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RESEARCH ARTICLE

INVESTIGATION OF LIFE SATISFACTION IN ESPORTS ATHLETES IN TERMS OF MINDFULNESS AND GAMING MOTIVATION

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ABSTRACT

Purpose: The aim of this study was to examine the life satisfaction of esports players in terms of mindfulness and motivation to play games. A survey model was used in this study.
Material and Methods: 257 esports athletes who participated in the Esports Literacy Project conducted in Turkey were included in this study. In this study, as data collection tools " Motivations for Play in Online Games Scale", “Satisfaction with Life Scale”, “Bergen Insomnia Scale”, and “Mindful Attention Awareness Scale” were used.
Results: The findings of the study showed that motivation to play, mindfulness, insomnia and some variables explained 13% of the variance in life satisfaction in esports athletes. It has been determined that there is a negative and significant relationship between insomnia and life satisfaction of esports athletes, mindfulness has a negative relationship with insomnia and a positive and significant relationship with success motivation in the game.
Conclusion: As a result, it is thought that increasing life satisfaction, mindfulness, motivation to socialize in the game, success motivation in the game, and reducing the insomnia of the esports athletes are the factors that need to be improved for the athletes to increase their game performance and be more successful in their careers.

Keywords: esports, video games, life satisfaction, mindfulness, gaming motivation, insomnia

INTRODUCTION

Global interest in electronic sport (esport), also known as competitive video gaming, has increased in recent years (1); this also has contributed to a significant increase in the number of amateur and professional teams and young people keen to pursue careers as professional esports players (2). In international level esports teams participating in tournaments, there are career opportunities in the fields of player, coach, and management (3). In order to transform the career aspiration of becoming a professional esports player through digital games into a sustainable career

planning activity for the new generations, it is necessary to examine professional esports players. This study is also important in changing the perception of esports that is not fully accepted by parents and the general societal view that perceives young people only as video game players. This is because the study addresses the various mental effects of esports games on players and their quality of life. Esports, which has a vital place because of the nature of online games being accessible anytime and anywhere and does not require people to be physically together, has grown in popularity significantly because of the pandemic (4). As esports continues to evolve universally, understanding the motivations of individuals engaged in esports is also becoming an important consideration. Because people can play games with various and different motivations. In their studies to determine the motives of individuals to play, Bartle (5) and Yee (6), who claim that everyone can play games with different motivations, showed that there are different motivations (5, 6). For instance, Bartle (5), model of game motivations; consists of four different types of players: those who play to socialize (socializers) or play to achieve (achievers) or play to kill (killers) or play to explore (explorers). In Yee's (6) online gaming motivation model, there are three main motivations. These three motivations are achievement, social, immersion. In addition, studies in the literature show that people play online games for a variety of reasons. According to Hamari et al., (7) people play online games for social interaction, while Giardina et al., (8) believe that people play games because they are relaxing, reduce stress, and make it easier to escape from some social environments. Furthermore, Souza et al., (9) stated that challenge (competition) and entertainment increase their motivation to play video games and enhance their mindfulness. The lack of existing research in the literature on the life satisfaction levels of adolescents who engage in amateur esports follows enhances the originality of this study.

The inherent sense of competition in esports can occasionally lead to stress among players (10). This stress can stem from various factors such as performance pressure, high expectations, team or individual responsibilities, intense training schedules, and the pressures that come with competition. Mindfulness is considered a factor that can assist esports players in coping with stress, maintaining focus, and preserving emotional balance. It is known that mindfulness significantly reduces individuals' stress levels in high-stress environments (11, 12). Moreover, elite esports athletes utilize mindfulness strategies to regulate their emotions and enhance their focus skills (13).

Mindfulness (14), which arose from Eastern meditation and developed as a method of focusing attention, is a consciousness aspect that has begun to attract significant attention from psychologists today. It is defined as the "in-the-moment" awareness of all emotions and thoughts (15). Mindfulness, in other terms, is the experience of focusing and being aware of the present moment. Esports games can be said to be one of the appropriate areas to investigate mindfulness due to their interactive nature. Because games provide an immersive interaction for the players, causing the concept of time to disappear (16). According to Gackenbach and Bown (17), esports athletes are generally more focused, and video games contribute to the development of mindfulness. Additionally, mindfulness practices can serve as a significant tool for supporting the mental and emotional well-being of esports athletes and facilitating improved performance.

The competitive esports environment is a world where athletes lead lives filled with great passion and ambitions. However, this intense competition and demanding training schedules can affect the sleep patterns and overall life satisfaction of esports athletes. Several studies in the literature have demonstrated a relationship between excessive esports gaming and sleep disorders and perceived stress (18-21).

According to the International Classification of Sleep Disorders (ICSD-2), insomnia is a disorder that lasts at least four weeks and is described by symptoms such as difficulties initiating/maintaining sleep, continuous fatigue, and daytime sleepiness (22). Insomnia causes psychological distress, a decline in mental health, and physical fatigue (23, 24). It is also frequently stated in the literature that insomnia reduces the life satisfaction of individuals (25-27). People interested in esports, playing games, doing practice for extended periods, and spending a lot of time in front of a screen may have sleep problems. In this case, it may influence esports athletes' life satisfaction, motivation, and mindfulness.

Life satisfaction, on the other hand, refers to people's assessments of the quality of their life, including assessments of their work or personal relationships (28, 29). Life satisfaction, which is the process

through which people evaluate their lives based on their criteria and standards (29, 30), is usually at the center of people's well-being (31). The erratic and hours-long games of esports athletes can negatively affect their lifestyles and psychological well-being (20). Wei et al., (32) report that esports players who play long hours are predisposed to show depressive, social phobic, and internet addiction symptoms. Therefore, adolescents and young adults who are interested in esports should prioritize the preservation of their physical and mental health by following a carefully planned program that includes structured training sessions and appropriate rest periods. Preserving physical health is crucial for sustaining the concentration and energy required for extended gaming sessions, while maintaining mental well-being is important for coping with stress, enhancing focus skills, and sustaining motivation. Thus, determining the effects of esports participation at a younger age on the life satisfaction of adolescents and young adults who are interested in esports is important.

In this context, this study aimed to investigate the effect of playing levels and gaming motivations on the life satisfaction and mindfulness of adolescent and esports athletes. Thus, it is believed that it will support adolescents and young adults interested in esports to enhance their satisfaction and improve their esports careers more healthily and professionally. This study can contribute to the development of evidence-based strategies aimed at enhancing the quality of life, supporting motivation, and improving esports performance among athletes.

MATERIAL AND METHODS

The study was conducted using the relationship model, one of the quantitative research models. In a study, it is stated that the survey method can be used when it is desired to measure the relationship between two variables. In this model, the researcher measures the variables in their natural state and decides whether there is a relationship between the variables (33).

Participants

The participants of Esports Literacy Education from different provinces of Turkey were included in this study. The athletes participating in the education consist of semi-professional and professional esports athletes. Criterion sampling method was applied in

Table 1. Descriptive Statistics

	N	*%*		*N*	*%*
Variables			**Variables**		
Gender	257		**Visual Impairment**	257	
Male	218	84.8	Yes	100	38.9
Female	39	15.2	No	157	61.1
Age	257		**Psychiatric Diagnosis**	257	
12-17	85	33.1	Yes	13	5.1
18-24	168	65.4	No	244	94.9
25 and above	4	1.6	**Daily Play Time**	257	
Graduated	257		0-2 Hours	55	21.4
High School	127	49.4	3-6 Hours	127	49.4
Bachelor	126	49.0	7 hours and above	75	29.2
Master	4	1.6	**Perceived Sleep Problems**	257	
Gaming Experience	257		Yes	69	26.9
0-1 Year	51	19.8	No	188	73.2
2-5 Year	93	36.2			
6-10 Year	113	44.0			

the study. According to McKay et al., (34), the esports athletes recruited in this study can be classified as Tier 3 and Tier 2 representing highly trained players that compete on the national level or according to Scharkow et al., (35) and Toth et al., (36) mentioned, they are 'hardcore' gamers. A total of 257 people, 39 females and 218 males, participated in the study. The study group also included 4 graduate students (Master's), 126 undergraduate students, and 127 pupils from high schools. Esports competitors who willingly agreed to engage in the research provided the data for the study. Table 1 provides statistics on participant demographic information. The study was approved by the Local Ethics Committee of Dokuz Eylul University (20.10.2021, 2021/29-07). The study also conformed to the standards set out in the Declaration of Helsinki.

Data Collection Tools

Motivations for Play in Online Games Scale (MPOGS); The scale developed by Yee (6) and adapted into Turkish by Dindar and Akbulut (37) was developed to reveal the motivation of online game users to play. MPOGS consists of 39 items and a structure with 3 main factors. If desired, the scale can also be used in a 10-factor structure. These three factors are immersion, achievement and social. Confirmatory Factor Analysis fit indices were examined to determine to construct validity [chi-square/SD .88; RMSEA = .00; CFI = 1.00; IFI = 1.09; GFI = .91; AGFI =.90; It is seen that SRMR = .059]. The factor loads of the items are between .47 and .72. The Cronbach Alpha reliability coefficient is .78.

Satisfaction with Life Scale (SWLS); The scale, which was developed by Diener et al., (29) and adapted into Turkish by Dağlı and Baysal (38), was developed to determine the life satisfaction levels of individuals. The LSS consists of 5 items and a single-factor structure. Because of the scale's reliability studies, its test-retest reliability was calculated to be r= .85, and its item-test correlations ranged between .71 and .80. Confirmatory Factor Analysis fit indices were examined to determine to construct validity [chi-square/SD 1.17; RMSEA = .0030; CFI = 1.00; NFI = 1.00; NNFI = 1.00; GFI =.99; It is seen that SRMR = .019]

Bergen Insomnia Scale (BIS); Developed by Pallesen et al., (39) and adapted to Turkish by Bay and Ergün (40), the scale was developed for the diagnostic criteria of individuals with insomnia, considering the DSM-4 diagnostic criteria. Within the scope of validity analysis, the content validity index of the scale was .99, and within the scope of reliability analysis; Cronbach's alpha reliability coefficient of the scale was found to be 0.72 for the total. Confirmatory Factor Analysis fit indices were examined to determine to construct validity [chi-square/SD 1.17; RMSEA = .0030; CFI = 1.00; NFI = 1.00; NNFI = 1.00; GFI =.99; It is seen that SRMR = .019].

Mindful Attention Awareness Scale (MAAS); The scale, developed by Brown and Ryan (41) and adapted into Turkish by Özyeşil et al., (42), reveals the ability of individuals to bring attention to and be aware of the situations that arise in the present tense. It consists of 15 items and a single-factor structure. Confirmatory Factor Analysis fit indices were examined to determine to construct validity [chi-square/SD 90; RMSEA = .06; RMS = .06; 1.09; GFI = .93; AGFI = .91]. The factor loads of the items are between .436 and 0.682. The Cronbach Alpha reliability coefficient is .78.

Data Collection Process

The researchers received the data by providing esports athletes with a questionnaire/scales link on the website form. The participants were informed that the data would be safeguarded and used merely for scientific purposes, and information such as instructions on how to use the instruments and the aim and substance of the research was given in the online forms. Among the questions of the questionnaire, there is also information about "having a psychiatric diagnosis and visual impairment" collected based on the statements of the participants. The participants were made conscious that taking part in the study didn't involve any danger or expense, that their identities wouldn't be included in the poll, and that it was entirely up to them whether or not to do so.

Analysis of Data

SPSS version 27 was used for all analyses. The required assumptions to perform the analysis were tested before starting. To find out if the requirements for parametric testing were satisfied, the values for kurtosis and skewness were checked. If they have the skewness and kurtosis values for a normal distribution are acceptable (43). The research data did not contain any breaches of assumptions. To make sure there were no multicollinearity issues, the study variables were examined as well. When the tolerance, variance inflation factor (VIF), and

Table 2. Descriptive statistics and correlations among variables in the total sample (N=257)

Variables	1	2	3	4	5	6
Life Satisfaction	—					
Mindfulness	.11	—				
Insomnia	**-.18****	**-.14***	—			
Immersion (In-game)	**.13***	-.04	.10	—		
Achievement (In-game)	**.13***	**.15***	-.03	.32***	—	
Social (In-game)	.07	-.11	.10	.38***	.18**	—
$\underline{x}$	15.1	62.0	15.7	23.8	9.44	10.5
Skewness	.07	-.77	.63	-.02	-.03	-.02
Kurtosis	-.05	.31	.00	-.03	-.01	-.04

In-Game: It includes information about their motivation in the game (Motivations for Play in Online Games).
* p < .05, ** p < .01, *** p < .001

confidence interval (CI) values were examined, these values were all within acceptable limits. It was determined that VIF was between 1.06 and 1.28, and CI was between 4.72 and 27.74. The limit values required to avoid multicollinearity problems are more than 0.20 for the tolerance value, less than 10 for the VIF value, and less than 30 for the CI value (44). As a result, no multicollinearity problems were detected. To find any outliers in the sample, Mahalanobis distance values were analyzed. The research did not include these outliers; hence the final sample size was 257.

This study was statistically analyzed using data by correlation and regression analysis, t-test, and one-way analysis of variance. Then, other normal distribution indicators (kurtosis, skewness, and normal distribution graph) were examined, and it was decided that the data set was suitable for regression analysis.

RESULTS

The associations between the variables in the study were analyzed using correlation analysis, and the results are shown in Table 2.

Table 2 reveals a negative and significant association between esports players' life satisfaction and insomnia (r=-.18), as well as a positive and significant relationship between Social (r=.13) and Achievement (r=.13). Mindfulness, is another variable of the study, was found to be negatively correlated with insomnia (r=-.14) and positively and significantly correlated with Achievement (r= .15).

Table 3 shows that mindfulness, immersion, achievement, social, age, graduate, gender, daily playing time, visual impairment, perceived sleep problems, and mental diagnosis did not predict esports athletes' life happiness. Otherwise, sleep disorder (β= -.21) is found to predict esports athletes' life satisfaction. According to this finding, the regression model, which contains all factors, predicts 13% of esports athletes' life satisfaction.

Findings Related to Gender

In the study, it was tried to determine whether the life satisfaction levels of esports athletes differed significantly by gender or not with the t-test (male $\bar{x}$= 15.13; female $\bar{x}$= 14.97). When Table 3 is examined, it is seen that life satisfaction does not differ significantly according to gender. It was concluded that the mean life satisfaction of men is higher than that of women (p>.05).

Findings Regarding Graduation Type

According to the research, to determine whether the graduation types of esports athletes differ according to life satisfaction, firstly, whether the variances of the scores are homogeneous or not was determined by the Levene test. As a result of this analysis, since it was seen that the variances were not homogeneous [F (2, 254) = 1.722, p= .181], the results of the Welch test, which is an alternative to the one-way analysis of variance, were considered [Welch Test: F (2, 8) = 1.644, p= .251]. According to the results obtained from this test, there is no significant difference between the groups (High school $\bar{x}$= 15.04, Bachelor $\bar{x}$=15.04, Master $\bar{x}$= 19.25). However, when the findings were evaluated, it was concluded that the arithmetic mean of life satisfaction of esports athletes who graduated with master's degrees was higher than other groups.

Table 3. Regression analysis

The dependent variable	Predictive Variable	*B*	*SE*	*β*	*t*	*p*	Correlation	
							Partial	Semi Partial
Life Satisfaction	Constant	7,798	4,886		1,596	,112		
	Mindfulness	,02	,01	,09	1,510	,132	.096	,091
	Insomnia	-,09	,03	-,21	-3,065	,002	-,194	-,185
	Immersion (In-game)	,12	,07	,12	1,687	,093	,108	,102
	Social (In-game)	,24	,22	,07	1,094	,275	,070	,066
	Achievement (In-game)	,18	,20	,06	,880	,380	,057	,053
	Age	-,19	,14	-,12	-1,398	,163	-,090	-,084
	Graduated	,70	,78	,08	,900	,369	,058	,054
	Gender	,41	1,01	,03	,403	,687	,026	,024
	Gaming Experience	,79	,43	,13	1,826	,069	,117	,110
	Daily Play Time	-,68	,42	-,10	-1,621	,106	-,104	-,098
	Visual Impairment	-1,09	,59	-,11	-1,859	,064	-,119	-,112
	Sleep Problems	-,21	,70	-,02	-,304	,761	-,020	-,018
	Psychiatric Diagnosis	2,23	1,30	,10	1,720	,087	,110	,104

In-Game: It includes information about their motivation in the game (Motivations for Play in Online Games), F (2,267) = 336.255, p<.05, R= .352; R^2= .13

Findings on Gaming Experience

According to the research, to determine whether the gaming experiences of esports athletes differ according to their life satisfaction, first, whether the variances of the scores are homogeneous or not was determined by the Levene test. As a result of this analysis, since it was seen that the variances were not homogeneous [F (2, 254) = 1.468, p= .232], the results of the Welch test, which is an alternative to the one-way analysis of variance, were considered [Welch Test: F (2, 137) = 1.458, p= .236]. According to the results obtained from this test, there is no significant difference between the groups. When the findings are evaluated, it is seen that the life satisfaction means of the athletes who game experience for 6-10 years are higher (0–1-year x̄= 14.41, 2-5 years x̄=14.87, 6-10 years x̄= 15.61).

Findings Regarding Daily Playing Time

According to the research, to determine whether the daily game-playing times of esports athletes differ according to their life satisfaction, first, whether the variances of the scores are homogeneous or not was determined by the Levene test. As a result of this analysis, since it was seen that the variances were not homogeneous [F (2, 254) = .770, p= .585], the results of the Welch test, which is an alternative to the one-way analysis of variance, were considered [Welch Test: F(2, 126)=.539, p= .585]. According to the results obtained from this test, there is no significant difference between the groups. When the findings are evaluated, it is seen that the difference between the life satisfaction of esports athletes who play games daily for 0-1 hours, 2-6 hours, and 7 hours and above is very small (0–1 hour x̄= 14.83, 2-6 hours x̄= 15.52, 7 hours and above x̄= 15.58).

Findings Related to Age Groups

According to the research, to determine whether the different ages of esports athletes differ according to their life satisfaction, first, whether the variances of the scores are homogeneous or not was determined by the Levene test. As a result of this analysis, since it was seen that the variances were not homogeneous [F (2, 254) = 2,433, p= .090], the results of the Welch test, which is an alternative to the one-way analysis of variance, were considered [Welch Test: F(2, 126)=.752, p = .502]. According to the results obtained from this test, there is no significant

Table 4. T-Test Result for Examining Life Satisfaction in Terms of Having Psychiatric Diagnosis

	Levene Test		T-Test						
								95% Confidence Interval	
	F	*p*	*t*	SD	*p*	Average Difference	SE	Low	High
Life Satisfaction	.013	,908	-2,123	-.94	.03	-2.70744	1,2775	-5,218	-,1960

difference between the groups (12-17 years x̄= 14.83, 18-24 years x̄= 15.75, 25 years and above x̄= 16.50).

Findings Related to Visual Impairment

In the study, it was tried to determine whether the life satisfaction levels of esports athletes differed significantly seen to their visual impairment with the t-test (Yes x̄= 15.54, No, x̄= 14.83). According to the results that life satisfaction does not differ significantly with having a visual impairment (p>.05)

Findings Related to Having a Psychiatric Diagnosis

In the study, it was tried to determine whether the life satisfaction levels of esports athletes differed significantly according to their psychiatric diagnosis with the t-test. The results are presented in Table 4. When Table 4 is examined, it is seen that life satisfaction differs significantly with having a psychiatric diagnosis (Yes x̄= 12.53, No, x̄= 15.24).

Findings Related to Perceived Sleep Problems

With the t-test, it was tried to determine whether the life satisfaction levels of the esports athletes in the study differed significantly according to their sleep problems (Yes x̄= 15.54, No, x̄= 14.83). It is seen that life satisfaction does not differ significantly with having sleep problems (p<.05)

DISCUSSION

According to the findings of the study, it was concluded that there is a negative and significant relationship between the life satisfaction of esports athletes and their insomnia and insomnia has a negative impact on the life satisfaction of esports athletes. When the literature is examined, it is seen that there are studies supporting this finding (25-27). In support of this finding, Lee et al., (45) a study concluded that the depression scores of esports athletes were strongly related to the number of awakenings and the number of awakenings after beginning to sleep and that these sleep patterns negatively affected their mood (45, 46). In line with the result of this research, the emergence of depressive symptoms due to esports athletes falling asleep due to playing games until late in their games and the number of awakenings after the beginning of sleep is high, negatively affecting these athletes' life satisfaction and game performance. In this context, the reason why esports athletes' life satisfaction and insomnia levels are negatively and significantly related; these players may have success in games, which is one of the factors affecting their life satisfaction. The fact that the attention and focusing abilities that are necessary for them to be successful in long games are difficult to achieve when they are sleepless can help their reduced life satisfaction because of not reaching the essential success in the games. Consequently, such a conclusion might have been reached in the current investigation. The study also found that mindfulness has a negative and significant relationship with insomnia. No research investigates the relationship between mindfulness and insomnia in the literature. However, "acting with awareness," a term related to mindfulness, may be linked to improved sleep quality (47). This result is like the findings of the current investigation. A high level of mindfulness of the individual's daily life situations, as well as bilateral relations, can reduce and make it easier to handle difficulties in daily life situations and events. With this, having a high level of mindfulness also can help the athletes to provide an easier and faster solution to the situations that develop in the game, and increase their game performance. In this case, with a higher level of mindfulness, they can feel more relaxed and calmer and sleep better.

According to the study's findings, mindfulness has a positive and significant association with Achievement (In-game) in the game. To the best of our knowledge, no study has been published that investigates the relationship between these two domains. The reason for such a result in the research is that it can achieve

goals such as making rapid progress in the game, having status, and reaching the result successfully by using the available in-game resources in the best way, which is within the scope of achievement (In-game) in the game. The esports athlete's high levels of mindfulness may make it easier to achieve these goals. As a result, mindfulness may have had a positive and significant relationship with achievement (In-game) in the game of our study.

Limitations

A total of 257 esports athletes, 218 men, and 39 women, participated in the research. The low number of female athletes compared to men can be seen as a limitation. In addition, the fact that esports athletes are generally not willing to participate in research such as filling in scales that require attention other than their games is one of the reasons why the number of participants in the research is not very high.

CONCLUSION

The findings of this study show that there is a negative and significant relationship between esports athletes' life satisfaction and insomnia. Another study result is that mindfulness has a negative relationship with insomnia while having a positive and significant relationship with achievement in gaming. In this context, increasing esports athletes' life satisfaction, mindfulness, Social and Achievement in the game, and reducing their insomnia can positively affect the game performance of esports athletes. In this context, psychoeducation for esports players on life satisfaction, mindfulness, Social and Achievement in the game can be provided by mental health experts, and individual and group psychological counseling can also be provided. Therefore, it can be said that these are the factors that need improvement for esports players to be more successful in their professional careers and happier in their social lives.

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