

An Investigation of Online Gaming Addiction Level Among University Students in Terms of Emotional Schemas, Agentic Personality, and Various Variables

[1] seyhanbekir93@gmail.com,
Uludag University , TURKEY

[2] eyupcelik@sakarya.edu.tr,
Sakarya University, TURKEY

Seyhan BEKİR [1], Eyüp ÇELİK [2]

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ABSTRACT

The aim of this study is to examine online game addiction level among university students in terms of emotional schemas, agentic personality, and various variables (i.e. gender, type of game played, and accommodation). The sample group consists of 380 university students studying in İzmir province and playing online games during the school year of 2017 and 2018. The data have been collected through multiple tools that are Online Game Addiction Scale for University Students, Multi-measure Agentic Personality Scale, Leahy Emotional Schema Scale, and Personal Information Questionnaire. The data were analyzed by correlation analysis, t-test, one-way analysis of variance, and regression analysis in accordance with the hypothesis of the study. The result of regression analysis indicated that emotional schemas of uncontrollability, demand for rationality, rumination, dissimilarity, denial of emotions, validation, seeing emotions as dangerous, acceptance of feelings, consensus, and guilt predicted addiction significantly, whereas, emotional schemas of weakness against emotions and duration did not predict such an outcome. Additionally, as a result of the t-test, it was found that online gaming addiction levels differed significantly according to gender and that males had higher levels of online game addiction than females. Lastly, one-way analysis of variance resulted in finding the level of online gaming addiction significantly differed based on the type of game played, but it did not differ significantly based on where students lived.

Keywords: *University students, online game addiction, agentic personality traits, emotional schemas*

INTRODUCTION

Throughout the human history, the effort that has been performed by individuals to survive might have driven them to live with other people in harmony as “societies”. Etymologically, the word “society”, which we commonly use today, originated from the Latin word “societas” that translates to communicate and cooperate (Brezinka, 1994). From this perspective, societies are built and they are open to interference, alteration, development, and regression. In order to draw attention to such interactions, the research conducted by Çamsarı (2016) studied the change in a variety of concepts which are related to societies, such as their lifestyles, habits, and routines while emphasizing the impact of “addiction” and “technology” on those changes.

Karaman and Kurtoğlu (2009) address addiction as two basic types. The former is defined as substance addiction (or abuse) and described as being dependent to coffee, tea, drugs, alcohol, and cigarettes. On the

other hand, the ladder is defined as behavior-based addiction and described as an individual's actions that are performed repeatedly and resulting in damage in one's psychology, body, and social adaptation skills. In this sense, addiction can be considered as a condition that affects a society adversely in physical, mental, and behavioral aspects.

In the year of 2002, Kim and Kim stated that technology can be within the scope of addiction, too. When the international literature of technology addiction is reviewed many sub-categories become present i.e. behavior-based game addiction, computer addiction, internet addiction, online game addiction, and media addiction (Günüç & Kayri, 2010, Kaya, 2013; Kim & Kim, 2002) Peltoniemi (2002) proposed that internet addiction has several sub-branches and one of those sub-branches can be considered as online gaming addiction. Kaya (2013) states that online game addicts are the ones who spend hours, even days, to proceed in an online game.

According to the studies conducted by Kim, Namkoong, Ku and Kim (2008) and Mehroof and Griffiths (2010) and Madran and Çakılcı (2014) a positive correlation was found between online game addiction and aggression. Likewise, a negative correlation was found between online game addiction and self-control (Kim et al., 2008). Moreover, when the issue is examined from gender perspective, the results show that men tend to demonstrate online game addiction more than women (Ko, Yen, Chen, Chen & Yen 2005; Madran & Çakılcı, 2014; McInroy & Mishna, 2017). Another study reveals that there is a high level of positive correlation between online game addiction and problematic internet use (Van Rooij, Schoenmakers, Van de Eijnden & Van de Mheen, 2010). In brief, online game addiction affects societies and individuals in many ways. Therefore, it is crucial to shed a light on the factors that provoke such an addiction. In that sense, the study conducted by Kim, Namkoong, Ku and Kim (2008) paves the way for use by presenting a high-level significant relationship between online game addiction and one's personality traits. Consequently, it can be assumed that agentic personality variable may be one of the predictors of online game addiction.

Agentic personality is an individual's willingness to take responsibility for that himself/herself life and the trust that manage one's own decisions. (Cote & Levine, 2014; Emirbayer & Mische, 1998; Stueber, 2006). When the related literature is studied, there seems to be a negative correlation between the three sub-categories of agentic personality, which are self-esteem, satisfaction with life, subjective well-being and smoking cigarettes. Another research about agentic personality, which belongs to Atak (2010), investigates the relationship between attachment to parents/identity formation and agency.

The results are as follows; there is a positive correlation between agency and identity achievement and identity moratorium yet there is an adverse relationship between agency and identity diffusion and identity foreclosure. As a result, according to the study, the more one's agency increases the more healthily one's identity is formed. Besides, when the literature is examined, it is recognized that agency and identity-discovery (Cote, 1997, 2000, 2002; Cote & Levine, 1987, 2002; Cote & Schwartz, 2002; Schwartz, Cote & Arnett, 2005; Shanahan & Pychyl, 2007) and agency and self-discovery (Morsünbül & Atak, 2013) have a positive correlation.

Specifically, substance abuse (Ball, 1998), eating disorders (Luck, Waller, Meyer, Ussher & Lacey, 2005; Simpson, Morrow, Vreeswijk & Reid, 2010; Waller, 2003; Waller, Kennerley & Ohannian, 2007), personality disorders (Arntz and Van Genderen, 2011; Farrell, Shaw and Webber, 2009). Furthermore, the study of Özbaşı, Sayın and Coşar (2012) propose a significant relationship between students' state anxiety levels along with disconnection and rejection, other-directedness, and impaired autonomy schemas. The result of the same study provides a positive correlation between students' trait anxiety levels along with disconnection and rejection schemas, too. Lastly, it suggests that early maladaptive schemas have adverse effects in the long run as well, such as affecting students' anxiety levels negatively before exams. Kapçı and Hamamcı (2010) suggest that emotional isolation schema acts as a mediator variable in the relationship between family functions and psychological symptoms. Additionally, in the study of Yiğit and Erden (2015) abused individuals tend to develop an impaired autonomy schema more and they at a great amount of risk to experience psychological issues.

Considering these outcomes, it can be predicted that emotional schemas have an important connection with the variables which affect individuals' mental health. Therefore, in this study, prediction powers of specific variables were examined.

As a result of the literature review, it can be thought that online gaming addiction will have a negative impact on people, and that it will affect the students, which constitute an important part of the society, in terms of cognitive, emotional and social aspects. However, there is a limited number of studies in the literature related to online gaming addiction that has recently been identified as an addiction type (Bekir & Çelik, 2019; Bekir & Yıldırım, 2018; Kaya, 2013; Mehroof & Griffiths, 2010; Young, 2009; Ng & Wiemer-Hastings, 2005). Nonetheless, when these researches were examined, it becomes evident that no research that examined the relationship between emotional schemas and agentic personality and online game addiction in the university sample was found.

When we examine the problems of university students, it is stated that one of them is internet-based addiction (Balıcı & Gülnar, 2009; Noyan, Darçın, Nurmedov, Yılmaz & Dilbaz, 2015; Yiğit & Khorshid, 2006). Students in the university period may experience many problems due to addiction. It is stated that the problems in this period may adversely affect the mental health and academic success of students (Yiğit & Khorshid, 2006). Studies to determine the variables that predict the level of addiction of university students may be the source of intervention studies to prevent these problems from arising. In this context, it can be argued that the emotional schemes and acting personality traits that emerged with this research are very important in leading the development of programs to reduce the level of online game addiction and the recognition of online game addiction. It is stated that university students attach great importance to their feelings and need a solution in case of a problem (Karalp, 2009). Deniz and Yılmaz (2016) conducted a study on the emotional state of students in the university period. According to the findings of this study, a high level of relationship was found between the emotional intelligence of university students and problem-oriented coping skills. In this context, it can be thought that this study will be important in terms of revealing the emotional schemes of those who play online games during the university period and then developing their problem-solving skills by recognizing their schemes and bringing them into the literature.

Consequently, the aim of this study is to investigate the relationship between university students' online game addiction levels and their emotional schemas and agentic personalities. In addition, whether the level of online gaming addiction of the university students differed according to gender, type of play, and place of residence was investigated as well.

Research Model

This research was carried out using the correlational survey model, which is one of the quantitative research methods. The researcher measures some variables in their natural parameters and decides whether or not there is a relationship between the variables in this method (Christensen, Johnson & Turner, 2015). Within this scope, online game addiction level among university students in terms of emotional schemas, agentic personality, and a variety of variables (i.e. gender, genre of games played, and accommodation) are examined using the correlational survey method.

Participants

The sample group was formed of 380 university students who were studying in İzmir province and playing online games during the 2017-2018 school year. The sampling was completed with a criterion sampling method which is a type of purposive sampling. It is stated that the individuals to be taken into a research sample, which is constituted using criterion sampling method, should be selected according to certain criteria (Akgün, Büyüköztürk, Çakmak, Demirel & Karadeniz, 2010). To this end, 263 of the participants were categorized as male and 117 of them as females. 113 of them play Counter Strike Global Offensive, 29 of them PubG, 118 of them Facebook games, and 120 of them League of Legends. 209 of the students reside at student houses, 120 of them at dormitories, and 51 of them with their families.

Data Collection Tool

Online Game Addiction Scale (OGAS): The data of online game addiction level was collected through Online Game Addiction Scale (OGAS) which was developed by Kaya (2013) for high school students and then later used for university students by Bekir and Yıldırım (2018). OGAS is a measurement tool consisting of five-point Likert questionnaire (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree) and three sub-dimensions (i.e. troubles, success, and economic profit). The exploratory factor analysis which was applied in order to help determine the validity of the scale resulted in a three-factor structure explaining 62.99% of overall scale, matching with the original. Also, the factor loadings were found to vary between .53 and .83 after the analysis. Both total and sub-dimension scores can be obtained from this scale and no item is subject to reverse scoring.

Multi-Measure Agentic Personality Scale (MAPS): Another tool that is used in this study is Coté's (1997) Multi-Measure Agentic Personality Scale (MAPS) which was developed to analyze personality traits. The scale was adapted to Turkish in 2015 by Atak, Kapçı and Çök. It contains 15 items and five-point Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree) as well as four sub-dimensions (i.e. self-esteem, purpose in life, self-efficacy (ego strength), and internal locus of control). As a result of the CFA, the fit indices' χ^2/sd ratio was found to be 3.11 (GFI= 0.94, AGFI= 0.92, CFI= 0.93, NFI= 0.91, NNFI= 0.92, RMR= 0.06 and RMSEA= 0.05), meaning that it is at acceptable levels. As a result of the Exploratory Factor Analysis (EFA), the scale was found to have a four-factor structure with 15 items and total variance of 57.43%. The parameters from the Cronbach Alpha Coefficient were as follows; .81 for the entire scale, .76 for self-esteem sub-dimension, .72 for, purpose in life sub-dimension, .73 for self-efficacy (ego strength) sub-dimension, and .74 for internal locus of control sub-dimension. Furthermore, the reliability of the test-retest result was found between .86 and .90. The scale does not contain any items subject to reverse scoring.

Leahy Emotional Schema Scale (LESS): The third tool used in the study was Leahy's Emotional Schema Scale developed by Leahy in 2002 and adapted to Turkish by Yavuz, Türkçapar, Demirel and Karadere in 2011. It consists of 50 items and 14 sub-dimensions (i.e. validation, comprehensibility, guilt, looking at emotions clearly, high values, not being controlled, feeling of numbness, desire to be rational, duration, consensus, acceptance of feelings, rumination, expression and blaming) and the items are presented with a 6-point Likert questionnaire (i.e. 1 = very untrue of me 2 = somewhat untrue of me 3 = slightly untrue of me 4 = slightly true of me 5 = somewhat true of me 6 = very true of me). EFA result of the analysis revealed the scale having 14 factors explaining 56, 88% of overall scale. The highest factor was found to be .75 whereas the lowest was .37. The Cronbach's Alpha reliability coefficient was found as .75.

Data Analysis

The collected data from this study were analyzed through correlation analysis, t-test, one-way analysis of variance, and regression analysis in accordance with the hypothesis of the study. In the analysis of the data of the study, the significance control of independent variables with two levels was examined by using the independent samples t-test. Additionally, a statistically significant difference was found as a result of the one-way variance analysis and Scheffe test was applied to determine which groups had the difference. Lastly, the levels of prediction which emotional schemas may have on online gaming were examined through multiple regression analysis.

FINDINGS

The data from the study were checked for regression analysis values before being subjected to regression analysis. Within this framework, in order to determine if the data were applicable for regression analysis, Mahalanobis distance, kurtosis and skewness parameters and normal distribution curve were studied. Çokluk, Şekerçioğlu and Büyüköztürk (2012) indicate that multivariate extreme values in the data set can be determined by calculating the Mahalanobis distance values. For this purpose, firstly, Mahalanobis distance parameters were calculated to check whether or not there were multivariate extreme values in the

data set. Later, these parameters were evaluated according to $p < .001$ significance level, and 78 data were deleted from the data set to provide normality and linearity. Besides, Şimşek (2007) claims that before beginning the statistical analysis of the data obtained from the research group, a preliminary preparation (kurtosis and skewness) must be made to get the data ready for analysis. For this sense, normal distribution indicators (kurtosis and skewness parameters and normal distribution curve) were examined and it was found that the data set was appropriate for regression analysis. Additionally, the presence of multiple connection problems between independent variables was examined by using VIF (Variance Inflation Factor). It is known that there are no connection problems among independent variables if the VIF value is less than 10 (Tabachnick and Fidell, 2007).

Table 1. Regression Analysis Values

Variables	Skewness	Kurtosis	VIF
Online Game Addiction	-.08	-.47	1.35
Self-esteem	-.05	-.36	1.32
Purpose in Life	-.13	-.49	1.45
Internal Locus of Control	-.05	-.55	1.23
Self-efficacy	-.23	-.36	1.32
Uncontrollability	-.06	-.05	1.23
Weakness Against Emotions	.20	-.56	1.62
Comprehensibility	.16	-.71	1.55
Demand for Rationality	-.11	.99	1.37
Emotional Avoidance	-.09	-.70	1.12
Rumination	-.06	-.74	1.37
Dissimilarity	.16	-.23	1.69
Denial of Emotions	.03	-1.24	1.13
Validation	.22	-.51	1.14
Seeing Emotions as Dangerous	-.17	-.72	1.61
Acceptance of Feelings	-.03	-.97	1.24
Duration	.11	-1.22	1.38
Consensus	.32	-.80	1.09
Guilt	-.14	-.56	1.31

When the Table 1 is reviewed, it is concluded that the skewness values are between -.32 and -.23, and the kurtosis values are between -1.24 and .99. These results are interpreted as there are no extreme deviances because kurtosis and skewness values are between -2 and 2 (George & Mallery, 2010, Ruegg, 2015). In the study, the relationship between online gaming addiction variable and emotional schemas and agentic personality traits was examined by correlation analysis and the results are presented below, in Table 2 and Table 3.

Table 2. Descriptive statics and correlation values of online gaming addiction levels, emotional schemas

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OGAUS	1														
UNC	-.16**	1													
WAE	.35**	.20	1												
CMP	-.06	-.17	-.37	1											
EA	-.05	-.16	-.11	.09	1										
DFR	.34**	.00	.30	-.34	-.20	1									
RUM	.32**	.25	.40	-.40	-.05	.31	1								

DIS	.14*	.05	.19	-.18	.00	.02	-.00	1							
DOE	-.24**	-.02	-.20	.40	.17	-.28	-.36	.04	1						
VLD	-.00	.15	.19	-.16	-.19	.18	.14	.06	-.18	1					
SED	-.41**	-.12	-.44	.24	.16	-.19	-.42	-.15	.24	-.20	1				
AOF	-.31**	-.16	-.12	.22	.03	-.01	-.05	-.00	.09	.02	.27	1			
DUR	.17**	.25	.39	-.25	-.14	.32	.22	.16	-.23	.09	-.21	-.12	1		
CON	.20**	-.00	.15	-.08	.08	-.07	-.00	.12	.06	.06	-.12	-.05	.07	1	
GUI	-.24**	-.06	-.17	.02	-.05	-.02	-.13	.01	-.00	.03	-.00	.18	.02	-.08	1
\bar{x}	62.12	9.97	16.9	9.96	17.5	14.6	10.7	16.5	6.51	6.59	7.04	12.7	3.4	5.4	7.74
SS	12.82	2.91	4.07	3.96	3.27	4.21	3.72	3.68	3.22	2.54	2.86	2.75	1.7	2.64	2.60

*= $p < .05$, **= $p < .01$

OGAUS: Online Game Addiction Among University Students, UNC: Uncontrollability, WAE: Weakness Against Emotions, CMP: Comprehensibility, EA: Emotional Avoidance, DFR: Demand for Rationality, RUM: Rumination, DIS: Dissimilarity, DOE: Denial of Emotions, VLD: Validation, SED: Seeing Emotions as Dangerous, AOF: Acceptance of Feelings, DUR: Duration, CON: Consensus, GUI: Guilt

When Table 2 is examined, it is seen that there is a significant relationship between the level of online gaming addiction among university students and emotional schemas. The results are as follows: There is a positive mid-level correlation between online game addiction level among university students and weakness against emotions ($r = .35$), demand for rationality ($r = .34$), and rumination ($r = .32$); a positive low level and statistically significant correlation between online game addiction level among university students and dissimilarity ($r = .14$), duration ($r = .17$), and consensus ($r = .20$); a negative low-level correlation between online game addiction level among university students and uncontrollability ($r = -.16$), denial of emotions ($r = -.24$), guilt ($r = -.24$), seeing emotions as dangerous ($r = -.24$); a mid-level negative correlation between online game addiction level among university students and acceptance of feelings ($r = -.31$). On the contrary, no correlation was detected between online game addiction level among university students and comprehensibility ($r = -.06$), emotional avoidance ($r = -.05$), and validation ($r = .00$).

Table 3. Findings About Predictive Levels of Emotional Schemas on the Dependent Variable of Online Game Addiction Level Among University Students

Dependent Variable	Predictor Variable	B	SH	B	t	P	Correlation	
							Partial	Semi-Partial
Online Game Addiction	Constant	210.37	25.66		8.21	.000		
	Uncontrollability	-1.07	.19	-.24	-5.52	.000	-.31	-.22
	Weakness Against Emotions	.48	.16	.15	3.01	.003	.17	.12
	Comprehensibility	1.00	.16	.31	6.25	.000	.34	.25
	Emotional Avoidance	-.048	.16	-.01	-.29	.772	-.01	-.01
	Demand for Rationality	.06	.14	.35	7.47	.000	.40	.29
	Rumination	.74	.17	.21	4.14	.000	.23	.16
	Dissimilarity	.49	.14	.14	3.37	.001	.19	.13
	Denial of Emotions	-.52	.18	-.13	-2.83	.005	-.16	-.11
	Validation	-.54	.21	-.10	-2.52	.012	-.14	-.10
	Seeing Emotions as Dangerous	-.69	.22	-.15	-3.06	.002	-.17	-.12
	Acceptance of Feelings	-1.36	.20	-.29	-6.57	.000	-.36	-.26
	Duration	-.33	.34	-.04	-.97	.330	-.05	-.03
	Consensus	.87	.20	.18	4.32	.000	.24	.17
Guilt	-.64	.20	-.13	-3.07	.002	-.17	-.12	

F= 24.218, p< .001

R²= .52

Table 3 shows that the emotional schemas of uncontrollability ($\beta=-.24$), weakness against emotions ($\beta=.15$), comprehensibility ($\beta= .31$), demand for rationality ($\beta= .35$), rumination ($\beta= .21$), dissimilarity ($\beta= .14$), denial of emotions ($\beta= -.13$), validation ($\beta= -.10$), seeing emotions as dangerous ($\beta= -.15$), acceptance of feelings ($\beta= -.29$), consensus ($\beta= .18$), and guilt ($\beta= -.13$) predict the variable of online game addiction. Nevertheless, the emotional schemas of emotional avoidance ($\beta= -.01$) and duration ($\beta= -.04$) do not predict the variable of online game addiction. Besides, considering these data, it is concluded that the regression model that included emotional schemas predicted online game addiction with an overall score of 52%.

Table 4. Correlation Analysis of Online Game Addiction Level Among University Students and Agentic Personality Traits

	1	2	3	4	5
Online Game Addiction	1				
Self-esteem	.04	1			
Purpose in Life	-.08	.52	1		
Internal Locus of Control	.00	.30	.31	1	
Self-efficacy	.00	.38	.46	.48	1
\bar{x}	62.12	9.97	13.11	13.00	13.6
SS	12.82	2.69	3.93	3.23	3.51

*= $p<.05$, **= $p<.01$

Based on table 4, it is evident that there is no correlation between online game addiction level among university students and agentic personality traits.

Gender

In this study whether online game addiction level among university students differed significantly based on their gender was also examined by using unpaired t test. The results obtained are presented below in table 5.

Table 5. The t-test result on whether online game addiction level among university students differed significantly based on their gender

	Levene Test				T-Test				95% Confidence Interval	
	F	P	T	Sd	P	Mean Difference	SE	Lower	Upper	
Online Game Addiction	3.779	.053	3.482	204.71	.001	5.126605	1.47231	2.2237	8.0294	

The results of t-test as presented in Table 5 indicates that gender significantly differs online game addiction ($p<.01$) and males tend to be more addicted to online games than females (males $\bar{x}= 63.68$, females $\bar{x}= 58.55$).

Type of Game Played

In order to determine whether the level of online gaming addiction differed significantly in terms of the type of game played by the university students, who formed the sample of the study, the variables were checked with Levene test to see whether or not they were homogeneous (F (3,299) = 1.64, $p> .05$) and they were applied one-way analysis of variance. Table 6 displays the mean and standard deviation values of the online

game addiction level of university students who play games of different types. Moreover, the results of the variance analysis are presented in Table 7.

Tablo 6. Descriptive Statistics Results

Game	N	\bar{x}	SS	95% Confidence Interval		Lowest Score	Highest Score
				Lower	Upper		
Counter Strike GO	95	65.651	12.579	63.054	68.172	32.00	92.00
PubG	25	71.048	12.863	65.732	76.356	34.00	89.00
Facebook Games	84	54.680	10.352	52.430	56.930	34.00	80.00
League of Legends	98	62.842	11.904	60.455	65.229	34.00	91.00
Total	302	62.123	12.801	60.672	63.574	32.00	92.00

The arithmetic means are as follows: Counter Strike GO (\bar{x} = 65.65), PubG (\bar{x} = 71.04), Facebook Games (\bar{x} = 54.68), and League of Legends (\bar{x} = 62.82). When the effects of games to addiction level is studied, it becomes evident that the students who play PubG seem to have a higher level of addiction that those who play Facebook Games.

Table 7. The Findings of Whether the Level Of Online Gaming Addiction Differed Significantly Based on Type of Game Played

Levene test	P	Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p
1.64	.175	Inter Groups	7848.450	3	2616.150		
		In group	41471.259	299	139.165	18.799	.000
		Total	49319.709	302			

Table 7 indicates that the level of online game addiction of university students differs significantly based on the type of game played ($F_{(3, 299)} = 18.799, p < 0.01$). The Scheffe test was applied after the one-way analysis of variance in order to determine specifically which groups had the difference and the results are presented in Table 8.

Tablo 8 The Scheffe Test Results of Level of Online Game Addiction Among University Students Based on the Type of Game They Play

(I)Type of Game	(J) Type of Game	Mean Diferemnce(I-J)	Standard Error	P	95% Confidence Interval	
					Lower	Upper
Counter Strike GO	PubG(Battlegrounds)	-5.429	2.655	.244	-12.884	2.025
	Facebook Games	10.932*	2.570	.000	7.499	15.899
	LeagueofLegends	2.774	2.537	.447	2.230	7.549
PubG(Battlegrounds 2)	Counter Strike GO	5.429	2.652	.244	-2.025	12.884
	Facebook Games	16.361*	2.688	.000	8.805	23.917
	LeagueofLegends	8.203*	2.643	.023	0.771	15.634
Facebook Games	Counter Strike GO	-10.932*	1.767	.000	-15.899	-5.964
	PubG(BattleGrounds)	-16.361*	2.688	.000	-23.917	-8.805
	LeagueofLegends	-8.158*	1.754	.000	-13.089	-3.226
LeagueofLegends	Counter Strike GO	-2.774	1.699	.447	-7.549	2.001

PubG(BattleGrounds)	-8.203*	2.643	.023	-15.634	-0.771
Facebook Games	8.158*	1.754	.000	3.226	13.089

Table 8 illustrates that the level of online game addiction of university students differs significantly based on the games they play. There are differences between Facebook Games and Counter Strike GO ($p < .01$) and PubG ($p < .01$) and League of Legends ($p < .01$). Additionally, there seems to be a difference between PubG and League of Legends ($p < .05$), too.

Place of Residence
In order to find out whether there is a significant difference in the level of online gaming addiction among the university students who constitute the sample of the study, the variances were applied one way analysis of variance along with Levene Test ($F_{(3,299)} = 1.08$, $p > .05$) to see if they were homogenous. The findings are presented in Table 9.

Table 9. The Levene Test on Whether the Level of Online Gaming Addiction Among the University Students Differ Significantly Based on Where They Reside

Levene test	P	Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p
1.08	.897	Inter Groups	354.923	3	177.462	1.084	.340
		In group	48964.785	299	163.762		
		Total	49319.709	302			

When Table 9 is examined, it is seen that the level of online game addiction of university students does not differ significantly according to the place of residence. ($F_{(3, 299)} = 1.084$, $p > .05$).

DISCUSSION AND CONCLUSION

The aim of this study was to examine the relationship between online game addiction level among university students and emotional schemas, agentic personality, and various variables. It is seen that there are meaningful relationships between online game addiction level among university students and emotional schemas. Specifically, there is a positive mid-level correlation between online game addiction and the emotional schemas of weakness against emotions, demand for rationality, rumination; positive, low level, and statistically meaningful correlation with the emotional schemas of dissimilarity, duration, consensus; negative and low level correlation with the emotional schemas of uncontrollability, denial of emotions, guilt, seeing the emotions as dangerous; negative and mid-level correlation with the emotional schema of acceptance of feelings. On the other hand, any relation is undetermined between online game addiction level among university students and the emotional schemas of comprehensibility, emotional avoidance, and validation. All variables will be examined one by one.

Furthermore, when the body of literature is examined, conducted researches about the online game addiction and controllability show that there is a negative correlation between online game addiction and the variable of controllability which is the antonym of uncontrollability (Kim, Namkoong, Ku & Kim, 2008; Mehroof & Griffiths, 2010; Oh, 2003). According to Kim, Namkoong, Ku and Kim (2008), impulsive behavior is highly common in the individuals who play online games. It is seen that the individuals may have impulse disorders based on technology addiction when other studies about addiction and impulsivity are examined (Greenfield, 1999; Oh, 2003). Also, considering that most of the students studied out of town, individuals may tend to play online games for hours because there will not be any family or friend group to notice that they are playing online games. Hence, in this study, a positive correlation might have been found between the emotional schema of uncontrollability and online game addiction level.

Moreover, it is determined that there is a meaningful and positive relationship between online game addiction level among university students and the emotional schema of weakness against emotions. When the literature is reviewed, no research that studied the relationship between online game addiction level

among university students and weakness against emotions was encountered. Considering the conducted researches, a study about internet addiction which is like online game addiction and weakness against the emotions schema is found (Moody, 2001). As a result of that specific study, a meaningful positive relationship between internet addiction and weakness against emotions schema was obtained. Another finding of the same study of Moody displays that the individuals who have a high level of internet addiction spend most of their time online, therefore, their skills on face to face relationships and their emotions are damaged. Consequently, a positive correlation between the emotional schema of weakness against the emotions and online game addiction level might have been found in this study as well.

A significant relationship between online game addiction level among university students and the schema of avoiding emotions is not determined. When the body of literature is examined, despite of not having a research about online game addiction level and the emotional schema of emotional avoidance, there is a research about substance addiction and emotional avoidance (Forsyth, Parker & Finlay, 2003). According to the findings of that research, the person who has the addiction has the situation of emotional avoidance. However, it is determined that the cause for addiction cannot be explained solely by the schema of emotional avoidance. In this sense, the findings of this study give pretty much the same results as the rest of the literature does.

In this study also a significant positive relationship between the emotional schema of duration and online game addiction level was found to exist. When the literature is reviewed, no research conducted on the emotional schema of duration and online game addiction level is encountered. Evaluating the content of the online games, the games can be played for 24 hours, they don't have an endpoint and the players can consistently change. As a result of playing with different people, it may bring motivation and rumination to the person. The general aim of these games is ensuring consistency by keeping the player in the game. Also, the more someone spends time in an online game the easier it gets to get strength in an online game. Supporting this claim, in some online games, if a player leaves the game before a certain period of time, s/he gets banned for 1-3 days as a punishment. Furthermore, some game developers' attitude to demand payment monthly or annually backs up the concept of duration, too. In conclusion, the positive correlation between the duration schema and the hypothesis may have caused the hypothesis of the researcher to be verified.

A high-level significant relationship between the emotional schema of demand for rationality and online game addiction level is found in this study. When the literature is examined, no conducted research about these two variables was detected. General features of online games are as improving the character, buying/selling stuff, establishing guilds, buying house/castle, producing stuff, carpentering, marketing, buying/selling weapons, painting the weapons, taking the stuff of the equalized person, and being united. Bearing in mind these features, in order players to be successful in online games they need to take important and strategic steps. If a player's character is stronger than the other player's character, it does not necessarily mean that the stronger can beat/plunder the weaker. Therefore, a positive correlation between the demand for rationality and online game addiction level might have been found in this research.

Another outcome of this study is that there is a high-level positive correlation between the emotional schema of rumination and online game addiction level. The result of this research is like the results of the international literature (Davis, 2001; Li & Wang, 2013; Peng & Liu, 2010). In accordance with the related body of literature, the reached result is that individuals who have a high level of online game addiction have the emotional schema of rumination. The schema of rumination is explained as in the examples of "thinking about the problems all the time, making negative evaluations, suspecting, thinking that getting more positive answers online, and the online game is my only friend" (Davis, 2001). In accordance with these researches, there might be some reasons for finding a positive relationship between online game addiction levels among university students and the emotional schema of rumination. Firstly, there is no end to online games. As a result of behavior that is done in online games, repeating the thoughts of "I wish I did it that way", "I should have done it like that", "it would be better if I did this" show us ruminative behavior. Also, being defeated to another player online and wanting to rematch against that player again and thinking of alternative strategies give us a ruminative behavior mindset as well. All in all, the positive correlation might have been found between the emotional schema of rumination and online game addiction level.

No significant relationship between online game addiction level among university students and the

emotional schema of validation was come determined. When the literature is studied, there seem to be some researches about substance/alcohol addiction and the validation schema although there is not any research conducted about online game addiction level and the emotional schema of validation directly (Ball, 1998; Roper, Dickson, Tinwell, Booth & McGuire, 2010). According to the findings of this research, individuals can verge on to substance and alcohol addiction because of the need for validation. However, the reason no relationship was not encountered may be that online game addiction is a behavior-based addiction.

It is occurred that there is not any relationship between online game addiction level and the emotional schema of comprehensibility. When the body of literature is examined about these two variables, o study is specifically present. Considering that there are approximately 15 million active users of online games, it is possible to say that they can be bigger than a country (Steam, 2018). There are functional situations in these games that reach the large masses, such as opportunity to establish a network online and to make money. Considering that when an online game user has a problem with another user, they can fix the problem through a third user, and this example may have been the explanation to why no correlation was found between online game addiction level and the emotional schema of comprehensibility.

There is a significant positive relationship between online game addiction levels among university students and the emotional schema of consensus. When the literature is viewed, an opinion is encountered between the internet and the variable of consensus although there are not any researches about online game addiction level and the emotional schema of consensus. According to that common opinion, the internet is defined as a worldwide platform that can be established with other people along with certain consensus and protocols (Bakioğlu & Şentuna, 2001). Considering that the prerequisite to enter the online games is the internet connection, it can be concluded that the definition involves, though partially, the online games, too. Generally examining the online games, it can be said that there are functional situations such as guild, starting a family, and even establishing villages and cities. The general name of these games in the international body of literature is "Massively Multiplayer Online Role-Playing Game" (MMPORG) (Hsu, Wen & Wu, 2009). In order to be successful in these games, being a member of a group or a community is required. In this sense, a positive correlation between online game addiction level and the emotional schema of consensus might have been found because online game players continue their game in a multiplayer way.

There seems to be a significant relationship between the emotional schema of dissimilarity and online game addiction levels among university students. When the body of literature is gone through, no research of dissimilarity and online game addiction levels among university students is found. The university students that make the sample of this study are between 18 and 25-year-olds. Considering the characteristics of this age group of students, they may want to get attention, competition, and dissimilarity. Also, considering that university students do not work in a job and make economical earnings, they may find the dissimilarity in online games which they could not find in their social environment. In this regard, considering that they can find the behaviors in online games like buying dresses, colorful shoes, and wearing t-shirts, a positive correlation between online game addiction level and the emotional schema of dissimilarity might have been found.

It is found that there is a meaningful and negative relationship between online game addiction level among university students and the emotional schemas of denial of emotions and seeing the emotions as dangerous. In a conducted research in the international body of literature, the hypnotic effect of online games is mentioned (Kelly, 2004). Though, the hypnotic effect of online games is a little bit different than the hypnotic effect of gambling addiction, the impact it leaves on a person may be the same. For example, not having windows in casinos can make the person hypnotic easily. The main aim of this might be making the person hypnotic so that they don't understand the passing hours. Online games have some similar features with the casinos. Examining the context of the online games, some behaviors taking a very short time to do and forcing the player focused on the game show the similarity to the hypnotic effect. In this sense, the individual not only notices the damage that has been done to them (not noticing the hunger, relationship breakdowns, deterioration of eyesight etc.) but also sublimates the feelings of success and the competition resulting in negative correlation with the schemas of denial of emotions and seeing them as dangerous.

It is seen that there is a negative relationship between online game addiction level and the emotional schema of guilt. When the conducted researches of literature are examined, no research is encountered about online game addiction level and the emotional schema of guilt although there are conducted

researches about crime and addiction (Hodge, 1991; McGlothlin, Anglin & Wilson, 1978; Young & Abreu, 2010). Examining the online games, they have characteristics such as killing the opponent, damaging other players, plundering stuff, battling, and dominating the opponent. In this sense, when the player does this behavior, they might be reinforced with success instead of being named as guilty by their environment. Therefore, university students' emotional schema of guilt may be damaged and may cause a meaningful negative correlation to be seen.

Another finding of this study is that there is a negative relationship between online game addiction level among university students and the emotional schema of acceptance of feelings. The online game addiction level increases if the situation of acceptance of feelings decreases. When this is examined, no research is encountered about online game addiction level among university students and the emotional schema of acceptance of feelings. Generally, evaluate the characteristic of the online games, the situation of not accepting the feelings may occur when an active circumstance happens (dying in the game, loss of the stuff, not being able to get the targeted stuff). As a result of this, the university student may tend to online games more with not accepting the feelings and rumination. In this sense, a negative relationship might have been found between online game addiction level among university students and the emotional schema of acceptance of feelings.

In addition to emotional schemas' effects on online game addiction level of university students, no meaningful relationship between online game addiction level among university students and agentic personality traits were obtained out of this study. Despite the fact that there are some connections between the traits and addiction level in the international literature, such as with narcissistic personality characteristics (Kim, Namkoong, Ku & Kim, 2008), distinctive personality characteristics (Wang, Ho, Chan & Tse, 2015), neurotic (Ko, Yen, Chen, Chen, Wu & Yen, 2006), and nonrestraint (Kim & others, 2008), no connection was found between the two variables in this specific study. Examining all the conducted researches, it is seen that online game addiction level among university students and negative personality characteristics have been studied in the past as well (Kim, Namkoong, Ku & Kim, 2008; Ko, Yen, Chen, Chen, Wu & Yen, 2006; Wang, Ho, Chan & Tse, 2015). In this sense, if the agentic personality scale measures the positive personality characteristics of the individual (self-esteem, purpose in life, internal locus of control, and self-efficacy), it is possible to find no meaningful relationship between online game addiction level and agentic personality characteristics. In furtherance of this thought, no research about measuring online game addiction level and positive personality characteristics was encountered in related body of literature.

According to the findings of the study, it is seen that online game addiction level differs meaningfully according to gender and male students play online games more than female students. The findings of this study and finding of the related body of literature show similar results (Ko, Yen, Chen, Chen & Yen, 2005; McInroy & Mishna, 2017, Bekir & Yıldırım, 2018; Bekir & Çelik, 2019).

These games are attracted by male students mostly because the games which cause addiction the most are originated from the feelings of aggression (Ko, Yen, Chen, Chen & Yen, 2005) and competition (McInroy & Mishna, 2017). In this sense, examining the conducted researches about gender, it can be concluded that male students play games more than female students and it is possible for a significant difference to occur.

Based on the outcomes of the study, it is attained that there is a significant difference between the online game addiction level among university students and the type of the game played. The outcomes resemble of the international literature (Bekir & Çelik, 2019). According to Sormaz and Yüksel (2012), game developers see the game producing process as a market. The quantity of market in the game industry approximately goes up to 80 billion dollars. Furthermore, users must pay monthly/annual fee (economical profit) in some online games. In this sense, it is seen that the sub-dimension of economic earning is considered while developing an online game addiction scale for high school students (Kaya, 2013) and university students (Bekir & Yıldırım, 2018). In this context, considering that the games differ economically and in context, it is possible a significant difference to become present.

Lastly, according to the outcomes of the study, it is seen that there is not a meaningful difference between online game addiction levels among university students regarding where they live. Examining the body of literature, a research is encountered about addiction and residence although no research is

encountered about online game addiction level among university students and residence (Brugal, Domingo-Salvany, Maguire, Caylà, Villalbí & Hartnoll, 1999). According to that study, the ratio of addiction is more in small towns and districts. In this sense, there can be a lot of reasons why the online game addiction level among university students does not differ with regards to the residence. Some reasons may be that there is a computer in every house, there are internet houses in every district, the students study away from their families, there is internet connection in dormitories and guest houses, mobilization of computers, technology spreads far and wide, and all occupations become done by computers (architect: online drawing, engineer: Autocad, accountant: ETA and Netsis Program, teacher: presentation by computer). Nowadays, the internet, computers, and cell phones are useable in a lot of places like cafés, museums, airports, terminals, buses etc. (Doğan & Tosun, 2016; Şar, Ayas & Horzum 2015). Considering these examples, residence of the university students doesn't matter on the addiction to online games among university students. A student who stays in dormitory can reach online games from in the dormitory, a student who stays with a relative can reach online games from an internet café, a student who does not own a computer can reach online games by going to an internet house, and even a student who owns a cell phone can reach online games through his/her cell phone. Therefore, online game addiction level among university students may not differ based on where they live.

In line with the results of this research, the following suggestions can be mentioned; Considering the findings obtained in this research, adolescents can be taught how to find their psychological needs in the social environment by preparing a psycho-education program in future research. When these sessions are ended, it can be checked whether the dependency levels of the people have decreased or not. The schemes can be prepared according to the levels of online game addiction and an intervention program can be prepared depending on which schemes it is associated with. Like this research can be done to secondary school students and can shed light on preventive studies. Finally, we can look at which personality types pose a risk by working together with personality types and online game addiction.

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