ARTICLE

ANALYSIS OF THE OPINIONS OF SECONDARY SCHOOL STUDENTS ABOUT PROBLEMATIC INTERNET USE

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ABSTRACT

The aim of this research is to identify the problematic internet use of secondary school students studying in the Turkish Republic of Northern Cyprus (TRNC). The research was conducted in the secondary schools and high schools operated by the Department of Secondary General Education of the Ministry of National Education and the high schools operated by the Department of Vocational Technical Education. A total of 1206 students in 6th, 7th, 8th, 9th, 10th, 11th and 12th during the Academic Year of 2016-2017 participated in the descriptive study. The data collection tools consist of two different types of questionnaires, namely 'Personal Information Form' and 'Problematic Internet Use Scale'. The findings of the survey revealed that there were significant statistical differences in problematic internet use regarding the gender, the district of the school and the duration of internet use. The findings also show that there were no significant differences in variables, like school types and forms. Aggression analysis also revealed that the level of weekly internet use and problematic internet use is 25.5 %. It can be seen that the majority of students opted for 'Fairly Applicable' regarding problematic internet use. According to the findings of this research, it is clear that the level of internet use of students studying at secondary schools and vocational schools is high. In this essay the results of the research are analysed in the light of the findings and some recommendations are provided.

INTRODUCTION

Rapid developments in information and communication technologies (ICTs) and the implementations of these technologies are spreading at an equal pace in almost all societies [33, 23, 1]]. The fact that the internet is an easily accessible network has made it indispensable for everyone not only in the fields of work, games, hobbies, health, child development, and education but also in our daily social interactions [29, 32, 22]. The many opportunities that the internet provides us, facilitate, enrich, diversify and improve human life [3, 10, 4, 5]. However, as it is with the development of every technological vehicle, along with its positive contributions, the internet has also caused the emergence of problematic human behaviour [2, 7, 27]. [11] defines Healthy Internet Usage as the use of the internet in a planned time frame that is aimed to meet the desired purpose without any disturbance of thought and behaviour. In addition, he maintains that those who access the internet in a healthy way use it for many purposes, such as acquiring information, establishing social relations, for business and playing games. Similarly, [26] conclude that their study on the negative effects of the internet has shown that excessive usage of the internet can result in addiction, which ultimately damages social relations. In recent years, many researchers have highlighted concepts, such as excessive internet usage, internet addictin, problematic internet usage, pathological internet usage and computer dependency [11, 18, 19, 35, 31]. Despite the fact that the concept of addiction has been traditionally used to describe physical dependencies towards substances, this concept is also used in relation to the over usage of the internet [34, 12]. Compared to previous years, students can use their smart phones in schools more freely and this is considered to be a factor which possibly increases the incidence of problematic behaviours. [25] stated that problematic internet usage behaviours can negatively affect a person's adolescence, youth, and even adulthood. While [13] lists online-sex, online-gambling, online-stock exchange and online-games as the most common causes of addiction related to problematic internet usage, [26] have similarly found that students who play online games and spend time on social networking sites tend to experience a more problematic internet usage than students who use the internet to do research, to follow up on current news, and to access their e-mail.

When problematic internet usage behaviors, which particularly affect young individuals adversely, are taken into consideration, it is fairly clear how imperative it is to recognise such negative behaviours in the early stages and to establish prevention strategies [21, 24]. It is necessary to obtain data to determine the behaviours of students who are engaging in problematic internet usage at schools. The main purpose of this study is to examine the views on problematic internet usage of the students who are enrolled in the schools registered to the Ministry of National Education (MoNE), the General Directorate of Education (GDE) and the Vocational Technical Secondary Education Office (VTSEO) in the Turkish Republic of Northern Cyprus (TRNC).

The overall purpose of the study sought to answer the following questions:

1. Is there a meaningful difference according to the scale dimensions of the problematic internet usage of the students?
2. Are there any significant differences in the opinions of students related to the subject of problematic internet usage according to the following variables?

a) Gender
b) Type of School

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Guest Editor: Prof. Dr. Husevin Uzunbovlu

c) Form
d) School District and
e) Weekly Internet Usage Time

MATERIALS AND METHODS

Research model

The study is descriptive and the general screening model was utilised. The general screening model is the screening arrangements carried out with a group, sample group or a paradigm or the entire universe in order to draw a conclusion about the universe composed of numerous elements [17].

Study group

The population of this research was 18,978 students who were enrolled in the 2015 - 2016 education year in the schools registered to the TRNC Ministry of National Education, the General Directorate of Secondary Education and the Office of Vocational Technical Secondary Education. The figures concerning the number of students constituting the population were obtained based on the information in the statistics books of the TRNC MoNE, the General Directorate of Secondary Education and the Office of Vocational Technical Secondary Education.

In the study, the regions of the TRNC were identified as the substratum. The sampling was composed by the simple random sampling method in the determined substratum. In [Fig. 1], the population and the selected sample groups are provided in detail.
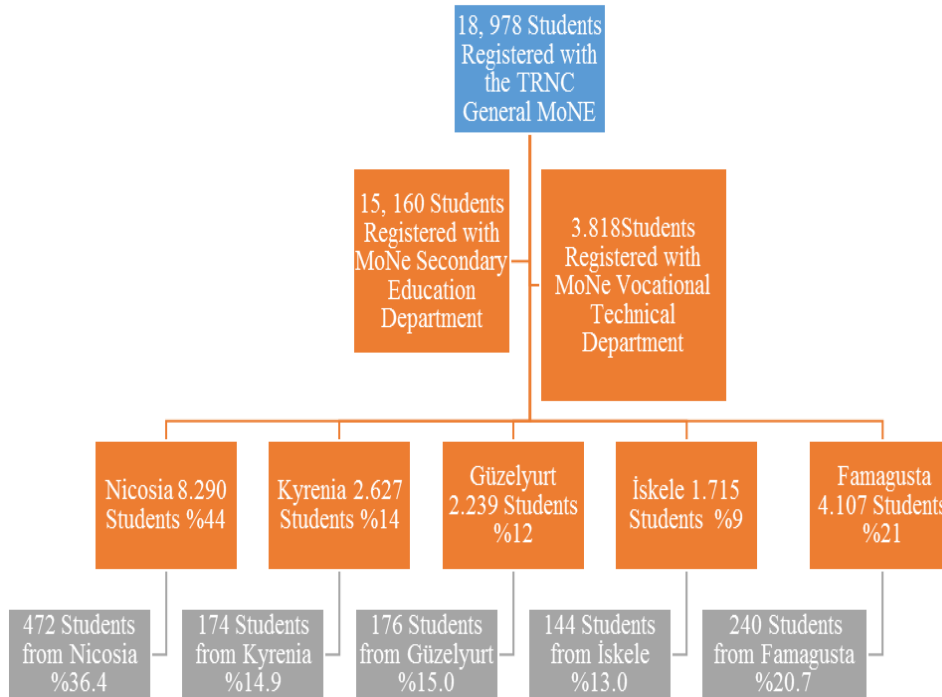
Fig. 1: Population, sample and regional population distribution rates.

The target sampling fraction of the students constituting the sample group is 6%. [6] indicate that the Kaiser-Meyer-Olkin (KMO) value has to be calculated at 0.60 or higher for the adequacy of the data to the factor analysis. [Table 1] illustrates the demographic information of the students participating in the survey.

[Table 1] illustrates that the study was conducted with a balanced group in terms of the distribution of the students' genders. As for the distribution according to the type of school,529 (43.9%) of the participants were in middle school, 389 (32.3%) were in high school and 288 (23.8%) were attending a vocational high school.

Data collection and data collection tool

A quantitative method was used in order to collect the data. The scale consisted of two parts. First, the "Personal Information Form" was used in order to obtain demographic information, such as gender, age, forms and weekly internet usage hours of the students participating in the research. Next, the "Problematic Internet Usage Scale" prepared by [9] was implemented. The five-point Likert scale contained 33 items in

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total from which the participants had a choice of "Highly Applicable", "Fairly Applicable", "Somewhat Applicable", "Rarely Applicable" and "Not at all Applicable". The scale consisted of three factors; the internal consistency (α) of the 33 items included in the scale was 0.94. If the internal consistency of the three factors makes up the scale, the first factor consisting of 17 items is "negative results of the internet" α: 0.92, the second factor consisting of 10 items is "social benefit / social convenience" α: 0.83 and the third factor consisting of 6 items is the "over usage period" α: 0.75. These results show that the internal consistency of the problematic internet usage scale is very high and reliable.

Table 1: Distribution of the demographic characteristics of students

Gender	N	%
Female	608	50.4
Male	598	49.6
Form distribution	**N**	**%**
6. Form	177	14.7
7. Form	176	14.6
8. Form	176	14.6
9. Form	169	14
10. Form	169	14
11. Form	169	14
12. Form	170	14.1
Type of School	N	%
Middle School	529	43.8
High School	389	32.3
Vocational High School	288	23.9
Total	**1206**	**100**

Solution and interpretation of data

The data collected in the study was uploaded on to the "Statistical Package for Social Science" (SPSS) v.24.0 package program and analysed under expert supervision. The T-test, Mean, Frequency, Variance Analysis (ANOVA), Tukey HSD, Multiple Regression Analysis, Mann-Whitney test and Kruskal-Wallis tests were used in order to analyse the data.

RESULTS

Findings and comments

In this section, the findings and interpretations obtained from the statistical analysis of the quantitative data collected from students participating in the research "Opinions on Problematic Internet Usage" are included.

Analysis of students' problematic internet usage scale according to sub-dimensions

The problematic internet usage levels of students were determined in the data obtained by use of the problematic internet usage scale.

Table 2: Analysis results of students' problematic internet usage scale according to sub-dimensions

Problematic Internet Usage (PIU)	N	$\bar{x}$	SS
Negative Results of the Internet	1206	3.67	0.934
Social Benefit / Convenience	1206	3.52	0.919
Over Usage	1206	3.28	0.830
General / Grand Total	1206	3.49	0.798

According to [Table 2], the students focused on the "Highly Applicable" option regarding the item related to problematic internet usage. The focus on the negative effects of the internet and the Social Benefit / Convenience sub-dimension seem to be in the "Highly Applicable" category, whereas the Extra Usage sub-dimension seems to concentrate in the "Somewhat Applicable" option. These findings demonstrate that the problematic internet usage of students participating in the research was at a high level.

Analysis of Students' Opinions about Problematic Internet Usage According to the Gender Variable
The results of the t-test made it possible to determine whether there was a meaningful difference in the Problematic Internet Usage According to Gender shown in [Table 3].

Table 3: T-Test analysis of students' opinions about problematic internet usage according to gender

Problematic Internet Usage	Gender	N	X̄	SS	T	P
Negative Outcomes of the Internet	Female	608	3.55	1.022	-4,582	.000
	Male	598	3.80	0.817		
Social Benefit / Convenience	Female	608	3.43	1.001	-3,554	.000
	Male	598	3.62	0.819		
Over Usage	Female	608	3.18	0.842	-4,371	.491
	Male	598	3.38	0.806		
General Total	Female	608	3.39	0.865	-4,675	.000
	Male	598	3.60	0.709		

[Table 3] shows that the mean of the gender variable was statistically significant[t(1204)=-4.582, p=.000] in reference to the Negative Outcomes of the Internet. The means of the negative outcomes of the internet formales students (¯X=3.80, SS=0.817) were found to be significantly higher than in the case of female students (¯X=3.55, SS=1.022.

Similarly, it was found that the Social Benefit / Convenience sub-dimension means differ statistically in regard to the gender variable [t(1204)=-3.554, p=.000]. It was concluded that the Social Benefit / Convenience sub-dimension means of male students (¯X=3.62, SS=0.819) were significantly higher than in the case of female students (¯X=3.43, SS=1.001).

No statistically significant difference was found in the sub-dimension means for Over Usage of the Internet[t(1204)=-4.371, p=.491].

The difference between the means for the two gender groups was found to be statistically significant [t(1204)=-4.675, p=.000]. The findings show that male students (¯X=3.60, SS=0.709) had a significantly higher level of problematic internet usage than female students (¯X=3.39, SS=0.865).

Analysis of Students' Opinions about Problematic Internet Usage According to the Type of School Variable The results of the descriptive statistics and variance analyses, which were conducted in order to determine whether there was a significant difference related to problematic internet usage according to the Type of School variable, are presented in [Table 4] and the ANOVA analysis results are given in [Table 5].

Table 4: Mean and standard deviation values of the type of school variable in relation to problematic internet usage

Type of School		Negative Outcomes of the Internet	Social Benefit/ Convenience	Over Usage	Problematic Internet Usage
Middle School	X̄	3,66	3,52	3,31	3,50
	N	529	529	529	529
	SS	0,926	0,905	0,837	0,798
High School	X̄	3,68	3,53	3,23	3,48
	N	389	389	389	389
	SS	0,896	0,930	0,799	0,771
Vocational High School	X̄	3,70	3,54	3,28	3,51
	N	288	288	288	288
	SS	0,999	0,933	0,859	0,836

[Table 4] determined that although there was no significant statistical difference among students with problematic internet usage in middle school, high school and vocational high school in the Type of School variable, the group average was high in general.

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Table 5: ANOVA analysis results according to type of school variable related to students' problematic internet usage

Problematic Internet Usage	Source of Variance	Sums of Squares	df	Means of Squares	F	P
Negative Outcomes of the Internet	Between Groups	.339	2	.170	.194	.824
	Within Groups	1051.962	1203	.874		
	Total	1052.301	1205			
Social Benefit / Convenience	Between Groups	.078	2	.039	.046	.955
	Within Groups	1019.471	1203	.847		
	Total	1019.548	1205			
Over Usage	Between Groups	1.529	2	.765	1.108	.331
	Within Groups	830.515	1203	.690		
	Total	832.044	1205			
General Total	Between Groups	.134	2	.067	.105	.900
	Within Groups	768.639	1203	.639		
	Total	768.773	1205			

[Table 5] reveals the variance analysis conducted in order to determine whether the opinions of the students were meaningfully different with respect to the type of school they were attending. The result showed that the group mean score showed no significant difference[F(2-1203)=0.105; P=0.900]. Similarly, when the Negative Outcomes of the Internet, (F(2-1203)=0.194; P=0.824), Social Benefit / Convenience(F(2-1203)=0.046; P=0.955) and Over Usage(F(2-1203)=1.108; P=0.331)sub-dimensions were examined, it was observed that the problematic internet usage group mean score did not show any significant difference in relation to the Type of School variable; however, the problematic internet usage levels were high.

Analysis of Students' Opinions about Problematic Internet Usage in relation to the Form Variable

Table 6: Form variance mean and standard deviation values in relation to students' problematic internet usage

Form		Negative Outcomes of the Internet	Social Benefit/ Convenience	Over Usage	Problematic Internet Usage
6	$\overline{X}$	3.61	3.45	3.31	3.46
	N	177	177	177	177
	SS	0.948	0.941	0.896	0.841
7	$\overline{X}$	3.64	3.51	3.27	3.47
	N	176	176	176	176
	SS	0.958	0.929	0.808	0.803
8	$\overline{X}$	3.72	3.59	3.36	3.56
	N	176	176	176	176
	SS	0.871	0.842	0.805	0.749
9	$\overline{X}$	3.59	3.47	3.24	3.43
	N	169	169	169	169
	SS	0.921	0.854	0.827	0.767
10	$\overline{X}$	3.72	3.58	3.27	3.52
	N	169	169	169	169
	SS	0.944	0.935	0.823	0.807
11	$\overline{X}$	3.66	3.52	3.26	3.48
	N	169	169	169	169
	SS	0.939	0.914	.797	0.780
12	$\overline{X}$	3.78	3.557	3.25	3.53
	N	170	170	170	170
	SS	0.955	1.017	0.859	0.842

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[Table 6] shows that there were no statistically significant differences between the mean scores of problematic internet usage according to the form variable and that of the three sub-dimensions in general, and the mean scores of the group averages for problematic internet usage.

Table 7: ANOVA analysis results related to the problematic internet usage according to the form variable

Problematic Internet Usage	Source of Variance	Sums of Squares	df	Means of Squares	F	P
Negative Outcomes of the Internet	Between Groups	5.116	6	.853	.976	.440
	Within Groups	1047.185	1199	.873		
	Total	1052.301	1205			
Social Benefit / Convenience	Between Groups	2.982	6	.497	.586	.742
	Within Groups	1016.567	1199	.848		
	Total	1019.548	1205			
Over Usage	Between Groups	1.845	6	.308	.444	.849
	Within Groups	830.199	1199	.692		
	Total	832.044	1205			
General Total	Between Groups	2.064	6	.344	.538	.780
	Within Groups	766.709	1199	.639		
	Total	768.773	1205			

The results of the ANOVA analysis in [Table 7] revealed that the means of problematic internet usage in general and the means of the sub-dimensions did not yield a significant difference.

Analysis of Students' Opinions about Problematic Internet Usage in Relation to the School District Variable
The results of the Kruskal-Wallis analysis conducted in order to determine whether the students' responses yielded a significant difference for problematic internet usage in relation to the school district variable are presented in [Table 8].

Table 8: Kruskal-Wallis test of the school district variable in reference to students' problematic internet usage

Problematic Internet Usage	School District	N	Rank Average	df	X^2	P
Negative Outcomes of the Internet	Nicosia	439	608.86	4	30.080	.000
	Kyrenia	180	646.14			
	Famagusta	250	628.49			
	Güzelyurt	181	632.99			
	İskele	156	464.97			
Social Benefit/ Convenience	Nicosia	439	603.76	4	23.578	.000
	Kyrenia	180	601.20			
	Famagusta	250	639.05			
	Güzelyurt	181	655.07			
	İskele	156	488.63			
Over Usage	Nicosia	439	598.04	4	14.190	.007
	Kyrenia	180	630.89			
	Famagusta	250	632.06			
	Güzelyurt	181	627.48			
	İskele	156	513.67			
General Total	Nicosia	439	601.71	4	25.871	.000
	Kyrenia	180	627.98			
	Famagusta	250	639.43			
	Güzelyurt	181	641.68			
	İskele	156	478.38			

Statistically significant differences were found between the group averages as a result of the Kruskal Wallis test, where the students' opinions on bullying behaviours were based on the school district variable (P=.000; P<0.05). The Mann-Whitney U test is a non-parametric method used to compare the mean of two independent groups that are not normally distributed [6]. According to this; the cyber bullying behaviors of the students in İskele (709.34); were found to be statistically significantly higher than the students in Nicosia (569.97), Girne (661.12), Famagusta (564.54) and Güzelyurt (590.10) regions. However, The reason as to why the level of Negative Outcomes of the Internet, Social Benefit / Convenience, Extreme Usage sub-dimensions and the general group sub-dimensions' means were considerably lower in İskele than in the other district may be linked to the inadequate internet services in the region.

Assessment of Students' Opinions Regarding Problematic Internet Usage According to the Weekly Internet Usage Duration Variable

The descriptive statistics and variance analysis results are shown in [Table 9] and the ANOVA analysis results, assessing the relationship between problematic internet usages to weekly internet usage are given in [Table 10].

Table 9: Average and standard deviation Values of the weekly internet usage duration variable in reference to students' problematic internet usage

Duration of Usage		Negative Outcomes of the Internet	Social Benefit/ Convenience	Over Usage	Problematic Internet Usage
Less than 4 Hours	$\overline{X}$	3.19	3.03	2.92	3.05
	N	284	284	284	284
	SS	1.077	0.999	0.820	0.875
4 to 12 hours	$\overline{X}$	3.66	3.43	3.13	3.40
	N	251	251	251	251
	SS	0.750	0.760	0.627	0.569
13 to 27 Hours	$\overline{X}$	3.60	3.50	3.15	3.41
	N	376	376	376	376
	SS	0.768	0.744	0.640	0.601
More than28 Hours	$\overline{X}$	4.16	4.08	3.85	4.03
	N	295	295	295	295
	SS	0.841	0.823	0.857	0.758

Table 10: ANOVA analysis results for problematic internet usage according to the weekly internet usage duration variable

Problematic Internet Usage	Source of Variance	Sum of Squares	Df	Square Averages	F	P	Explanation
Negative Outcomes of the Internet	Between Groups	147.068	3	49.023	65.094	.000	Mean Difference
	Within Groups	905.233	1202	.753			
	Total	1052.301	1205				
Social Benefit/ Convenience	Between Groups	175.406	3	58.469	83.255	.000	Mean Difference
	Within Groups	844.143	1202	.702			
	Total	1019.548	1205				
Over Usage	Between Groups	160.076	3	53.359	95.447	.000	Mean Difference
	Within Groups	671.968	1202	.559			
	Total	832.044	1205				
General Total	Between Groups	157.914	3	52.638	103.577	.000	Mean Difference
	Within Groups	610.859	1202	.508			
	Total	768.773	1205				

The individual analysis on the Negative Outcomes of the Internet, Social Benefit / Convenience, Over Usage sub-dimensions and the general group averages indicates that there was a statistically significant difference with reference to the variable regarding the weekly duration students spend on the internet. According to the results of the Tukey HSD test, conducted in order to determine which groups exhibited differences, the sub-dimension levels and the general group average of students, who spent more than 28 hours per week, was found to be significantly higher than those who use the internet for less than 4 hours, between 4 to 12 hours and between 13 to 27 hours weekly. Accordingly, it can be stated that the rate of problematic internet usage increases considerably as the weekly internet usage duration increases.

CONCLUSION AND DISCUSSION

The data obtained after the implementation of the problematic internet usage scale demonstrate that the problematic internet usage levels of the students were generally high. The participants mostly chose the 'Fairly Appropriate' option for the Negative Outcomes of the Internet and Social Benefit / Convenience sub-

dimensions and the 'Somewhat Appropriate' option for the Over Usage sub-dimension. However, a study aimed at determining the levels of internet addiction and the influencing factors in secondary school students in the TRNC conducted by [24] yielded different results. According to the findings, 59.9% were in the internet addiction low-risk category, 20.7% were in the high-risk category, 13.5% had no addiction risk and 5.9% were addicted to the internet. The inference is that the four-year lapse between the two studies is the reason for the difference in the results, indicating that problematic internet usage in the TRNC increased in 2017. In the study, it was found that the problematic internet usage levels of male students were significantly higher than in the case of female students. The reasons supportive of this finding include online gaming as well as the use of the internet for various sexual activities. In a study conducted with 563 participants at the Gazi University, [16] determined that men use the internet for sexual activities. In another study conducted with 114 vocational high school participants, [15] found that the problematic internet usage of male students was significantly higher than that of female students. However, there are also findings to suggest that the level of problematic internet usage does not vary according to the gender variable. Similarly, in his study conducted with 464 university students, [8] found that the problematic internet usage levels of the students did not show any significant difference according to the gender variation.

The result of this research yielded that the students who were studying in the schools registered to MoNE in the TRNC had a high level of problematic internet usage regardless of the type of school they were attending. Likewise, upon analysing the results of a study conducted with 385 high school students, [25] stated that the level of problematic internet usage did not show any significant difference in relation to the school variable. In another study, [30] found that the problematic internet usage levels of students in 540 high school students did not show any significant difference in relation to the Type of School variable. In the study, it was concluded that the problematic internet usage levels of the students in the schools registered to the MoNE in the TRNC were high regardless of the form of education they were attending. The literature review indicates that the results obtained from this study are consistent with similar studies. In a study conducted with 710 high school students, [15] stated that problematic internet usage levels did not significantly differ in relation to the form variable. Likewise, [9] stated that the results of their study conducted with 2076 students showed that the problematic internet usage levels of students did not present any significant difference according to the form variable. However, there are also studies yielding different results. According to [28] study, which was conducted with 1723 students, the problematic internet usage levels of the students showed significant differences in relation to the form variable.

It was concluded that the problematic internet usage levels of the students participating in the study showed significant differences between school districts and that the problematic internet usage levels of students who were attending the general and vocational secondary education schools registered to the MONE were high in general. The problematic internet usage level of the students in İskele was significantly lower than for other regions (Nicosia, Kyrenia, Famagusta, and Güzelyurt). This is thought to be because of the poor internet services in the region. No studies have been found to examine the problematic internet usage level in relation to the school district variable.

The study shows that as the internet usage time of students participating in the study increased, the problematic internet usage and sub-dimensions increased significantly. The literature supports that the results obtained are consistent with similar studies. The result of a study involving 493 students conducted by [20] indicated that the duration spent on the internet has a direct correlation with problematic internet usage. The results of the study revealed that the level of problematic internet usage increased significantly as a function of the internet usage duration. Similarly, in a survey involving 754 secondary school students, [14] found that the level of problematic internet usage also increased in line with the increase in the duration of internet usage.

Recommendations

In this section, recommendations are made based on the findings of the study.

Recommendations for the ministry of national education

Seminars on problematic internet usage may be organized for students in secondary schools and vocational secondary schools.

The research was conducted in secondary, high school and vocational high schools. Studies towards the prevention of problematic internet usage and informative seminars aimed at primary school students are important for the education of students, who will be future users of the internet.

Recommendations for researchers

The data used in the survey is obtained from students attending secondary, high school and vocational high schools. Further research can be conducted on primary and university students.

Students at secondary school level can be guided towards using the internet healthily and beneficially through the organization of educational programs and alternative activities that promote socialization and interaction.

CONFLICT OF INTEREST
None

ACKNOWLEDGEMENTS
None

FINANCIAL DISCLOSURE
None

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