



# Examining the Relationship Between Attitudes Toward E-Sports, Loneliness and Happiness in High School Students

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## Abstract

The main purpose of this study is to examine the relationships between high school students' attitudes towards e-sports and their loneliness and happiness levels. The research group consists of 360 high school students studying in high schools in Yozgat province in 2024. 175 (48.6%) of the participants were male and 185 (51.4%) were female. E-sports Attitude Scale, UCLA Loneliness Scale Short Form, Oxford Happiness Scale Short Form were used as data collection tools. Descriptive statistics, Pearson correlation analysis and multiple linear regression analysis were used. According to the findings, a low level, positive and significant relationship was found between cognitive attitude, which is one of the attitudes towards e-sports, and loneliness and happiness. A medium level, positive and significant relationship was found between affective attitude and loneliness, and a low level, positive and significant relationship was found with happiness. There was a medium level, positive and significant relationship between behavioral attitude and loneliness and a low level, positive and significant relationship with happiness. It was concluded that affective and behavioral attitudes affect loneliness by 12%. As a result, it was observed that as high school students' attitudes towards e-sports increased, their feeling of loneliness increased and their happiness levels increased at a low level. Especially affective and behavioral attitudes were found to have an effect on loneliness by 12%. These findings suggest that e-sports may increase social isolation for some students, but it provides a low level increase in happiness levels. The findings examine the relationship between attitudes toward e-sports and psychosocial factors such as loneliness and happiness, providing significant data on high school students' experiences in this area. Additionally, it offers a new perspective to the literature on understanding the effects of e-sports on individuals' social and emotional states.

**Keywords:** Attitude, E-sport, Loneliness, Happiness, High School Students.

## Özet

**Lise Öğrencilerinde E-Spora Yönelik Tutumlar, Yalnızlık ve Mutluluk Arasındaki İlişkinin İncelenmesi**

Bu çalışmanın temel amacı lise öğrencilerinin e-spora yönelik tutumları ile yalnızlık ve mutluluk düzeyleri arasındaki ilişkiyi incelemektir. Araştırma grubunu 2024 yılında Yozgat ilindeki resmi ortaöğretim kurumlarında öğrenim gören 360 lise öğrencisi oluşturmuştur. Katılımcıların 175'i (%48,6) erkek ve 185'i (%51,4)

kadındır. Veri toplama araçları olarak, E-Spor Tutum Ölçeği, UCLA Yalnızlık Ölçeği Kısa Formu ve Oxford Mutluluk Ölçeği Kısa Formu kullanılmıştır. Verilerin analizinde tanımlayıcı istatistikler, Pearson korelasyon analizi ve çoklu doğrusal regresyon analizi kullanılmıştır. Elde edilen bulgulara göre e-spora yönelik tutumlardan biri olan bilişsel tutum ile yalnızlık ve mutluluk arasında düşük düzeyde, pozitif ve anlamlı bir ilişki bulunmuştur. Duygusal tutum ile yalnızlık arasında pozitif yönde, orta düzeyde ve anlamlı bir ilişki, mutluluk ile ise pozitif yönde, düşük düzeyde ve anlamlı bir ilişki bulunmuştur. Davranışsal tutum ile yalnızlık arasında pozitif yönde, orta düzeyde ve anlamlı bir ilişki, mutluluk ile ise pozitif yönde, düşük düzeyde ve anlamlı bir ilişki bulunmuştur. Duygusal ve davranışsal tutumların yalnızlığı %12 oranında etkilediği sonucuna varılmıştır. Sonuç olarak lise öğrencilerinin e-spora yönelik tutumları arttıkça yalnızlık duygularının arttığı ve mutluluk düzeylerinin düşük düzeyde arttığı tespit edilmiştir. Özellikle duygusal ve davranışsal tutumların yalnızlık üzerinde %12 oranında etkili olduğu bulunmuştur. Bu bulgular, e-sporun bazı öğrenciler için sosyal izolasyonu artırabildiğini ancak mutluluk düzeylerinde düşük düzeyde bir artış sağladığını düşündürmektedir. Bulgular, e-spora yönelik tutumlar ile yalnızlık ve mutluluk gibi psikososyal faktörler arasındaki ilişkiyi inceleyerek, lise öğrencilerinin bu alandaki deneyimlerine ilişkin önemli veriler sunmaktadır. Ayrıca, e-sporun bireylerin sosyal ve duygusal durumları üzerindeki etkilerini anlamaya yönelik literatüre yeni bir bakış açısı kazandırmaktadır.

**Anahtar Kelimeler:** Tutum, E-Spor, Yalnızlık, Mutluluk, Lise Öğrencileri.

## INTRODUCTION

Rapid developments in the field of technology in today's world have caused radical changes in the field of sports as in every field. One of the most important of these radical changes is thought to be the replacement of traditional games with games played in virtual environments. As a matter of fact, games played in physical environments such as streets, neighborhoods or sports fields in the past have turned into games played in virtual environments through computers, tablets or smartphones in today's world. The fact that computers, tablets, and smartphones are becoming more technologically useful every day, along with the widespread use of the internet, has led to an increasing interest in virtual games. Games played in virtual environments have paved the way for changes in the field of sports and created the concept known as e-sports in today's world.

E-sports include games that are played in online environments and can be played both individually and as a team. According to Wagner (29), e-sports is defined as a sporting activity with its own rules, played in virtual environments and involving a sense of winning and competition. Newzoo (19), on the other hand, defines it as individual or team competitions organized in a competitive environment for a specific purpose. As mentioned earlier, the rapid developments in the field of technology have increased the number of people interested in e-sports day by day and paved the way for e-sports to become a very popular sports field in today's world. Reports and studies on e-sports also support this idea.

According to the report of Statista (25), the number of e-sports viewers, which was around 435 million in 2020, reached 489 million in 2021, 532 million in 2022, and this figure is expected to reach 640 million in 2025. When we look at the report of the same institution for 2022, it is estimated that the e-sports revenue, which was 996 million dollars in 2020, was 1.13 billion dollars in 2021, 1.38 billion dollars in 2022 and will reach 1.86 billion dollars in 2025 (26). According to the report prepared by Newzoo (20), the audience of 532 million people in 2022 is expected to be over 640 million in 2025.

Looking at the reports prepared on e-sports data, it is possible to say that e-sports will be preferred by many more people in the coming years, and that both the number of players, the number of viewers and the time allocated to e-sports by individuals will increase every year. Especially as a result of the increase in the time allocated to e-sports, it is possible to see some psychological and sociological problems in individuals. Two of the most important of these psychological and sociological problems are thought to be loneliness and happiness. As a matter of fact, it can be said that individuals who spend too much time on e-sports will move away from their social circles, weaken their friendships and lead an asocial life. As a result, it will be inevitable for them to face the feeling of loneliness. It is estimated that the resulting sense of loneliness will lead individuals to a more unhappy life. For this reason, it is thought that there is a relationship between attitude towards e-sports, loneliness and happiness.

Therefore, the aim of this study is to examine the relationship between attitude towards e-sports, loneliness and happiness in high school students. Within the framework of this main purpose, the following question was sought to be answered.

1. What is the relationship between attitude towards e-sports, loneliness and happiness in high school students?

## METHOD

### Research Model

This research is based on the relational survey model. The relational survey model is a research approach that aims to determine the relationships between two or more variables. This model aims to reveal the relationships between variables as they are without any intervention (5).

### Population-Sample (Research Group)

The research group of this study consists of 360 high school students studying in various types of high schools in Yozgat province in 2024. 175 (48.6%) of the participants were male and 185 (51.4%) were female. In sample selection, the convenience sampling method was used. Convenience sampling is a sampling method in which the researcher selects the easiest and most appropriate participants from the target population (8). This method was preferred because it saves time and cost.

### Data Collection

This research was conducted in accordance with the principles of the Helsinki Declaration, and ethical approval was obtained from the Ethics Committee of Yozgat Bozok University with the decision dated 28.06.2024 and numbered 15/31. The data collection process of the study was carried out entirely online, considering the technological possibilities of today. In this context, participants were able to easily access the online data collection form created via the Google Forms platform using their personal computers or smartphones. The time required for participants to complete the scales ranged between 5 to 10 minutes on average. The primary reasons for choosing the online data collection method in the study include significant advantages such as facilitating the data processing process, enabling rapid access to a wide participant pool, minimizing the risk of data loss, ensuring a high rate of voluntary participation, and particularly providing the opportunity to conduct research on sensitive and confidential topics. These advantages make the online data collection method a prominent choice in modern research processes (Kılınç ve Fırat, 2017).

### Data Collection Tools

#### *E-Sports Attitude Scale*

The scale was developed by Savaş and Turan (23) to measure participants' attitudes towards e-sports. The scale consists of 18 items and 3 sub-dimensions (cognitive, affective and behavioral). The evaluation of the items of the scale is made with a 5-point Likert-type rating (1=Not at all; 5=Totally agree). Cognitive sub-dimension: It refers to the knowledge and thoughts that an individual has about a subject. In the context of e-sports, the individual's knowledge about e-sports and having a certain opinion on this subject are evaluated under this dimension. Example item: I have sufficient knowledge about e-sports. Affective sub-dimension: It covers an individual's emotional reactions and attitudes towards a subject. In the e-sports example, emotional responses such as a person's interest in e-sports, excitement or satisfaction towards e-sports belong to this dimension. Example item: Winning in e-sports excites me. Behavioral sub-dimension: It includes an individual's behaviors and actions towards a specific topic or situation. In the context of e-sports, activities such as participating in e-sports events, producing e-sports-related content, or watching e-sports matches reflect the behavioral dimension. Example item: I participate in e-sports every chance I get. The lowest score that participants can get from each sub-dimension of the E-sports Attitude Scale (cognitive, affective, and behavioral) is 6, and the highest score is 30. The Cronbach Alpha value in the original form of the scale was .92.

### **UCLA Loneliness Scale Short Form**

In order to determine the loneliness levels of the participants, Russel, Peplau and Ferguson (22) first developed a 20-item scale. Then, Hays and DiMatteo (12) created an 8-item short form of the 20-item scale. The short form of the scale was adapted into Turkish by Doğan, Çötök, and Tekin (7). The scale consists of a total of 8 items and a single sub-dimension. The items of the scale are evaluated with a 4-point Likert-type rating (1=Never; 5=Always). Sample item: I have no friends. The lowest score that participants can get from the UCLA Loneliness Scale Short Form is 8 and the highest score is 32. High scores on the scale are interpreted as a high level of loneliness. Cronbach's Alpha value in the original form of the scale was found to be .72.

### **Oxford Happiness Scale Short Form**

It was developed by Hills and Argyle (13) to assess the happiness levels of the participants. The scale was adapted into Turkish by Doğan and Akıncı-Çötök (6). The scale consists of a total of 7 items and one sub-dimension. The items of the scale are evaluated on a 5-point Likert-type scale (1 - Strongly Disagree, 5 - Strongly Agree). Sample item: I am quite satisfied with everything in my life. The lowest score that can be obtained from the scale is 7 and the highest score is 35. Higher scores on the scale indicate higher happiness level scores. The Cronbach Alpha value in the original form of the scale was .74.

### **Data Analysis**

Data analysis was performed using the IBM SPSS Statistics 24 (IBM SPSS Corp., Armonk, NY, USA) package program. After checking for missing or incorrect data entry, the kurtosis and skewness values of the data included in the analysis were examined. Skewness and kurtosis values between -1.5 and +1.5 are considered as normal distribution (27). Within the scope of this research, it was concluded that kurtosis values were between -.385,-.197 and skewness values were between -.016,-.209. In addition, Durbin Watson test was used to check whether there is autocorrelation among the variables. The Durbin Watson value is expected to be between 1.5 and 2.5 (15). According to the analysis, it is concluded that there is no autocorrelation between the variables. Cook distance value was used for extreme value control, which is one of the assumptions of regression analysis. In the study, Cook distance values ranged between .087 and .000. As stated by Cook and Weisberg (4), a value less than 1 indicates that there is no outlier in the data set. In addition, a correlation greater than 0.90 between independent variables in regression analysis is considered as multicollinearity. Multicollinearity is an undesirable situation in regression analysis (21). In the analyses conducted within the scope of this research, the highest correlation coefficient between independent variables was found to be 0.67. This result shows that there is no multicollinearity problem in the data set. The statistical significance level was set as 0.05 in the analyses. Descriptive statistics, Pearson correlation analysis and multiple linear regression analysis with enter method were used in the analysis of the data. For the "r" coefficient obtained in Pearson correlation analysis; 0.1-0.3=Low, 0.3-0.5=Medium, 0.5-1=High correlation (3).

### **FINDINGS**

This section includes the description of the data obtained and the analysis of the relationships between students' e-sports attitudes, loneliness and happiness levels.

**Table 1.** Descriptive Statistics of Variables

	Minimum	Maksimum	Mean	SD	Cronbach Alpha
<b>Cognitive</b>	9	30	17.99	4.235	.75
<b>Affective</b>	9	26	17.67	3.853	.77
<b>Behavioral</b>	6	30	17.69	4.407	.81
<b>Loneliness</b>	8	34	19.42	5.539	.80
<b>Happiness</b>	10	32	21.38	4.101	.70

Table 1 presents the minimum, maximum, mean, standard deviation, and Cronbach Alpha values for the participants' attitudes towards e-sports, loneliness, and happiness scores. Based on these values, the mean scores for the sub-dimensions of attitudes towards e-sports (cognitive, affective, and behavioral), as

well as loneliness and happiness, are observed to be *slightly above the moderate level* when considering the score ranges of the respective scales.

**Table 2.** Correlation Analysis of the Relationship Between Variables

	Loneliness	Happiness
<b>Cognitive</b>	.242*	.176*
<b>Affective</b>	.344*	.177*
<b>Behavioral</b>	.312*	.094*

The positive correlational relationships between the variables are shown in Table 2. As a result of the analyses, a low level, positive and significant relationship was found between cognitive attitude, which is one of the attitudes towards e-sports, and loneliness ( $r = .242$ ;  $p < 0.05$ ), while a low level, positive and significant relationship was also found between cognitive attitude and happiness ( $r = .176$ ;  $p < 0.05$ ). A medium level, positive and significant relationship was found between affective attitude and loneliness ( $r = .344$ ;  $p < 0.05$ ), whereas a low level, positive and significant relationship was found between affective attitude and happiness ( $r = .177$ ;  $p < 0.05$ ). Similarly, a medium level, positive and significant relationship was found between behavioral attitude and loneliness ( $r = .312$ ;  $p < 0.05$ ), while a low level, positive and significant relationship was found between behavioral attitude and happiness ( $r = .094$ ;  $p < 0.05$ ).

**Table 3.** Regression Analysis of Students' Attitudes Towards E-Sports Predicting Loneliness and Happiness Variables

Dependent Variable	Independent Variable	B	SH	Beta	t	p	Corrected R2
<b>Loneliness</b>	Cognitive	-.017	.094	-.013	-1.184	.854	.12
	Affective	.273	.100	.190	2.741	.006	
	Behavioral	.263	.084	.209	3.145	.002	
<b>Happiness</b>	Cognitive	.126	.073	.130	1.731	.084	.03
	Affective	.135	.077	.127	1.752	.081	
	Behavioral	-.057	.065	-.061	-0.883	.378	

In Table 3, regression analysis results regarding the prediction of students' attitudes towards e-sports, loneliness and happiness levels are presented. According to the findings, cognitive attitude, which is one of the attitudes towards e-sports, does not explain loneliness significantly  $F(3.356) = 11.378$ ,  $p > 0.05$ . Affective attitude  $F(3.356) = 36.448$ ,  $p < 0.05$  and behavioral  $F(3.356) = 38.654$ ,  $p < 0.05$  explained loneliness by 12%. It is seen that attitudes towards e-sports do not significantly explain happiness  $F(3.356) = 4.876$ ,  $p > 0.05$ .

## DISCUSSION AND CONCLUSION

In this study, the effects of high school students' attitudes towards e-sports (cognitive, affective and behavioral) on their loneliness and happiness levels were examined. The results obtained are both consistent with the findings in the literature and differ in some respects. In this section, the findings will be discussed in more detail and compared with current research in the literature.

First of all, when the effect of cognitive attitude on loneliness and happiness was examined, a low level, positive and significant relationship was found. This finding indicates that the cognitive aspect of e-sports increases students' feelings of loneliness at a low level, while increasing their happiness levels at a low level. This can be explained by the fact that the cognitive aspect of e-sports focuses more on knowledge and strategy development and emphasizes individual performance rather than social interaction (11). Moreover, the limited effect of cognitive attitude on loneliness and happiness may also be related to the fact that e-sports are generally based on individual achievement and competition (24). These findings suggest that the cognitive aspect of e-sports has a limited impact on social connections and that focusing on individual achievement may increase feelings of loneliness, but does not lead to a significant increase in happiness levels.

The effect of affective attitude on loneliness was found to be medium level, positive and significant. This finding suggests that the affective aspect of e-sports may moderately increase students' feelings of loneliness. While e-sports communities can create strong emotional bonds and a sense of belonging among players (9), it should not be ignored that these bonds can also increase social isolation in some cases. In this context, the potential of e-sports to provide social support may increase rather than decrease feelings of loneliness for some students (16). However, the effect of affective attitude on happiness was found to be low,

positive and significant. This result suggests that the affective aspect of e-sports increases the level of happiness at a low level, but is not effective enough in general. This suggests that the affective aspect of e-sports is more effective in increasing the feeling of loneliness, but it is limited in increasing the overall level of happiness. These findings call for a deeper examination of the complex effects of e-sports on social interactions and emotional bonds (2).

The effect of behavioral attitude on loneliness was also found to be medium level, positive and significant. This finding suggests that behavioral participation in e-sports may moderately increase students' feelings of loneliness. Participation in e-sports activities can reduce the feeling of loneliness by increasing students' social interactions, but in some cases it can also increase social isolation (14). While the fact that e-sports is seen as a social activity and enables the establishment of social ties between players may be effective in reducing the feeling of loneliness, the fact that these ties replace face-to-face interactions in some cases may increase the feeling of loneliness (28). However, the effect of behavioral attitude on happiness was found to be low, positive and significant. This result shows that behavioral participation in e-sports increases students' overall happiness level at a low level, but it is not effective enough. This suggests that despite the potential of e-sports to provide social interaction, it remains limited in increasing individuals' overall happiness levels (30).

According to the regression analysis results, cognitive attitude does not have a significant effect on loneliness. This shows that students' knowledge and thoughts about e-sports do not directly affect their feelings of loneliness. However, affective and behavioral attitudes had a significant effect on loneliness and explained 12% of loneliness. This finding reveals that students' emotional ties to e-sports and their level of participation in e-sports activities are important in increasing their feelings of loneliness. The effect of affective attitude on loneliness can be interpreted as the positive emotions that students feel towards e-sports may increase social isolation and therefore increase their feelings of loneliness. Since e-sports activities are usually carried out individually and concentrated online, it may lead to a decrease in face-to-face social interactions and thus increase feelings of loneliness (18). Similarly, the effect of behavioral attitude on loneliness suggests that students' active participation in e-sports activities may increase their feelings of loneliness by reducing opportunities for physical social interaction (17). The findings regarding happiness level show that attitudes towards e-sports do not explain happiness in a significant way. This result reveals that students' cognitive, affective or behavioral attitudes towards e-sports do not have a significant effect on their overall happiness levels. To further examine the impact of e-sports on individuals' overall life satisfaction and happiness levels, other variables and moderators may need to be considered (1).

In conclusion, this study shows that the emotional and behavioral aspects of e-sports are effective in increasing high school students' feelings of loneliness. However, the cognitive aspect of e-sports has no significant effect on loneliness and happiness. These findings suggest that e-sports can play an important role in increasing students' feelings of loneliness in social and emotional contexts, but it is limited in increasing the overall level of happiness.

## **SUGGESTIONS**

In line with the findings of this study, various suggestions can be made to better understand the effects of high school students' attitudes towards e-sports on their loneliness and happiness levels and to minimize the negative effects. First of all, e-sports clubs and activities can be organized in schools to encourage students to increase their social interactions. In this way, e-sports can be transformed from an individual activity into a social activity. In addition, guidance services and awareness-raising programs can be organized for students to engage in e-sports in a balanced way. Students can be encouraged to adopt a balanced lifestyle by suggesting them to engage in different social and physical activities in addition to e-sports. Finally, parents and teachers can closely monitor students' e-sports activities and provide support and guidance when necessary. Such approaches can help students increase their happiness levels in a healthier way while reducing feelings of loneliness.

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