

Hemşirelik ve Bilgisayar Mühendisliği Öğrencileri Arasında Problemlı İnternet Kullanımı ve Etkileyen Faktörler

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Öz

Giriş: Problemlı internet kullanımı bireyin yaşamında olumsuz birçok soruna neden olmaktadır. Gençler arasında internet kullanımının artmasına rağmen problemlı internet kullanımını belirlemeye yönelik ülkemizde sınırlı sayıda çalışma bulunmaktadır. **Amaç:** Bu çalışma hemşirelik ve bilgisayar mühendisliği öğrencileri arasındaki problemlı internet kullanımı ve etkileyen faktörlerin belirlenmesi amacıyla yapılmıştır. **Yöntem:** Bu çalışma tanımlayıcı karşılaştırmalı bir çalışmadır. Araştırmanın örneklemini Şanlıurfa ilinde üniversitede 2012-2013 öğretim yılında hemşirelik ve bilgisayar mühendisliği bölümünde öğrenim gören 310 öğrenci oluşturmaktadır. Veriler Problemlı İnternet Kullanımı Ölçeği ve Tanımlayıcı Özellikler Soru Formu kullanılarak yüz yüze görüşme yöntemi ile elde edilmiştir. Veriler tanımlayıcı istatistikler ve varyans analizi kullanılarak değerlendirilmiştir. **Bulgular:** Öğrencilerin %52.9'u erkek, %47.1'i kız, %29.6'sı ikinci sınıfta öğrenim görmektedir. Öğrencilerin problemlı internet kullanımı ölçeğinden ortalama 65.04±24.33 puan aldıkları saptanmıştır. İnternetin olumsuz sonuçları 29.94±13.67, sosyal fayda 19.20±7.75, aşırı kullanım 15.90±5.27 olarak belirlenmiştir. Problemlı internet kullanımını cinsiyet, internette oyun oynama ve sosyal ağlarda gezinme durumunun istatistiksel olarak anlamlı şekilde etkilediği, bölüm ve sınıfın etkilemediği tespit edilmiştir. **Sonuç:** Bu çalışmada üniversitede öğrencilerinde problemlı internet kullanımının düşük düzeyde olduğu bulunmuştur.

Anahtar Sözcükler: Problemlı internet kullanımı, Üniversite öğrencileri, Sosyal ağlar.

Abstract

The Factors Affecting Problematic Internet Use Among Nursing and Computer Engineering Students

Introduction: There is inevitable growth of technology usage in recent years. **Aim:** The main purpose of this study is to investigate the factors affecting the problematic internet use (PIU) among university students from nursing and computer engineering departments. **Methods:** The method of this study is a descriptive. The sample of the study is 310 Nursing and Computer Engineering students studying in Şanlıurfa in 2012-2013 school years. The data sources are demographic survey questions and the questionnaires developed about students' PIU. For the analysis of the data, descriptive analysis, frequencies, and variance analysis are used. **Findings:** Among the participants, 52.9% are male and 47.1% are female students where 29.6% are in their second years. The students' scores from PIU scale are 65.04±24.33. the following scores were found; the negative effects of the internet 29.94±13.67, the social benefit 19.20±7.75, and overuse 15.90±5.27. The findings show that gender, online game play and being on a social network site make differences for students' PIU scores regardless of their majors or school years. **Conclusion:** This study found that PIU among these university students were at low levels.

Key Words: Problematic internet use (PIU), University students, Social networks.

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From its first lurching in 1960s to today's complex use, the internet has grown astonishingly. Entertainment, communication, professions or shopping is now moving from physical world to cyber world. The number of computers and the internet users are approximately more than three billion. Just in Turkey, the percentage of homes connected to the internet was 47.2% in 2012 and this number was seven times less in 2004 (Türkiye İstatistik Kurumu, 2012).

Even though computers and internet technologies are helping us make life easier and share information instantly, there are some disadvantages because of misuses or overuses. After the misuses of internet increased, terms to describe overuse of the internet are defined. Some of them are; internet addiction (Young, 1998), pathologic and problematic internet use (Niculovic, Zivkovic, Manasijevic & Strbac, 2012), internet behavior addition, unhealthy internet use, net addiction, online addiction, cyber addiction (Ceyhan 2008; Davis 2001; Muslu & Bolşık 2009; Shapira et al., 2003; Türkiye Büyük Millet Meclisi, 2012),

excessive and compulsive internet use (Widyanto & Griffith, 2006). These terms usually explains overuses of the internet, not being able to control himself, not feeling well without the internet, and having anger and aggression when do not use (Arısoy, 2009; Young, 1998).

Even though there are arguments and critics about accepting overuse of the internet as problematic internet use (PIU) (Widyanto & Griffith, 2006), studies conducted on this topic shocks users and families. According a study, overuse or PIU can cause physical, psychological, social and cognitive problems on a person (TBMM, 2012). Other studies found that overuse of the internet can cause depression, suicide, psychological symptoms (Jang, Hwang, & Choi, 2008; Kim et al., 2006). In addition, it can be cause of disrupted sleep patterns (Chou, Condron, & Belland, 2005), obesity, and physical development problems (Bulck, 2004).

The Literature Review

The statistics show that adolescents are the biggest number for this use (TUIK, 2012). Study by DiNicola (2004) shows that university students are heavier users of the internet and this group counter with the PIU first since university students have more opportunities to access the internet. Similar to developed countries, university campuses in Turkey also provide free internet access to their students. In addition, mobile service providers are

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offering call packages that includes internet connection form their cell phones. Thus, this age group can be on the Internet from anywhere at any time. Lee's study (2009) shows that the time amount that the university students spent online had a positive correlation with their PIU scores. Most of the literature on this topic also highlights adolescent's internet addictions (Christakis, Moreno, Jelenchick, Myaing & Zhou 2011) and severe internet addiction problems for the late 20s or early 30s age groups (Shaw & Black 2008).

Whether females and males have different PIU behaviors have been questioned for many field related studies. Study by Mottram and Fleming (2009) shows that there is a significant difference between genders in their use of the internet where males use it for games and females use it for work and therefore male participants show higher PIU behavior. Parallel results that report a male preponderance are found in other studies as well (Lee, 2009; Shaw & Black, 2008; Tekinarslan & Gurer, 2011; Tutgun & Deniz, 2010). Even though the results of the study by Tutgun, Deniz, and Moon (2011) also show male dominance of problematic internet use in Turkey, their comparison in Korea does not show any gender differences but significant difference between PIU and hours spend online in a day in both nations.

As it was pointed out, games are seen one of the main reasons for PIU. Lo and colleagues (2005) found that men use the internet and games more frequently than women. As a result, heavy gamers had lower quality of interpersonal relationships but higher social anxiety comparing with lighter game players (Lo et al., 2005). Similar results are found in the study on gaming addiction in China (Yu, Sun, & Huang, 2009).

Looking at correlation between internet users' school years (or age) and the PIU level also studied. It was reported that freshmen students had more PIU scores than senior students had (Tutgun & Deniz, 2010). However, a similar study by Lee (2009) shows that there is no significant difference between students' school year and their PIU. The differences were found only between freshmen students and graduate students where freshmen were more likely to have internet addiction.

Cyber relationship was found a most serious cause of PIU (Niculovic et al., 2012). Even though social networks are tremendously growing on the internet, studies that examine correlation between using social networks and PIU levels are not many. Tekinarslan and Gurer (2011) found more symptoms of PIU levels among users of social networks. With a more general perspective, Caplan (2002) claims that social use of the internet may become a cause of PIU.

Internet users' professions or university majors were also studied in PIU researches. Studies show that natural science-engineering majors have higher scores of PIU than social majors (Lee, 2009; Niemz, Griffiths, & Banyard, 2005). In another study, computers engineering students have higher rate of PIU than the other university students (Tutgun, 2012). According to the study conducted with teacher candidates, students at computer education major and psychology and counseling education majors had higher PIU levels comparing with other teacher candidates (Balta & Horzum, 2008). A similar study conducted with medical students in Chile also found high PIU scores (Berner, Santander, Contreras & Gómez, 2014). However, study conducted with only in technical

faculty show that most of the students were not at the PIU level (Niculovic et al., 2012).

This current study, thus, has purpose to determine PIU levels between nursing students who take courses about addiction and computer engineering students who more involve in computing and the internet. Similar to previous studies, participants' school years, gender, major, game play, and use of social networks are also examined. Thus, a common research question of this study is: Are there differences between PIU scores of students with different gender, school year, major, play online game, social network access, and time spent on internet. The research questions can be categorized as follows;

- Is there any difference between students' school years and their PIU scores?
- Is there any difference between students' majors and their PIU scores?
- Is there any difference between students' internet use time and their PIU scores?
- Does playing online game make any significant differences on participants' PIU scores?
- Does having an account for social network site makes any significant difference on participants' PIU scores.

Method

Research Design

This study utilizes a descriptive research design employing quantitative research methodology.

Research Sample

This study is determined and a case focused on one region. The participants are university students from a public university in Şanlıurfa. The study was conducted with 310 students from Nursing (65.6%) and Computer Engineering (34.4%) departments in 2012-2013 school years. The variables to be examined in this study are six; gender, age, school year, time, time spent on games, time spent on social networks, major, PIU scores.

Data Collection

Instruments

The data of this study was collected with the PIU and demographic forms.

In order to keep validity and reliability, the instrument on PIU in Turkish developed by Ceyhan and colleagues (2007) was used. The instrument has three scales; the negative effects of the internet (17 items), social benefits (10 items), and overuse (6 items). Each item is scaled from 1 (never adequate) to 5 (definitely adequate). Users can get scores between 33 and 165. Two items are reversed. PIU scores increase if the participants' survey scores increase. The internal validity of the instrument is .94 and the same value found for this study as well. In addition, eleven items are added by the researchers to the instruments to obtain socio-demographic information

The questionnaire was distributed to the participants before their lessons by the researchers. They were requested to complete the questionnaire anonymously in order to minimize any potential reporting bias. There were no extra credits or other financial benefits for the participation.

Data Analysis

Descriptive statistics were used to examine the demographic data, gender, major, time spent on games, and time spent on social networks. T-test and one-way

ANOVA are used to test the significance of the differences.

Ethical Consideration

In order to conduct the research, the permissions from the participants' school were obtained. At the beginning of the survey, the participants were reminded that the participation was voluntary. Students who decided not to participate were not given the survey and the no identical information was asked on the survey forms.

Results

The participants consisted of 52.9% male and 47.1% female students. The sample percentages for the school year is as follows; the first year students (freshmen) are 28.7%, second year students (sophomore) 29.6%, the third year students (junior) 27.3%, and the fourth year students (senior) 14.1%. according responses to the demographic questions students' weekly internet use hours varies as follows; 12.9% use less than one hour, 19.6% use between 1 and 3 hours, 56.3% use between 4 and 39 hours, and 10.3% use more than 40 hours.

Almost half of the participants (46.3%) spend the fourth of their internet hours for the school works. The students who use the internet for game play are 43.1% and who use for social network sites are 88.1%. Students' visit times to such social networks vary. According to the responses; 18.6% visit at least 5 times a day, 39.5% visit 1-2 times a day, 22.8% visit 1-2 times a week.

The participants' average scores from the PIU instrument is found as 65.04 ± 24.33 . When looking at the sub scales the average scores are 29.94 ± 13.67 for negative results of the internet, 15.90 ± 5.27 for overuse, and 19.20 ± 7.75 for social benefits.

Table 1. The comparison of gender and PIU scores for sub scales.

Sub scales	Gender	n	X	SD	t	p
Negative effect of Internet	Female	146	25.94	10.53	5.049	p<.01
	Male	164	33.50	15.11		
Social benefits	Female	146	17.06	6.22	4.731	p<.01
	Male	164	21.10	8.47		
Overuse	Female	146	14.97	5.11	2.934	p=.004
	Male	164	16.71	5.30		
Total Score	Female	146	57.99	19.16	4.999	p<.01
	Male	164	71.32	26.68		

Gender difference was analyzed. To do so, PIU average scores was analyzed with independent t-test and the difference was found significant ($t=4.999$, $p<.01$). The male participants had higher scores (Table 1).

Similar to previous studies, this study also look whether or not there are differences between students school year and their PIU levels. For this differences, students average scores from PIU instruments was analyzed with one-way ANOVA and the finding show that there is no significant differences between school years ($F=0.740$, $p>.05$).

Table 2. Total PIU scores and sub scales scores with students' majors

Sub scales	Major/ Department	n	X	SD	t	p
Negative effect of Internet	Nursing	204	29.19	14.07	1.340	.181
	Computer Engineering	106	31.38	12.80		
Social benefits	Nursing	204	18.92	8.02	0.887	.376
	Computer Engineering	106	19.74	7.20		
Overuse	Nursing	204	15.37	5.22	2.438	.015*
	Computer Engineering	106	16.90	5.25		
Total Score	Nursing	204	63.49	25.22	t=1.562	p>.05
	Computer Engineering	106	68.03	22.35		

*p<.05

The difference between students' internet use time and their PIU scores are analyzed with ANOVA test and the difference is found significant ($F=6.021$, $p<.01$). In order to find out the cause of the difference, another further analysis is conducted (Tukey HSD) and according to the findings the source of the difference are students who use the internet more than 40 hours a week ($p<.005$).

Table 3. Total PIU scores and sub scales scores with students' online game play

Sub scales	Game Play	n	X	SD	t	p
Negative effect of Internet	Yes	134	33.44	15.64	4.023	.001
	No	176	27.28	11.29		
Social benefits	Yes	134	21.38	8.41	4.461	.001
	No	176	17.53	6.76		
Overuse	Yes	134	17.27	5.44	4.109	.001
	No	176	14.85	4.90		
Total Score	Yes	134	72.10	26.98	4.597	.001
	No	176	59.67	20.62		

The difference between playing online games and PIU scores was analyzed with independent groups t-test and the finding shows that there is a significant difference found ($t=4.597$, $p<.01$, Table 3). The differences for sub scales are also found significant (Table 3). The PIU scored of students who play online games are higher than who do not play.

In order to find a difference between the time span of playing game and sub scales of PIU, ANOVA is tested. Significant differences are found for total PIU score ($F=9.873$, $p=.0001$), for social effect sub scale, ($F=8.525$, $p=.0001$), for overuse sub scale ($F=10.701$, $p=.0001$). More analysis was conducted to find out what causes the difference and the test shows that students who plays online games makes the difference (Table 3).

Table 4. Total PIU scores and sub scales scores with students' use of social network sites.

Sub scales	Use	n	X	SD	t	p
Negative effect of Internet	Yes	274	30.45	13.91	1.836	.067
	No	36	26.02	11.04		
Social benefits	Yes	274	19.37	7.92	1.059	.290
	No	36	17.91	6.25		
Overuse	Yes	274	16.14	5.16	2.280	.023*
	No	36	14.02	5.80		
Total Score	Yes	274	65.97	24.67	1.863	.063
	No	36	57.97	20.54		

*p<0.05

Similarly, the difference between having account for social network site and PIU scores is also analyzed with independent groups t-test and for overuse sub scale the difference is found significant ($t=2.280$, $p=.023$). There are no significant differences for the total score and other sub scales ($t=1.863$, $p>.05$, Table 4).

The participants were asked what percentages they use spend their internet use time for their school work. An ANOVA test was conducted how use time for schooling makes a difference with PIU score and sub sections. The analysis shows that there are significant differences for total PIU score ($F=6.002$, $p=.001$), negative effect of internet ($F=5.887$, $p=.001$), social benefits ($F=3.469$, $p=.001$), and overuse ($F=5.829$, $p=.001$). The further analysis shows that the difference is caused by groups who spend 51-75% and 76-100% of their internet use time for school work.

Discussion

This study aimed to examine the influence of gender, school year, major, playing online game, social network access, and time spent on internet on PIU scores. The sample of this was 310 students from nursing and computer engineering departments at a university in Şanlıurfa. The representation of gender, school year and major (nursing and computer engineering) was at the average level with most Turkish university. The results show that most of the students go online often and have account on a social network site. Participants' scores from PIU and sub sections are at average level that participants are not at pathological level.

The study findings also show that there is a significant difference between genders for their PIU scores and males had higher scores. These findings support previous studies (Shaw & Black, 2008; Lee, 2009; Mottram & Fleming, 2009; Tutgun & Deniz, 2010; Tekinarslan & Gurer, 2011). As it is explained, high scores of males could be services that male users use on the internet (Chou et al., 2005). This argument can be supported with following findings.

First, students' school years did not make any difference for their PIU scores. Similarly, previous studies also did not found any differences between students' school years except between first years and last years (Tutgun and Deniz, 2010) or graduate students (Lee, 2009).

One of the main purpose of this study was to examine a difference between students' majors and their PIU scores. The second result show that there is no significant difference between nursing and computer engineering students in their PIU scores even though computer

engineering scores have higher PIU scores (Table 2). Previous studies that look a difference between various majors found mixed results but there is no specific indication of a major (Niemz, Griffiths, & Banyard, 2005; Lee, 2009; Tutgun 2012). Other studies that specified on a technology or health majors found some symptoms of PIU but there was no distinction (Balta & Horzum, 2008; Niculovic et al., 2012; Berner et al., 2014). In this current study, the expectation was that nursing students may have lower score than computer engineering students since they have lesser work to do on the internet but more courses on addiction and problematic behaviors.

Third, no significant differences was found between students' internet use time and their PIU scores. This was exceptional with only students who use the internet more than 40 hours a week. This finding is not parallel to what previous studies have found (Tutgun & Deniz, 2010; Tekinarslan & Gurer, 2011; Tutgun, Deniz, & Moon, 2011).

Fourth, the findings of this study show that playing online games makes significant differences on participants' PIU scores. This finding is similar to what previous studies have found (Lo et al., 2005; Yu, Sun, & Huang, 2009). In addition, the time span of game play has made differences on participants' total PIU scores and sub section scores.

In addition, this study shows that having an account for social network site makes a significant difference on participants' PIU scores. Tekinarslan and Gurer (2011) also found more symptoms of PIU among social network users. Niculovic et al., studied cyber relationship (2012) and found similar results. More importantly, Caplan's claim (2002) that social use of the internet may become a cause of PIU supports the arguments of the differences between internet users.

While the listed findings are novel, there are limitations to consider. Since most of the students in nursing major were females, the results may have gender factor which overlapping with other research questions. The sample consisted of only students enrolled at a single public university in Turkey.

In conclusion, today where more jobs, tasks, and resources are moving on the internet, it is meaningless to discuss again about use or no use of the internet. However, it is crucial to point out whether the use of the internet is problematic or not. This study concludes that gender, online game play and being on a social network make differences for students' PIU scores regardless of their majors or school years. Thus, the discussion that the internet itself is not addictive but services or programs on the internet cause this addiction (Widyanto & Griffith, 2006) is also proved in this study as well. Moreover, accessing the internet from everywhere at any time prompts this issue incredibly. In addition, social influence at the physical world may prevent some addictions in physical life. For example, addiction of smoke or other drugs can be observed simply in the physical world. The addictions on the internet can be judged simply. Thus, parents, school administrations, and policy makers should work with computer experts to lead children to use the internet for school works. Qualitative and quantitative studies that deeply explore and examine addicted users' online behaviors needs to be studied in order to find what exactly on the internet addict users.

The Implication of the Study

There are several outcome of this study can be implied out of this study. The study unveil a critical issue that most of the people deal with in a daily bases. One of the specific implications of this study is the result that the overuse of the Internet by the university students could prompt PIU among them. In addition, this study also show that users addictions into the physical world could become the cause of their PIU.

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