

# The Impact of Gaming on Fear of Missing Out: The Case of Bahcesehir University E-Sports Team

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## Abstract

The presents study sought the impact of gaming on the fear of missing out on social media and compared these variables by the participants' demographic characteristics. A total of 94 e-Sports players, 9 females (9.6%) and 85 males (90.4%), participated in the research. The data were collected using a demographic information form, the Digital Game Addiction Scale, and the Fear of Missing out Scale. Demographic characteristics of the participants were shown as frequencies and percentages. The Kolmogorov-Smirnov and Shapiro-Wilks tests revealed the data showed a normal distribution. Therefore, an independent samples t-test, a one-way analysis of variance (ANOVA), and a linear regression analysis were utilized to examine the relationships between the variables. All analyses were performed on SPSS 20.0 at a 95% confidence level. The findings suggested that the young engaging in gaming for a long time may have several problems such as a decline in academic achievement, normalization of violent behaviors in games, decrease in communication with family members, disruptions in social relations, and deteriorated vision.

**Keywords:** digital game, FoMO, E-sports, university students

## 1. Introduction

Social media addiction refers to situations where the individual increasingly spends a lot of time on social media, posing substantial adverse impacts on school, work, and social relations (Walker, 2011). It was previously reported that individuals tend to communicate with others via social networking sites instead of engaging in real-time interactions due to deficiencies in their social skills and low self-perception. In other words, poor social skills may lead individuals to become internet- and social media-addicted (Caplan, 2003). Excessive use of social media may cause them to alienate themselves from their own reality and create a new "virtual self." One may be lonely, insecure, unhappy, unsuccessful, unloved, and unappreciated in social life. Yet, they have a chance to create their own virtual self in social media, allowing them to pretend to be a different person on social media than in social life (Akmeşe & Deniz, 2017).

One may use social media as a tool not to miss the events and experiences in virtual environments. Accordingly, the fear of missing out (FoMO) intrinsically may lead individuals to interact with multiple persons on social media simultaneously and access information about what others are doing more quickly and easily (Przybylski, Murayama, DeHaan, & Gladwell, 2013). An individual with FoMO feels an excessive need to be online to be aware of others' activities (Alt, 2015), which boosts the time spent on social media.

People with FoMO often report feeling lonely in daily life except for their time on social networking sites (Hato, 2013). Those not engaging in social media and not being able to follow what others are doing tend to fill themselves with uneasiness and unhappiness and unreasonably and often criticize the meaning of life.

Ultimately, the presents study sought the impact of gaming on FoMO and compared these variables by the participants' demographic characteristics.

## 2. Method

### 2.1 Research Design

This study, employing a correlational design, investigated the impact of gaming on FoMO and compared the variables by the participants' demographics.

## 2.2 Sample

The target population of the study included the e-sports players of the Bahcesehir University E-sports Club in the 2021-2022 academic year. Among them, the sample was composed of randomly selected (Karasar, 2018) 94 e-sports players, 9 females (9.6%) and 85 males (90.4%).

## 2.3 Data Collection Tools

The data were collected using a demographic information form, the Digital Game Addiction Scale (DGAS), and the Fear of Missing out Scale (FoMOS) between November – December, 2021. The Ethics Committee of Istanbul Ayyansaray University granted ethical approval to the present research (No: E-31675095-100-2100014342).

*Digital Game Addiction Scale (DGAS):* The DGAS, developed by Irmak and Erdoğan (2014), was used to reveal the gaming addiction levels of the participants. The 5-point (1 = Never, 5 = Always) Likert-type scale consists of 7 items. One may obtain a score on the scale between 7 and 35.

*Fear of Missing Out Scale (FoMOS):* Przybylski et al. (2013) developed the scale to administer to adult internet users aged 18 years and over. The 10-item scale was adapted to Turkish by Gökler et al. (2016). The items are rated on a 5-point Likert-type scale (1 = “not at all true of me,” 5 = “extremely true of me”), and the scale has no cut-off score; a high score indicates increased FoMO. In the Turkish adaptation study, the researchers calculated its CVI to be .62. The factor loadings of the items ranged from .36 to .77. While internal reliability was calculated to be .81, the test-retest reliability coefficient was found to be .81. The researchers concluded that the FoMOS is a valid and reliable measurement tool for university students (Gökler et al., 2016). Besides, the Cronbach’s alpha coefficient of the scale was calculated to be .81 in this study.

## 2.4 Data Analysis

The Kolmogorov-Smirnov and Shapiro-Wilks tests revealed the data showed normal distribution; therefore, parametric tests were performed on the data. An independent samples t-test, a one-way analysis of variance (ANOVA), and a linear regression analysis were recruited to examine the relationships between the variables. All analyses were performed using SPSS 20.0 at a 95% confidence level.

## 3. Results

Table 1 presents the participants’ demographic characteristics.

Table 1. Demographic characteristics

Demographic characteristics		n	%
Gender	Male	85	90.4
	Female	9	9.6
	Total	94	100.0
Age	18 years	17	18.1
	19 years	16	17.0
	20 years	24	25.5
	21 years and over	37	39.4
	Total	94	100.0
Does social media use adversely affect your sleep pattern?	Yes	52	55.3
	No	42	44.7
	Total	94	100.0
What does the concept of e-sports mean to you?	Addiction	2	2.1
	Achievement-Competition	34	36.2
	Entertainment-Fun	34	36.2
	Career-Job	6	6.4
	Income	2	2.1
	Struggle-Discipline	6	6.4
	Socializing	1	1.1
	Passion-Excitement	9	9.6
	Total	94	100.0
For what purpose do you use social media the most?	Communicating with friends	17	18.1
	Getting informed	4	4.3

	Following the latest updates	19	20.2
	Just for socializing	19	20.2
	Just spending time	35	37.2
	Total	94	100.0
Daily social media time	1-3 hours	59	63.4
	3-5 hours	21	22.6
	5+ hours	13	14.0
	Total	93	100.0

The male participants (90.4%) dominated the sample when compared to females (9.6%). Besides, the majority of the participants were aged 21 years and over (39.4%), followed by those aged 20 years (25.5%). More than half of the participants (55.3%) reported that using social media affects their sleep patterns. The concept of e-sports often means achievement-competition (36.2%) and entertainment-fun (36.2%) for the participants. On the other hand, the participants use social media mainly for just spending their time (37.2%), followed by following the latest updates (20.2%) and socializing (20.2%). Finally, most of the participants (63.4%) reported using social media for 1-3 hours a day.

The participants' FoMO and gaming addiction were explored by their demographics using an independent samples t-test and one-way analysis of variance (ANOVA).

Table 2. The participants' FoMO and gaming addiction by gender

The participants' FoMO and gaming addiction by gender		N	M	SD	t	p
FoMO	Male	85	23.5	6.1		
	Female	9	24.2	7.9	0.117	0.734
	Total	94	23.5	6.3		
Gaming addiction	Male	85	20.0	4.8		
	Female	9	20.9	7.1	0.263	0.609
	Total	94	20.1	5.1		

The scores on the FoMOS and DGAS did not significantly differ by gender ( $p > 0.05$ ). In other words, both male and female participants had similar levels of FoMO and gaming addiction (Table 2).

Table 3. The participants' FoMO and gaming addiction by age group

The participants' FoMO and gaming addiction by age group		N	M	SD	F	p
FoMO	18 years	17	25.4	6.6		
	19 years	16	21.7	5.4		
	20 years	24	24.2	5.4	1.148	0.334
	21 years and over	37	23.1	6.8		
	Total	94	23.5	6.3		
Gaming addiction	18 years	17	19.1	4.7		
	19 years	16	21.6	5.7		
	20 years	24	20.2	5.1	0.703	0.553
	21 years and over	37	19.8	4.9		
	Total	94	20.1	5.1		

ANOVA results revealed that the participants' scores on the FoMOS and DGAS did not differ significantly by age group ( $p > 0.05$ ). Namely, the participants of different ages had relatively similar FoMO and gaming addiction (Table 3).

Table 4. The participants' FoMO and gaming addiction by the impact of social media on sleep patterns

The participants' FoMO and gaming addiction by the impact of social media on sleep patterns		N	M	SD	t	p
FoMO	Yes	52	24.8	6.2	4.659	0.033
	No	42	22.0	6.0		
	Total	94	23.5	6.3		
Gaming addiction	Yes	52	21.5	4.6	10.662	0.002
	No	42	18.3	5.0		
	Total	94	20.1	5.1		

The findings showed significant differences in the participants' FoMO and gaming addiction by whether using social media affects sleep patterns ( $p < 0.05$ ). Accordingly, those reporting using social media affects their sleep patterns had significantly higher FoMO and gaming addiction scores than others (Table 4).

Table 5. The participants' FoMO and gaming addiction by e-sports connotation

The participants' FoMO and gaming addiction by e-sports connotation		N	M	SD	F	p
FoMO	Addiction	2	23.50	13.44	0.783	0.604
	Achievement-Competition	34	24.32	6.14		
	Entertainment-Fun	34	23.47	5.51		
	Career-Job	6	21.50	8.62		
	Income	2	15.50	7.78		
	Struggle-Discipline	6	25.67	5.79		
	Socializing	1	20.00			
	Passion-Excitement	9	23.00	6.98		
	Total	94	23.54	6.25		
Gaming addiction	Addiction	2	27.00	2.83	2.799	0.011
	Achievement-Competition	34	21.59	4.24		
	Entertainment-Fun	34	19.00	4.41		
	Career-Job	6	21.83	7.55		
	Income	2	14.50	4.95		
	Struggle-Discipline	6	20.67	3.78		
	Socializing	1	11.00	-		
	Passion-Excitement	9	17.44	6.23		
	Total	94	20.06	5.05		

It was found that while the participants' gaming addiction significantly differed by what the concept of e-sports evokes in them ( $p < 0.05$ ), it was not the case for their FoMO ( $p > 0.05$ ). Then, the Tukey test was performed to uncover the source of difference in gaming addiction. The results showed that those reporting "addiction" had significantly higher scores than others. Moreover, the gaming addiction scores of the participants reporting "achievement-competition," "entertainment-fun," "career-job," and "struggle-discipline" were significantly higher than of those reporting "income" and "passion-excitement." Finally, those who see e-sports as a mean for "income" had significantly higher gaming addiction scores than the participants considering e-sports "passion-excitement."

Table 6. The participants' FoMO and gaming addiction by the purpose of using social media

The participants' FoMO and gaming addiction by the purpose of using social media		N	M	SD	F	p
FoMO	Communicating with friends	17	22.59	5.69	1.150	0.338
	Getting informed	4	23.00	5.48		
	Following the latest updates	19	21.37	6.08		
	Just for socializing	19	25.11	6.38		
	Just spending time	35	24.40	6.53		
	Total	94	23.54	6.25		
Gaming addiction	Communicating with friends	17	19.24	4.25	0.978	0.424

Getting informed	4	21.00	7.53
Following the latest updates	19	19.32	5.83
Just for socializing	19	19.05	4.01
Just spending time	35	21.31	5.18
Total	94	20.06	5.05

It was discovered that the participants did not significantly differ in FoMO and gaming addiction by the purpose of using social media ( $p>0.05$ ). In other words, all the participants using social media for different purposes had similar FoMO and gaming addiction levels.

Table 7. The participants' FoMO and gaming addiction by daily social media time

The participants' FoMO and gaming addiction by daily social media time		N	M	SD	F	p
FoMO	1-3 hours	59	23.10	6.15	0.432	0.651
	3-5 hours	21	23.76	5.22		
	5+ hours	13	24.85	8.38		
	Total	93	23.49	6.27		
Gaming addiction	1-3 hours	59	18.85	4.86	6.247	0.003
	3-5 hours	21	22.05	4.51		
	5+ hours	13	23.00	4.58		
	Total	93	20.15	5.01		

According to the results of one-way analysis of variance, the participants' FoMO did not significantly differ by daily social media time ( $p>0.05$ ), but it was the case for gaming addiction ( $p<0.05$ ). Not surprisingly, the results of the Tukey test revealed that those using social media for 3-5 hours and more than 5 hours a day had significantly more gaming addiction than those using it for 1-3 hours, respectively.

Table 8. The impact of gaming addiction on FoMO

Model		Unstandardized coefficients		Standardized coefficients	t	p
		$\beta$	SE	Beta		
FoMO	Constant	18.08	2.60		6.95	0.00
	Gaming addiction	0.27	0.13	0.22	2.16	0.03

F=4.674 ; p=0.033  
R<sup>2</sup>=0.048

A linear regression analysis was performed to reveal the impact of gaming addiction on FoMO. Accordingly, the tested model was found to be significant ( $F(4.674)$ ;  $p<0.05$ ); therefore, gaming addiction significantly predicted FoMO. However, the correlation between the variables was positive but weak (0.27).

#### 4. Discussion

The present study explored the impact of gaming on FoMO and compared the variables by the participants' demographics. Among the e-sports players of the Bahcesehir University E-sports Club in the 2021-2022 academic year, the sample was composed of randomly selected (Karasar, 2018) 94 e-sports players, 9 females (9.6%) and 85 males (90.4%). The data were collected using a demographic information form, the DGAS, and the FoMOS. After checking the normality of distribution using the Kolmogorov-Smirnov and Shapiro-Wilks tests, the relationships between the variables were tested through an independent samples t-test, a one-way analysis of variance (ANOVA), and a linear regression analysis. All analyses were run on SPSS 20.0 at a 95% confidence level.

The male participants (90.4%) dominated the sample when compared to females (9.6%). Besides, the majority of the participants were aged 21 years and over (39.4%), followed by those aged 20 years (25.5%). More than half of the participants (55.3%) reported that using social media affects their sleep patterns. The concept of e-sports often means achievement-competition (36.2%) and entertainment-fun (36.2%) for the participants. On the other hand, the participants use social media mainly for just spending their time (37.2%), followed by following the latest updates (20.2%) and socializing (20.2%). Finally, most of the participants (63.4%) reported using social media 1-3 hours a day.

Initially, the participants' FoMO and gaming addiction levels were investigated by their demographics. Accordingly, it was found that there were no significant differences in FoMO and gaming addiction levels of the participants by gender, age group, and purpose of using social media. Yet, the findings gave birth to significant differences in the variables by the impact of social media on sleep patterns. In her study on FoMO, Tanrikulu (2018) reported that adolescents (16-18-year-olds) did not have FoMO, and FoMO did not differ significantly among the participants by gender, while it had adverse effects on the young adult group. Nevertheless, the general trend in the previous research is to show no significant relationship between FoMO and age and gender, in parallel with the present study (Przybylski et al., 2013; Milyavskaya et al., 2018; Tomczyk & Selmanagic-Lizde, 2018).

It was found that those with disrupted sleep patterns due to using social media had higher levels of FoMO and gaming addiction. Overlapping this finding, Koçak (2021) suggested FoMO and gaming addiction to be more prevalent among those with poor sleep quality due to social media. The literature also hosts studies putting forward that social media addiction adversely affects sleep patterns (Eroğlu & Yıldırım, 2017; D'Souza & Negahban, 2019). Therefore, previous findings may be considered as evidence to support the findings of this study, considering the daily social media time of those with more social media addiction. When it comes to social media addiction and FoMO, addictive use of social media may elevate FoMO (Lenhart et al., 2010; Moore & McElroy, 2012), which, in turn, increases problematic social media use (Banyai et al., 2017) in a vicious cycle. Some studies suggest a link between social media use, FoMO, and gender and show that female adolescents have more FoMO than males (Banyai et al., 2017). It may be because young adult women want to be in social media environments more and pretend to be somebody else on social media due to social perceptions, structures, and restrictions on women; therefore, they have more FoMO than males (Tanrikulu, 2018).

On the other hand, there were significant differences between gaming addiction and e-sports connotations and daily social media time, yet it was not the case for FoMO. Although no significant difference was found between FoMO and daily social media time, the previous research concluded a significant link between addictive use of social media and FoMO (Blackwell et al., 2017; Casale et al., 2018; Tanrikulu, 2018). Besides, some studies showed that FoMO rises as the time spent on social media increases (Baker et al., 2016; Hoşgör et al., 2017; Oberst et al., 2017; Bor, 2018). Parallel to this study, there are also studies showing no significant relationship between daily social media time and FoMO (Hızarcı, 2018; Terzi, 2019). The differences in the findings may be attributed to the differences in samples and measurement tools in the studies.

As expected, it was realized that those expressing e-sports as an addiction had higher gaming addiction than others. Moreover, the gaming addiction scores of the participants seeing e-sports as "achievement-competition," "entertainment-fun," "career-job," and "struggle-discipline" were significantly higher than of those seeing it as "income" and "passion-excitement." In addition, those seeing e-sports as a mean for "income" had significantly higher gaming addiction scores than the participants considering e-sports "passion-excitement." On the other hand, it was determined that the gaming addiction level of those using social media for 3-5 hours and more than 5 hours a day was significantly higher than the participant using it for 1-3 hours a day. In other words, it can be proposed that increased social media time triggers gaming addiction. The previous research showed that increased duration of e-sports activities, as well as daily social media time, increases gaming addiction (Baygöl, 2021).

## 5. Conclusion

In general, gaming addiction has become a severe problem and continues to affect the social functionality and well-being of the young. It is scrutinized by various disciplines, including economics, biology, psychology, and sociology. As in this study, the literature often reports negative consequences of gaming addiction. Although e-sports is appreciated and adopted more and more by the young, those engaging in gaming for a long time suffer many problems such as a decline in academic achievement, normalization of violent behaviors in games, decrease in communication with family members, disruptions in social relations, and deteriorated vision. In this context, further studies are needed to bring a comprehensive understanding of gaming addiction, e-sports, and FoMO among the young to be able to design relevant intervention programs.

The Ministry of Youth and Sports supports e-sports activities in our country. Yet, such support from state organizations and e-sports clubs should also include protective measurements for the players against the negative consequences of gaming addiction. Besides, the young and their families should be informed about e-sports and gaming addiction. It is also deemed critical to explore factors driving the young into gaming addiction and FoMO so that appropriate intervention programs can be developed.

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