Psikiyatride Güncel Yaklaşımlar-Current Approaches in Psychiatry 2021; 13(Suppl 1):270-280
Doi: 10.18863/pgy.986936

RESEARCH

Relationship Between Technological Game Addiction and Character Development in Adolescents

Adölesanlarda Teknolojik Oyun Bağımlılığı İle Karakter Gelişimi Arasındaki İlişki

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Abstract

The aim of this study is to examine the relationship between technological game addiction and character development in adolescents in order to contribute to the practices and approaches of psychiatric nurses. The research sample consists of 134 adolescents (Female:84, Male:50). The data was collected using the Participant Information Form, Game Addiction Scale for Adolescents- Short Form and the Character Growth Index which were developed by the researcher in the light of literature. The analysis determined that game addiction differed according to variables such as gender, family structure, the availability of unlimited internet at home and showed that game addiction negatively influences character development. As a result of the study, it can be recommended that psychiatric nurses and other health professionals serving in the field of mental health should cooperate with school health nurses, guidance teachers and families to raise awareness about this issue and implement preventive measures.

Keywords: Adolescent, technology, game addiction, character development

Öz

Bu çalışmada, adölesanlarda teknolojik oyun bağımlılığı ile karakter gelişimi arasındaki ilişkinin incelenmesi ve psikiyatri hemşirelerinin konu ile ilgili yaklaşım ve uygulamalarına katkı sağlanması amaçlanmıştır. Araştırma örneklemini 134 adölesan (Kız= 84, Erkek=50) oluşturmuştur. Veriler araştırmacı tarafından literatür ışığında geliştirilen Katılımcı Bilgi Formu ile Ergenler İçin Oyun Bağımlılığı Ölçeğinin Kısa Formu ve Karakter Gelişim İndeksi kullanılarak toplanmıştır. Yapılan analizde oyun bağımlılığının cinsiyete, aile tipine, evde sınırsız internet bulunma durumuna göre farklılıştığı ve oyun bağımlılığın karakter gelişiminin kararlılık boyutu ile negatif yönde ilişkili olduğu tespit edilmiştir. Çalışma sonuçları göz önüne alındığında, psikiyatri hemşirelerinin ruh sağlığı alanında hizmet veren diğer sağlık profesyonellerinin haricinde, okul sağlığı hemşireleri, rehber öğretmenler ve ailelerle iş birliği yaparak bu konuda farkındalık oluşturmaları, koruyucu önlem uygulamalarında yer almaları gerektiği söylenebilir.

Anahtar sözcükler: Adölesan, teknoloji, oyun bağımlılığı, karakter gelişimi

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Received: 25.08.2021 | Accepted: 26.10.2021 | Published online: 26.12.2021

TECHNOLOGIES such as mobile, internet and tablet, which have made great progress in recent years and entered human life as a result of discoveries, are frequently used by individuals to meet their daily needs (shopping, banking transactions, etc.). In addition to this, mobile phones and the internet are preferred as a means of communicating with other people through social networks that are popular today (Agarwal and Kar 2015; Hazar 2018). Researchers on the subject point out that the use of technology, which offers important conveniences, is inevitable, however excessive and unnecessary use can lead to technology addiction (Agarwal and Kar 2015).

Although there is no standard definition of technology addiction, it is included in the third section of DSM-5 as Internet Gaming Disorder. Regarding this, nine diagnostic criteria are stated as follows: Preoccupation with internet games, withdrawal symptoms when internet games are not played, continuous increase in internet gaming times, unsuccessful attempts to stop playing internet games, decreased interest in other enjoyable life activities, lying about the frequency and duration of internet gaming, continuing to play internet games despite all the negativeness, turning to internet games as a way to alleviate or avoid feelings of anxiety or guilt, losing or jeopardizing relationships by missing opportunities due to playing internet games (APA 2013). When evaluated in terms of criteria, it is possible to say that adolescents are in the highest risk group in terms of technology addiction. Because adolescent girls and boys go through many biological, social, emotional, and cognitive changes that affect their personality and character (Steinberg 2014). Hence, the correct use of technology, which meets the increasing need for socialization in this period, is very significant for the development period (Borca et al. 2015).

Adolescence is defined as the time when individuals actively develop their personalities (Blakemore 2019). In this period, adolescents may be more socially focused, more open-minded, less well adjusted and less conscientious, less capable of preventing impulsive behaviors, and more willing to take risks and seek excitement. In this context, they may lean to technology in obtaining life satisfaction (Caspi et al. 2005, Hammond et al. 2012, Balluerka et al. 2016). In particular, they may prefer online games as a way of coping with their loneliness, depressed mood, stress caused by school failures, introversion, and communication problems with family and friends (Ögel 2020, Ektiricioğlu et al. 2020). In this sense, adolescents may prefer the games in which the characters they find most believable (Mateas 1997).

Convincing game characters are expressed as virtual personalities that resemble real-life characters, perform meaningful actions, and are convincing to the players (Bostan and Tıngöy 2015). Due to the emotional, cognitive and behavioral changes they experience during the developmental period they are in, adolescents may prefer games that include such personalities and characters that can meet their needs in this direction. For instance, an adolescent who is exposed to parental or peer pressure can suppress his/her anger by spending time with violent games involving virtual players with aggressive character traits. However, after a while, this situation may cause the player to move away from character traits such as persistence, honesty, love and common sense, and display negative behaviors such as anger and aggression, as the player isolates himself/herself from the real world and focuses on the virtual environment and virtual personalities (Ögel 2020). On the other hand, each player can create their own game characters along with the constantly developing technology. Therefore, within this context, it seems possible to say that each player contributes positively to character traits

such as creativity, curiosity, openness to learning, open-mindedness, and versatile perspective (Mateas 1997, Park et al. 2004).

When evaluated in the light of the above information, it can be said that adolescents should be in the priority group in order to be protected from addiction caused by technology and technological games (Dinç 2015). The aforementioned adolescent group can be affected by technological games that have become quite widespread while developing their personality, attitudes and characters and determining their steps towards the future. Thus, the character traits of virtual personalities in technological games, in which they spend as much time as the environment they live in, can also affect socialization and identity formation of adolescents in this age of technology positively or negatively. All this information demonstrates that it is necessary to focus on studies on this subject in our country in order to raise awareness about the effects of technological games on adolescents, and most importantly, to raise generations with strong personality traits and to protect and strengthen the mental health of them. Hence, this study was planned to examine the relationship between technological game addiction and personality development in adolescents and to contribute to the approach and practices of psychiatric nurses on the subject. The research hypotheses are as follows: Technological game addiction scores of adolescents differ according to their descriptive characteristics; Character growth index scores differ according to the descriptive characteristics of adolescents.; There is a strong negative relationship between adolescents' technological game addiction and character growth index scores.

Method

The research was conducted as cross-sectional, relational, and descriptive between March 2- June 16, 2021.

Sample

The population of the research consisted of a total of 2697 students, 9th, 10th, 11th and 12th grade students of 2 public and 2 private high schools in Keçiören district of Ankara. In the study, which the random sampling method was used, sample size was calculated using the "G. Power-3.1.9.2" program at the 95% confidence level before the data collection phase. According to the sample size results calculated by taking the correlation coefficient as -0.7, the alpha value of the study was 0.05 and by taking theoretical power as 0.99, the minimum number of samples was determined as 27.

Inclusion criteria of the study were determined as being literate in Turkish, not having a speech, hearing disability or not being visually impaired, not having a disability in fine and gross motor skills, not having received a diagnosis/treatment for addiction, and agreeing to participate in the research. Due to the different education and training curriculums, students studying in medical vocational high school, business high school, technical and vocational high school and imam hatip high school and who did not meet other inclusion criteria were excluded in the study. There was a total of 163 responses to the study announcement. Of these, 9 parents stated that they did not want their children to participate in the study, and 20 students refused to participate in the study even though their parents gave their consent. Thus, our sample group comprised 134 students who were included in the inclusion criteria and agreed to work with their parents. In the present case, approximately 5 times the minimum number of samples has been reached.

Procedure

In order to conduct the study prepared in accordance with the Declaration of Helsinki (1998), required permissions were obtained from the Ethics Committee of Ufuk University Institute of Social and Human Sciences (Decision number: 2020/66) and Ankara Provincial Directorate of National Education (Decision number: E-14588481-605.99-19150298). Before the data collection phase, written permission was obtained from the students and their families who will participate in the research. In addition to these permissions, written permission was obtained from the researchers who conducted the validity and reliability study of the CGI and GASA-SF, which were decided to be used in the study.

The questionnaire including the "Parent Approval Form" and "Student Consent Form", "Participant Information Form", "Game Addiction Scale for Adolescents- Short Form" and "Character Growth Index" uploaded to Google Forms, an online survey system widely used in academic studies. The questionnaire consisted of 5 screens (parent consent (1), student consent (2), Participant Information Form (3), Game Addiction Scale for Adolescents-Short Form (4), Character Growth Index (5)) and a total of 71 questions. Switching between screens was not allowed, and all questions on the relevant screen must be answered in order to access the next screen. IP address restriction technology is adopted so that participants can fill out the survey only once.

Before the implementation, the online forms were tested electronically by both researchers and it was determined that the questionnaire could be filled in between 20-30 minutes on average, and no problems were detected in its functioning. After these processes, the school administrators contacted the guidance teachers via telephone in order to make the research announcement. Following that, the questionnaire form was sent to the guidance teachers via Whatsapp and it was requested to share the information that no wage would be paid to the students or parents for participating in the research. The research announcement was made by the guidance teachers to the students and parents on March 2, 2021, they were also informed that no wage will be paid for participation in the research, and the forms were shared. The researcher followed up the application via google forms and the research announcement was reminded 3 times intermittently by contacting guidance teachers. After the last reminder and 1 month of waiting, the research was completed on 16 June 2021 as no feedback was provided.

Measures

In this study, the data were collected through the "Participant Information Form" developed by the researcher in the light of the literature, the "Short Form of the Game Addiction Scale for Adolescents" used in the literature to evaluate the level of game addiction, and the "Character Growth Index" used to evaluate the character development characteristics of adolescents. Detailed information about the tools used is given below:

Participant Information Form (PIF)

The form, which is developed by the researcher in line with the relevant literature, consists of questions covering age, gender, family type, the participant's state of putting money in the technological game, and the time spent on the game.

Game Addiction Scale for Adolescents- Short Form (GASA-SF)

The scale was developed by Lemmens et al. (2009) was adapted into Turkish by Ilgaz (2015) . The validity and reliability of the Turkish Version of the scale were performed by Anlı and Taş et al. (2018). The scale consists of 21 items and 7 factors. Since there are 9 diagnostic criteria for internet gaming addiction in the third section of DSM-V, a 9-item scale has been tried to be developed. Then, DSM-V online game addiction diagnostic criteria were taken into consideration and 3 items were prepared in line with each diagnostic criterion. A 5-point Likert-type rating was used to measure the items in the scale. The 5-point Likert-type ratings are: "Never", "Rarely", "Sometimes", "Often", and "Always". After the scale was finalized, validity and reliability studies were started. In determining the items to be included in the scale, attention was paid to ensure that the eigenvalue was 1 and the item load values were at least 32. A 9-item scale was created with each item representing one of the DSM-V online game addiction criteria from the items with high item factor loads. The Cronbach Alpha internal consistency coefficient was detected as .81 . In this study, The Cronbach Alpha value of the scale was found as .85.

The Character Growth Index (CGI)

Character Growth Index developed by Liston (2014), aims to evaluate the character development characteristics of adolescents in a valid and reliable way. The Turkish validity and reliability study of the scale was carried out by Ekşi et al. (2017). 5-point Likert type has ("I Strongly Disagree", "I Disagree", "I Am Undecided", "I Agree", and "I Strongly Agree") structure and consists of 11 sub-dimensions which are determination, humility, optimism, kindness, closeness, calmness, courage, wisdom, spirituality, forgiveness, and honesty. The Cronbach alpha internal consistency coefficient of the scale was calculated as .94 for the total score of the scale, and the test-retest correlation coefficient was calculated as .72. The reliability coefficient of the sub-dimensions was above .70, except for honesty. The exploratory factor analysis resulted in an 11-dimensional structure that explained 58.5% of the total variance with an eigenvalue above 1. For concordance validity, the correlation between CGI and 52 items of the 96-item form of the Character Strengths and Virtue Youth Inventory was found to be at the level of .85. The relationship between sub-dimensions also varies between .41 and .81. The Cronbach Alpha internal consistency coefficient of the scale was calculated as .94 for the total score of the scale, and the test-retest correlation coefficient was calculated as .72. The reliability coefficient of the sub-dimensions was above .70, except for honesty. In this study, the Cronbach Alpha value of the scale was determined as .97.

Statistical analysis

The data obtained in the research were analyzed using the SPSS (Statistical Package for Social Sciences) for Windows 25.0 program. Descriptive statistical methods (number, percentage, mean, standard deviation) were used while evaluating the data. Mann Whitney U test was used to compare two groups (gender, unlimited internet usage status, real money spending status) to compare quantitative data, while Kruskal Wallis H test was used to compare more than two groups (family type). The relationship between

continuous variables (Game Addiction Scale for Adolescent scores and Character Growth Index scores) was examined by Spearman correlation analysis.

Results

The mean age of the participants in the study was found as 15.95 (min= 13, max= 18). The majority of the participants are girls (62.7%), have 1 sibling (49.3%), have an elementary family (83.6%), have a middle monthly income level (80.6%), have unlimited internet at home (96,3%), playing technological games (67.9%), not spending real money in technological games (72.4%), and stating that their playing time is less than 1 hour (47%) (Table 1).

Table 1. Descriptive characteristics of the participants (n= 134)

Variables		Mean±SD	n	%
Age		15.95±1.16(13.00-18.00)		
Gender	Girl		84	62.7
	Boy		50	37.3
Number of Siblings	None		2	1.5
	1		66	49.3
	2		48	35.8
	3+		18	13.4
Family Type	Elementary		112	83.6
	Extended		7	5.2
	Fragmented		15	11.2
Monthly Income Status	Low		9	6.7
	Middle		108	80.6
	High		17	12.7
Availability of Unlimited Internet at Home	Yes		129	96.3
	No		5	3.7
Playing Technological Game Status	Yes		91	67.9
	No		43	32.1
Real Money Spending Status in Technological Game	Yes		37	27.6
	No		97	72.4
Average Technological Gaming in a day	Less than 1 hour		63	47.0
	1-2 hours		30	22.4
	3-4 hours		27	20.1
	5-6 hours		12	9.0
	8+ hours		2	1.5

Mean: Average Sd: Standard deviation n: Number of participants

Comparison of game addiction scale scores for adolescents according to the descriptive characteristics of the participants, game addiction scale scores of boy participants for adolescents were higher than girl participants ($p<0.05$). Moreover, game addiction scale scores of adolescents who play technological games and spend real money in technological games were found to be higher than those who did not play technological games and did not spend real money ($p<0.05$) (Table 2)..

In the comparison of the sub-dimensions of the character growth index according to the descriptive characteristics of the participants, the optimism, kindness, and honesty sub-dimension scores of the participating girl students were found to be higher than the boys (p<0.05). The calmness and wisdom sub-dimensions of the character development index, on the other hand, differed according to the family type. Accordingly, it was ascertained that the participants with an extended family structure had higher calmness sub-dimension scores than the participants with a fragmented family structure and that the wisdom sub-dimension scores of the participants with elementary family structure were higher than the participants with fragmented family structure (p<0.05) (Table 3)..

Table 2. Comparison of Character Growth Index sub-dimensions according to the descriptive characteristics of the participants (n= 134)

		Determination			Humility			Optimism			Kindness			Closeness/Love			Calmness		
		Ort	SS	Med	Ort	SS	Med	Ort	SS	Med	Ort	SS	Med	Ort	SS	Med	Ort	SS	Med
Gender	Girl	4.33	0.56	4.40	4.31	0.58	4,40	4,02	0,98	4,40	4,48	0,42	4,50	4,43	0,42	4,40	3,67	0,96	4,00
	Boy	4.20	0.79	4.40	4.29	0.65	4,40	3,54	1,10	3,70	4,24	0,68	4,20	4,34	0,69	4,50	3,62	1,01	3,80
U			-0,469			-0.263			-2.753			-2.148			-0.102			-0.203	
p			0,639			0.793			0.006			0.032			0.919			0.839	
Family Type	Elementary	4.29	0.60	4.40	4.36	0.47	4,40	3,84	1,02	4,20	4,39	0,46	4,40	4,41	0,45	4,40	3,69	0,97	4,00
	Extended	4.37	0.53	4.40	4.40	0.48	4,40	4,54	0,22	4,60	4,49	0,51	4,60	4,71	0,28	4,80	4,29	0,71	4,40
	Fragmented	4.20	1.06	4.40	3.85	1.16	4,20	3,59	1,32	4,20	4,32	0,99	4,60	4,13	0,99	4,20	3,07	0,93	3,20
KW			0,772			2.529			3.700			0.882			4.429			9.396	
p			0,680			0.282			0.157			0.643			0.109			0.009	
Unlimited Internet	Yes	4.29	0.66	4.40	4.31	0.61	4,40	3,84	1,04	4,20	4,40	0,54	4,40	4,40	0,54	4,40	3,62	0,98	3,80
	No	4.20	0.51	4.20	4.20	0.58	4,00	3,84	1,42	4,60	4,16	0,55	4,20	4,32	0,36	4,20	4,68	0,27	4,80
U			-0,684			-0.695			-0.354			-1.134			-0.760			-2.743	
p			0,494			0.487			0.724			0.257			0.448			0.006	
Real Money	Yes	4.16	0.86	4.40	4.25	0.84	4,40	3,65	1,14	3,80	4,26	0,71	4,40	4,15	0,77	4,40	3,55	1,04	3,80
	No	4.33	0.56	4.40	4.32	0.49	4,40	3,92	1,00	4,20	4,44	0,46	4,40	4,48	0,39	4,60	3,69	0,96	4,00
U			-0,563			-0.395			-1.364			-1.327			-2.428			-0.661	
p			0,574			0.693			0.172			0.185			0.015			0.508	

		Courage			Wisdom			Spirituality			Forgiveness			Honesty		
		Ort	SS	Med	Ort	SS	Med	Ort	SS	Med	Ort	SS	Med	Ort	SS	Med
Gender	Girl	4.25	0.60	4.40	4.30	0,47	4,30	4,31	0,50	4,40	3,80	0,82	4,00	4,28	0,57	4,40
	Boy	4.06	0.81	4.00	4.20	0,82	4,40	4,07	0,82	4,20	3,92	0,91	4,00	3,95	0,83	4,20
U			-1,204			-0.625			-1.587			-0.979			-2.296	
P			0,229			0.532			0.113			0.328			0.022	
Family Type	Elementary	4.20	0.64	4.40	4.30	0,51	4,40	4,24	0,59	4,40	3,89	0,79	4,00	4,18	0,59	4,20
	Extended	4.20	0.38	4.20	4.46	0,76	4,60	4,54	0,41	4,60	3,64	1,31	4,00	4,54	0,41	4,60
	Fragmented	4.01	1.08	4.20	3.85	1,08	4,20	3,95	1,02	4,00	3,58	1,05	3,75	3,84	1,25	4,40
KW			0,321			6.240			2.845			1.087			2.415	
P			0,852			0.044			0.241			0.581			0.299	
Unlimited Internet	Yes	4.19	0.70	4.40	4.27	0,62	4,40	4,21	0,65	4,40	3,83	0,86	4,00	4,17	0,70	4,40
	No	4.08	0.39	3.80	4.08	0,81	4,20	4,48	0,52	4,40	4,35	0,52	4,25	3,76	0,36	3,80
U			-0,976			-0.637			-0,842			-1.346			-1.879	
P			0,329			0.524			0.400			0.178			0.060	
Real Money	Yes	4.00	0.88	4.20	4.14	0,80	4,40	3,97	0,86	4,20	3,81	0,88	4,00	3,96	0,94	4,20
	No	4.25	0.59	4.40	4.31	0,54	4,40	4,32	0,52	4,40	3,86	0,85	4,00	4,23	0,57	4,40
U			-1,234			-0.729			-2.345			-0.165			-1.162	
P			0,217			0.466			0.019			0.869			0.245	
Bonferroni																

Mn: Mean SD: Standard Deviation Med: Median U: Mann Whitney U Test KW: Kruskal Wallis H Test p: Significance Level

In the comparison made according to the participants' availability of unlimited internet at home and spending real money in technological games, it was found that the calmness sub-dimension scores of the participants who did not have unlimited internet at home were higher than those who had unlimited internet at home. It was detected that the closeness/love and spirituality sub-dimension scores of the participants who did not spend real money in technological games were higher than those who spent real money (p<0.05) (Table 3).

According to the results of the Spearman correlation analysis performed to determine the relationship between the scales; there is a statistically negative and significant

correlation between game addiction scale scores for adolescents and character growth index stability sub-dimension scores (p<0.01: r=-0.279) (Table 4).

Table 3. Comparison of the Game Addiction Scale for Adolescents according to the descriptive characteristics of the participants (n=134)

		Game Addiction Scale for Adolescents		
		Mean	SD	Med
Gender	Girl	1.58	0,59	1,44
	Boy	1.98	0,64	1,88
U			-3.697	
p			0.000	
Technological Game	Yes	1.94	0,62	1,88
	No	1.30	0,41	1,11
U			-6.004	
p			0.000	
Real Money	Yes	2.12	0,63	2,00
	No	1.58	0,57	1,44
U			-4.531	
p			0.000	
Technological Gaming Time	Less than 1 hour	1.42	0,45	1,22
	1-2 hours	1.73	0,48	1,61
	3-4 hours	2.04	0,60	1,88
	5-6 hours	2.62	0,55	2,72
	8+ hours	2.28	1,81	2,27
KW			41.906	
p			0.000	

SD: Standard Deviation Med: Median U: Mann Whitney U Test KW: Kruskal Wallis H Test; p: Significance level

Table 4. The relationship between the Character Growth Index and the Game Addiction Scale for Adolescents

	1	2	3	4	5	6	7	8	9	10	11	12
1- Game Addiction for Adolescents	1.000											
2- Determination	-0.279**	1.000										
3- Humility	0.012	0.391**	1.000									
4. Optimism	-0.146	0.213*	0.268**	1.000								
5- Kindness	-0.152	0.393**	0.395**	0.236**	1.000							
6- Closeness/Love	-0.096	0.451**	0.403**	0.315**	0.475**	1.000						
7- Calmness	-0.104	0.212*	0.199*	0.387**	0.134	0.210*	1.000					
8- Courage	-0.157	0.419**	0.276**	0.341**	0.424**	0.495**	0.553**	1.000				
9- Wisdom	-0.101	0.459**	0.482**	0.392**	0.340**	0.540**	0.329**	0.539**	1.000			
10- Spirituality	-0.065	0.343**	0.387**	0.347**	0.353**	0.492**	0.212*	0.336**	0.447**	1.000		
11- Forgiveness	-0.108	0.201*	0.418**	0.286**	0.149	0.272**	0.551**	0.376**	0.272**	0.228**	1.000	
12- Honesty	-0.149	0.506**	0.468**	0.258**	0.381**	0.489**	0.145	0.371**	0.498**	0.384**	0.188*	1.000

Discussion

It is indicated that technological games cause many positive and negative changes on the personality and character of individuals. This change may make adolescents who are in the development process the most risky group, and psychiatric nurses may have important duties in this regard. In this context, this study aims to examine the relationship between technological game addiction and character development in

adolescents and to contribute to the approach and practices of psychiatric nurses on the subject.

Game addiction scores of 134 adolescents in our study differed according to gender. In regard to the result we obtained, the game addiction scores of male participants were higher than female participants. However, the game addiction scores of those who spent real money on technological games were higher than those who did not spend real money. In the literature, it is possible to find studies that support the results we have obtained. For instance, we observe similar situations in the studies conducted by Horzum (2011), Güllü et al. (2012) and Çakıcı (2018). Thus, it was determined in the studies that the game addiction of the participating male students was higher than that of the female students. Furthermore, studies have reported that game addiction is high among adolescents and this is a significant public health problem (Amudhan et al. 2021) and it was also stated that the rate of playing games with money was moderate (Zendle et al. 2019, Veselka et al. 2018). Factors that may be associated with these results are shown as gender, presence of friends or parents playing games, stress, low self-esteem, impulsivity, etc. (Chang and Boyoung 2020). This result obtained in our research can be associated with the fact that boys are brought up to make their own choices more freely than girls within our cultural structure. At the same time, the fact that the research conducted during the Covid-19 pandemic period may have affected the results. Because in this period, adolescents who could not do their social activities outside in the environment of friends due to lockdowns preferred technological games and may have been adversely affected by this situation.

In the literature, it has been emphasized that the type of family they have on the personality development and social behavior of individuals is important (Gander and Gardiner 1993). In studies conducted in this context, it has been stated that individuals with extended family structure are in social interaction with more people and this has an effective place in the personality and character traits of the individual (Tatlıoğlu 2014). While Smahel et al. (2008) stated in their study that the characters in technological games are effective on the personality and character of the individuals playing the game (Smahel et al. 2008), Ide et al. (2021) remarked that popular and powerful game characters are bought with money (Ide et al. 2021). From this point of view, the results we obtained in relation to the character development of adolescents, family type and spending real money in technological games support the research results stated in the literature. This situation seen in adolescents may be related to their ambition to win, their desire to have a stronger personality and character traits. Considering that the majority of the participants have elementary family type and unlimited internet access, it can be considered that adolescents turn to technological games in order to get away from the issues that they are unsuccessful in problem solving in relation to the support of the parents and the strength of the relationship within the family. As a result, while adolescents gain wisdom on the skills brought by the technological age, on the other hand, they may be moving away from character traits related to love, tolerance and spirituality.

It is accepted that one of the processes in which problem-solving and decision-making skills come to the fore is adolescence (Manassis et al. 2012). Considering the identity development process of adolescents in this period, it can be said that making the right decision has a critical importance in creating a healthy identity. As a matter of fact, coping mechanisms may be insufficient in solving the emotional problems, identity

search and similar problems that arise in this period of the adolescent, and they may have difficulty in making the right decision for themselves. They may tend to technology as a solution to problems (Oldershaw et al. 2009, Steinberg 2010, Klimmt et al. 2009).

Considering in connection with the results obtained from this study, it is possible to say that this situation makes adolescents determined to tend towards technology and continue technological games. However, this situation, which is thought to be preferred by the majority of adolescents as a coping mechanism, poses a risk not only for technological game addiction, but also for the formation of a strong personality and character.

Conclusion

Looking at the results of the research, it is seen that game addiction differs according to gender, family type, unlimited internet availability at home, and game addiction is negatively related to the stability dimension of character development. Considering all these, it can be said that it is very essential for psychiatric nurses to become aware of this issue and take part in preventive measures. In this context, psychiatric nurses can guide adolescents in dealing with problems by acting in cooperation with school nurses and guidance teachers in order to find solutions to both technology addiction and interpersonal problems that adolescents may encounter, to prevent mental problems, and most importantly, to raise individuals with a strong personality and character. Furthermore, psychiatric nurses can communicate with family members and other caregivers and plan awareness activities for them.

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Authors Contributions. Authors attest that they have made an important scientific contribution to the study and have assisted with the drafting or revising of the manuscript.
Peer-review: Externally peer-reviewed.
Ethical Approval: Ethical approval was obtained from Ufuk University Institute of Social Sciences and Humanities Ethics Committee for the study. All participants gave informed consent.
Conflict of Interest: No conflict of interest was declared by the authors.
Financial Disclosure: The authors declared that this study has received no financial support.