Investigation of High School Students' Attitudes Towards E-Sports, Loneliness and Happiness Levels in Terms of Some Demographic Characteristics

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Abstract

This study aims to examine high school students' attitudes towards e-sports, loneliness, and happiness levels in terms of different demographic variables. The research group consists of 344 high school students studying in Yozgat in 2023, with 175 (50.9%) males and 169 (49.1%) females. Data collection tools included a personal information form, the Esports Attitude Scale, the Short Form of the UCLA Loneliness Scale, and the Short Form of the Oxford Happiness Questionnaire. Data were analyzed using descriptive statistics, independent samples t-test, and one-way ANOVA. The results showed no significant difference in the cognitive dimension by gender, but male students exhibited more positive attitudes in the affective and behavioral dimensions compared to females. Female students had significantly higher loneliness levels, but no gender difference was observed in happiness. No significant differences were found between variables by grade level, but loneliness and happiness varied with the number of close friends. Attitudes toward esports and happiness did not significantly differ with daily smart device use, yet a significant difference was noted in loneliness. Considerable differences have been detected across all variables when considering the level of academic achievement. The number of siblings showed significant differences in the affective sub-dimension, loneliness, and happiness variables. In conclusion, male students had more positive attitudes towards e-sports in affective and behavioral dimensions, while female students had higher loneliness levels. Variables such as the number of close friends, daily smart device usage, academic achievement, and number of siblings significantly affected students' e-sports attitudes and their levels of loneliness and happiness. No substantial differences were found according to grade level.

Keywords: E-sports, attitude, loneliness, happiness, student.

Lise Öğrencilerinin E-Spora Yönelik Tutumları, Yalnızlık ve Mutluluk Düzeylerinin Bazı Demografik Özellikler Açısından İncelenmesi

Özet

Bu araştırmanın amacı, lise öğrencilerinin e-spora yönelik tutumlarını, yalnızlık ve mutluluk düzeylerini farklı demografik değişkenler açısından incelemektir. Araştırma grubunu, 2023 yılında Yozgat ilindeki liselerde öğrenim gören 344 lise öğrencisinden oluşturmaktadır. Katılımcıların 175'i (%50.9) erkek, 169'u (%49.1) kızdır. Veri toplama aracı olarak kişisel bilgi formu, E-spor Tutum Ölçeği, UCLA Yalnızlık Ölçeği Kısa Formu, Oxfort Mutluluk Ölçeği Kısa Formu

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kullanılmıştır. Veriler tanımlayıcı istatistikler, bağımsız gruplar t-testi ve tek yönlü varyans analizi (ANOVA) ile analiz edilmiştir. Elde edilen verilere göre, cinsiyet açısından bilişsel boyutta anlamlı bir fark bulunmamakla birlikte, erkek öğrencilerin duyuşsal ve davranışsal boyutlarda kadın öğrencilere göre daha olumlu tutum sergilediği tespit edilmiştir. Kadın öğrencilerin yalnızlık düzeyleri anlamlı derecede daha yüksek bulunmuş, ancak mutluluk değişkeninde cinsiyetler arasında fark görülmemiştir. Sınıf düzeyine göre hiçbir değişkende anlamlı farklılık bulunmazken, yakın arkadaş sayısına göre yalnızlık ve mutluluk değişkenlerinde anlamlı farklılıklar tespit edilmiştir. Günlük akıllı cihaz kullanımı süresine göre e-spor tutumunda ve mutlulukta anlamlı farklılık bulunmazken, yalnızlık değişkeninde anlamlı farklılık görülmüştür. Akademik başarı düzeyine göre tüm değişkenlerde anlamlı farklılıklar tespit edilmiştir. Kardeş sayısına göre, duyuşsal alt boyut, yalnızlık ve mutluluk değişkenlerinde anlamlı farklılıklar bulunmuştur. Sonuç olarak, erkek öğrencilerin duyuşsal ve davranışsal boyutlarda e-spora yönelik daha olumlu tutumlar sergilediği, kadın öğrencilerin ise anlamlı derecede daha yüksek yalnızlık düzeylerine sahip olduğu tespit edilmiştir. Ayrıca, yakın arkadaş sayısı, günlük akıllı cihaz kullanımı, akademik başarı ve kardeş sayısı gibi değişkenlerin, öğrencilerin e-spor tutumları ile yalnızlık ve mutluluk düzeylerini anlamlı şekilde etkilediği belirlenmiştir. Bununla birlikte, sınıf düzeyine göre herhangi bir değişkende anlamlı farklılık bulunmamıştır.

Anahtar Kelimeler: E-spor, tutum, yalnızlık, mutluluk, öğrenci.

INTRODUCTION

Rapid developments in the field of technology have affected the field of sports in a very important dimension as in every field. As a result of these developments, e-sports have emerged as an alternative to traditional sports. According to Hilvoorde and Pot (31), e-sports is increasing its popularity daily and challenging traditional sports. Considering that almost every individual in today's world has technological devices such as smartphones, tablets or computers; thus, e-sports may become more widespread among individuals and traditional sports will be abandoned over time. The distribution of e-sports players over the years and the budgets allocated to this sport also support this idea. Railsback and Caporusso (44) state that e-sports has a rapidly growing and crowded audience and the number of professional e-sports players is increasing daily. Gough (22) stated that the revenue from e-sports tournaments in 2019 was 957 million dollars, while he estimated that this figure will be around 1.6 billion dollars in 2024. The fact that more than 80 million viewers watched the League of Legends World Championship tournament held in 2017 can be considered as an indicator that the popularity of e-sports is increasing day by day (35).

When we look at the history of e-sports, we see that the first local tournament in e-sports was held at Stanford University in 1972 (35). The first nationwide tournament was the Red Annihilation tournament organized in the United States of America (USA) in 1997. In 2000, the World Cyber Games and the Electronic Sports World Cup were organized in the USA and in 2022, Major League Gaming was established in the USA and more than 200,000 dollars in prize money was awarded in these tournaments (7). In 2008, a total of 800 e-sports players from 78 different countries participated in the World Cyber Games tournament held in Germany (37). The amount of prize money distributed in e-sports organizations reached 500,000 dollars in 2015 (44). When the data on the market of the e-sports market is analyzed, it is possible to reach quite remarkable statistics. While the market value of the e-sports market was 1.38 billion dollars in 2022, it is estimated that this value will reach 1.87 billion dollars in 2025 (33).

When we look at the player and audience of e-sports, it is possible to say that adolescents and school-age youth tend to e-sports more than other age groups (61). As a result of a worldwide study conducted by Clement (10), it was determined that 87% of adolescents between the ages of 16-24 play video games considered within the scope of e-sports. In this age group, it was concluded that boys were more e-sports players than girls with a rate of 89%. Ketelhut et al. (34) state that e-sports players are generally young people and men. This information can be considered as an indicator that e-sports is quite common among adolescents who are generally in the university period. While the fact that e-sports is quite common among university students makes this group more risky, the excessive amount of time devoted to e-sports brings along various physical and mental problems.

In a study conducted by Di Francisco et al. (14) with e-sports players, it was found that 52% of the players felt fatigue in their eyes, 41% in their wrists and 36% in their neck areas. Achab et al. (1) found that players

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who spend too much time on e-sports have disturbed sleep patterns and exhibit sleepless, tired and exhausted behaviors during the day because they usually spend time on e-sports at night. As a result of the research conducted by Dindar and Akbulut (15), it was concluded that the body mass indexes of young people who spend too much time on e-sports activities are quite high. In addition, due to the nature of e-sports, the e-sports individual has remained inactive for a very long time. This situation brings along a sedentary lifestyle and various physiological diseases (4). As a result of this sedentary lifestyle and physical problems, not only physical health but also mental health of individuals are negatively affected. As a matter of fact, Von Der Heiden et al. (56) stated that e-sports negatively affect the psychological and mental health of individuals and this may cause various psychological problems. Vuuren (57) states that these situations also pave the way for depression, suicidal tendencies, low self-confidence and excessive stress on individuals. These psychological problems cause loneliness and unhappiness in individuals.

Loneliness is an important issue that has been studied by many researchers for many years because human beings are social beings by nature and need to belong to a group or society and communicate with other people around them. Gün (26) defines loneliness as a feeling that people experience in line with the decisions they have made by weakening their relationships with the people around them. Peplau and Perlman (41) defined loneliness as an unpleasant feeling caused by the difference between one's current social relationships and one's imagined social relationships. Haliloğlu (27) stated that the concept of loneliness is a negative emotion that causes unhappiness and pain in people. While the feeling of loneliness makes people think that they are useless person in the society they live in, it also causes the feeling of abandonment and rejection (2). Considering the factors that cause loneliness, it can be said that some of these factors are hopelessness, shyness, insecurity, social and environmental factors, personality traits, problems in self-esteem, lack of self-confidence, inadequacies in social skills, addictions, and some other psychological factors.

When the research on the problem of loneliness is examined, it is possible to see social, behavioral and emotional problems in people with this problem. Yüksel and Demirkıran (62) found a significant relationship between loneliness and social anxiety levels and rejection sensitivity in students. Hamarta (28) found an inverse relationship between loneliness level and social skills in his study with university students. Batıgün (6) concluded that suicide risk is higher in individuals who are unhappy due to loneliness. Yılmaz and Altınok (59) and Sluis and Boschen (49) found that people who feel lonely are also unhappy.

When the definitions of happiness are examined, it is noticeable that there are many definitions. Although Marar (40) states that it is quite difficult to explain and define happiness, Kangal (33) defines it as the satisfaction and positive emotions that individuals obtain from their lives, while Yılmaz (60) defines it as individuals being in a good mood and feeling spiritual and emotional comfort. Veenhoven (55) defines it as having a high quality of life and being peaceful. According to Kangal (33), happiness has three basic dimensions. The first dimension, positive emotion, shows the state of being joyful, cheerful and contented, while the second dimension, negative emotion, shows feelings such as boredom, sadness, agitation or demoralization, which are the opposite of these feelings. The third and final dimension, life satisfaction, shows how people evaluate themselves when they consider their lives as a whole.

When the studies on happiness are examined, it is possible to say that happiness affects individuals in many different ways. Canbay (8) found that happiness positively affects high school students' social competencies, skills and academic achievements, while Toprak (2014) found that individuals who define themselves as happy are more psychologically resilient and have higher life satisfaction. In the study conducted by Aypay and Eryılmaz (3), it was determined that high school students who express themselves as unhappy are alienated from school and lose interest in school.

In light of the information given above, it is possible to say that e-sports are becoming more widespread every day, the budgets allocated to e-sports are expressed in billions of dollars, and e-sports have become quite common among young people. With the developments in the field of technology, it is thought that e-sports will become much more widespread and will be a much more preferred type of sport among young people. The fact that the time allocated to e-sports is increasing day by day and that it is much more widespread, especially among high school students who are in adolescence will negatively affect high school students psychologically, sociologically, academically, and economically. For this reason, studies conducted

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with high school students and based on e-sports are considered to be very important. When the literature is examined, it is seen that the number of studies conducted on high school students' attitudes toward e-sports or their level of e-sports participation is quite insufficient.

This study aims to examine high school students' attitudes toward e-sports, loneliness, and happiness levels in terms of different demographic variables.

In line with this purpose, answers to the following questions were sought.

How are high school students' attitudes towards e-sports, loneliness, and happiness levels?

Is there a statistically significant difference between high school students' attitudes towards e-sports, loneliness, and happiness levels according to gender, class, number of close friends, daily device usage time, academic achievement, and number of siblings?

METHOD

Research Model

This research is based on a descriptive research model. The descriptive research model is a research approach that aims to describe the characteristics of a population or phenomenon. This model aims to reveal the current situation as it is without any intervention (11).

Population-Sample (Research Group)

The research group of this study consists of 344 high school students studying in high schools in Yozgat province in 2023. Of the participants, 175 (50.9%) were male and 169 (49.1%) were female. In sample selection, 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 (20). This method was preferred because it saves time and cost.

Data Collection

All stages of this research were conducted in accordance with the Principles of the Declaration of Helsinki and the approval of Yozgat Bozok University Ethics Committee dated 22.05.2024 and numbered 14/20 was obtained. The data collection process was carried out online. Participants accessed the online data collection form created using Google Forms via their personal computers or smartphones. Filling out the scales took an average of 5 to 10 minutes for the participants. The choice of online data collection method allows participants to participate in the research without time and space constraints. In addition, the automatic digital recording of data minimizes errors that may occur during the data entry phase and protects data integrity.

Data Collection Tools

E-Sports Attitude Scale

The scale was developed by Savaş and Turan (47) 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 the E-sports Attitude Scale is 18 and the highest score is 90. In the original form of the scale, Cronbach's Alpha value was found to be .92. In the current study, Cronbach's Alpha value was calculated as .89.

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UCLA Loneliness Scale Short Form

To determine the loneliness levels of the participants, Russel, et al. (46) first developed a 20-item scale. Then, Hays and DiMatteo (49) created an 8-item short form of the 20-item scale. The short form of the scale was adapted into Turkish by Doğan et al. (17). 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. The Cronbach Alpha value in the original form of the scale was found to be .72. In the current study, the Cronbach Alpha value was calculated as .79.

Oxfort Happiness Scale Short Form

It was developed by Hills and Argyle (30) to assess the happiness levels of the participants. The scale was adapted into Turkish by Doğan et al. (16). 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 found to be .74. In the current study, Cronbach Alpha value was calculated as .83.

Data Analysis

The data were analyzed with the SPSS 24 package program. After checking for missing or incorrect data entry, the kurtosis and skewness values of the analyzed data were examined. It was determined that these values were in the range of -1 and +1. In the literature, it is stated that the data between -1.5 and +1.5 show normal distribution (11). Therefore, parametric analyses were used to analyze the data. The significance level was set as 0.05 in the analyses. Data were analyzed with descriptive statistics, independent groups t-test and one-way analysis of variance (ANOVA). In case of a significant difference in the ANOVA test, Tukey test was used to determine the source of the difference.

Table 1. Descriptive Statistics of the Scales

	Mean	Standard Deviation	Skewness	kurtosis
Cognitive	18.00	4.206	.101	-.151
Affective	17.67	3.870	-.019	-.353
Behavioral	17.75	4.356	.017	-.056
Loneliness	19.39	5.600	-.008	.021
Happiness	21.22	3.979	.159	.210

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FINDINGS

This section includes the description of the data obtained and the analysis of students' e-sports attitudes, loneliness and happiness levels according to demographic characteristics.

Table 2. Findings on Demographic Characteristics

		n	%
Gender	Male	175	50.87
	Female	169	49.13
Class Level	9. Classroom	116	33.72
	10. Classroom	75	21.80
	11. Classroom	71	20.64
	12. Classroom	82	23.84
Number of Close Friends	None at all	40	11.63
	1-2	101	29.36
	3-4	129	37.50
	5 and above	74	21.51
Daily Device Usage Time	Less than 1 hour	68	19.77
	1-4 hours	151	43.90
	4 and more hours	125	36.34
Academic Success	0-49.99 Between	25	7.27
	50-59.99 Between	92	26.74
	60-69.99 Between	79	22.97
	70-84.99 Between	91	26.45
	85-100 Between	57	16.57
Number of Siblings	None at all	37	10.76
	1	61	17.73
	2	96	27.91
	3	85	24.71
	4 and above	65	18.90

In Table 2, in terms of gender distribution, 50.87% of the students were male and 49.13% were female. In terms of grade level, 33.72% of the students were in the 9th grade, 21.80% in the 10th grade, 20.64% in the 11th grade and 23.84% in the 12th grade. In terms of the number of close friends, 11.63% of the students had no close friends, 29.36% had 1-2 close friends, 37.50% had 3-4 close friends and 21.51% had 5 or more close friends. When the daily device usage time is analyzed, 19.77% of the students use devices for less than 1 hour, 43.90% use devices for 1-4 hours and 36.34% use devices for 4 hours or more. In terms of academic achievement, 7.27% of the students had a grade point average between 0-49.99, 26.74% between 50-59.99, 22.97% between 60-69.99, 26.45% between 70-84.99 and 16.57% between 85-100. In terms of the number of siblings, 10.76% of the students had no siblings, 17.73% had 1 sibling, 27.91% had 2 siblings, 24.71% had 3 siblings and 18.90% had 4 or more siblings.

Table 3. T Test Analysis According to Gender Variable

	Gender	n	Ort.± Std. Sp.	t	p
Cognitive	Male	175	18.28±4.024	1.271	.205
	Female	169	17.70±4.379		
Affective	Male	175	18.07±3.751	1.973	.049
	Female	169	17.25±3.957		
Behavioral	Male	175	18.26±4.007	2.222	.027
	Female	169	17.22±4.643		
Loneliness	Male	175	20.97±5.85	2.986	.003
	Female	169	21.49±4.234		
Happiness	Male	175	20.96±3.708	-1.239	.216
	Female	169	21.49±4.234		

p < 0.05

In Table 3, it is seen that while there is no significant difference in the cognitive sub-dimension of the e-sports attitude scale, men have a significantly more positive attitude than women in affective and behavioral

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dimensions. In addition, it was determined that women had a significantly higher level of loneliness than men in the loneliness variable, while there was no significant difference between genders in the happiness variable.

Table 4. Anova Analysis According to Grade Level Variable						
	Class Level	n	Ort.± Std. Sp.		f	p
Cognitive	9. Classroom	116	17.71±	3.987	.700	.553
	10. Classroom	75	18.09±	4.246		
	11. Classroom	71	17.76±	3.845		
	12. Classroom	82	18.52±	4.756		
Affective	9. Classroom	116	17.70±	3.733	1.062	.365
	10. Classroom	75	17.69±	3.799		
	11. Classroom	71	17.04±	3.830		
	12. Classroom	82	18.16±	4.144		
Behavioral	9. Classroom	116	17.84	4.497	.189	.904
	10. Classroom	75	17.43	4.243		
	11. Classroom	71	17.77	3.863		
	12. Classroom	82	17.90	4.708		
Loneliness	9. Classroom	116	19.95	5.485	1.650	.178
	10. Classroom	75	18.19	5.751		
	11. Classroom	71	19.37	5.057		
	12. Classroom	82	19.73	5.990		
Happiness	9. Classroom	116	20.97	3.864	2.077	.103
	10. Classroom	75	20.76	3.766		
	11. Classroom	71	21.03	3.410		
	12. Classroom	82	22.16	4.649		
p < 0.05						

In Table 4, there is no significant difference in the sub-dimensions of the e-sports attitude scale, loneliness and happiness variables according to the grade level.

Table 5. Anova Analysis According to Number of Close Friends Variable							
	Number of Close Friends	n	Ort.± Std. Sp.		f	p	difference
Cognitive	None at all	40	17.68	6.082	.326	.806	-----
	1-2	101	17.75	3.508			
	3-4	129	18.21	3.791			
	5 and above	74	18.14	4.588			
Affective	None at all	40	16.43	5.144	2.517	.058	-----
	1-2	101	17.36	3.221			
	3-4	129	17.94	3.743			
	5 and above	74	18.31	3.989			
Behavioral	None at all	40	17.53	6.034	.871	.457	-----
	1-2	101	17.42	3.726			
	3-4	129	17.69	3.766			
	5 and above	74	18.45	5.013			
Loneliness	None at all	40	17.01	6.909	8.376	.000	5 and above> None
	1-2	101	17.91	5.127			
	3-4	129	19.69	4.934			
	5 and above	74	21.74	5.748			
Happiness	None at all	40	18.83	4.483	9.606	.000	5 and above> None
	1-2	101	20.59	3.753			
	3-4	129	21.71	3.408			
	5 and above	74	22.51	4.263			
p < 0.05							

In Table 5, there is no significant difference in the sub-dimensions of the e-sports attitude scale according to the number of close friends. There is a significant difference in loneliness and happiness variables according to the number of close friends. According to the Tukey test conducted to determine which groups this significant difference is between, it was determined that in both variables, high school students with 5 or more

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close friends and high school students with no close friends were in favor of students with 5 or more close friends.

Table 6. Anova Analysis According to Daily Device Usage Time Variable

	Daily Device Usage Time	n	Ort.± Std. Sp.		f	p	difference
Cognitive	Less than 1 hour	68	17.13	3.824	2.047	.131	-----
	1-4 hours	151	18.37	3.762			
	4 and more hours	125	18.02	4.829			
Affective	Less than 1 hour	68	17.04	3.576	1.347	.261	-----
	1-4 hours	151	17.68	3.550			
	4 and more hours	125	18.00	4.351			
Behavioral	Less than 1 hour	68	17.24	3.974	.601	.549	-----
	1-4 hours	151	17.90	3.917			
	4 and more hours	125	17.86	5.020			
Loneliness	Less than 1 hour	68	19.01	4.852	4.104	.017	4 or more hours>1-4 hours
	1-4 hours	151	18.64	5.276			
	4 and more hours	125	20.51	6.191			
Happiness	Less than 1 hour	68	21.34	4.134	.280	.756	-----
	1-4 hours	151	21.04	3.756			
	4 and more hours	125	21.38	4.173			

p < 0.05

In Table 6, there is no significant difference in the sub-dimensions of the e-sports attitude scale and the happiness variable according to the duration of daily device use. There is a significant difference in the loneliness variable according to the duration of daily device usage. According to the Tukey test conducted to determine which groups this significant difference is between, it was determined that the daily device usage time between those with 4 and more hours and those with 1-4 hours was in favor of those with 4 and more hours.

Table 7. Anova Analysis According to Academic Achievement Variables

	Academic Success	n	Ort.± Std. Sp.		f	p	difference
Cognitive	0-49.99 Between	25	17.00	5.560	6.996	.000	85-100 between>0-49.99 Arası
	50-59.99 Between	92	16.45	3.778			
	60-69.99 Between	79	18.66	3.644			
	70-84.99 Between	91	18.15	3.467			
	85-100 Between	57	19.77	5.082			
Affective	0-49.99 Between	25	16.08	5.016	8.548	.000	85-100 between >0-49.99 Arası
	50-59.99 Between	92	16.23	3.695			
	60-69.99 Between	79	17.77	3.178			
	70-84.99 Between	91	18.42	3.413			
	85-100 Between	57	19.37	4.190			
Behavioral	0-49.99 Between	25	17.20	5.620	3.143	.015	85-100 between> 50-59.99 Arası
	50-59.99 Between	92	16.67	3.786			
	60-69.99 Between	79	18.05	3.869			
	70-84.99 Between	91	17.87	3.939			
	85-100 Between	57	19.14	5.426			
Loneliness	0-49.99 Between	25	17.60	5.657	9.309	.000	85-100 between> 50-59.99 Arası
	50-59.99 Between	92	17.55	5.063			
	60-69.99 Between	79	18.63	5.277			
	70-84.99 Between	91	20.53	4.792			
	85-100 Between	57	22.39	6.483			
Happiness	0-49.99 Between	25	19.04	4.267	4.212	.002	85-100 between> 0-49.99 Arası
	50-59.99 Between	92	20.80	3.901			
	60-69.99 Between	79	20.82	3.536			
	70-84.99 Between	91	21.91	3.601			
	85-100 Between	57	22.30	4.644			

p < 0.05

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In Table 7, there is a significant difference in the sub-dimensions of the e-sports attitude scale according to academic achievement level. According to the Tukey test conducted to determine between which groups this significant difference was, it was determined that in all three sub-dimensions between those with an academic achievement level between 85-100 and those with an academic achievement level between 0-49,99 in favor of those between 85-100. There is a significant difference between the loneliness variable and academic achievement level. According to the Tukey test conducted to determine between which groups this significant difference was, it was determined that the academic achievement level between those between 85-100 and those between 50-59,99 was in favor of those between 85-100. In the happiness variable, there is a significant difference between academic achievement. According to the Tukey test conducted to determine between which groups this significant difference was, it was determined that in all three sub-dimensions between those with an academic achievement level of 85-100 and those with an academic achievement level of 0-49.99, it was in favor of those with an academic achievement level of 85-100.

Table 8. Anova Analysis According to Number of Siblings Variable						
	Number of Siblings	n	Ort.± Std. Sp.	f	p	difference
Cognitive	None at all	37	17.16 5.156	1.096	.358	-----
	1	61	17.57 3.622			
	2	96	18.06 3.568			
	3	85	17.99 4.145			
	4 and above	65	18.78 4.989			
Affective	None at all	37	16.38 4.621	2.425	.048	4 and above > None
	1	61	17.36 3.742			
	2	96	18.15 3.119			
	3	85	17.31 3.559			
	4 and above	65	18.48 4.671			
Behavioral	None at all	37	18.32 5.180	.837	.502	-----
	1	61	16.93 4.070			
	2	96	17.66 3.984			
	3	85	17.98 3.891			
	4 and above	65	18.05 5.161			
Loneliness	None at all	37	19.43 7.081	2.659	.033	3 > 1
	1	61	17.48 4.836			
	2	96	19.31 4.806			
	3	85	20.29 4.710			
	4 and above	65	20.11 7.031			
Happiness	None at all	37	19.41 4.833	3.557	.007	1>None at all
	1	61	22.48 3.854			
	2	96	21.17 3.511			
	3	85	21.24 3.750			
	4 and above	65	21.14 4.194			
p < 0.05						

In Table 8, there is no significant difference in the cognitive and behavioral sub-dimensions of the e-sports attitude scale according to the number of siblings. There is a significant difference in the affective sub-dimension according to the number of siblings. According to the Tukey test conducted to determine which groups this significant difference was between, it was determined that the number of siblings with 4 or more siblings and those with no siblings was in favor of those with 4 or more siblings. There is a significant difference between the loneliness variable and the number of siblings. According to the Tukey test conducted to determine which groups this significant difference is between, it was found that the number of siblings between those with 3 siblings and those with 1 sibling was in favor of those with 3 siblings. There is a significant difference between the happiness variable and the number of siblings variable. According to the Tukey test conducted to determine which groups this significant difference is between, it was found that the difference between those with 1 sibling and those with no siblings was in favor of those with1 sibling.

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DISCUSSION AND CONCLUSION

In this section, we will examine in detail the relationships between high school students' attitudes toward e-sports and their levels of loneliness and happiness. In the rapidly developing digital world of our age, e-sports have started to take an important place in the social and emotional lives of young people. In this context, studies in the fields of education and psychology predict that these interactions may have far-reaching consequences. While the results of our study reveal the impact of demographic variables on these interactions, they also provide important findings on how these variables can shape students' attitudes toward e-sports.

According to the data presented in Table 3, the presence of gender differences in the affective and behavioral sub-dimensions reveals results consistent with the existing literature. For example, the study conducted by Lemmens et al. (38) determined that male individuals exhibit more positive attitudes toward digital games. This finding is also in line with the study by Griffiths et al. (24), which showed that men have more positive attitudes and spend more time playing games compared to women. This situation suggests that men's greater interest in digital games may explain the difference in attitudes. Gender-based differences in attitudes may reflect the general assumption, shaped by historical and cultural contexts, that men are more interested in digital games and technology. Additionally, it should not be overlooked that gender roles and expectations play an important role in shaping these tendencies. At this point, it is also possible to say that societal perceptions of digital games can influence individuals' attitudes. In terms of the loneliness variable, the fact that women show significantly higher levels of loneliness compared to men is also consistent with the literature. In the study by Stickley et al. (50), it was stated that women have higher feelings of loneliness, and the meta-analytic study by Pinquart and Sörensen (42) supports this finding. One possible reason underlying this difference may be that women value social relationships more and are more sensitive to feelings of loneliness. Additionally, it can be considered that women's greater openness in expressing their emotional states may also contribute to this result. Regarding the happiness variable, the absence of a significant difference between genders is consistent with some studies in the literature. The research by Lyubomirsky and Lepper (39) shows that the level of happiness is independent of gender. This result demonstrates that happiness is influenced by many individual and environmental factors, and that gender alone is not a determining factor. Therefore, the lack of a gender-based difference in happiness levels can also be explained by the multidimensional nature of this variable.

The findings in Table 4 indicate that the cognitive, affective, and behavioral sub-dimensions of the e-sports attitude scale do not show a significant difference according to students' grade levels. Additionally, levels of loneliness and happiness also do not differ significantly by grade level. These results suggest that students' attitudes toward e-sports, as well as their emotional states such as loneliness and happiness, are independent of grade level. A review of the literature reveals that studies examining e-sports attitude, loneliness, and happiness in the context of grade level are limited. Existing research generally focuses on different variables. For example, in a study by Kocadağ (36), it was found that university students' awareness of e-sports did not differ significantly according to grade level, which supports the findings of the current study regarding e-sports attitude. Similarly, Ünal and Batı (54) also reported that university students' attitudes toward e-sports did not differ significantly by grade level, which is consistent with the present study. On the other hand, a study by Lemmens et al. (38) showed that problematic e-sports participation was associated with psychological factors such as loneliness and depression; however, grade level was not considered in that study. The lack of a significant difference according to grade level may be due to the fact that students' attitudes toward e-sports and their emotional states remain similar throughout university life. Additionally, the equal accessibility of e-sports and digital environments to students at all grade levels may have contributed to this result. In this context, there is a need for more detailed studies examining how the relationships between e-sports attitude, loneliness, and happiness may change according to grade level. The results of the present study are consistent with the limited literature indicating that the variables examined do not differ significantly according to grade level and may be independent of this variable.

In light of the data presented in Table 5, no significant difference was found in the sub-dimensions of the e-sports attitude scale according to the number of close friends. This suggests that individuals' attitudes towards e-sports may be independent of how many close friends they have. However, significant differences were identified in the variables of loneliness and happiness. According to the results of the Tukey post-hoc

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test, individuals with five or more close friends had lower levels of loneliness and higher levels of happiness compared to those with no close friends. These findings support the positive impact of social relationships on psychological well-being and are consistent with similar studies in the literature. When the relevant literature is examined, Demir and Kutlu's (12) research showed that an increase in the number of close friends is associated with a decrease in loneliness. In the study by Güloğlu and Karaırmak (25), it was found that support from close friends increased psychological resilience among university students and reduced feelings of loneliness. Similarly, the positive effect of close friendships on happiness has been highlighted in various studies. Doğan et al. (18) indicated that satisfaction with close friendships is an important factor in determining happiness levels among university students. Demir et al. (13) also demonstrated that the quality of close friendships increases subjective well-being and happiness among young people. In conclusion, while the number of close friends did not have a notable effect on e-sports attitudes in this study, it was found to have a significant effect on levels of loneliness and happiness. Close friendships help meet individuals' social and emotional needs, thereby reducing feelings of loneliness and increasing levels of happiness. Therefore, it is important for university students to develop and maintain close friendships for their psychological well-being.

In light of the data presented in Table 6, the effect of daily device usage time on loneliness, happiness, and the sub-dimensions of the e-sports attitude scale was examined. The findings indicate that there is no significant difference in the cognitive, affective, and behavioral sub-dimensions, as well as in the happiness variable, according to daily device usage time. However, a significant difference was found in the loneliness variable based on daily device usage time. According to the results of the Tukey test, a significant difference was identified between individuals who use devices for 4 hours or more per day and those who use devices for 1-4 hours per day, in favor of those who use devices for 4 hours or more. This finding shows that feelings of loneliness increase as device usage time increases. Similar results are found in the literature. For example, Twenge et al. (53) found that prolonged social media use increased symptoms of loneliness and depression. Similarly, Primack et al. (43) showed that high levels of social media use can increase feelings of loneliness. These studies are consistent with the current findings. On the other hand, some studies suggest that device use can strengthen social connections and reduce feelings of loneliness. For example, Shaw and Gant (48) reported that internet use increased the perception of social support and decreased feelings of loneliness. These differing results may be explained by factors such as the type and duration of device use and individual differences. The lack of a significant difference in the cognitive, affective, and behavioral sub-dimensions, as well as in the happiness variable, suggests that daily device usage time does not have a noticeable impact on these areas among students. This indicates that daily device use alone may not be a determining factor in e-sports attitudes or happiness levels. Therefore, it can be considered that other variables may also play a role in shaping students' e-sports attitudes and happiness levels. Overall, these results show that while increased device usage time may be associated with higher feelings of loneliness, it does not create a significant difference in e-sports attitudes or happiness. It is important to manage digital media use in a balanced way, considering its potential social and emotional effects.

As seen in Table 7, there are significant differences in the sub-dimensions of the e-sports attitude scale according to academic achievement level. These findings show that academic achievement has a significant effect on cognitive, affective and behavioral sub-dimensions. In particular, it was found that individuals with higher academic achievement exhibited more positive attitudes. These results reveal that high academic achievement has a positive effect on e-sports attitudes. Similarly, significant differences were found in loneliness and happiness variables according to academic achievement level. Robbins et al. (45) meta-analysis showed that higher academic achievement was associated with higher self-esteem, lower depression, and better social adjustment. This supports that individuals with high academic achievement are more successful in social relationships and feel less lonely. Chow (9) also found that higher academic achievement was associated with higher psychological well-being. This indicates that high academic achievement increases individuals' overall life satisfaction. However, some studies have revealed different findings. Eisenberg et al. (19) found that students with better mental health showed higher academic achievement, while Hysenbegasi et al. (32) found that academic achievement decreased as depression levels increased. These findings suggest that the relationship between academic achievement and psychological well-being is complex and not a unidirectional causal relationship. In conclusion, this study shows that academic achievement has a significant effect on e-sports attitudes, loneliness, and happiness. Individuals with higher academic achievement appear

to have more positive esports attitudes, lower levels of loneliness, and higher levels of happiness. However, the mechanisms underlying these relationships and the role of other factors need further research.

The results of the analysis in Table 8 examine the relationship between the sub-dimensions of the e-sports attitude scale and the number of siblings of the participants. The findings show that there is no significant difference in the cognitive and behavioral sub-dimensions according to the number of siblings, while there are significant differences in the affective sub-dimension, loneliness and happiness variables. In the affective sub-dimension, participants with 4 or more siblings scored higher than those with no siblings. This finding shows that with the increase in the number of siblings, individuals' affective attitudes towards e-sports activities also improve positively. Similarly, in a study conducted by Şahin and Barut (51), it was concluded that individuals' e-sports attitudes were positively affected as the number of siblings increased. In terms of the loneliness variable, it is seen that participants with 3 siblings have higher loneliness scores than those with 1 sibling. This finding shows that individuals' feelings of loneliness increase with the increase in the number of siblings. However, in a study conducted by Yıldız and Çağlar (58), it was concluded that the loneliness levels of individuals decreased as the number of siblings increased. This difference may be due to the differences in sample groups and study contexts. In terms of the happiness variable, it was found that participants with one sibling had higher happiness scores than those with no siblings. This finding shows that having only one sibling positively affects individuals' happiness levels. Similarly, in the study conducted by Yıldız and Çağlar (58), it was concluded that happiness levels of individuals increased as the number of siblings increased. In conclusion, the findings of this study show that the number of siblings has an effect on the affective dimension of e-sports attitudes, loneliness and happiness levels of individuals. However, it is also seen that there are some differences between the findings of other studies on this subject. It is thought that these differences may be due to the differences in the characteristics of the sample groups, the study contexts and the measurement tools used. Future studies with more comprehensive and diverse sample groups may provide an opportunity to examine the effect of sibling number on individuals' e-sports attitudes, loneliness and happiness levels in more depth. In addition to the number of siblings, other sibling relationship variables such as sibling order, gender, and age difference may provide a more holistic perspective on the subject.

This study revealed that high school students' e-sports attitudes, loneliness and happiness levels differ in terms of various demographic variables. It was determined that male students had more positive attitudes towards e-sports in affective and behavioral dimensions, whereas female students had significantly higher levels of loneliness. In addition, it was found that the number of close friends, daily smart device use, academic achievement, and number of siblings significantly affected students' attitudes towards e-sports and their loneliness and happiness levels. These findings provide important clues for educators and parents and provide valuable information in terms of understanding the role of e-sports in the social and emotional development of young people.

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