Original Article

The Relationship between Problematic Internet Usage in Students of Faculties of Health Sciences and Parameters of Locus of Control and Emotional Intelligence

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Abstract

Background: "Controlling internet usage", which is investigated in scope of problematic internet usage, may also be discussed in terms of locus of control and emotional intelligence.
Aim: This study aimed to determine the relationship between problematic internet usage in students of faculties of health sciences and parameters of locus of control and emotional intelligence.
Methods: This cross-sectional study was conducted with 1004 students of the faculty of health sciences. The data were collected by a "Personal Information Form", the "Online Cognition Scale (OCS)", the "Rotter Internal-External Locus of Control Scale (IELCS)" and the "Emotional Intelligence Questionnaire (EIQ)".
Results: It was found that the student's mean time of internet usage was 58.50 ± 113.49 minutes and 82.1% were online mostly in between the hours of 16 and 24 o'clock. The reasons for using the internet were listed in order as: obtaining general information / reading the news (94.5%), research about education / homework (90.8%), listening to mp3 files / watching movies / downloading software (88.8%), social networks / making friends / chatting (84.6%), surf / entertainment (77.9%), e-mail / communication (62.8%), shopping (57.9%), gaming (50.1%), banking operations (37.4%), financial information (26.5%), games of chance / betting (14.3%) and pornography (8.1%). There was a weak and significant relationship in the negative direction between the total and all sub-scale scores of OCS and the total scores of IELCS and EIQ ($p<0.05$).
Conclusions: It was determined that as problematic internet usage increased in the students, their total scores of internal-external locus of control and emotional intelligence levels decreased.

Keywords: Control center, emotional intelligence, faculty of health sciences, problematic internet use, student.

Introduction

The most important function of the internet is reaching information fast and communicating. Usage of mobile technological devices such as phones in addition to computers increases the rate of internet usage and expansion of areas of usage brings about some negative issues (Aslan & Yazıcı., 2016). In this context, the concepts of "problematic internet usage" (PIU) and "internet addiction" gained attention (Young, 2004; Eksi & Ciftci., 2017; Cam & Nur., 2015). PIU was defined in the literature as the excessive desire to use the internet, anger and aggression in cases of not having access to the internet, not being able to control the duration of using the internet, and negative effects of this situation on the professional and social life of the individual in time (Young, 2004; Eksi & Ciftci., 2017).

It is seen that internet usage in Turkey became prevalent very fast, and it is preferred more frequently by high school and university students (Ceyhan & Ceyhan., 2014). The factors leading students to be in a risk group for problematic internet usage include students' unlimited and easy access to the internet, expectation for students to use technology in education, that they prioritize social interaction and their lack of external control (Kuss, Griffiths, & Binder., 2013). According to the results of the Study on Household Information and Communication Technology Usage by the Turkish Statistical Institute, it was 56.6% and 66.8%, respectively, in individuls in the 16-74 age group using the internet. This shows that internet is used widely in Turkey (TUİK, 2017).

This increase in the rates of internet usage has led to the prevalence of online social interactions as opposed to in-person interactions (Engelberg & Sjoberg., 2004; Casale, Tella, & Fiorovanti, 2013, Ancel, Acikgoz, & Ayhan., 2015; Balcı & Ayhan., 2007). It is known that social interaction develops in the context of understanding, organizing and managing emotions, and this situation has been associated with emotional intelligence (Engelberg & Sjoberg., 2004; Casale, Tella, & Fiorovanti., 2013; Ancel, Acikgoz, & Ayhan., 2015). Emotional intelligence is defined as a person's knowledge of their own emotions, strong and weak aspects, understanding of their emotions and behavior based on this understanding (Deniz, Erus, & Buyukcebeci., 2017). In this context, it is noticeable that there is not a sufficient number of studies on the relationship between emotional intelligence and problematic internet usage (Engelberg & Sjoberg., 2004; Casale, Tella, & Fiorovanti., 2013; Ancel, Acikgoz, & Ayhan., 2015). Especially because loneliness, one of the sub-dimensions of problematic internet usage, is related to low self-esteem and low emotional intelligence, it was reported that this variable may be an important predictor of problematic internet usage (Reisoglu, Gedik, & Goktas., 2013). Considering the results of studies on emotional intelligence, it was seen that emotional intelligence is emotional intelligence had a significant relationship with social efficacy,

better organization of emotions, and satisfaction from life (Deniz, Erus, & Buyukcebeci., 2017) Additionally, it was emphasized that individuals with problematic internet usage had lower emotional intelligence (Engelberg & Sjoberg., 2004).

"Controlling internet usage", which is investigated in scope of problematic internet usage, may also be discussed in terms of locus of control (Demir, Ozkoklu, & Turgut., 2015). Locus of control is associated with to whom and what the individual attributes the responsibility of what they experience (Burcak, 2012). The individual's assessment of what they experience as a result of their own behavior is called internal control, while their belief that it is a result of luck, chance, fate or other people's actions is described as external control (Akın, Gungor, Mendi, Sahin, Bizat, & Durna., 2007). Those with internal locus of control are able to control, reduce or stop their usage of the internet whenever they want by considering their skills. Additionally, efforts spent by those with internal locus of control to reduce their internet usage do not lead to feelings of restlessness or depression. On the other hand, those with external locus of control are more likely to stay online excessively, and this leads to problematic internet usage (Demir, Ozkoklu, & Turgut., 2015).

The literature review revealed that internal-external locus of control and emotional intelligence should be discussed as important variables in analyzing problematic internet usage, and studies in this context are limited. In this sense, it was aimed to contribute to the literature by determining the relationship between problematic internet usage in health science students and parameters of locus of control and emotional intelligence.

Methods

The population of this cross-sectional study consisted of 1979 students who were registered at the faculty of health science in question in the academic year of 2016-2017. The study did not choose a sample, but it tried to reach all students. The sample of the study consisted of 1004 students who volunteered to participate. 50.7% of the population was reached. The data were collected between March and June 2017. The students were asked to provide the data before the class.

The data were collected by a "Personal Information Form", the "Online Cognition Scale (OCS)", the "Rotter Internal-External Locus of Control Scale (IELCS)" and the "Emotional Intelligence Questionnaire (EIQ)".

Personal Information Form, which was developed by the researchers, consisted of questions about the descriptive characteristics of the participants (age, sex, department, class level, type of family, monthly income of the family, the number of years of using internet, times of the day they used the internet, which activities they took part in online).

Online Cognition Scale (OCS) is a measurement tool developed by Davis (2002) with the purpose of analyzing problematic internet usage which assesses the issue under four sub-dimensions (loneliness-depression, diminished impulse control, social comfort, distraction) and consists of a 7-point Likert-type format including 36 items (Davis, Flett, & Besser., 2002). OCS assesses opinions about the internet. The scale is evaluated by calculating the total score and sub-group scores. High scores indicate "problematic usage". There is no cutoff score for OCS. The reliability and validity studies of the scale for Turkish were conducted by Ozcan and Buzlu (2005) on a sample consisting of 148 university students. The Cronbach's alpha internal consistency coefficient of the scale was 0.91'dir (Ozcan & Buzlu., 2005). The Cronbach's alpha coefficient in this study was 0.89.

Rotter Internal-External Locus of Control Scale (IELCS) which was developed by Rotter (1966) with 29 items is a self-report scale which assesses individuals' elements of control regarding their lives and themselves with internal and external dimensions (Rotter, 1966). The scale is scored in the range of 0-23. High scores indicate beliefs of external control, while low scores indicate beliefs of internal control. The scale was adapted to Turkish by Dag (1991) and its Cronbach's alpha internal consistency coefficient was found as 0.71 (Dag, 1991). The Cronbach's alpha coefficient in this study was 0.80.

Emotional Intelligence Questionnaire (EIQ), which was developed by Hall (1993), was adapted to Turkish by Elif Ergin (2000), its reliability and validity studies were conducted, and the Cronbach's alpha coefficient was found as 0.84. The scale consists of a total of 30 items and five sub-dimensions as being aware of feelings (6 items), empathy (6 items), managing emotions (6 items), social skills (6 items) and motivating oneself (6 items). The minimum and maximum scores possible in the scale are 30 and 180 respectively. The maximum score for each sub-dimension is 36. High scores in the scale indicate high levels of emotional intelligence (Ergin, 2000). The Cronbach's alpha internal consistency coefficient was 0.91 in this study.

The data were analyzed using the SPSS 16.0 software. Cronbach's alpha and Pearson correlation analyses were used in addition to descriptive statistics (frequency, percentage, mean, standard deviation).

In order to conduct the study, written permission was received from the institution where the study would be carried out, and approval was received from the İnonu University Health Sciences Research and Publication Ethics Board (Decision No: 2017/7-3). Additionally, before starting the study, the students were informed about it, they were informed that their personal information would be protected, and their verbal and written consent was received in line with principles of volunteerism.

Results

Table 1 presents the distribution of the demographic characteristics of the students. Among the students with the mean age of 20.75 ± 1.75, the mean level of income was 1.57 ± 0.82. It was found that 74.5% of the students were female and 25.5% were male, 48.1% studied nursing, 19.3% studied physical therapy and rehabilitation, 18.0% studied midwifery, and 14.6% studied audiology. 33.8% were 1st year, 23.9% were 2nd year, 24.5% were 3rd year and 17.8% were 4th year students. 66.2% of the students lived in the city center, and 83.9% had nuclear families. 12.2% of the students stated that their mother worked at a job, while 71.5% stated that their father worked at a job. Additionally, the ratio of those who stated that their mothers were literate / finished primary education was 50.7%, while this ratio was 36.9% regarding the fathers.

Table 2 presents information on the distribution of the internet usage behaviors of the students. It was found that the students' mean time of internet usage was 58.50 ± 113.49 minutes and the mean time of usage since they started using the internet was 75.46 ± 40.49 months. 18.1% of the students used the internet mostly in the hour

range of 08-16, while 82% used it in the range of 16-24, 12.7% used it in the range of 24-08. The reasons for using the internet were listed in order as: obtaining general information / reading the news (94.5%), research about education / homework (90.8%), listening to mp3 files / watching movies / downloading software (88.8%), social networks / making friends / chatting (84.6%), surf / entertainment (77.9%), e-mail / communication (62.8%), shopping (57.9%), gaming (50.1%), banking operations (37.4%), financial information (26.5%), games of chance / betting (14.3%) and pornography (8.1%).

Table 1: Distribution of the demographic characteristics of the students (n=1004)

Variable	$\bar{\mathbf{X}}$ ±SD	
Age	20.75 ± 1.75	
İncome	1.57 ± 0.82	
	n	**%**
Gender		
Female	748	74.5
Male	256	25.5
Department		
Nursing	483	48.1
Physical therapy and rehabilitation	194	19.3
Midwifery	181	18.0
Audiology	146	14.6
Class		
1class	339	33.8
2class	240	23.9
3class	246	24.5
4class	179	17.8
Living Place		
Province	665	66.2
County	230	22.9
Village	109	10.9
Family Structure		
Small	842	83.9
Big	131	13.0
Divorced/separate	31	3.1
Mother's Working Status		
Working	122	12.2
Not Working	882	87.8
Father's Working Status		
Working	718	71.5
Not Working	286	28.5
Educational Status of Mother		
İlliterate	184	18.3
Literary / Primary Education	509	50.7
Secondary education	113	11.2
High School	120	12.0
Üniversity	78	7.8
Educational Status of Father		
İlliterate	37	3.7
Literary / Primary Education	370	36.9
Secondary education	168	16.7
High School	249	24.8
Üniversity	180	17.9
Total	**1004**	**100.0**

Table 2: Information on the distribution of the internet usage behaviors of the students (n=1004)

Variable	$\bar{\mathbf{X}}$±SD	
Daily average internet usage time / min	58.50 ± 113.49	
The period of active use of the Internet / month	75.46 ± 40.49	
	n	**%**
The most used time range on the Internet [a]		
08:00-16:00	182	18.1
16:00-24:00	824	82.1
24:00-08:00	128	12.7
In general, the purpose of using the internet [a]		
General information / Reading news	949	94.5
Educational Research / Homework Research	912	90.8
MP-3 listening / Movie viewing / Program download	892	88.8
Social networks / Making friends / Chatting	849	84.6
Surfing / Entertainment	782	77.9
E-mail / Communication	631	62.8
Shopping	581	57.9
Playing games	503	50.1
Banking operations	375	37.4
Financial information	266	26.5
Chance games / Betting	144	14.3
Pornography	81	8.1

[a] Since more than one option is flagged, percentages are taken over "n".

Table 3: The relationship between problematic internet usage in the students and internal-external locus of control

OCS	R[β]	IELCS
Loneliness / Depression	r	-0.097
	p	**0.002***
Diminished Impulse Control	r	-0.115
	p	**0.000****
Social Comfort	r	-0.070
	p	**0.026***
Distraction	r	-0.098
	p	**0.002***
OCS Total	r	-0.101
	p	**0.001***

[β] Pearson Correlation *p<0.05 **p<0.001

Table 4: The relationship between problematic internet usage in the students and emotional intelligence

OCS	R$^\beta$	Being Aware of Feelings	Managing Emotions	Motivating Oneself	Empathy	Social Skills	EIQ Total
Loneliness/Depression	r	-0.255	-0.187	-0.205	-0.211	-0.178	-0.241
	p	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***
Diminished İmpulse	r	-0.269	-0.197	-0.232	-0.224	-0.189	-0.258
Control	p	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***
Social Comfort	r	-0.248	-0.156	-0.193	-0.207	-0.169	-0.227
	p	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***
Distraction	r	-0.229	-0.221	-0.235	-0.191	-0.193	-0.248
	p	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***
OCS Total	r	-0.277	-0.204	-0.236	-0.231	-0.200	-0.267
	p	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***

$^\beta$ Pearson Korelasyon *$p<0.001$

Table 3 shows the relationship between problematic internet usage in the students and internal-external locus of control. It was found that there was a significant and weak relationship in the negative direction between the students' IELCS scores and their both total and all sub-dimension scores of OCS ($p<0.05$, $p<0.001$) and as problematic internet usage increased, the total locus of control scores decreased significantly.

Table 4 shows the relationship between problematic internet usage in the students and emotional intelligence. It was found that there was a significant and weak relationship in the negative direction between the students' EIQ ($p<0.001$) and as problematic internet usage increased, the emotional intelligence levels of the students decreased significantly.

Discussion

Internet addiction is generally defined as spending long times on the internet and inability to have control over internet usage (Gunuç & Kayri., 2010; Leung, 2004). In their study on 1302 university students, Anderson found that the mean amount of time they spent online was 100 minutes, and categorized those whose mean usage time was 229 minutes as addicted, while categorizing those whose mean usage time was 73 minutes as not addicted (Anderson, 2001). Likewise, in their study with high school students, Demir found significant and positive relationships between problematic internet usage and times of usage. They stated that spending long hours online leads to problematic usage (Demir et al., 2015). In this study, the student's mean time of internet usage was 58.50 ± 113.49 minutes and 82.1% were online mostly in between the hours of 16 and 24 o'clock. The time spent on the internet is not sufficient in finding internet addicts, and it the reason for usage is also highly important. While internet-addicted users spend more time on film-music websites, gaming websites, chat rooms, pornographic websites, community websites and similar ones, those who are not addicted spend time in news, shopping and education websites (Gunuç & Kayri., 2010; Kim & Kim., 2002). Additionally, in this study, the general reasons for using the internet were listed in order as: obtaining general information / reading the news (94.5%), research about education / homework (90.8%), listening to mp3 files / watching movies / downloading software (88.8%), social networks / making friends / chatting (84.6%), surf / entertainment (77.9%), e-mail / communication (62.8%), shopping (57.9%), gaming (50.1%),

banking operations (37.4%), financial information (26.5%), games of chance / betting (14.3%) and pornography (8.1%) (Table 2). It was seen that obtaining general information / reading the news and educational research / research for homework were stated frequently in this study. As opposed to this, Ceyhan found in their study on adolescents that the ratio usage of the internet for obtaining information was 18.20%. They also stated that the participants used the internet for chatting online (17.5%), spending time because of boredom (17.2%), entertainment (16.9%), gaming (11.4%), both homework and other activities (10.1%) and doing homework (8.8%) (Ceyhan, 2013). It is believed that this difference emerged due to differences in age groups and levels of education.

This study found that there was a significant and weak relationship in the negative direction between the students' IELCS scores and their both total and all sub-dimension scores of OCS (Table 3, p<0.05, p<0.001) and as problematic internet usage increased, the total locus of control scores decreased significantly. It was a noteworthy finding that as problematic internet usage increased, the mean total IELCS score decreased significantly. In IELCS, high scores indicate beliefs of external locus of control, while low scores indicate beliefs of internal locus of control (Dag, 1991). According to the literature, those who have beliefs of external locus of control would have higher rates of problematic internet usage, while those with beliefs of external locus of control would be able to control their internet usage whenever they want (Demir et al., 2015). In contrast to this information, this study found that, as problematic internet usage increased, beliefs of internal locus of control increased due to reduced IELCS total scores. From this point of view, it may be argued that the students in the scope of this study were aware of their problematic internet usage, and they controlled this with their internal control mechanisms. Similarly, in the literature, it was reported that individuals with internal locus of control accepted that what they experienced was a result of their own actions, their self-perceptions were higher, they felt healthies and they had higher coping skills and internal motivations (Akın et al., 2007; Basım & Şeşen., 2006; Şahin et al., 2009). It is believed that as the students in this study were on a university level and they were grown-up individuals based on their mean age (20.75 ± 1.75) their beliefs of

internal locus of control and awareness of problematic internet usage may have been increased accordingly. In a similar sense to the findings obtained in this study, İskender and Akın conducted a study with 311 university students with the purpose of identifying the relationship among social self-efficacy, academic locus of control and internet addiction, and found that there was a negative relationship between internet addiction and internal locus of control while there was a positive relationship with external locus of control (Iskender & Akin., 2009). In their study with 722 adolescents, Chak and Leung investigated the relationship of internet addiction with shyness and locus of control, and they found a weak and significant relationship in the negative direction between locus of control and internet addiction (Chak, 2003). Bellamy and Hanewicz stated that, if internet addition is considered like types of addiction such as playing games of change and alcoholism, it might have a significant and negative relationship with variables that measure self-esteem such as locus of control (Bellamy & Hanewicz., 2001). From this point of view, it may be seen that the finding was in agreement with the literature and problematic internet usage significantly decreased the total internal-external locus of control scores.

This study found that there was a significant and weak relationship in the negative direction between the students' EIQ (p<0.001) and as problematic internet usage increased, the emotional intelligence levels of the students decreased significantly (Table 4). In parallel to the results of this study, Ançel et al. conducted a study with 432 health sciences students to determine the relationship between problematic internet usage and parameters of emotional intelligence and some sociodemographic characteristics, and they found a weak, negative relationship between OCS and EIQ. Additionally, they determined that students with low levels of problematic internet usage had higher total and sub-dimension scores of EIQ in comparison to those with higher levels of problematic usage (Ançel et al., 2015). Far et al. investigated the relationship between internet addiction and components of emotional intelligence, and they found a negative relationship between internet addiction and all components of emotional intelligence (Far et al., 2014). Hamisi et al. conducted a study with 201 university students to determine technology

addiction and emotional intelligence and found a negative relationship between internet addiction and emotional intelligence (Hamissi et al., 2013). Beranuy et al.'s study on determining the role of emotional intelligence on problematic internet and mobile phone usage in university students found a significant relationship between low emotional intelligence and excessive internet usage (Beranuy et al., 2009). Parker et al. conducted a study with 667 adolescents to determine the relationship between emotional intelligence and various addictions (gambling, internet usage and video games), and they found a significant relationship between emotional intelligence and internet addiction (Parker et al., 2008). Engelberg and Sjoberg's study on students revealed that individuals with problematic internet usage habits had lower emotional intelligence levels (Engelberg & Sjoberg., 2004). The study by Khoshakhlagh and Faramarzi which aimed to determine the relationship between internet-related mental disorders and emotional intelligence showed a correlation between these variables. Moreover, the reported that emotional intelligence was a significant predictor of internet addiction (Khoshakhlagh & Faramarzi., 2012). Usta conducted a study to investigate the relationship between internet addiction and emotional intelligence in university students and demonstrated that increased internet addiction levels in university students reduced their levels of emotional intelligence and sub-dimensions of emotional intelligence (Usta, 2017). The finding in this study agreed with those in the literature, and it may be seen that problematic internet usage posed as an obstacle in development of emotional intelligence.

Conclusions

It was determined that the students used the internet by the mean time of 1 hour, they were online mostly between the hours 16 and 24 o'clock, the most prevalent reason for using the internet was "obtaining general information / reading the news", and as problematic internet usage increased in the students, their total scores of internal-external locus of control and their levels of emotional intelligence decreased significantly. In the light of these results, it may be recommended that;

- Frequency of problematic internet usage in university students and the effects of this on

significant variables such as locus of control and emotional intelligence are focused on,
- Appropriate training and consultation activities are organized with the purpose of managing the negative effects of problematic internet usage in young people.

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