

## Examining the Internet Addiction Levels of High School Senior Students

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### Abstract

In the present study, the internet addiction status of high school senior students in Yeşilyurt county of Malatya was analyzed and examined in terms of gender variable. The study population consisted of 3442 senior students who were studying at 37 high schools in state schools in Yeşilyurt County of the city of Malatya in 2016-2017 academic year. The sampling of the study consisted of 606 students selected with the Random Sampling Method from among 17 high schools. The model of the study was the Survey Model. For the purpose of determining the internet addiction levels of the students, the “Internet Addiction Scale”, which was developed by Gunuc (2009) was used. This scale consists of sub-dimensions like “Deprivation”, “Difficulty in Control”, “Disruption in Functionality”, and “Social Isolation”. In analyzing the data of the study, arithmetic average ( $\bar{X}$ ), frequency (f), standard deviation (sd), k-means clustering method and t-test were used. In brief, the following results were received in the present study: out of the 606 senior high school students, 85 (14,1%) were in the Addicted Group, 258 (42,6%) were in the Risk Group and 262 (43,3%) were in the Non-Addicted Group. When these results were analyzed it was determined that the majority of the students who constituted the sampling group of the study were in the Non-Addicted Group (43,3%). A significant differentiation was detected between the internet addiction scores of the students according to the gender variable in favor of the male students.

**Keywords:** internet, internet addiction, addiction

### 1. Introduction

In general, it is considered that addiction and substance use have the function of aiding the individual to overcome the difficulties in daily life (Flores, 2004, s. 1). Addiction means the routine behaviors of individuals mostly to have the chemical substance and sometimes without any specific purpose and is a disorder in which the individual shows repeated obsessions or compulsory feelings (Marks, 1990, s. 1389). Although, traditionally, addiction is considered as a phenomenon stemming from stimulant substances like alcohol or cocaine that affect the human behaviors, studies conducted in the past 30 years have shown that individuals may be harmed due to behaviors and habits that show addiction symptoms. Excessive eating, gambling, shopping, sex and Internet use may also cause similar problems like stimulant substance (Padwa & Cunningham, 2010). For this reason, the term addiction has been increasingly used to explain many human behaviors (Netherland, 2012, s. 11).

Using Information Technologies to facilitate daily life brought with it the differentiation of interest areas of individuals in the society (Kocoglu, 2017, s. 4). As a matter of fact, the term “*Technology Addiction*”, which is defined as a type of addiction that is not chemical and involved the interaction between humans and machines in the times in which computers, which are among information technologies, were used in an intense manner, was first mentioned by Griffiths (1995, s. 14,15). With the spread of the Internet all over the world as of mid-1990s, internet addiction has been defined as an important psychological disorder that affects cognitive, emotional and social development of individuals (Price, 2011, s. 7). In as early as 1998, it was determined that 6% of the online users faced this problem in America (Brenner, 2000, s. 452). However, unlike chemical addiction, excessive internet use was not criticized as an addictive and was mentioned with some technological benefits it brought to the society (Young K. S., 2009, s. 217). When the first symptoms of internet addiction appeared, it caused debates among clinicians and academicians. Excessive internet use has been accepted as a type of addiction that causes pathological symptoms by some experts (Widyanto & Griffiths, 2006, s. 31).

Internet use, which is one of the realities of the Information Age, has influenced every field of life at a great deal as well as the structures and presentations of educational programs in education and school system. The Internet not only facilitated the access to information and made it cheaper, but it also made it become independent from time and place. As a natural result of this, it seems that access to information is no longer a problem (Aydemir, Benzer, Karahan, & Akmençe, 2013, s. 1073).

Proper definition of the Internet Addiction term varied according to viewpoints. Generally, it has been associated and defined with the impulses or behaviors for using the computer and the internet that cause disruptions and distress as well as uncontrolled occupation (Shaw & Black, 2008, s. 353). Some researchers associated internet addiction with the addictions that involved alcohol and substance use (Griffiths M. , 1999, s. 246), and some others associated it with obsessive or compulsive control disorders of individuals (Belsare, Gaffney, & Black, 1997). The terms “Pathological internet use” (Davis, 2001, s. 187), and “Problematic internet use” (Caplan, 2003, s. 625) have been used to define this problem. The Internet Addiction term, which was the last ring of the technology addiction, was first mentioned by Ivan Goldberg (Suler, 1999). It is a process that is not controlled taking excessive time and is problematic resulting in professional hardships (Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000, s. 268). According to Young, on the other hand, as a fast-growing phenomenon, internet addiction is a concept including a wide variety of behaviors related with gambling addiction, and motive-control problems (2004, s. 402). Griffiths (1999); however, the internet might not be addiction for many excessive internet users, and it could be another way of satisfying other addictions. The number of internet users was 360 million worldwide in 2000 and exceeded 3 billion 800 million users in 2017 (3,885,567,619) (IWS, 2017). According to the data of 2016, the rate of the individuals using the internet in Turkey was 61,2% (TÜİK, 2016). The number of the users was recorded as nearly 41 million people (IWS, 2017). This means that nearly one out of every two people is active user. With this increase of the internet use in daily life, the relation between mainly psychological factors and many other factors and internet addiction has been investigated in many studies. In these studies, it was reported that there was relations between problematic internet use and some psychological disorders like Attention Deficit Hyperactivity Disorder (Yen, Yen, Chen, Chen, & Ko, 2007; Ko C.-H. , 2009; Dalbudak & Evren, 2013; Ozturk, Ekinci, Ozturk, & Canan, 2013; Kocoglu, 2017), depression (Koronzai, et al., (2013); Sahin, Ozdemir, & Unsal, (2013); Senormanci, et al., (2014); Yang, et al., (2014); Choi, et al., (2014)), loneliness (Yao & Zhong, 2014), neurotic personality (Tsai, et al., (2009); Wang, et al., (2011)), low self-respect (Armstrong, Phillips, & Saling, (2000); Aydin & Sari, (2011); Sariyska, et al., (2014)), low self-control (Ozdemir, Kuzucu, & Ak, 2014), academic failure (Stavropoulos, Alexandraki, & Stefanidi, 2013), hostility (Koc, 2011), sleep disorders (Anderson, 2001; Lam, 2014).

In this context, the relation between gender variable and internet addiction was investigated and the internet addiction status was examined with feedbacks from students and in the light of the relevant literature. It is considered that the results of the present study will contribute to the students, parents, psychological counselors and guides, specialists of the field, managers and decision-makers in solving the problems stemming from internet addiction in social and academic life.

## **2. Method**

The Survey Model, which aims to describe an existing situation as is, was used in the present study. Survey models are research approaches that aim to describe an already existing situation either in the past or in our present time as they are. In other words, in a universe consisting of many elements, such study approaches are used on a group, sample or sampling that will be selected from among the study population to make a general judgment on the universe (Karasar, 2011, s. 110).

### *2.1 The Universe and Sampling of the Study*

When the sampling was made, firstly, the universe which is desired to be generalized by the author is limited for the purpose of the study. There is a study universe that fits the aims of research best (Karasar, 2011, s. 111). The universe of the study consisted of 3442 students studying at 4<sup>th</sup> grades in 37 high schools in Yeşilyurt County of Malatya in 2016-2017 academic year.

The sampling is a small set whose adequacy is accepted to represent the universe and is selected from among the universe according to certain rules. Studies are mostly conducted on sampling clusters and the result are generalized according to the relevant universe (Karasar, 2011, s. 110). The sampling of the study consisted of 606 students who were selected with random sampling method in 17 high schools at 4<sup>th</sup> grades.

### *2.2 The Data Collection Tool*

In the present study, for the purpose of determining the internet addiction levels of the students, the “Internet Addiction Scale”, which was developed by Gunuc (2009), was used. The scale consists of 35 items under the sub-factors of “Deprivation”, “Difficulty in Control”, “Disruption in Functionality” and “Social Isolation”.

### *2.3 The Collection and Analysis of the Data*

After the data obtained with the “Internet Addiction Scale” from the participants were loaded into the computer, the Test of Normality was applied. In a statistical study, to perform many tests, the distribution must be normal or close to normal (Kalayci, 2006). Although many features show a normal distribution in the universe, in case the measurements on the desired feature are obtained from a small group ( $n < 30$ ), there will be deviations from normal distribution. As the size of the group increases, the values will near to normal (Ravid, 1994; Buyukozturk, Cokluk, & Koklu, 2014, s. 63).

Tabachnick and Fidell (2015) accept that in case the skewness and kurtosis values are between +1,500 and -1,500, the distribution is normal (p. 81). Since it was determined that the skewness (.762) and kurtosis (.074) values of the statements of the scale were between +1,500 and -1,500 in the normality test, it is possible to claim that the distribution is normal in the study. For this reason, arithmetic average ( $\bar{X}$ ), frequency, standard deviation (sd), k-means clustering method and t-tests were used in the analysis of the data. The significance value was taken as ( $p < .05$ ) in the analysis of the data.

### 3. Findings

The scores received by the students from the scale were analyzed, and the results are given in Table 2.

Table 1. The Distribution of the Cluster Scores Received by the Students from the Internet Addiction Scale

	Number of the People (N)	The Lowest Score	The Highest Score	$\bar{X}$	Standard Deviation
Score Value	606	1,00	4,94	2,37	0,89

As seen in Table 1, the lowest score average received by the students who participated in the study in the "Internet Addiction Scale" was 1,00; and the highest score was 4,94. The arithmetic average ( $\bar{X} = 2,37$ ) and standard deviation received by the students in the scale was determined as  $sd = 0,89$ .

The "Clustering Analysis technique", which is one of the sampling classification techniques, was used in order to determine the group that had internet addiction or not and to receive more detailed results on the addition status of the individuals. The general aim of the clustering analysis is to determine the similarities of units according to their certain features and classify them accurately by considering these similarities (Cokluk, Sekercioglu, & Buyukozturk, 2014, s. 139). This method facilitates that some end-values that are implicit in the sampling are revealed. With this clustering method, the addiction levels of the individuals were classified more accurately (Gunuc & Kayri, 2009, s. 171).

The Clustering Analysis was used to obtain a more detailed result on determining the addiction status of the individuals, and it was observed that the results were grouped in 3 sub-sets. In this respect, as seen in Table 2, there is "The Addicted Group" in the first set, the "Group with risk of addiction" is in the second set, and the "Non-addicted group" in the third set. In naming the sets, the classification of Gunuc (2009) was taken as the basis. By considering the scores received in the scale as a whole on the addition levels of the students, the frequency and percentage distributions of the internet addiction scores of the students are given in Table 2.

Table 2. The frequency and percentage distribution of the students for Internet Addiction Status

Clustering (k-mean)	f	Total (%)
1 (Addicted Group)	85	14,1
2 (Risk Group)	258	42,6
3 (Non-Addict Group)	262	43,3
<b>Total</b>	<b>606</b>	<b>100</b>

When Table 2 is examined it is seen that the majority (43,3%) of the 606 senior students who participated in the study were in the non-dependent group. The risk group (42,6%) and the dependent group (14,1%) followed this.

In the literature review, which was conducted as based on these data, it was observed that in the study conducted by Ozdemir (2016), 1,5% of the sampling were dependent internet users; in the study of Isleyen (2013), the dependent group constituted 7% of the sampling; in the study of Gunuc (2009) 10,1% of the sampling were dependent; in the study of Inan (2010), 0,4% of the sampling were dependent; in the study of Caliskan (2013), 0,2% of the sampling were dependent; in the study of Balci and Gulnar (2009), 23,2% of the sampling were dependent; in the study of Durualp and Cicekcioglu (2013), 17% of the sampling were dependent. It was also determined that there were no dependent groups in the study conducted by Yucelten (2016) and Doner (2011). In some other studies, these rates were reported as 4% (Wang, Zhou, Lu, Wu, Deng, & Hong, 2011); 1,1% (Bayraktar, 2001); 3,1% (Kaltiala-Heino, Lintonen, & Rimpela, 2004); 2% (Johansson & Gårestam, 2004); 20,7% (Yen, Yen, Chen, Chen, & Ko, 2007); 2,4% (Cao & Su, 2007); 8% (Elizabeth & Tee, 2007); 4,3% (Jang, Hwang, & Choi, 2008; Gunuc, 2009). In the study conducted by Ozdemir (2016), 14% of the sampling were risky internet users; and in the study conducted by Inan (2010), the group that showed symptoms of internet dependency constituted 9% of the sampling; in the study conducted by Balci and Gulnar (2009), risky internet users constituted 28,4% of the sampling; in the study of Yucelten (2016), the internet dependency risk group constituted 11% of the sampling; in the study of Doner (2011), the participants who showed limited symptoms constituted 9% of the sampling; in the study of Isleyen (2013), the risk group constituted 23% of the sampling; in the study of Sahin (2011), the participants who showed limited symptoms constituted 14% of the sampling; in the study of Durualp and Cicekcioglu (2013), the risk group constituted 66% of the sampling; and in the study of Gunuc (2009) the risk group constituted 29% of the sampling.

The "t-test" was conducted to test whether there was a difference between the genders of the high school senior students and their internet addiction levels, and the results are given in Table 3.

Table 3. The Internet Addiction Scores of the Students according to the Gender Variable

Dimensions	Gender	N	$\bar{X}$	sd	t	p
<b>Deprivation</b>	Female	313	2,57	0,97	4,27	0,11
	Male	293	2,58	1,07		
<b>Difficulty in Control</b>	Female	313	2,27	0,88	0,25	<b>0,00*</b>
	Male	293	2,31	0,91		
<b>Disruption in Functionality</b>	Female	313	2,22	0,94	0,28	<b>0,03*</b>
	Male	293	2,26	0,96		
<b>Social Isolation</b>	Female	313	2,31	0,88	3,52	<b>0,04*</b>
	Male	293	2,41	0,92		
<b>Internet Addiction Scale (General)</b>	Female	313	2,36	0,80	1,22	<b>0,04*</b>
	Male	293	2,37	0,85		

**N=606**

When Table 3 is examined, it is seen that there were no differences in the Deprivation Sub-dimension of the Internet Dependency Scale of the senior high school students according to gender 0,11 ( $p > 0.05$ ). In the Internet Addiction Scale, there was a significant difference in general 0,04 ( $p < 0.05$ ); in Difficulty in Control, there was a significant difference at a rate of 0,00 ( $p < 0.05$ ); in the Disruption in Functionality, there was a significant difference at a rate of 0,03 ( $p < 0.05$ ); and in Social Isolation sub-dimension, there was a significant difference at a rate of 0,04 ( $p < 0.05$ ) according to gender. When the Arithmetic average values were analyzed, it is seen that the significant difference stems from the male students.

In the study findings, it is possible to claim that male students are under more risk in terms of internet dependency when compared with the female students. In this respect, in the literature review, there were many studies that supported the findings of the present study. In the study conducted by Usta in (2016), the relation between gender and internet dependency was examined, and it was found that there was a significant relation between the internet dependency behaviors of the students and gender variable. In their analysis, they reported that the male students showed more internet dependency behaviors than the female students. Similarly, Gencer (2017) also reported that male students showed more internet dependency behaviors than the female students. Ayaroglu (2002) conducted a study and examined the relation between the internet use of university students and their loneliness levels, and concluded that male students spent more time on surfing on the internet and file transfer when compared with the female students. Scherer (1997) conducted another study and examined 531 students in terms of internet use. They found out that the great majority of the students who were determined to be internet dependent were male students (71%). Doner (2011) conducted a study and examined 624 students 282 of whom were female and 342 were male. According to the findings of their study, the internet addiction levels of male students compared to the female ones differentiated at a significant level, and this difference was in favor of the male students. Similarly, Morahan-Martin and Schumacher (2000), Chou and Hsiao (2000), Bayraktar (2001), Koch and Pratarelli (2004), Aktas (2005), Yang and Tung (2007), Balta and Horzum (2008), Ogel and Comert (2009), Gunuc (2009), Kelleci et al., (2009), Tsai et al., (2009), Esen (2010), Gurcan (2010), Yildiz (2010), TacYildiz (2010), Doner (2011), Gencer (2011), Liberatore et al., (2011), Carli et al., (2012), Gokcearslan and Gunbatar (2012), Yilmaz (2013), Zorbaz (2013), Turkoglu (2013), Azher et al., (2014) and Waldo (2014), Ceyhan E. (2016), Issever (2016), Unsal (2016) also reported that male students had higher internet addiction levels when compared with female students in terms of the gender variable. These findings support our findings in terms of the gender variable.

It is also possible to see several studies in the literature claiming that there were no significant differentiation between internet dependency and gender. Brenner (2000), Batigun (2011), Kaya (2011), Jelenhick et al., (2012), Hawii (2012), Caliskan (2013), Andreou and Svoli (2013), Dikme (2014), Dalgali (2016), Yucelten (2016) also determined that gender was not effective on internet dependency. In fewer studies, it was reported that the Internet dependency was in favor of female students (Griffiths M. , 1995; Besalti, 2016).

It is interpreted that the differentiation between the gender variable and internet dependency may stem from the measurement style of the addiction level in studies and from cultural differences among countries (Balta & Horzum, 2008, s. 187-205). When considered in general terms, it is possible to name the high internet Addiction levels in males when compared with females may be the unequal gender concept in the society, males being left more comfortable and free, males going more to the Internet cafes, etc. (Cavus & Gökdaş, 2006, s. 57). On the other hand, female students may be left deprived (Atlama & Ozsoy, 2009), their free time is taken away from them by loading them with many chores, or their freedom fields are narrowed down by intervening in their freedom areas (Yilmaz E. , 2013, s. 75). In the Turkish society, males may be more comfortable and free because they have the tendency of moving away from the family after a certain age, puberty syndromes, circle of friends, and similar reasons. In addition, the patriarchal structure of Malatya may be the reason for higher internet addiction scores in males.

#### 4. Results

Based on the findings of the study, the following results were concluded.

- ✓ As a result of the Clustering Analysis, which was made to determine the Internet Addiction levels of senior high school students, it was determined that 14% of the students were in the Addicted Group, 42% were in the Risk Group in terms of Addiction, and 43% were in the Non-Addict Group.
- ✓ It was determined that the averages of the scores received by the students from the Internet Addiction Scale differed according to the gender variable. This difference was found to be in favor of the male students. The averages of the scores of the male students are higher than those received by female students.

The following recommendations may be made in the light of the study findings:

- ✓ When the fact that 42% of the students are in the Risk Group is considered, high school students must be informed about Internet Addiction in informatics classes as well as in other classes, and the required contents on Internet Addiction must be added to the curriculum.
- ✓ Families and their children may be informed about the Internet Addiction being an important addiction like other addictions by using various technological opportunities.
- ✓ Although students at high school age are open to new ideas and innovations, it is generally accepted that they do not have the life experience to question the validity of these ideas. For this reason, parents must guide and limit the Internet use of their children.
- ✓ Parents should be informed about family protection programs, and the necessary support needed for the efficient use of these programs must be provided by relevant institutions.
- ✓ This study was conducted with senior high school students studying at high schools in Yeşilyurt County of the city of Malatya. Similar comparative studies may be conducted in other regions with wider universe and sampling.

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