



Examining of High School Students' Internet Addiction Levels in Terms of Sports Participation and Various Variables

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Abstract

The purpose of this study is to investigate the internet addiction levels of high school students with respect to the variables of sports participation, gender, grade level, and type of school. A total of 804 students (n=387 female, n=417 male) from various high schools in Düzce Province voluntarily participated in the research during the spring semester of the 2023–2024 academic year. Data were collected using a Personal Information Form developed by the researchers and the Young Internet Addiction Test Short Form, originally developed by Young (1998), shortened by Pawlikowski, Altstötter-Gleich, and Brand (2013), and adapted to Turkish by Kutlu, Savcı, Demir, and Aysan (2016). The SPSS program was used for data analysis, including mean, percentage, and frequency calculations. As the data showed normal distribution, independent samples t-test was used for two-group comparisons, and One-Way ANOVA was used for comparisons among more than two groups. Results showed that no significant differences were found based on gender, grade level, or school type (p>0.05). However, a significant difference was found in favor of students who participate in sports (p<0.05), indicating that students engaged in sports have lower levels of internet addiction. Therefore, it can be suggested that sports may serve as an effective tool in reducing internet addiction. Future studies could experimentally test this effect at primary and secondary school levels.

Keywords: Addiction, Internet, Adolescent, High school, Sports

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INTRODUCTION

Technology, which has become a part of our lives, is defined as application knowledge covering tools, equipment, instruments and the way they are used (TDK, 2024). With the rapid development of technology, it has started to be used in almost every field from daily life to professional life, from education to sports (Camkıran et al., 2021; Deniz & Teke, 2020; Elvan & Mutlubas, 2020; Paris et al., 2024; Ramsten et al., 2020). One of the first and most common technologies that comes to mind when it comes to technology is internet technology. The Internet is an international network that connects many computers to each other and provides the opportunity to communicate globally between governmental, business and educational institutions (Dorsemanie et al., 2015; Seferoğlu, 2007). In the 1960s, the ARPA (Advanced Research Projects Agency) project supported by the US Department of Defense laid the foundations for the emergence of the Internet (Seferoğlu, 2007). The internet, which has developed rapidly since then, has taken its place among the indispensables of our daily lives; it has provided an environment where users can quickly and easily transfer opinions and information, and provide the opportunity to communicate with people around the world (Karakuş et al., 2014). In addition to all these positive aspects, the fact that the internet has entered our lives and made life easier has also brought a negative concept such as internet addiction into our lives. Addiction, at its origin, refers to devotion or engaging in a habitual behavior and is based on biological, psychological, and environmental causes (McLellan et al., 2000); it appears in different forms such as shopping, gaming, gambling, alcohol, and eating (Eryılmaz & Deniz, 2019; Sussman & Sussman, 2011). One of these types of addiction is internet addiction. Internet addiction can be defined as a person's use of the internet that he/she cannot control in a way that causes negative consequences in his/her daily life (Bozkurt et al., 2016; Montag & Reuter, 2017). Individuals who are addicted to the Internet are individuals who cannot prevent the desire to use the Internet excessively, who need to spend more time on the Internet over time, and who become angry, restless, and tense when they cannot access the Internet (Young, 2004 cited in Bozkurt et al., 2016). Internet addiction can result in many symptoms such as deterioration in social relationships, loneliness, violence, pathological problems, depression, anxiety, physical and academic problems, eating disorders, etc. (Aslan, 2019; Cao et al., 2021; Noroozi et al., 2021). On the other hand, participation in sports is widely recognized as an important factor in the physical, psychological, and social development of adolescents (Eime et al., 2013). Indeed, adolescents who participate in regular physical activity have a lower risk of internet addiction. At this point, it can be said that sports are an effective tool in reducing internet addiction (Gülbetekin et al., 2025).

Internet addiction is observed to be more prevalent in some life stages, and adolescence is one of these stages (TUIK, 2021). Adolescence is not only a stage of maturation, but also one of the most critical stages of human beings where biological and hormonal changes occur; both positive and negative developmental differences emerge during this period (Ektiricioğlu et al., 2020). It is seen that the rate of internet use among adolescents was 50.8% in 2013, and this rate increased to 81.5% in 2021 (TUIK, 2021). Considering the increase in internet use among adolescents, it is thought

that adolescents and internet addiction have become an issue that needs to be emphasized. A review of the relevant literature reveals that although internet addiction has been conceptualized in various ways (Efe et al., 2021; Lozano-Blasco et al., 2022; Marin et al., 2021; Selen & Koç, 2024), contemporary research specifically investigating the association between sports participation and internet addiction among high school students remains scarce (Gülbetekin et al., 2025; Sarıkol & Öçalan, 2022; Qui et al., 2023). Gülbetekin et al. (2025) reported that high school students who engaged in more physical activity exhibited lower levels of internet addiction. Similarly, in the study conducted by Sarıkol & Öçalan (2022), it was found that high school students who do not engage in sports exhibit higher levels of internet addiction compared to those who participate in sports. This study is significant as it examines the internet addiction levels of high school students in terms of sports participation and various variables, thereby contributing to the development of suggestions for reducing addiction and providing current data to enrich the literature. From this point, the purpose of this study is to investigate the internet addiction levels of high school students with respect to the variables of sports participation, gender, grade level, and type of school. In line with this purpose, answers to the following questions were sought:

- 1-Is there a statistically significant difference in students' internet addiction levels according to gender?
- 2-Is there a statistically significant difference in students' internet addiction levels according to their grade level?
- 3-Is there a statistically significant difference in students' internet addiction levels according to the type of school they attend?
- 4-Is there a statistically significant difference in students' internet addiction levels according to their sporting status?

METHOD

Research Model: The current research was conducted based on the survey model. The aim of the survey model is to determine the opinions, attitudes, skills, etc. of the participants about an event or subject (Büyüköztürk, 2015). In the survey model, the individuals or objects under investigation are described within their own circumstances, without any attempt to influence or alter the variables (Karasar, 2012).

Research Groups: The population of this study consists of 1926 students studying in 4 different school types (Anatolian High School, Anatolian Imam Hatip High School, Science High School, Sports High School) in the central district of Düzce Province. The sample consisted of 804 students selected by simple random sampling method (Yıldırım & Şimşek, 2011) among 1926 students. Demographic information of the students participating in the study is given in Table 1.

Table 1. Demographic information of the students participating in the study

Variable		Frequency (f)	Percentage (%)	
C 1	Female	387	48.1	
Gender	Male	417	51.9	
	9	186	23.1	
Class Level	10	200	24.9	
Class Level	11	189	23.5	
	12	200 189 229 204 n Hatip 202	28.5	
	Anatolian	204	25.4	
Cabaal Tema	Anatolian İmam Hatip	202	25.1	
School Type	Science	230	28.6	
	Sports	168	20.9	
D : 0 4	Yes	491	61.1	
Doing Sports	No	313	38.9	

Among the students who participated in the study, 48.1% (n=387) were female, while 51.9% (n=417) were male. 23.1% (n=186) of the students were in ninth grade, 24.9% (n=200) were in tenth grade, 23.5% (n=189) were in eleventh grade, and 28.5% (n=229) were in twelfth grade. 25.4% (n=204) of the students' study at Anatolian High School, 25.1% (n=202) at Anatolian Imam Hatip High School, 28.6% (n=230) at Science High School and 20.9% (n=168) at Sports High School. While 61.1% (n=491) of the students do sports, 38.9% (n=313) do not do sports.

Data Collection Tools: Personal Information Form prepared by the researchers and Young Internet Addiction Test Short Form developed by Young (1998), transformed into a short version by Pawlikowski et al. (2013) and adapted into Turkish by Kutlu et al. (2016) were used as data collection tools in the study. In the Personal Information Form, there are four questions to determine the participants' gender, sporting status, grade level and school type. There are 12 questions in the Young Internet Addiction Test Short Form. In the form, which consists of a single-factor structure and is prepared in a five-point Likert type, it is graded as '1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, 5=Always'. There are no reverse coded items in the scale. The lowest score that can be obtained from the scale is 12 and the highest score is 60. A high score on the scale indicates a high level of internet addiction. Cronbach Alpha internal consistency coefficient of the scale is .85. For the current study, this value was calculated as .78.

Ethical Approval: In the current study, ethics committee permission dated 25.03.2024 and numbered E-78187535-050.04-415804 was obtained from Düzce University Ethics Committee.

Collection of Data: During the data collection process, firstly, the scale owner was contacted via e-mail and permission to use the scale was obtained. In addition, the participants were asked to sign the informed consent form prepared before the study to confirm their voluntary participation in the study. Since the participants in the study group were under the age of 18, parental consent forms prepared before the research were signed by the parents and their consent was also obtained.

Data were collected during the spring semester of the 2023-2024 academic year. During the data collection process, the researchers went to predetermined schools during school hours and collected the data face-to-face. The data were collected at the beginning of the lesson by obtaining permission from the course instructor. Before the scales were distributed, the participants were informed about the purpose of the research and confirmation was obtained about whether there were any questions about the points that were not understood. Then the scales were distributed. The scale filling process took an average of 10 minutes.

Analysis of Data: The data were analyzed using the SPSS 25 program. In the analysis of the data, mean (X), standard deviation (S.), frequency (f) and percentage (%) calculations were made, and since the kurtosis skewness values of the data were within the range of ± 1 and the variances were found to be homogeneous, t-test was used to compare two independent groups and One-Way ANOVA test was used to compare more than two independent groups. The significance level was taken as p<0.05.

FINDINGS

This section presents the findings obtained as a result of the analysis of the research data.

Table 2. Mean internet addiction scale scores of students

Internet Addiction	n	Min.	Max.	Mean	Std. Dev.
Internet Addiction	804	13	57	29.21	7.38

Table 2 shows the mean score of the students who participated in the study on the internet addiction scale. According to Table 2, it is seen that the internet addiction level of the students participating in the study is 29.21±7.38. At this point, it can be said that the students participating in the study exhibit moderate level of internet addiction (Table 2).

Table 3. T-test results on internet addiction according to the gender variable of the participants

	Gender	n	Mean	Std. Dev.	t	df	p
Internet Addiction	Female	387	28.89	7.372	-1.175	802	.240
	Male	417	29.51	7.384	-1.1/3	802	.240

Table 3 shows the comparison of students' internet addiction levels according to gender variable. When Table 3 is examined, it is seen that there is no statistically significant difference in students' internet addiction levels according to gender (t(802) = -1.175; p>0.05), (Table 3).

Table 4. One-way ANOVA result on internet addiction according to grade variable of the participants

Source of Variance	Sum of Squares	Std. Dev.	Mean Squares	F	р
Between Groups	110.758	3	36.919		
In-group	43625.297	800	54.532	.677	.566
Total	43736.055	803			

Table 4 shows the internet addiction levels of the students according to the grade level variable. When Table 4 is examined, it is seen that there is no statistically significant difference between the groups in the results of the students' grade level variable ($F_{(3.800)}$ =.677; p>0.05), (Table 4).

Table 5. One-way ANOVA result on internet addiction according to school type variable of the participants

Source of Variance	Sum of Squares	Std. Dev.	Mean Squares	F	p
Between Groups	368.864	3	122.955		
In-group	43367.191	800	54.209	2.268	.079
Total	43736.055	803			

Table 5 shows whether the internet addiction levels of students differ according to the type of school they attend. When Table 5 is examined, it is seen that there is no statistically significant difference between the groups in the results of the students' school type variable ($F_{(3.800)}=2.268$; p>0.05), (Table 5).

Table 6. T-test results on internet addiction according to the sport participant variable of the participants

	Sport	n	X	S.	t	df	p
Internet Addiction	Yes	491	28.66	7.401	-2.674	802	.008*
	No	313	30.08	7.275		802	.008"

^{*}p<0.05

In Table 6, the internet addiction levels of the students were analyzed according to their sporting status. When Table 6 is examined, it is seen that there is a statistically significant difference in favor of the students who do sports (t(802)=-2,674; p<0,01), (Table 6).

DISCUSSION AND CONCLUSION

The purpose of this study is to investigate the internet addiction levels of high school students with respect to the variables of sports participation, gender, grade level, and type of school. As a result of the analyses conducted in the study, no significant difference was found in the internet addiction levels of the students according to the variables of gender, grade level and school type, while a significant difference was found in favor of those who do sports according to the status of doing sports.

When the studies conducted in the literature on the subject are examined, similar to the results of the current study, there are studies that reveal that internet addiction does not differ according to gender variable (Aksoy-Akbaş et al., 2023; Mari et al., 2023; Su et al., 2020). The main reason

behind the fact that internet addiction does not differ by gender can be explained by the developing smart devices and the prevalence of social media use in the relevant age groups. The fact that smart devices and the internet have become accessible in daily life regardless of time and place, and social media offers an endless flow may have made individuals addicted regardless of gender. As a matter of fact, the addiction of young individuals to smart devices and social media is reported in the literature (Adorjan & Ricciardelli, 2021).

In the current study, it is seen that students at different grade levels have similar addiction levels, but this finding is different from similar studies in the literature. As a matter of fact, there are mainly studies in the literature that conclude that internet addiction differs according to the grade level (Ayas & Horzum, 2013; Ren et al., 2017; Taş et al., 2014). On the other hand, Koç and Tanrıkulu (2021) concluded in their study that internet addiction of university students did not differ according to class level. Based on this information, it can be said that there is no common judgment about whether internet addiction differs according to the grade variable. On the other hand, it is seen that the studies that have reached similar addiction results according to class level are more recent studies. This situation can be explained by the fact that the digital world has become more needed in every field, including the field of education, especially with the pandemic process. The fact that the digital world has become so necessary explains the similar addiction of students according to their grade level.

There are also studies in the literature (Bağrıaçık et al., 2022; Seyrek et al., 2017) in which there are findings that students' internet addiction does not differ according to the type of school, which is another independent variable of the research. The lack of effect of school type on internet addiction can be explained by the ease of access to the internet and the diversity of the purposes of using the internet. Students may use the internet for different purposes such as entertainment, learning, education, socialization, etc. Thus, students may be spending time on the internet for different purposes regardless of the type of school they attend.

The result of the study indicates that internet addiction is lower in students who do sports. Similarly, it is supported by the literature that students who do sports have lower levels of internet addiction (Can & Tozoğlu, 2019; Du & Zhang, 2022; Hazar et al., 2017; Khan et al., 2017; Sarıkol & Öçalan, 2022). The fact that the internet addiction levels of students who do sports are lower can be explained by the fact that they spend a certain part of their time doing sports in their daily lives. The fact that students who allocate their time for sports can move away from the virtual world and turn to activities involving physical movements can be effective in minimizing their addiction to the internet. Omar et al. (2023), who reached a conclusion that supports this view, stated that it is better for individuals who do sports to spend their time and energy on sports than to spend time and energy on video games. It is also known that sport is an effective way to combat addiction (McGannon et al., 2020; Patterson et al., 2022). According to the results of the study, individuals who are already involved in sports have low levels of internet addiction.

In conclusion, the findings indicate that students from different types of high schools exhibit comparable levels of internet addiction, and that gender and grade level do not constitute significant determinants of addiction levels. However, students who participate in sports demonstrate lower levels of internet addiction. Therefore, promoting sports participation may serve as an effective strategy for mitigating internet addiction among high school students. Based on the results of the study, it is recommended that especially high school students be provided with opportunities to engage in sports. In addition to physical education and sports class hours at schools, students can also be encouraged to engage in exercise outside of school. In the future, researchers who want to study in a similar field can be recommended to test whether sports can be used as a way to reduce internet addiction at primary and secondary school level with experimental studies.

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Ethical Approval

Ethics Committee: Düzce University Ethics Committee.

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