Orjinal Araştırma / Original Article

The Effect of Internet Addiction in Students on Quality of School Life

Öğrencilerde İnternet Bağımlılığının Okul Yaşam Kalitesine Etkisi

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Abstract

Aim: Internet addiction in children is a mental disorder that negatively affects the quality of life. In this day and age, internet usage, and school life, which takes a significant amount of time for students, are specified as engaged concepts that affect each other. Therefore, this study has been addressed to investigate the effects of internet addiction on primary, middle, and high school students on school life quality.

Material and Method: This research was conducted as a questionnaire study by Dr. Sami Ulus Training and Research Hospital Pediatric Neurology in the 2018-2019 academic year for Primary School, Middle, and High School students. The questionnaire consisted of sociodemographic information, Internet Addiction Scale (IAS), and Quality of School Life Scale (QSLS).

Results: Seven hundred eighty-eight students were included in the study. Mean age was 12.94±2.79 years (range 8 - 17). Internet addiction scores were 57.67±20.63, and 106 (13.80%) children had internet addiction. The Quality of School Life Scale total scores were found as 112.65±18.42. It was observed that school success and school life quality decreased as the internet addiction score increased. It was observed that the students' education and puzzle games compared to other websites caused lower IAS scores. The most significant differences were observed among high school students. While it was observed that IAS scores, internet addiction, family negative relationships, and exposure to violence rates were highest in high school students, QSLS scores, and course success were found below.

Conclusion: There is a need to develop programs that would minimize the excessive and useless internet use of students and improve the environmental factors that regulate their relationships in the family, school, and other settings.

Keywords: Internet addiction, quality of school life, children, student, ınternet tendency problems

Öz

Amaç: Çocuklarda internet bağımlılığı yaşam kalitesini olumsuz etkileyen mental bir bozukluktur. Yaşam kalitesinin niteliğini en az mental ve fiziksel sağlık kadar okul performans ve akademik başarılar da etkilemektedir. Bu nedenle ilkokul, ortaokul ve lise öğrencilerin internet bağımlığının okul yaşam kalitesine etkilerinin araştırılması amacıyla bu çalışma ele alınmıştır.

Gereç ve Yöntem: Dr. Sami Ulus Eğitim ve Araştırma Hastanesi Çocuk Nörolojisi tarafından 2018-2019 eğitim-öğretim yılında İlkokul, Ortaokul ve Lise öğrencilerine yönelik anket çalışması yapıldı. Çalışma gereçleri olarak sosyodemografik bilgiler formu, İnternet Bağımlılık Ölçeği (İBÖ) ve Okul Yaşam Kalitesi Ölçeği (OYKÖ) kullanıldı.

Bulgular: Çalışmaya 788 öğrenci dahil edildi. Yaş ortalaması 12,94±2,79 (8 -17) idi. İnternet bağımlılık skoru 57,67±20,63 idi. Öğrencilerin %13,8(106)'inde internet bağımlılığı saptandı. Okul yaşam kalitesi ölçeği toplam puanları 112,65±18,42 idi. İnternet bağımlılık skoru artıkça okul başarısının ve okul yaşam kalitesinin düştüğü görüldü. Eğitim amaçlı ve puzzle şeklinde oyun sitelerini ziyaret eden öğrenciler daha düşük internet bağımlılık skoruna sahip idi. En belirgin farklılıkların lise öğrencileri arasında olduğu saptandı. Lise öğrencilerinde internet bağımlılığı, ailevi olumsuz ilişkiler ve şiddete maruz kalma oranlarının en yüksek olduğu görülürken, okul yaşam kalitesi puanları ve ders başarısının düşük olduğu görülmüştür.

Sonuç: Öğrencilerin aşırı ve faydasız internet kullanımını en aza indirecek, aile, okul ve diğer ortamlarda ilişkilerini düzenleyen çevresel faktörleri iyileştirecek programların geliştirilmesine ihtiyaç vardır.

Anahtar kelimeler: İnternet bağımlılığı, okul yaşam kalitesi, çocuk, öğrenci, internet eğilim sorunları

INTRODUCTION

Unhealthy internet use has become increasingly common in recent years due to technological advances and accessibily.[1,2] As per the Internet World Stats (IWS, 2020) data, 63.2% of the world is reported to use the internet. North America and Europe have the highest usage rates (90.3%, 87.2%, respectively), and Africa (47.1%) the lowest usage rates in terms of internet usage.[3] Excessive use of the internet, lack of self-control, or family difficulties in this regard increase the risk of internet addiction in children. Internet addiction causes negative symptoms such as fatigue, sleep problems, posture disorders, memory problems, learning difficulties, difficulty in expressing oneself, school failure, and decreased productivity. In conclusion, many psychiatric problems, such as anxiety, depression, and social isolation, appear.[2,4,5]

Quality of life is explained by the quality of the positive and negative emotions that the individual has in family, school, friends, and work environment. The World Health Organization (WHO) emphasized that children and adolescents' school performance and success are as important as their mental and physical health. Therefore, it would be an appropriate approach to look at the school environment from a broad perspective as a standard solution point to improve the quality of life. This situation will create a significant opportunity to increase the quality of the school and to pass down the achievements to be gained.[6,7] Many factors play a role in determining the quality of school life, such as the structure of families, their perspective on education, income levels, attitudes and behaviors, school administrators, teachers, students' self-confidence, feelings towards the school and their friends. Identifying these factors and focusing on their solutions is essential for improving the school environment.[8]

Both internet use and school take up a significant portion of students' time today. Therefore, these two parameters should be considered as engaged concepts. However, there is not enough evidence to show the relationship between internet use disorder (IUD) and factors such as school-related academic achievement, learning, absenteeism, and social functionality to date.[9] Therefore, this study aimed to investigate the effects of internet addiction of primary, middle, and high school students on the quality of school life.

MATERIAL AND METHOD

Student selection

This questionnaire study was conducted by Dr. Sami Ulus Gynecology, Child Health, and Diseases Training and Research Hospital Pediatric Neurology Clinic in the 2018-2019 academic year. A questionnaire was conducted in the Telsizler Primary School (from the 2nd grade), Muhammer Şahin Middle School and Yıldırım Beyazıt Anatolian High School in Altındağ district where low and middle-income families live in Ankara, the capital city of Turkey. With the help of school principals and teachers, two pediatric neurologists (EA, ÜÖ) performed a questionnaire for each class in 20 classes for students between the ages of 8-17 and without systemic disease. Observations of teachers were also taken into account in terms of objectivity. The questionnaire consisted of sociodemographic information, Internet Addiction Scale (IAS), and Quality of School Life Scale (QSLS). Two hundred twenty-one students were excluded due to missing or inconsistent answers. The data obtained from the remaining 788 students were transferred to SPSS for statistical study.

Study Procedure

Before applying the questionnaire to the students, the study protocol was reviewed and approved by the institutional review boards (Ankara and Altındağ National Education Directorate and relevant school directorates). The study was approved by the clinical research ethics committee of Health Sciences University Ankara Child Health and Diseases Hematology and Oncology Health Research and Application Center (Approval number 2018-190). Permission was obtained from the researchers (Fatih Canan, Mediha Sarı), who conducted the Turkish validity and reliability study of the questionnaire scales used in this study. Informed consent was obtained from the families voluntarily.

Data collection tools

The first section of the form: Sociodemographic Characteristics Form

In this form developed by the researchers, age, gender, school class, parental education level, number of siblings, family structure (nuclear family or extended family), academic success level, relationships with parents, exposure to violence, and characteristics of internet use (usage preferences, daily Internet usage time) were included.

The second section of the form: Internet Addiction Scale (IAS)

IAS Turkish version, developed by Nichols and Nicky in 2004 and adapted by performing Turkish validity and reliability study (Cronbach α = .95), was used.[1,10] This scale is a five-point Likert type assessment consisting of 27 items. The items were scored between 1-5 as "never" (1 point), "rarely" (2 points), "sometimes" (3 points), "often" (4 points), and "always" (5 points). The total IAS score was obtained by arithmetically summing the scores of each item. The total IAS score obtained per this scoring ranges from a minimum of 27 to a maximum of 135 points. The resulting score of 81 (3x 27 items) and above was considered as internet addiction.[1]

The third section of the form: Quality of School Life Scale (QSLS)

Quality of school life criteria varies from country to country due to cultural and socio-economic differences.[6,11,12] For this reason, the QSLS developed for Turkey was preferred in this study.[13] This scale includes a total of 35 items consisting of 20 positive and 15 negative questions. It includes five sub-dimensions as nine items of "teachers" that determine the quality of their communication with students and their professional development level, nine items of "students" that determine the

quality of communication between students at school, eight items of "feelings towards school" that determine positive or negative emotions, six items of "principal" that determines the level of sensitivity towards the problems of the students at school, the quality of their communication with the students, the importance they attach to participation in the school, and three items of "status" that determines to what extent students feel important and valuable as individuals at school. Turkish validity and reliability Cronbach's alpha reliability coefficients for these 5 dimensions are .83, .80, .82, .77, .69, respectively. The fit indicators examined in the confirmatory factor analysis performed with the LISREL 8.30 package program also gave satisfactory results in terms of the model's good fit with the data [χ^2= 2003.03 (sd=547, p<0.001), (χ^2/sdi=3.66, RMSEA=0.068, NNFI=0.94, CFI=0.95 ve GFI=0.83]. Each item contains five options. These options are scored between 1-5 as "Strongly Disagree" (1 point), "Disagree" (2 points), "Slightly Agree" (3 points), "Agree" (4 points), and "Strongly Agree" (5 points). QSLS scores for the five sub-dimensions and consisting of the sum of these sums were calculated separately. As per this calculation method, the sum of reversed option points in negative items and option points in positive items was obtained.

Statistical Analysis

All analyses were performed on the SPSS v21 program (SPSS Inc., Chicago, IL, USA). The Kolmogorov-Smirnov test was used for the normality check. Normally distributed variables were analyzed with the independent samples t-test or one-way analysis of variances (ANOVA) depending on the count of groups. Pairwise comparisons of these variables were performed with the Tamhane test. Non-normally distributed variables were analyzed with the Mann-Whitney U test or Kruskal Wallis test depending count of groups. Pairwise comparisons of these variables were performed with the Bonferroni correction method. Categorical variables were analyzed with the Chi-square tests. P<0.05 values were accepted as statistically significant results.

RESULTS

Seven hundred eighty-eight children (438 girls and 350 boys) were included in our study, and the mean age was 12.94±2.79 years (range 8 - 17). Two hundred and sixty-one (33.12%) children were in primary school, 249 (31.60%) children were in middle school, and 278 (35.28%) children were in high school. The most common education status was high school both for mothers (32.08%) and fathers (37.34%). Most of the children were living with a nuclear family (77.93%, mother-father-single child). Two hundred and ninety-eight (38.90%) children were very good at school lessons while 219 (28.59%) children were good, 189 (24.67%) children were average and 60 (7.83%) children were unsuccessful. Most of the children described relationships with parents as "good" (72.48%). One hundred and seventy-nine (23.16%) children were exposed to violence. Characteristic features of the students are presented in **Tables 1** and **2.**

Table 1. General features of students

	n (%)/mean±sd	p
Student number	788	
Gender (F/M) (F %)	438/350 (55.5 %)	
Mean age	12.94±2.79 (8-17)	
Primary school	261 (33.12%)	
Middle school	249 (31.60%)	
High school	278 (35.28%)	
School success(very good/others**) (good %)	298/468 (37.8 %)	
Relationships with parents (good/others**) (good %)	561/213 (71,1 %)	
Exposed to violence (yes/no) (yes %)	179/609 (22.7 %)	
Internet characteristic		
Internet use	741 (94.04%)	
IASs	57.67±20.63	
Internet Addiction	106 (13.80%)	
IASs (gender)		**0.042**
F	56.74±21.71	
M	58.83±19.14	
IAS s (school success)		**<0.001**
Very good [a]	49.68±17.65	
Good [b]	57.07±18.56	
Average [c]	65.87±20.18	
Unsuccessful [c]	74.45±23.34	
IASs(Daily duration of internet use)		**<0.001**
1 hour [a]	49.26±17.62	
2 hours [b]	57.32±17.90	
Equal or more than 3 hours [c]	67.49±21.13	
IASs(Negative family relationships)		**<0.001**
No	54.91±19.99	
Yes	67.84±19.90	
IASs(Exposed to violence)		**<0.001**
No	54.89±20.56	
Yes	66.51±17.97	
IASs (most commonly visited website)		**<0.001**
Education [b]	47.04±16.79	
Social media [a]	64.58±21.73	
Movies, TV [a]	58.98±19.42	
Game [a]	59.57±19.53	
IASs (type of games)		**<0.001**
Puzzle [b]	51.38±19.70	
Racing [a]	58.13±15.71	
Sport [a]	59.45±19.46	
Action [a]	59.70±20.92	
QSLS characteristic		
Teachers	29.65±6.58	
Students	29.12±6.78	
Feelings toward school	26.93±6.61	
Principal	17.31±5.26	
Status	9.65±3.17	
Total	112.65± 18,42	

sd: Standart deviation, F: female, M: male, IAS s: Internet addiction scale score, QSLS: Quality of School life scale Others**: good, average, unsuccessful for school success, moderate, bad for relationships with parents.
a,b,c ; statistical difference between a,b and c, a,b ; statistical difference between a and b.

Most of the children had used the internet actively 741 (94.04%). IAS scores were found as 57.67±20.63 (range 27 - 135) and 106 (13.80%) children had internet addiction. Also, we found that boys had significantly higher IAS scores than girls (p=0.042). It was observed that the IAS score gradually increased with daily use of the internet for ≥ 2 hours. Also, it was observed that the course success decreased as IAS score increased (p<0.001) (**Table 1**). One hundred and sixty-seven (21.92%) children had family negative relationships because of internet use and 359 (46.99%) children had family restrictions for internet use. It was observed that the IAS score increased in students with family negative relationships and who were exposed to violence (p<0.001) (**Table 1**). Family negative relationships and exposure to violence for internet use percentage were significantly higher in high school than the primary and middle school (p<0.001). Keep under control by the family was observed to be the least common in high school students (**Table 2**).

 Among the visited websites, it was observed that education and playing puzzle IAS scores were found to be significantly lower than the others, while these two were preferred at least by high school students and mostly by primary school students. Internet addiction, on the contrary, was found at least in primary school students and most in high school students (**Table 1,2**).

QSLS total scores were found as 112.65± 18.42 (**Table 1**). Except for students, the scores of other sub-dimensions (teacher, feelings toward school, principal, status, and total) were the lowest for high school and the highest for middle school. Students had the highest score among primary school students (p<0.001, **Table 3**).

The most significant differences between parameters were observed in high school students (**Tables 2, 3**). Accordingly, it was observed that IAS scores, internet addiction, family negative relationships, and exposure to violence rates were highest in high school students, keep under control by family, QSLS scores, and course success were found to below.

There were no significant differences between groups about mother and father education status, number of siblings.

Table 2. Internet tendency problems and features of students in schools

n (%)/median (min-max)	P. School	M. School	H. School	p
Family negative relationships	50 (19.84%)	33 (13.87%)	84 (30.88%)	<0.001
Exposed to violence	40 (15.87%)	30 (12.24%)	109 (39.49%)	<0.001
Keep undercontrol by family	139 (54.94%)	139 (58.16%)	81 (29.78%)	<0.001
Internet use	243 (93,10 %)	231 (92,77 %)	267 (96,04 %)	0.211
IAS s	48 (27- 95) [a]	50 (27- 112) [a]	71 (27-135) [b]	<0.001
I.addiction	9 (3.52%)	17 (7.11%)	80 (29.30%)	<0.001
Most commonly visited website				**<0.001**
Education	82 (32.67%)	56 (23.63%)	24 (9.02%)	
Social media	15 (5.98%)	63 (26.58%)	116 (43.61%)	
Movies, TV	21 (8.37%)	14 (5.91%)	25 (9.40%)	
Game	119 (47.41%)	91 (38.40%)	85 (31.95%)	
Type of games				**<0.001**
Puzzle	78 (30.95%)	60 (25.10%)	39 (14.34%)	
Racing	50 (19.84%)	22 (9.21%)	35 (12.87%)	
Sport	33 (13.10%)	44 (18.41%)	46 (16.91%)	
Action	72 (28.57%)	76 (31.80%)	74 (27.21%)	

P: primary, M: middle, H: high, I. addiction: Internet addiction, IAS s: Internet addiction scale score. a,b; statistical difference between a and b.

Table 3. QLSS features in schools

mean±sd /median (min-max)	P. School	M. School	H. School	p
Teachers	31.44±6.43 [a]	31.64±6.40 [a]	26.25±5.43 [b]	<0.001
Students	30.61±7.30 [a]	26.67±7.12 [b]	29.93±5.25 [a]	<0.001
Feelings toward school	28.41±6.37 [a]	30.12±6.28 [b]	22.75±4.70 [c]	<0.001
Principal	17.20±4.96 [a]	20.01±5.05 [b]	15.02±4.58 [c]	<0.001
Status	10 (3 -15) [a]	11 (3-15) [b]	9 (3- 15) [c]	<0.001
Total	117.16±18.67 [a]	119.06±19.20 [a]	102.86±12.48 [b]	<0.001

QSLS: Quality of school Life scale scores, P: primary, M: middle, H: high, sd: Standart deviation
a,b,c ; statistical difference between a,b and c, a,b ; statistical difference between a and b.

DISCUSSION

Internet use disorder (IUD), which is a widespread problem of today, is defined as a mental disorder that negatively affects the quality of life of children and adolescents, just like adults. [14,15] Internet addiction is closely related to the amount of time spent on the internet. Especially, internet use over 2 hours a day is a risk factor for addiction.[16] Gaming disorder in younger age groups, communication, and social media use in older people are other risk factors for IUD.[9,14,16,17] Internet addiction prevalence ranges from 5.9% to 18.3% among university students.[18] This prevalence was found to be 11.6% in a study on high school students.[1] Contradictory arguments are seen in studies in terms of gender. In a study conducted with university students aged 18-27, internet addiction was observed in 12.6% of boys and 5.5% of girls.[19] In another study conducted with high school students, these rates were shown as 15.3% for boys and 13.1% for girls.[20] In another study, it was concluded that girls had higher IAS scores than boys and all those who were internet-addicted were girls.[16] While internet addiction was observed at a rate of 13.80 % in our study, it was observed that approximately one third (29.30%) of this rate was high school students and boys had higher IAS scores than girls.

On the other hand, parallel to the amount of time spent on the internet, it was noted in our study that there was a statistically significant increase in the IAS score, especially when using the internet more than 2 hours per day. The daily duration of internet use was significantly higher in high school than in the others. Also, while the internet was used mainly for the puzzle, playing online games and educational information searching in primary school, it was seen that the internet was mostly used for social media purposes in high school (p<0.001). On the other hand, it was statistically significant that internet addiction and IAS scores were the highest for high schools and the lowest for primary school students. We think that the reason for this distinct difference is related to the duration of internet use, and the use of social media for communication purposes to solace the loneliness of high school students and reach a high level of life satisfaction is related to internet usage (e.g., puzzle and education) preferences of primary school students. In a related study, it was observed that while children's internet activities such as education and homework do not bother families, the use of social media for communication purposes worries them.[21]

Internet use disorder has various negative effects on school life. Besides, an important issue that parents worry about is the academic performance of their children. In general, girls exhibit a superior skill in school and other life activities than boys.[6,22] However, studies have stated the opposite or that there is no gender difference.[23,24] Parents' attitudes, family communication, family cohesion, and exposure to domestic violence (e.g. parent-to-child violence) trigger addiction to the internet.[25] On the other hand, internet addiction leads to the risk of stress and impulsive self-behavior in individuals and weakens intra-family relationships.[20,21] All these factors lead to psychosocial problems, poor cognitive performance, and low academic achievement in children and adolescents, as well as school burnout.[9,26-29] Apart from the IUD, low socio-economic status and exposure to violence in various environments (such as at home, school, or peer communities) increase students' risk of school failure. Individual efforts of teachers are often insufficient to prevent this failure. This situation becomes more apparent in schools with limited resources.[30] Supporting these views, it was found in our study that high IAS scores and internet addiction caused a low QSLS score. Family negative relationships, reduced family control, and increased exposure to violence increased IAS scores and internet addiction. It was also observed that these high scores were closely related to failure on courses of students, especially in high school students.

The fact that socio-economic differences cannot be reflected on the internet and quality of school life due to the similar cultural structure, education, and income levels of students' families constituted the limitation of this study. However, the large participation in the questionnaire, the wide range of students' age, the primary school, middle school, and high school groups have created the opportunity to compare them with each other in terms of internet and quality of school life characteristics. We think that this is a strong aspect of this study in that it contributes to revealing the unclear points that are not sufficiently known between the internet and the quality of school life.

As a result, the distribution of the quality of school life reflecting self-confidence, school motivation, learning behavior, and academic achievement in primary, middle, and high school and where the IUD is in this distribution has not been studied sufficiently until today. To close this gap, we believe that the results of our study analysis will shed light on future studies by identifying the student's concerns in the school environment, the introduction of school-based support programs, and the contribution to the increase of motivation and feeling good. According to our results, male gender, high school group, spending more than 2 hours a day on the internet, social media, family negative relationships, reduced family control, and increased exposure to violence was determined as risk factors that increase the tendency to high IAS scores and thus internet addiction. It was observed that high school students had these risk factors the most. At the same time, QSLS scores which reflect academic achievement were found as the lowest for high school students, and as the highest for middle school students. However, both QSLS scores and IAS scores, and internet addiction results were close to each other in middle school students compared to primary school. QSLS scores decreased as IAS scores and internet addiction increased significantly with the high school period. When we consider from this point of view, it brought to our mind that high IAS scores that determine internet addiction and risk factors that lead to this may be among the reasons that reduce the quality of school life.

On the other hand, it was noteworthy that playing puzzles and educational information searching, which are most common in primary schools, are associated with low IAS scores and internet addiction. Considering these reasons, we recognize the concerns of families with children in high school. To eliminate these concerns, we believe that it is necessary to develop programs where families will play an essential role in preventing internet addiction, minimizing excessive and unhelpful internet use of high-risk adolescents, and improving environmental factors that regulate the relationship of students in families, schools and other environments. These programs in question should focus on students' efforts to establish positive social relationships and beneficial internet use. Considering children's Internet usage preferences and durations, directing internet usage to useful websites such as education and puzzle as much as possible will undoubtedly have a positive reflection on the quality of school life. Consequently, improving the quality of school life will have a positive reflection on the academic performance of the student, will enable the elimination of bad habits, and will be determinant in the development of a healthy society. However, further studies are needed on this subject.

ETHICAL DECLARATIONS

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