

AN INVESTIGATION OF PROBLEMATIC INTERNET USAGE BEHAVIORS ON TURKISH UNIVERSITY STUDENTS

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ABSTRACT

This research aims at examining the relationships between problematic internet usage (PIU) behavior and some demographic information and qualifications related to internet use of Turkish university students. The research was conducted with 2084 university students. Data was collected by means of Problematic Internet Usage Scale (Ceyhan, Ceyhan & Gürcan, 2007) and a questionnaire. The findings indicate that the males' PIU levels were significantly higher than females. Individuals' PIU levels did not reveal a significant difference in terms of the length of the regular internet usage time and grade groups. In terms of pairwise comparisons of CumGPA groups, only the less successful group (0-1.99) had significantly higher PIU level than the more successful group (3.00-4.00). The more the individuals' average weekly usage span of internet increased, the more the PIU levels raised. Individuals' PIU levels also differentiated significantly according to competence levels regarding internet usage and primary reasons to use internet.

Key words: Internet addiction, internet dependency, pathological internet usage, problematic internet usage, college student

INTRODUCTION

Internet has an important place in people's lives. Nowadays, internet is an indispensable communication tool in many peoples' lives and has affected social life in many different aspects. Because of the possibility of rapid internet access, variety in internet and prevalence of internet, people can access any type of information in a very short time and communicate with others in a rapid way. Therefore, internet causes gradual development or change in people's lives and contributes positively.

In parallel with these developments and contributions; unhealthiness, misuse and delinquencies of internet have become rather important problem and have performed various issues in social life. For example, in recent years, the rising of unethical internet use behaviors such as; piracy, invasions of intellectual property rights and privacy, virus attacks, hackers, pornography and so forth, have led people's lives to be vulnerable to negative effects. Moreover, due to problematic/unhealthy internet use and excessive access to internet, social and emotional functions of many users have been also affected negatively and may cause impairments.

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In literature, the researches about the effects of out of control and excessive use of internet on internet users' psychological well-beings become more and more widespread. For example, there are researches regarding the concepts of internet addiction (Young, 2004), internet dependency (Scherer, 1997; Wang, 2001) pathological internet use (Davis, 2001; DiNicola, 2004; Morahan-Martin & Schumacher, 2000), problematic internet use (Ceyhan, Ceyhan & Gürcan, 2007; Shapira et al., 2000; Shapira et al., 2003; Yellowlees & Marks, 2007). The variety of these concepts results in different approaches related to etiology of problematic internet use (PIU). Each one of these approaches focuses on one of the emotional, behavioral or cognitive components of problematic internet use (Davis, 2001). Prevalently, problematic internet usage can be characterized with the fact that the individual is distressed and experiences functional disorders in his/her daily activities (Shapira et al., 2000).

There are various researches examining the variables related to problematic internet use (PIU). In literature, it is seen that investigation of the relations between PIU and mostly personal characteristics such as gender (Everhard, 2000; DiNicola, 2004; Hall & Parsons, 2001; Leung, 2004; Johanson & Götestam, 2004; Li & Chung, 2006; Choi, 2001; Morahan-Martin & Schumacher, 2000; Scherer, 1997; Weitzman, 2000), age/class level (DiNicola, 2004; Choi, 2001; Everhard, 2000; Johanson & Götestam, 2004) and school performance (Lin & Tsai, 2002; Morahan-Martin & Schumacher, 2000; Niemi, Griffiths, & Banyard, 2005; Scherer, 1997; Suhail & Bargees, 2006; Yang ve Tung, 2007; Young, 1998; Young, 1999).

One of the risk factors in terms of PIU also is the variables including internet use. Within this scope, the relations between PIU and length of time period internet has been used (Choi, 2001; Kraut et al., 1998; Young, 1998), time spent online (Morahan-Martin & Schumacher, 2000; Young, 1998; Weitzman, 2000), places accessed to internet (Choi, 2001; Johanson & Götestam, 2004), internet self-efficiency (Morahan-Martin & Schumacher, 2000; Scherer, 1997; Song, 2003; Young, 1998) and purpose of internet usage (Caplan, 2002; Chak & Leung, 2004; Choi, 2001; Chou & Hsiao, 2000; Johanson & Götestam, 2004; Li & Chung, 2006; Meerkerk, et.al., 2006; Morahan-Martin & Schumacher, 2000; Nalwa & Anand, 2003; Scherer , 1997; Sun, 2004; Young, 1998, Ward, 2001; Weitzman, 2000; Whang et al., 2003; Widyanto & McMurrin, 2004) also have been investigated.

Because internet access is easier and more rapid, and internet is used for more purposes in university environment, the

university students' probability being affected by negative results of internet looks higher (Kandell, 1998). At the same time, identity formation and establishment of intimate relationships, which are developmental task of university students, can make them vulnerable to PIU because online relationships eliminate the anxiety in face to face relations and provide anonymity. Furthermore, students may also have the opportunity of experiencing different personality and relationship types, way of playing intended personality and sexual roles without the anxiety of being judged in terms of external features or personal characteristics. As a result, internet can become an "addiction of choice" for many university students when environmental and developmental factors keep together (Kandell, 1998; Hall & Parsons, 2001). Therefore, there is a great need for various researches directed towards PIU and understanding internet use behaviors of university students, because internet is a quite new subject and a few studies are conducted on internet misuse and excessive internet use (DiNicola, 2004). For this reason, there is need for various researches about the pattern of PIU in Turkish university students because this subject is investigated rather few in Turkey.

In this study, it is aimed to determine the pattern of PIU behaviors of university students. In the scope of this aim, the relationships between PIU and gender, grade, cumulative grand point average (CumGPA), the length of the regular internet usage time, the average of weekly usage span of internet, competency regarding internet use and primary reasons to use internet are investigated.

METHOD

Participants

This research was conducted with 2084 students attending various departments at Anadolu University, Turkey in 2006. The sample comprised of 1123 female (53.90%) and 953 male (45.70%) students, and no answering 8 person (0.40%).

Instruments

The instruments utilized in the research are described below briefly.

- *Problematic Internet Usage Scale (PIUS)*: The PIUS developed by Ceyhan, Ceyhan & Gürcan (2007) with the assumption that the severity of internet use shows continuity from normal to pathologic use, is an instrument used to determine PIU of university students. 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 internet, social benefit/social comfort, and excessive use. These sub-factors consisted of 17 items, 10 items and 6 items, respectively, and accounted for 48.96% of variance together. Based on validity and reliability studies, the PIUS is a valid and reliable instrument which can be used to measure problematic behaviors of university students regarding internet usage (Ceyhan, Ceyhan & Gürcan, 2007).
- *The Questionnaire*: A questionnaire was developed for this study to gather information about young adults' certain demographic characteristics and experiences related to their internet use behavior.

Procedure

Data collection instruments have been applied to the students in July-April 2006. The data was analyzed by means of SPSS. The data has been examined with respect to assumptions of parametric tests. The assumption of normality has been checked up with normality plots and the equality of group variances was determined with the Levene statistic. For the analyses, t-test for independent groups and one-way analyses of variance with Tukey's HSD post hoc test if the data provide assumptions of normality and homogeneity of variances has been computed. In case the data does not provide these assumptions, Kruskal Wallis H test and following Mann-Whitney U test have been utilized. $<.05$ was taken as the critical level of significance.

RESULTS

In the study, the findings show that male young adults ($N=953$, $M=64.12$, $SD=20.38$ for males) have significantly more PIU levels than females do ($N=1123$, $M=57.20$, $SD=17.54$ for females) ($df=2074$, $t=8.22$, $p<.0001$). Secondly, the results of variance analysis, concerning with whether the grades of groups have significant differences in terms of PIU scores ($N=194$, $M=62.41$, $SD=19.37$ for preparatory, $N=524$, $M=61.29$, $SD=19.93$ for first, $N=454$, $M=60.39$, $SD=19.05$ for second, $N=564$, $M=60.36$, $SD=19.34$ for third, and $N=348$, $M=58.01$, $SD=17.86$ for senior grade), have not revealed a significant difference among the groups ($df=2083$, $F=2.16$, $p=.07$).

Thirdly, it was found that the CumGPA groups ($N=188$, $M=63.09$, $SD=18.93$ for 0-1.99 group, $N=431$, $M=59.68$, $SD=18.94$ for 2.00-2.49 group, $N=625$, $M=60.09$, $SD=19.45$ for 2.50-2.99 group, $N=483$, $M=58.57$, $SD=17.34$ for 3.00-4.00 group) had significant differences in terms of the PIU scores according to variance analysis ($df=1726$, $F=2.68$, $p<.046$).

According to the pairwise multiple comparisons with Tukey HSD, the less successful group (0-1.99) had significantly higher PIU behavior than the more successful group (3.00-4.00) (mean difference= 7.60, $p < .0001$). However, none of the other comparisons between groups has shown statistically significant differences.

Additionally, the result of the variance analysis regarding whether individuals' PIU levels is differentiated in terms of the length of the regular internet usage time ($N=287$, $M=61.52$, $SD=19.36$ for 0-12 months, $N=616$, $M=60.19$, $SD=19.72$ for 1-2 years, $N=789$, $M=60.01$, $SD=18.59$ for 3-5 years, and $N=344$, $M=61.88$, $SD=19.63$ for 6+ years) revealed no significant difference among these groups ($df=2035$, $F=1.07$, $p=.36$).

Furthermore, it was found that the average of weekly usage span of internet ($N=404$, $M=51.47$, $SD=15.12$ for 0-2 hour, $N=673$, $M=55.31$, $SD=14.50$ for 3-6 hour, $N=386$, $M=59.78$, $SD=17.11$ for 7-10 hour, $N=292$, $M=67.82$, $SD=18.92$ for 11-20 hour, $N=213$, $M=74.75$, $SD=21.83$ for 21-40 hour, and $N=94$, $M=81.86$, $SD=24.98$ for 41+ hour) differentiated significantly in terms of the PIU scores according to the result of Kruskal Wallis H test because it did not provide homogeneity of variance of the data ($df=5$, $\chi^2=415.43$, $p < .0001$). All pair comparisons carried out with Mann-Whitney U test demonstrated significant differences (41+ hours > 21-40 hour > 11-20 hour > 7-10 hour > 3-6 hour > 0-2 hour; $p < .001$). The results indicated that the more the individuals' average of weekly usage span of internet increase, the more the PIU levels raised.

Moreover, it was also examined whether individuals' PIU levels differentiate in terms of their competencies regarding internet use ($N=171$, $M=56.46$, $SD=19.49$ for incompetence, $N=610$, $X=58.22$, $SD=18.12$ for a little competence, $N=1133$, $M=61.08$, $SD=18.99$ for fairly competence, and $N=149$, $X=65.86$, $SD=20.01$ for perfect competence). The variance analysis revealed a significant difference among the groups ($df=2062$, $F=9.78$, $p < .0001$). According to the pairwise multiple comparisons, PIU levels of the individuals who have fairly competent or perfect competent at using internet were significantly higher than the ones who have incompetent or a little competent ($p < .05$). The PIU levels of the individuals who have perfect competence at using internet were also significantly higher than the ones who have fairly competence ($p < .05$).

In addition, the variance analysis was carried out to investigate whether the PIU levels of young adults differ according to their primarily reasons to use internet such as; scanning sources for homework, gathering information about a topic, communicating with relatives or friend, and having enjoyable time ($N=497$, $M=56.85$, $SD=18.44$ for homework, $N=843$, $X=58.41$, $SD=17.96$ for gathering any information, $N=368$, $M=63.26$, $SD=18.92$ for communicating, and $N=180$, $M=67.89$, $SD=19.40$ for entertainment, respectively, and 61 participants on "the others" alternative were excepted for analysis) revealed a significant difference among the groups ($df=1887$, $F=21.17$, $p < .0001$).

The pairwise multiple comparisons demonstrated that PIU levels of young adults' whose primarily reason is to communicate with their relatives and to have enjoyable time were significantly higher than the ones who use internet primarily to scan sources for homework and to obtain information about a topic. In addition, the PIU levels of the individuals whose primarily reason to use internet is to have enjoyable time has also been significantly higher than the ones who use it to communicate.

DISCUSSION

In this study, since PIU of university students is a multidimensional phenomenon (Caplan, 2002; Davis, 2001), the relationships of PIU with different variables were investigated. As a result, it has been found that the PIU levels differentiated with regard to some demographic information and qualifications such as gender, CumGPA, the average of weekly usage span of internet, competency regarding internet use and primary reasons to use internet significantly. However, the variables such as grade and the length of the regular internet usage time did not demonstrate a significant difference in terms of the PIU levels.

In the study, the findings showed that male young adults have significantly higher PIU levels than females do. This finding is consistent with the findings in the literature that males are more prone to PIU in general (Choi, 2001; DiNicola, 2004; Everhard, 2000; Li & Chung, 2006; Morahan-Martin & Schumacher, 2000; Scherer, 1997; Weitzman, 2000). However, the findings that PIU do not differentiate in terms of gender (Hall & Parsons, 2001; Leung, 2004) are inconsistent with these findings. In this research, it can be stated that findings that males' PIU levels were higher than females' PIU levels indicated that males experience more difficulties in establishing intimate relationships which is one of the developmental tasks, and they used internet as a life jacket. Consistent with these findings, it was found that females had better communication skills than males did (Korkut, 1999). This may result from the fact that males prefer communicating by means of internet to communicating face to face, and expressing their feelings in a better way.

The individuals' problematic internet usage levels do not demonstrate significant differences according to grade levels. These findings are consistent with the findings of DiNicola (2004)' that the university students' pathological internet uses did not differentiate with respect to grade levels. Thus, it can be stated that university students use internet as a tool to cope with different developmental tasks and stressors they meet in different grades. This situation can indicate that students' needs are a more basic factor in PIU, rather than grade factor.

The findings only revealed that the less successful group (0-1.99) had significantly higher problematic internet usage behavior than the higher successful group (3.00-4.00) did. None of the other comparisons between groups has shown

statistically significant differences. These findings are in line with the findings that PIU affected school performance negatively and caused academic problems (Lin & Tsai, 2002; Morahan-Martin & Schumacher, 2000; Niemi, Griffiths, & Banyard, 2005; Scherer, 1997; Suhail & Bargees, 2006; Yang & Tung, 2007; Young, 1998; Young, 1999). Thus, it is pointed out that the university students with low academic success use internet for more different purposes than supporting their academic success. This kind of internet use may lead them to spend less time on academic activities and to reduce their success.

The individuals' problematic internet usage levels did not differ significantly in terms of the length of the time they have been using internet regularly. This finding is consistent with the findings that the development of PIU behaviors is more prevalent at the early years of internet use (Choi, 2001; Kraut et al., 1998; Young, 1998). Therefore, it remains that the time length and purpose of internet usage would be important factors in the PIU rather than how long internet has been used. Especially, due to the purposes of internet use such as gambling, gaming, chatting and so forth individuals may spend more time when online, and this may result in the PIU.

In terms of average of weekly usage span of internet, the results indicated that the more the individuals' average weekly usage span of internet increase, the more the problematic internet usage levels rise. This finding is consistent with the findings that the more the time spent online increases, the more the PIU increases (Choi, 2001; Chou & Hsiao, 2000; Morahan-Martin & Schumacher, 2000; Shapira, et. al., 2000; Young, 1998; Weitzman, 2000). These findings reveal that over use of internet is a fundamental indicator of PIU.

According to competencies regarding internet use, problematic internet usage levels of the individual who are fairly competent and perfect competent at using internet were significantly higher than those of the ones who are incompetent and a little competent. The problematic internet usage levels of the individuals who are perfect competent at using internet were also significantly higher than those of the ones who are fairly competent. In literature, Morahan-Martin & Schumacher (2000) found that users felt themselves more competent with internet, but this result was insignificant statistically. Additionally, Song (2003) found that internet internet self-efficacy was positively related with internet dependency or addiction. These findings are congruent with the result of this research. As the university students' competence levels in the use of internet activities increases, their usage period increase, and their usage purposes differentiates as well. This situation may make them more vulnerable to the PIU.

The findings also demonstrated that problematic internet usage levels of young adults, whose primary reason is to communicate with their relatives and to have fun, were significantly higher than those of the ones who use internet to scan sources for homework and to obtain information about a topic primarily. The problematic internet usage levels of the individuals, whose primary reason in using internet is to have fun, have also been significantly higher than those of the ones who use it to communicate primarily.

The findings show that using internet for social interactions is a risk factor in development of the PIU (Caplan, 2002; Chak & Leung, 2004; Choi, 2001; Chou & Hsiao, 2000; Li & Chung, 2006; Ward, 2001; Young, 1998). Similarly, problematic internet users use internet mostly for having fun, feeling relieved, spending time (Choi, 2001; Morahan-Martin & Schumacher, 2000; Weitzman, 2000). Healthy internet users use internet mostly for searching information (Chak & Leung, 2004; Whang, Lee & Chang, 2003; Young, 1998). These findings are in congruent with the finding of this research.

On the other hand, there are some findings indicating that healthy users use internet for the aim of social interactions such as sending e-mail and chatting (Meerkerk, et.al., 2006; Nalwa & Anand, 2003; Whang, Lee & Chang, 2003; Widyanto & McMurrin, 2004). This result supports the finding that the PIU levels of internet users who use internet primarily for having fun are higher than those of the ones who use internet primarily for communication. In conclusion, to use internet primarily for having fun is a fundamental factor in the PIU. Following the purpose of having fun, to use internet primarily for communication is also a significant factor in the PIU.

The findings obtained from this study can be taken into consideration in further studies about university students' PIU behavior. However, the research has some limitations and these limitations need to be acknowledged. The methodological limitation of the study is that it is a descriptive study and inadequate for examining causal relationships.

Consequently, the results of this study do not allow conclusions about causal relationships between the variables under investigation. In addition, this study examines the influence of each independent variable on PIU behavior separately. However, it is possible to investigate interactions of the independent variables together by using factorial design.

Based on these limitations, the present findings are needed to be replicated with different samples and different methods. Further efforts may expand these findings. Despite the limitations outlined, this study provides some tentative evidence related to the usefulness and importance of exploring relationships between the PIU behavior and one's some qualities. The findings and interpretations of the study must be evaluated carefully in terms of the potential limitations. As a result, the findings must be taken into consideration as a preliminary information and clue for examining the antecedent factors.

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