University Students' Problematic Internet Use in terms of Reasons for Internet Use

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Abstract: - The current research aims to determine the main effects of gender and the primary reason to use the internet and the interaction of them with the subscale scores of the problematic internet use including the negative consequences of the internet, social benefit/social comfort and excessive use. Data was collected from 1414 volunteer university students by means of utilizing the Problematic Internet Usage Scale and a questionnaire. The results of the analyses computed with the MANOVA and the following ANOVAs indicated that the main effect of gender was significant for the subscale of social benefit/social comfort of the problematic internet use and the main effect of the primary reason to use internet was significant for the subscales of the negative consequences and social benefit/social comfort, but the interaction of them was not significant for all the subscales. As a result, the study reveals that males used internet to get social benefit/social comfort more than females do. Moreover, the students who use internet primarily for getting connected socially with unreal life contacts experience more severe negative consequences of internet and use internet to get social benefit/social comfort more intensively than the students who use the internet primarily for gathering information about a topic. In addition, the students who use internet primarily for recreation experience more intensive negative consequences of internet than the students who use internet mainly for gathering information about any topic.

Key-Words: Internet, internet addiction, internet dependency, problematic internet use, university student

1 Introduction

Recently, internet has become a main communication instrument affecting all the aspects of human life. Through internet technology, people access to any type of information and communicate with others rapidly. The number of internet users increase in all societies. As connected with this, more and more the length of internet use time increases and the reasons for internet use also vary.

Some users use the internet reasonably as a required technological tool of daily life such as gathering information about a topic on sites (e.g. www, newsgroups and search tools) and communication with real life contacts (e.g. e-mail use for communication with friends and relatives) mostly. Some users may use internet unhealthily/ problematically and incorrectly because they use internet for recreation (e.g. playing games, wasting time and relaxing) and getting connected socially with unreal life contacts (e.g. meeting new people, talking to others with same interests, chatting and sharing ideas or fantasies) excessively. As a result, overuse and misuse of internet have risen gradually and become a rather important problem while internet contributes people's lives

positively. For example, problematic/unhealthy internet use and excessive access to internet have led many users to be vulnerable to negative effects. For this reason, these misuse habits may affect the social and emotional functions of many users negatively, and cause impairments on their mental healths, inhibit their daily life and escalate internet addiction.

Prevalently, problematic internet usage can be characterized by distress and functional impairment experienced because of the inability to control internet usage [1]. In literature, there are a lot of researches about excessive use of internet on internet users' psychological well-beings. For example, there are various studies examining the relations between problematic internet use and gender [2-10] and purpose of internet usage [2, 8, 10-15]. However, there are number of limited studies carried on problematic internet use with Turkish university students. Therefore, the current study will provide important contributions about the subject of problematic internet use because it will take into consideration the interaction of gender and primary reason for the internet use on a group consisting of university students.

Internet is used frequently for many purposes such as preparing assignments, searching information,

communicating with others and having fun by university students. Therefore, university students' probability of being affected by negative results of internet seems to be higher [16]. In other words, internet may cause students to experience negative outcomes related with its usage. Examples of negative consequences of internet usage can be stated as follows: procrastination of responsibilities, preoccupation with internet, interpersonal relationship problems with significant others, cancellation of appointment, being late/nonattendance to class, sleep and eating problems. At the same time, a developmental task like establishment of intimate relationships of university students can make them vulnerable to PIU because online relationships eliminate the anxiety experienced in the face to face relations and provide anonymity. As a result, internet can become an "addiction of choice" for many university students when environmental and developmental factors kept together [5, 16]. Therefore, it is rather important to investigate the subject of problematic internet use on university students.

2   Problem Formulation

2.1   Problem definition

The present study aims to determine whether university students' problematic internet use levels such as negative consequences, social benefit/social comfort and excessive use differ significantly in terms of gender and the primary reasons of internet use. Therefore, the current study investigates the following research questions:

1. Do the means of the scores on the domains of the problematic internet use such as the negative consequences of the internet, social benefit/social comfort and excessive use differ significantly across gender? (*The main effect of gender*)

2. Do the means of the scores on the domains of the problematic internet use differ significantly to students' primary reason to use internet such as gathering information about a topic, using the internet for recreation, getting connected socially with unreal life contacts, and for communication with real life contacts? (*The main effect of primary reason to use the internet*)

3. Do the differences in the means of the scores on the domains of the problematic internet use among the groups of the primary reasons to use internet vary significantly as a function of gender? (*The interaction effect of gender x the primary reasons to use the internet*)

2.2   Methods

The research was conducted as a descriptive study about problematic internet use behavior of university students.

2.2.1   Subjects

Data was collected from 1414 volunteer university students attending various departments at Anadolu University, in Turkey, in 2006-2007 academic year. The subject group was made up of 711 female students (50.3%), 703 male students (49.7%). Out of the 1414, 373 subjects were freshmans (26.4%), 307 of them were sophomores (21.7%), 374 of them were juniors (26.4% cent), 219 of were seniors (15.5%), and 141 of them (10%) were unknown because of no response.

2.2.2   Instruments

The instruments utilized in the research are described below briefly.

Problematic Internet Usage Scale (PIUS): The PIUS is an instrument used to determine problematic internet use of university students. The PUIS was developed by Ceyhan, Ceyhan & Gürcan [17] with the assumption that the severity of internet use shows continuity from normal to pathologic use. The PIUS consists of 33 items rated on a five-point scale ranging from "not appropriate at all" to "very appropriate". The score range of PIUS varies between 33 and 165, and the high scores on the scale indicate that an individual's internet usage is unhealthy, may affect their lives negatively and may create tendency to internet addiction. The factorial structure of the scale revealed that the scale was composed of three sub-factors: negative consequences of the internet (NCI), social benefit/social comfort (SB/SC), and excessive use (EU). Negative consequences of internet include items such as, "I neglect my daily routines for spending more time on internet", "Internet makes me experience relationship difficulties with my significant others", "Internet enslaves me", "I am late to my courses and my appointments since I can not give up using internet". Social benefit/social comfort of internet comprises items such as, "Concealing my name on internet makes me freer", "I share my loneliness with internet". A few examples of the last factor, excessive use are as follows. "I can not give up internet usage although I want to quit it very much", "I can not understand how time flows".

These sub-factors consisted of 17 items, 10 items and 6 items, respectively, accounted for 48.96% of the variance together. Based on the validity and reliability studies, it can be stated that the PUIS is a valid and reliable instrument which can be used to measure problematic behaviors of university students regarding internet usage [17].

The questionnaire: The questionnaire was developed for this study to collect participants' certain demographic information about gender, grade level, and the experiences related to the internet usage. It asks about their primary reasons of internet use such as gathering information about a topic on internet sites (www, newsgroups, search tools), using the internet for recreation (playing games, wasting time, relaxing),

using internet getting connected socially with unreal life contacts (meeting new people, talking to others with same interests, chatting, and sharing ideas or fantasies), and using internet for communication with real life contacts (e-mail use for communication with friends and relatives).

2.2.3 Procedure

The instruments were applied to university students attending various undergraduate programs at Anadolu University in 2006-2007 academic year. The purpose of the research was explained in detail during classes. The students were told that there was no obligation to take part in the research and, as a result, all respondents participated in the research voluntarily. The questionnaires took approximately 20 minutes to complete.

2.2.5 Analysis

In the analysis, two-way multivariate analysis of variance (MANOVA) and the following two-way analyses of variance (ANOVAs), with post hoc test were used to determine the main effects and the interaction effect of variables [18]. $p < .05$ was taken as the critical level of significance. All data was analyzed using SPSS for Windows [18].

3 Problem Solution

The research examined that the domains of problematic internet use such as negative consequences, social benefit/social, and excessive use differ across gender by the primary reason for internet use significantly.

For this aim, the descriptive statistics were computed initially. A summary of the descriptive statistics including the means and standard deviations for each cell are given in Table 1.

Table 1. A summary of the descriptive statistics of the three subscales of problematic internet use in terms of gender by the primary reasons for internet use

The subscales of problematic internet use	Gender	The primary reasons for internet use														
		A*			B*			C*			D*			Total		
		N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
The negative consequences of internet (NCI)	Male	360	29.98	12.87	123	34.19	15.14	89	35.34	13.61	105	29.13	14.39	677	31.32	13.81
	Female	380	27.64	13.81	57	31.82	14.57	64	32.47	15.76	154	29.24	13.46	655	28.86	14.07
	Total	740	28.78	13.40	180	33.44	14.97	153	34.14	14.56	259	29.20	13.82	1332	30.11	13.99
The social benefit/ social comfort (SB/SC)	Male	360	20.20	7.48	123	22.67	7.96	89	23.18	7.46	105	19.63	7.68	677	20.95	7.70
	Female	380	18.79	7.91	57	19.46	7.15	64	21.20	9.50	154	19.71	8.13	655	19.30	8.09
	Total	740	19.47	7.73	180	21.65	7.83	153	22.35	8.40	259	19.68	7.94	1332	20.14	7.93
The excessive use (EU)	Male	360	16.45	3.83	123	17.14	3.29	89	16.75	3.56	105	16.07	4.54	677	16.56	3.83
	Female	380	16.33	3.74	57	17.60	3.60	64	16.08	4.54	154	17.27	3.93	655	16.64	3.88
	Total	740	16.39	3.78	180	17.28	3.39	153	16.47	3.40	259	16.78	4.23	1332	16.60	3.86

Notes: A refers to the gathering information about a topic on internet sites, B refers to the using internet for recreation, C refers to the using internet for getting connected socially with unreal life contacts, and D refers to the using internet for communication with real life contacts.

The two-way MANOVA was conducted to determine whether the means for each cell shown in Table 1 differ significantly. For this purpose, it was initially examined whether the observed covariance matrices of the dependent variables were equal across groups. The result of the test of equality of covariance matrices was insignificant (Box's M=53.26, F=1.25, p=.126) because the variances and the covariances are equal. Levene's test of equality of error variances was also insignificant (F=1.47, p=.17 for NCI; F=1.62, p=.12 for SB/SC; F=1.59, p=.14 for EU). These results indicated that the error variances of the dependent variables were equal across groups. Then, the values of Wilks' Lambda Test were found significant for the main effects of gender and the primary reason for internet use (Λ=.98, F(3,1322)=5.59, p=.001, and Λ=.97, F(9,3217)=4.50, p=.001, respectively), but insignificant for the interaction of them (Λ=.99, F(9,3217)=1.37, p=.166). The multivariate partial eta squared is reported as .013 for gender and .010 for the reasons for internet use.

Since the two-way MANOVA was significant, the follow-up two-way ANOVAs, one for each domain of the problematic internet use were conducted to determine the differences related to the interaction of gender with the primary reason for using internet, and the main effects of them. The results of the ANOVAs are shown in Table 2.

In the Table 2, some results about the main effects of the ANOVAs were significant at the .05 level. However, the traditional Bonferroni procedure was used to control for Type I error across these three multiple the ANOVAs because of the purpose to assess the results of the ANOVAs and to take into account the multivariate nature of MANOVA by means of a more powerful method [18].

Table 2. The results of the ANOVAs produced
in the MANOVA procedure

Independent variables	Dependent variables	df*	F	Significant	Partial Eta squared
	NCI	1	3.94	.047	.003
A (gender)	SB/SC	1	9.35	.002	.007
	EU	1	0.68	.409	.001
B(the primary reason for the internet use)	NCI	3	8.53	.000	.019
	SB/SC	3	6.02	.000	.013
	EU	3	2.92	.033	.007
	NCI	3	0.58	.632	.001
A x B	SB/SC	3	1.51	.210	.003
	EU	3	2.55	.055	.006

*total df=1332

The results of each ANOVA were evaluated at the .016 significance level because the .05 level was divided by the number of ANOVAs conducted. Thus, only the main effect of gender for the SB/SC and the main effect of the primary reason to the internet use for the NCI and the SB/SC were significant at .016 level because their p values are less than .05 level. However, according to Bonferroni procedure, all the other main effects and interactions were not significant because they were greater than .016 level.

Based on these results, the main effect of gender showed that the SB/SC levels of male and female students differed significantly from one another. To determine the source of this difference, no further analysis was needed to assess the main effect of the gender because gender variable included two factors like male and female. As a result, as seen in Table 1, the SB/SC level (M=20.95) of male students was higher than that of female (M=19.30) significantly.

As regards to the NCI and the SB/SC main effects of the primary reason for the internet use, the Bonferroni procedure was used to control for Type I error across the pairwise comparisons. Therefore, it was tested each of the pairwise comparisons at .016/6, or .0026 level because the .016 level for the ANOVA was divided by six pairwise comparisons which were the number of comparisons.Thus, the pairwise comparisons for both the NCI and the SB/SC were evaluated at the .0026 level. The results of the post hoc analyses for the NCI and the SB/SC were shown in Table3.

As a result, the results of the pair comparisons regarding with the reason for internet use showed that both the NCI of the students who use internet for recreation (M=33.44) and the students who use internet for getting connected socially with unreal life contacts (M=34.14) were higher significantly than that of the students who gather information about a topic on internet sites, and the SB/SC of the students who use internet for getting connected socially with unreal life contacts (M=22.35) were significantly higher than that of the students who gather information about a topic (M=19.47).

Table 3. Results of the post hoc analyses with Bonferroni method for the NCI and the SB/SC

Dependent variable	Group*	Group* A	B	C	D
the NCI	A	-	4.66**	5.36**	0.42
	B	-	-	0.69	4.24
	C	-	-	-	4.94
the SB/SC	A	-	2.18	2.88**	0.21
	B	-	-	0.70	1.97
	C	-	-	-	2.67

*Notes: A refers to the gathering information about a topic on internet sites, B refers to the using internet for recreation, C refers to the using internet for getting connected socially with unreal life contacts, and D refers to the using internet for communication with real life contacts.
**The mean difference was significant at the .0026.

4 Conclusion

The results indicate that male students use internet to get social benefit/social comfort more than females, but this does not point out that male students experience more intensively negative consequences of internet and use internet more excessively. This result is consistent with the findings denoting that males had more problematic internet use than females did in general [2-4,7-10] and females had better communication skills than males [19]. An interpretation of this result can be that the male students have more difficulties in establishing intimate relationships, which is one of the developmental tasks and they use internet as a rescue because males prefer communicating by means of internet to communicating face to face.

The current findings indicate that the students who use internet primarily for getting connected socially with unreal life contacts experience more intensively negative consequences of internet and use internet to provide social benefit/social comfort from internet than the students who use internet primarily for gathering information about a topic. In addition, the students who use internet primarily for the recreation experience more intensively negative consequences of internet than the students who use internet primarily for gathering information about a topic. These results support that using internet for social interactions is a risk factor in the development of the problematic internet use [2, 7, 11-14, 20], problematic internet users used internet mostly for having fun, feeling relieved, spending time [2, 8, 10] and healthy internet users used internet mostly for searching information [12, 15]. As a result, the students who use internet for recreation such as playing games, wasting time and relaxing, and getting connected socially with unreal life contacts such as meeting new people, talking to others with same interests, chatting and sharing ideas or fantasies, primarily are unhealthy users and further may result in internet addiction.

The present study reveals that the problematic internet use did not differ significantly among the groups of the primary reasons to use the internet as a function of gender. A possible explanation of these results may be that the primary reason for the internet use is independent from gender variable. The students who primarily use internet for the recreation and getting connected socially with unreal life contacts are likely to face with a potential risk like internet addiction. This circumstance does not vary as a function of gender. Thus, both male and female students who primarily use internet for the recreation and getting connected socially with unreal life contacts have a potential risk of becoming internet addicted.

The findings obtained from this study can be taken into consideration in further studies about university students' problematic internet use behavior. However, the research has some limitations. The methodological limitation of the study is that it is a descriptive study and inadequate for examining causal relationships. In addition, the students' answers related with primary reasons for internet use based on the students' perceptions. Based on these limitations, the present findings are needed to be replicated with different samples and different methods. Further efforts may expand these findings. The findings and interpretations of the study must be evaluated carefully in terms of the potential limitations.

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