is to train "decent individuals". Meanwhile, physical training and sports classes are major instruments, in terms of their structural belongings and target achievements, which can instil the spirit of fair play in pupils and thus enable individuals to establish healthy and favorable social relations in all areas of life.

When the relevant literature is reviewed, it is observed that the literature has studies on "addiction to digital games" and "bullying", but studies that deal with the concepts of "digital game addiction, peer bullying, and sportsmanship" are few (Anderson and Carnagey, 2005; Ayas and Horzum, 2014; Aktaş, 2018; Aziz et al., 2021, Aktaş and Bostancı, 2021; Chan and Rabinowitz, 2006; Gentile et al., 2004; Griffiths et al., 2004; Greitemeyer and Kılıç, 2019; Mügge, 2014). It is assumed, that investigating the correlation between the concepts of peer bullying and sportsmanship, which are considered as the factors related to digital game addiction, which is an important trouble for secondary school students, will make significant contributions to the literature.

METHOD

Research Model

This study was designed according to the quantitative research model and a relational screening pattern was applied accordingly.

Study Group

The subjects of this research consist of 1088 students studying in the 2021 to 2022 academic year. As 36 out of 1088 questionnaires were filled incorrectly, they were not included in this research and 1052 of them were evaluated. The method of "stratified sampling and maximum variation sampling" was applied for selecting appropriate subjects.

Data Collection Tool

In this study, necessary data were collected through Demographic Information Form, Digital Game Addiction for Children, Peer Bullying Detection, and Sportsmanship Behavior Scales in Physical Training Class.

Digital Game Addiction Scale for Children (DGASFC): The scale developed by Hazar and Hazar (2017) has twenty-four items, four sub-dimensions, and a five-point Likert structure (1

= Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Totally Agree). The minimum score that can be acquired from the scale is 24 whereas the maximum score is 120. In the grading of scoring, 1-24 Normal, 25-48 Low-risks, 49-72 Risky, 73-96 Dependent, and 97-120 High-level dependent groups. A calculation can be made on the total score of the scale. The Cronbach' Alpha internal consistency coefficient of the scale was determined as .91 as a result of the reliability analysis.

Peer Bullying Detection Scale (PBDS) Adolescent Form: The form was developed by Kutlu and Aydın (2010) for primary and secondary school pupils. The scale has 3 factors (victim, bully, and filler), 19 items, and a 5-point Likert structure (1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Totally Agree). Those showing victim and bully subscales consist of parallel items, including bullying actions in terms of physical, verbal, and aspect. If individuals have higher scores in terms of the total scale and the total scores of the sub-factors, it means that individuals have vigorous behavioral attitudes. The Cronbach' Alpha internal consistency coefficient of the scale was determined as .78 according to the results of the reliability analysis.

Physical Training Class Sportsmanship Behavior Scale (PTCSBS): The scale developed by Koç (2013) consists of 22 items, 2 sub-factors (exhibiting congenial attitudes, avoiding from unfavorable behaviors), and a 5-point Likert structure (1 = Always, 2 = Very often, 3 = Occasionally, 4 = Rarely, 5 = Never). The minimum score acquired from the scale is 22 whereas the maximum score is 110. The second sub-dimension of the scale is scored reversely. Having a higher total score of the scale and the total scores of the sub-factors means that individuals have strong behavioral features. The Cronbach' Alpha internal consistency coefficient of the scale was determined as .87 based upon the reliability analysis.

Ethical Approval

Based on the letter of interest of the Dean of the Faculty of Sports Sciences, Ağrı İbrahim Çeçen University "An Investigation on Relationship between Digital Game Addiction, Peer Bullying, and Sportsmanship Attitudes of Secondary School Pupils" by Ağrı İbrahim Çeçen University Scientific Research Ethics Committee, It has been examined by the Scientific Research Ethics Committee of the University of Türkiye and with the decision dated 26.01.2022 and numbered 19. This research was allowed.

Data Analysis

The SPSS 20.0 Statistical Package Program was used to assess the acquired data. According to the normality testing, parametric tests were implemented for the data indicating normal distribution. T-test and one-way Analysis of Variance (ANOVA), Tukey Test Statistics and Pearson Correlation and Multiple Regression methods of analysis were applied along with descriptive statistical methods for analysing applicable data.

FINDINGS

Table 1. Averages of total scores in terms of digital game addiction, sportsmanship, and peer bullying scales

	N	\bar{X}	Min.	Max.
DGASFC Total	1052	49.67	24.00	120.00
PTCSBS Total	1052	83.61	25.00	105.00
PBDS Total	1052	24.24	14.00	70.00
PBDS- Victim	1052	14.63	8.00	40.00
PBDS PBDS- Bully	1052	9.61	6.00	30.00

When Table-1 is examined, it is clearly shown that the mean score of the subjects on the digital game addiction scale is 49.67, the mean score on the sportsmanship behaviour scale is 83.61, the total mean score on the peer bullying scale is 24.24, the mean score on the victim sub-dimension is 14.63, and the mean score on bullying sub-dimension is 49.67. The average score, therefore, is 9.61 as shown.

Table 2. T-Test analysis of participants' total scores of digital game addiction, sportsmanship, and peer bullying in terms of gender variable

Scale	Gender	N	\bar{X}	S	t	p
DGASFC Total	Female	599	45.06	15.30	-9.525	.000
	Male	493	54.89	18.15		
PTCSB Total	Female	599	87.01	13.75	8.071	.000
	Male	493	79.76	15.34		
PBDS Total	Female	599	22.59	8.61	-5.950	.000
	Male	493	26.11	10.57		
PBDS Victim	Female	599	14.04	6.09	-3.11	.002
	Male	493	15.03	7.03		
PBDS Bully	Female	599	8.55	8.61	-7.07	.000
	Male	493	10.81	5.94		

It is observed on Table-2 that the digital game addiction, sportsmanship attitude, peer bullying, victimization, and bullying sub-dimension total scores of the participants differ statistically in terms of the gender variable ($p < 0.05$). It is clearly shown on relevant table that digital game addiction, peer bullying, victimization, and bullying total scores of male subjects are higher than female ones, whereas female participants' scores are higher than males in terms of sportsmanship total scores.

Table 3. Pearson - correlation testing results with regard to total scores of participants' digital game addiction, sportsmanship, and peer bullying

Gender			DGASFC Total	PTCSS Total	PBDS Total	PBDS Victim	PBDS Bully
Female	DGASFC Total	r	1	-,313	,336	,295	,252
		p		,000	,000	,000	,000
	PTCSS Total	r	-,313	1	-,342	-,135	-,484
		p	,000		,000	,001	,000
	PBDS Total	r	,336	-,342	1	,878	,745
		p	,000	,000		,000	,000
	PBDS Victim	r	,295	-,135	,878	1	,334
		p	,000	,001	,000		,000
	PBDS Bully	r	,252	-,484	,745	,334	1
		p	,000	,000	,000	,000	
Male	DGASFC Total	r	1	-,360	,351	,240	,341
		p		,000	,000	,000	,000
	PTCSS Total	r	-,360	1	-,402	-,183	-,499
		p	,000		,000	,000	,000
	PBDS Total	r	,351	-,402	1	,847	,777
		p	,000	,000		,000	,000
	PBDS Victim	r	,240	-,183	,847	1	,323
		p	,000	,000	,000		,000
	PBDS Bully	r	,341	-,499	,777	,323	1
		p	,000	,000	,000	,000	

It is evidently clear on Table-3 that there is a negative correlation between the total scores of digital game addiction and sportsmanship while a positive and moderate correlation is observed between the total scores of bullying and the total scores of victimizations and bullying. It is evident, that there is a negative and moderately statistically significant relationship between the participants' sportsmanship total scores, bullying total scores, and victimization and bullying sub-dimension scores. It is observed that there is a positive and statistically moderately significant relationship between the total bullying scores of the participants and the sub-dimension scores of victimizations and bullying. The study clearly shows that there is a positive and generally moderate relationship between the victimization and bullying sub-dimension scores of the subjects.

Table 4. Multiple regression results of participants in terms of scale total scores

Variable	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	Beta		
(Constant)	105.395	1.206	-	87.419	.000
Addiction	-1.233	.077	-.436	-16.018	.000
Bullying	-.200	.023	-.232	-8.532	.000
R=.561 ^a R ² = .314 F=240.332 p=0.000					

Dependent Variable: PTCSS

Variable	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	Beta		
(Constant)	2.425	.498	-	4.870	.000
Addiction	.082	.009	.271	9.328	.000
Victimization	.211	.023	.262	9.027	.000
R=.427 ^a R ² = .182 F=116.921 p=0.000					

Dependent Variable: Bully

It is observed on Table-4 above that digital game addiction and peer bullying attitudes of the subjects negatively affect sportsmanship behaviour by 31% ($R^2 = 0.314$), and this effect is statistically significant ($p=0.000$). It is assessed that digital game addiction and victimization behaviors of the subjects assertively affect bullying behaviors by 8% ($R^2 = 0.182$), and this effect is also statistically significant ($p=0.000$).

DISCUSSION AND CONCLUSION

When the analysis results in Table-1 are examined, it is evident that the digital game addiction levels of the subjects fall remained in the range expressed as the risk group (according to the DGASFC scoring reference range, the range of 49-72 points is the risk group and the average score of the participants is 49.67). Therefore, it can be said that the average score of the participants from determining of determining. The sportsmanship behaviour is 83.61, and their sportsmanship level is at quite high. The total mean score of the participants in the adolescent form of identifying bullying is 24.24 (victim + bully), the mean score of the sub-dimension of victimization is 14.63, and the mean score of the bully sub-dimension is 9.61. So, according to these average scores it may be claimed that the relevant scores of subjects are short in all of the dimensions.

When the total scores of the participants on the *Digital Game Addiction Scale for Children* were examined according to the gender variable, it was detected that the average score of male subjects was statistically significantly higher than the average of females ($p<0.05$). That boys are more interested in computer games than girls, the content of digital games is more for ones, and the halls and internet cafes where games are played are more convenient for male individuals due to cultural impacts and therefore boys can easily enter these areas can be considered the main reasons for such a difference. The reviews accomplished on the literature revealed that similar results have been obtained in many studies on this scheme (Aktaş, 2018; Griffiths and Hunt, 1998; Gökçearslan and Durakoğlu, 2014; Güvendi et al., 2019; Hazar et al., 2020; Horzum 2011; Kars, 2010).

When the total scores of the subjects from the scale of *Adolescent Form for Peer Bullying Identification* and the sub-dimension scores of *Victimizations* and *Bullying* were analysed in terms of the gender variable, it was detected that the averages of male subjects were statistically significantly higher than the averages of female ones ($p<0.05$). It is assumed that this finding, which was collected from the research findings, may be related to the roles of genders. It can be considered that it is because girls are brought up as submissive and obedient individuals due to social culture requirements, whereas boys are brought up more dominantly in a male-dominated society. Furthermore, the imitation, of some characters in violent digital games played especially by boys can be considered as the reason for adopting aggressive attitudes. It is observed on the studies that the literature has similar results (Gökbulut, 2020; Gökkaya et al., 2018; Karaca 2018; Keskin, 2010; Kılıç, 2019; Özen, 2006; Öztürk et al., 2014).

When the total scores of the subjects collected from the *Physical Training Class Sportsmanship Behavior Scale* were examined in terms of the gender variable, it was found out that the averages of females were statistically significantly higher than the averages of males ($p<0.05$). It can be claimed as a result of this finding that the females are more obedient and more loyal to the rules in consequence of the way they are brought up by their families and the roles given them by the society. The literature order that there are results that support the findings obtained (Altun and Güvendi, 2019; Çalayır et al., 2017; Ekinci, 2018; Koç and Yeniceri, 2017; Tsai and Fung, 2005).

When the correlation between the variables argued in the study is reviewed, it is clearly shown that a negative relationship exists between the total scores of digital game addiction and sportsmanship for both female and male subjects while a positive and moderate statistically significant relationship is observed between the total scores of bullying and the total scores of both victimization and bullying. It is observed that there is a negative and moderately statistically significant relationship between the subjects' sportsmanship total scores and bullying total scores, and the scores of victimizations and bullying sub-dimension. It is evident that there is a positive and statistically moderately significant relationship between the total bullying scores of the subjects and the sub-dimension scores of victimizations and bullying. It is shown that there is a favorable and statistically moderately significant relationship between the participants' victimization and bullying sub-dimension scores. It can be claimed in compliance with the aforespecified findings that as the digital game addiction levels of the participants increase, the levels of peer bullying also increase, but the level of sportsmanship behaviour decreases. It is observed, furthermore, that the level of peer bullying decreases as

the sportsmanship behaviour levels of the subjects increase. On the other hand, it is a substantial finding that as the level of victimization or being exposed to violence increases, the level of being a bully also increases.

When the multiple regression analysis results regarding the research findings are reviewed accordingly, it is observed that digital game addiction and peer bullying behaviors of subjects negatively affect sportsmanship behaviour by 31% ($R^2 = 0.314$), and this effect is statistically prominent. It is clearly shown that digital game addiction and victimization behaviors of the subjects positively affect bullying attitudes at a rate of 18% ($R^2 = 0.182$), and this effect is statistically noteworthy.

It can be claimed, that digital game addiction is an important predictor of peer bullying and so it negatively affects interpersonal social relations in terms of sportsmanship. Therefore, the fact that this study was designed only in compliance with the quantitative model, can be expressed as an important limitation, and the keystones of trouble can be handled in more detailed aspects in future studies, especially by utilizing the mixed style model of research.

Conflict of Interest: The author(s) of the article does not have any personal or financial conflicts of interest within the scope of the study.

Researchers' Contribution Statement: Authors; Research Design, Data Collection, statistical analysis; Preparation of the article; They contributed together with processes such as BA and ZH.

Ethical Approval

Commite Name: Ağrı İbrahim Çeçen University Scientific Research Ethics Committee

Date: 26.01.2022

Number: 19

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