

A Study on the Effects of Loneliness, Depression and Perceived Social Support on Problematic Internet Use among University Students

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ABSTRACT The present study investigated the effects of loneliness, depression and perceived social support on problematic Internet use among university students. The participants were 459 students at two universities in Turkey. The study data were collected with a Questionnaire Form, Problematic Internet Use Scale (PIUS), University of California at Los Angeles (UCLA) Loneliness Scale (Version 3), Multidimensional Scale of Perceived Social Support (MSPSS) and Beck Depression Inventory (BDI). The Mann-Whitney U Test and Kruskal-Wallis one-way analysis of variance were conducted to examine the differences; and correlation and regression analyses were used to examine the relationships between variables. There was a positive significant correlation between the PIUS and MSPSS and the UCLA Loneliness Scale and a negative significant correlation between the PIUS and Beck Depression Scale (BDS). The female students had higher total PIUS scores. The results also illustrated that there was a statistically significant difference in total PIUS scores according to having a social network account.

INTRODUCTION

The Internet has become the leading tool of communication in the 21st century. With a gradual increase in the public use of the Internet and widening differences in user profiles, it has become inevitable to study both the negative effects of the Internet and its positive contributions, such as sharing knowledge and facilitating communication between people (Odaci and Kalkan 2010). Internet use may be beneficial or benign when kept to 'normal' levels, however, high levels of internet use which interfere with daily life have been linked to a range of problems, including decreased psychosocial well-being, relationship breakdown and neglect of domestic, academic and work responsibilities

(Gonul 2002; Hardie and Yi-Tee 2007). The concept of "problematic internet use" revealed when individual cannot control internet use. "Problematic Internet use" (Beard and Wolf 2001; Davis et al. 2002) which is also called as "pathological Internet use" (Davis 2001; Morahan-Martin and Schumacher 2000) revealed itself as spending time on the Internet more and more, not being able to stop the desire to access to the Internet and continuing to use it despite the deterioration of mental preoccupation and functioning in various areas regarding Internet use.

The studies have shown that Internet use is comparatively more common among university students (Morahan-Martin and Schumacher 2000; Nalwa and Anand 2003; Niemz et al. 2006; SPO 2008). A study carried out by the Turkish State Planning Organization (SPO) with a larger sample (2008) suggested that 16-24 year-old young people compose the leading group of Internet users (65.6%), that Internet use increases with educational status (87.7%) and students are the top users of the Internet (82.2%) (State Planning Organization Information Society Statistics

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2008). As a result, young Internet users are more likely to develop Internet addiction (Chou et al. 2005). The higher levels of Internet addiction among university students may result from a variety of reasons. They may encounter many challenges (gaining independence, seeking a better career, adapting to peer groups) with their new life at university. Some university students may not successfully cope with such novelties and difficulties and they may potentially develop depression or stress, which may lead to an escape into the online world (Celik and Odaci 2012). Thus, it proved to be elemental to investigate the correlation between Internet use and mental problems of students in developing preventive guidance programs against Internet addiction. An easier and faster Internet access at universities may also enhance the risk of university students getting involved with negative effects. Ceyhan (2010) argued that the findings of different studies on problematic Internet use would enable us to make generalizations and to understand the nature of this behavior better. In Turkey, there is a great need for studies on problematic Internet use (PIU) of university students. In Turkey, there is a great need for studies on problematic Internet use (PIU) of university students.

Socio-demographic Features and Problematic Internet Use

Studies in the literature delve into the relationship between problematic Internet use and variables like gender (Serin 2011; Ceyhan and Ceyhan 2007; Celik and Odaci 2012; Morahan-Martin and Schumacher 2000; Odaci and Kalkan 2010; Tekinarslan and Gurer 2011; Weiser 2000), age/class level (Ceyhan and Ceyhan 2007; Johanson and Götestam 2004). However, studies with different sampling characteristics revealed different implications regarding some predictor variables including gender. In Turkey, studies of university student pupils similarly mentioned that boys use computers pathological more than girls (Serin 2011; Ceyhan and Ceyhan 2007; Celik and Odaci 2012; Odaci and Kalkan 2010; Tekinarslan and Gurer 2011). However, some of the studies points that there are no gender differences in the PIU levels of the students (Ceyhan et al. 2009; Davis et al. 2002; Hardie and Yi-Tee 2007; Odaci and Celik 2011).

Similarly, studies with different sampling characteristics revealed different implications regarding age (Hardie and Yi-Tee 2007; Niemz et al. 2005). Further, there are still some controversy particularly about age issue in the PIU literature.

Time Spent Online and Problematic Internet Use

Time spent on the Internet is one of the most important criteria of diagnosis for problematic Internet use. The more time spent using the Internet, the higher the possibility of problematic Internet use. The researchers investigated the relationship between PIU and time spent online (Morahan-Martin and Schumacher 2000; Odaci and Kalkan 2010) and purpose of internet usage (Caplan 2002; Chak and Leung 2004). People, who are addicted to the Internet, obviously make intense and frequent use of the Internet measuring in per week. 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 (Morahan-Martin and Schumacher 2000; Tekinarslan and Gurer 2011). The studies resulted also show that the more time spent on the Internet; the more likely were to have problematic Internet use and unhealthier lifestyles. Internet use changed with regard to several lifestyle-related factors including decreases in physical activity, increases in time spent on the Internet, shorter durations or lack of sleep, and increasingly irregular dietary habits and poor eating patterns (Kim and Chun 2005; Lam et al. 2009).

Loneliness, Depression, Social Support and Problematic Internet Use

Recent studies on the Internet mainly focus on psychosocial wellness and Internet use, which particularly emphasized the correlation between PIU and depression (Shapira et al. 2000), loneliness (Serin 2011; Caplan 2007; Ceyhan and Ceyhan 2008; Davis 2001; Davis et al. 2002; Durak-Batigun and Hasta 2010; Gross et al. 2002; Hardie and Yi-Tee 2007; Kim et al. 2009; Morahan-Martin and Schumacher 2003; Odaci and Kalkan 2010), social support (Hardie and Yi-Tee 2007; Keser-Ozcan and Buzlu 2005; Swickert et al. 2002) and interpersonal distortion (Kalkan 2012) at university students. Davis (2001) suggested that psychosocial problems, such as loneliness and depression, are the precursors of PIU and lonely

and depressed people are more prone to prefer online interaction. This, further, acknowledged that individuals with lower levels of communication skills prefer online communication to face-to-face communication and who reportedly experience difficulties in controlling the time spent online (Davis 2001). Shaw and Gant (2002) stated that more internet use was associated with an increase in perceived social support but also decrease in loneliness. In a study it was found that lonely individuals can develop a preference for online social interaction and it can cause problematic internet use (Caplan 2003). In Turkey, Odaci and Kalkan (2010) additionally noted that PIU among university students increases with higher levels of loneliness. Ceyhan and Ceyhan (2008) stated that individuals experiencing the feeling of loneliness tend to have more PIU behavior. Based on these theoretical frameworks, this analytical study aims to conduct a thorough analysis of the effects of loneliness, depression and perceived social support on problematic Internet use among university students. The hypotheses of the study are as following:

1. There is a significant difference between students' gender and levels of problematic Internet use.
2. There is a significant difference between students' age and levels of problematic Internet use.
3. There is a significant difference between levels of problematic Internet use and students' length of Internet use.
4. There is a significant difference between levels of problematic Internet use and a social network accounts
5. There is a significant correlation between students' problematic Internet use and loneliness, depression and social support levels.

MATERIAL AND METHODS

Sampling

The present study was conducted on randomly chosen participants in the faculties and colleges at the Ege University and Adnan Menderes University. The study universe was comprised of 3460 students attending the School of Nursing, Faculty of Medicine, Faculty of Communications, Faculty of Engineering and Faculty of Education at the Ege University and 3909 students attending the School of Health, School of Physical Education and Sports, Faculty of

Education, Faculty of Economics and Nazilli Vocational College at the Adnan Menderes University. The magnitude of the study sample was measured with a sample formula with a known universe and 459 students were distributed homogeneously into groups by using stratified random sampling in which a certain number of students were allocated for each school/faculty and students were stratified according to their study year. The mean age of students was 20.92 (\pm 2.15 SD). Out of the students, 59.3% were female, 38.1% were living in metropolitan areas, 83.2% had nuclear families and 57.1% had median incomes. Additionally, 92.2% of the students were unemployed.

Data Collection Tools

The study data was collected with a Questionnaire Form, Problematic Internet Use Scale (PIUS), UCLA Loneliness Scale (Version 3), Multidimensional Scale of Perceived Social Support (MSPSS) and Beck Depression Inventory (BDI).

Questionnaire Form

The form included questions about the socio-demographic characteristics of the students and their routines of Internet use and it was designed by the researchers in accordance with the recent literature (Ata et al. 2011; Odaci and Celik 2012; Odaci and Kalkan 2010). The questionnaire form included 33 questions about their age, family type, financial status, educational status and professions of their parents, daily duration of Internet use, most favorite web pages, and favorite place for access to the Internet and purposes of Internet use.

Problematic Internet Use Scale (PIUS)

Ceyhan et al. (2007) developed a dimensional scale to grade levels of Internet use for students based on the self-reporting of individuals with the assumption that the intensity of Internet use ranges from normal to pathologic. The scale included three sub dimensions, negative results of Internet use, social benefit/social comfort and overuse, and 33 items. The scale scores vary from 33 to 165 and higher scores illustrate unhealthy use of the Internet, which may result in Internet addiction. The internal consistency coefficient (α) was .94. The item total correlation varies between 0.3 and 0.70 ($p < .001$). The test-

retest reliability coefficient has been reported to be 0.81 and split-half reliability was 0.83 (Ceyhan et al. 2007). The results of this study showed that internal consistency of the scale (α) was .95, and internal consistency coefficients of three factors in the scale were noted to be .94, .86 and .74, respectively.

UCLA Loneliness Scale

The UCLA Loneliness Scale is a likert-type self-reporting scale that measures general levels of loneliness. The scale was developed by Russell in 1978 and it was revised in 1980. The scale was revised again in 1996 to correct some gaps. Reliability and validity of the UCLA Loneliness Scale (Version 3) were tested by Durak and Durak (2010) and the internal consistency was found to be 0.86.

Version 3 includes a total of 20 items, 9 positive items, which don't directly refer to loneliness, and 11 negative items, which deliberately measure loneliness of individuals. Each item of the scale presented a situation concerning an emotion or idea about social relations and the participants are asked to scale how often they experience such situations on a 4-point likert scale. Positive items are scaled as never-4, seldom-3, sometimes-2 and often-1, while negative items are scaled as never-1, seldom-2, sometimes-3 and often-4. The total scale score equals the sum of each point and the lowest score is found to be 20, while the highest score is 80 with higher scores illustrating higher levels of loneliness.

Multidimensional Scale of Perceived Social Support (MSPSS)

The scale was designed by Zimet et al. (1988) to investigate perceived social support agents. The scale was tested for reliability and validity in Turkey by Eker and Arkar (1995). The scale is a 7-point likert scale (1 point-definitely no and 7 points-definitely yes) that consisted of 12 items and three sub-dimensions, family, peers, special person, each of which included three items. The lowest score possible is 12, while the highest is 84. The higher scores illustrate higher levels of perceived social support.

Beck Depression Inventory (BDI)

It was first developed by Beck (1961) and it included 21 items to measure common motivational, cognitive and emotional symptoms and

low self-esteem in depressive people. Lower scores suggested scarcity of depressive symptoms, while higher scores illustrated a plenitude of symptoms. The scores of the scale range from 0 to 63 and reliability and validity tests of the scale were conducted by Tegin (1980) and Hisli (1988). The reliability coefficient of test-retest was 0.65, while internal consistency was found to be 0.78 in the split-half correlation analysis. Tegin particularly analyzed the reliability and validity for university students, and reported that the scale could successfully recognize depressive and non-depressive students.

Collecting Data

The study data was collected by the researchers from student groups in classrooms between January-March 2012. The students were informed in detail about the purpose of the study and how to fill in the questionnaires and other forms.

Data Analysis

The study data were analyzed with the SPSS 14.00 package program. The distribution of data was tested with the Kolmogorov-Smirnov Test and Shapiro-Wilk Test and it was found that all variables were not distributed normally. Due to the fact that variables were not distributed normally, binary comparisons were conducted with the Mann-Whitney U Test and multiple variables were tested with the Kruskal-Wallis one-way analysis of variance. When a meaningful difference was found between multiple variables in the Kruskal-Wallis one-way analysis of variance, the Bonferroni Correction for the Mann Whitney U Test was conducted to specify the source of differences between groups. The correlation between scales and sub-dimensions was investigated with relational correlation analysis. Multiple regression analysis was used to determine the influences of loneliness, social support and depression on PIU.

Ethical Considerations

The permissions in writing were granted by the Board of Ethics (31.05.2011/157) of the Ege University, School of Nursing, and the host institutions. The purpose of the study was explained to the students and only those who volunteered were included in the sample. Personal information and identities of the participants were kept confidential.

RESULTS

Study results are presented in accordance with the study hypotheses.

Characteristics of Computer and Internet Use

It was noted that the participating students spent 2.47 (± 2.5 SD) hours a day on the Internet. Further, it was reported that 64.1% of the students had a computer with an Internet connection at home/dormitory, 66.4% used their computers at home and 13.1% used the Internet for research. It was also stated that 85.4% of the students had a social network account. Out of the participants, 60.1% agreed that computer use did not significantly affect their social lives. Once total score means are examined, it is seen that the score mean of the problematic internet use obtained by the students was 140.60 (± 20.71 SD). PIU score means of the students taken into the scope of the study reveal that the score mean of the “negative effects of the Internet” subscale was 75.91 (± 12.1 SD); the score mean of the “social benefit/social comfort” subscale was 43.43 (± 7.01 SD); the score mean of the “overuse” subscale was 19.82 (± 5.3 SD).

PIU Level According Students’ Gender

The average sub-dimension scores of the PIUS according to gender are given in Table 1. The results suggested that female students had higher social benefit/social comfort scores ($p < 0.004$) and PIUS total scores ($p < 0.02$) compared to male students.

PIU Level According Students’ Age

The correlation between students’ age and the PIUS sub-dimension and total score averages was analyzed with correlation analysis and no significant correlation was found between age and negative effects of the Internet ($r = .088$), social benefit/social comfort ($r = .084$), overuse ($r = .035$) and PIUS total score ($r = .086$) ($p > 0.05$).

PIU Level According Daily Internet Use

The correlation between daily Internet use and PIU and sub-dimension score averages was analyzed with correlation analysis, which illustrated a positive weak significant correlation between daily Internet use and negative effects of the Internet ($r = .246$), social benefit/social comfort ($r = .222$), overuse ($r = .336$) and total score ($r = .261$) ($p = .000$).

Table 1: A comparison of problematic internet use and average sub-dimension scores according to gender

Sub-dimensions	Gender	n	Rank average	Rank total	U	p
Negative Effects of the Internet	Female	272	239.10	65035.00	22957.000	.074
	Male	187	216.76	40535.00		
Social Benefit/Social Comfort	Female	272	244.67	66549.50	21442.500	.004
	Male	187	208.67	39020.50		
Overuse	Female	272	234.38	63750.00	24242.000	.393
	Male	187	223.64	41820.00		
PIU Total Score	Female	272	241.72	65748.50	22243.500	.022
	Male	187	212.95	39821.50		

Table 2: A comparison of problematic internet use and sub-dimension score averages according to social network accounts

Sub-dimensions	Social network accounts	n	Rank average	Rank total	U	p
Negative Effects of the Internet	Yes	392	225.07	88226.00	11198.000	.052
	No	67	258.87	17344.00		
Social Benefit/Social Comfort	Yes	392	222.98	87408.00	10380.000	.006
	No	67	271.07	18162.00		
Overuse	Yes	392	222.66	87283.00	10255.000	.004
	No	67	272.94	18287.00		
PIU Total Score	Yes	392	222.37	87168.00	10140.000	.003
	No	267	272.94	18287.00		

Table 3: Correlation between problematic internet use, UCLA Loneliness Scale, Beck Depression Inventory and Multidimensional Scale of Perceived Social Support

Variables	Negative effects of the internet	Social benefit/ Social comfort	Overuse	PIU total score	UCLA Loneliness Scale	Special person	Family	Peer	Multidimensional Scale of Perceived Social Support	Beck depression inventory
Negative Effects of the Internet	.719**									
Social Benefit/ Social Comfort	.636**	1								
Overuse	.548**	.548**	1							
PIU Total Score	.872**	.872**	.664**	1						
UCLA Loneliness Scale	.308**	.323**	.169**	.311**	1					
Special Person	.275**	.269**	.162**	.264**	.372**	1				
Family	.274**	.304**	.133**	.297**	.308**	.471**	1			
Peer	.250**	.269**	.118**	.269**	.498**	.535**	.488**	1		
Multidimensional Scale of Perceived Social Support	.298**	.312**	.132**	.310**	.479**	.810**	.750**	.819**	1	
Beck Depression Inventory	-.382**	-.401**	-.259**	-.400**	-.441**	-.350*	-.316**	-.359**	-.414**	1

PIU Level According to Social Network Accounts

Table 2 presents data comparing PIU with sub dimension score averages according to social network accounts. The findings pointed out a statistically significant difference between social benefit/social comfort ($U=10380.000$), overuse ($U= 10255.000$) and total score ($p<0.05$). It was further reported that those who did not have a social network account were more likely to exhibit PIU behaviors.

Correlation between PIU and Loneliness, Depression and Social Support Levels

There was a negative weak correlation between PIU and multidimensional perceived social support ($r=0.311$) ($p=0.000$), a positive correlation with the UCLA Loneliness Scale ($r=0.310$) and a negative correlation with the Beck Depression Inventory ($r=-0.400$) ($p=0.000$) (Table 3).

The effects of loneliness, social support and depression on PIU were investigated with multiple regression analysis. Loneliness, social support and depression were regarded as independent variables, while PIU was accepted as a dependent variable. Loneliness could explain only 11% of the total variance in Model 1, while loneliness and perceived social support together could explain 16% of the total variance. All variables could explain 25% of the total variance in Model 3. The contribution of loneliness, depression and perceived social support to the model was found to be meaningful ($p=0.00$) (Table 4).

DISCUSSION

The present study particularly focused on the effects of loneliness, depression and perceived social support on PIU and it was reported that the participating students used the Internet 2.47 ± 2.5 hours/day. The results of our study were found to be higher than those conducted in Turkey (Ata et al. 2011; Ceyhan et al. 2007; Keser-Ozcan and Buzlu 2005) and lower than those conducted in other countries (Rotunda et al. 2003; Niemz et al. 2005). In terms of time spent on the Internet, which could be explained by increasing frequency of Internet use and soaring rates of Internet use as a research and education tool in foreign countries.

Once total score means are examined, it is seen that the score mean of the problematic internet use obtained by the students was 140.60

(±20.71 SD). When the study's total PIU scores were examined, using the same PIU Scale (Ata et al. 2011; Çuhadar 2012), it emerged that the total scale and sub-scale values of this praxis are higher. Ata et al. (2011) and Çuhadar (2012) reported moderate problematic internet use. The respondents in this study reported mean overall PIU scores indicating a positive inclination towards problematic internet use.

The results of this study, further, confirmed a significant difference between gender and PIU and demonstrated a higher level of PIU for female students. However, some recent studies in the literature utterly contradicted our results and suggested that male students had higher levels of PIU (Serin 2011; Ceyhan and Ceyhan 2007; Celik and Odaci 2012; Morahan-Martin and Schumacher 2000; Odaci and Kalkan 2010; Tekinarslan and Gurer 2011). Some studies, however, found no gender differences in PIU (Ceyhan et al. 2009; Davis et al. 2002; Hardie and Yi-Tee 2007; Odaci 2011). Odaci and Celik (2011) conducted a study complying with our findings. The Internet has become widely popular, both among female and male students. It was considered that an easier access to computers and the Internet with developing technology and better communications services and shopping caused computers to become an indispensable tool for young people, male and female.

The study results also pointed out no significant correlation between PIU and age of the participants. Hardie and Yi-Tee (2007) conducted a study with a wider age range (18-72 years of age) and found an intense use of the Internet in the twenties and a higher level of Internet addiction in the thirties. A similar study with a small variance suggested no meaningful difference in PIU total scores in relation to age (Niemz et al. 2005). The fact that the results of our study

showed no meaningful relation between the age and PIU can be due to the small age range of our study.

Contrary to the findings in the recent literature, the results of this study illustrated no PIU among the participants in a social network account (Morahan-Martin and Schumacher 2000; Tekinarslan and Gurer 2011). Caplan (2003) proposed that individuals with social anxiety experienced difficulties in face-to-face communication and they felt relatively more comfortable in online communication. Morahan-Martin and Schumacher (2000) found that pathological Internet users utilize the Internet for meeting new people, emotional support, adult-only resources, gambling, relaxing, socializing, and playing highly interactive online games. Chak and Leung (2004) discussed that the Internet can provide a satisfiable place for individual to social and emotional needs which are uncovered by their limited face-to-face communication. These findings seemed to support the idea that communicative or interactive applications of the Internet might be particularly addictive. It was also clarified that our participants used the Internet for the purposes of checking e-mails, listening to music, playing online games, or research, which, in turn, resulted in higher levels of PIU among those without a social network account.

Concerning the average weekly use of the Internet, our results indicated that the more the individuals' average weekly use of the Internet increases, the more the PIU levels rise. Relevant studies similarly confirmed a tendency of frequent users developing PIU behaviors (Niemz et al. 2005; Odaci and Kalkan 2010; Tekinarslan and Gurer 2009). These findings reveal that overuse of the Internet is a fundamental indicator of PIU. Nevertheless, it has also been asserted that overuse of the Internet at pathologic levels cannot

Table 4: Analysis of variables with regression analysis that influence problematic internet use

<i>Model</i>	<i>Variables</i>	<i>â</i>	<i>t</i>	<i>R</i>	<i>R²</i>	<i>F</i>	<i>p</i>
1	Loneliness	.340	7.740	.340	.116	59.903	.000
2	Loneliness	.215	4.356				
	Multidimensional Perceived						
	Social Support	.254	5.164	.406	.165	44.966	.000
3	Loneliness	.121	2.493				
	Multidimensional Perceived Social	.152	3.126				
	Support Depression	-.340	-7.261	.501	.251	50.952	.000

be directly associated with the duration of Internet use, emphasizing the critical role of the purpose of Internet use (Odaci and Celik 2011).

The results of this study affirmed that there was a positive correlation between the PIU scores and the UCLA Loneliness scale and MSPSS and a negative weak correlation between the PIU scores and BDI ($p = 0.000$), which suggested that the levels of perceived support and loneliness increase, while levels of depression decrease with increasing levels of PIU. He et al. (2014) detected that loneliness and lack of social support are significantly correlated with depression among Internet addicts in the undergraduate students. Esen et al. (2013) studied a meaningful relationship between internet use and UCLA loneliness scores. It has been found that university students with a higher score on internet use have a higher degree of loneliness.

Swickert et al. (2002) studied the correlation between Internet use, personal traits and social support and reported a positive meaningful correlation between Internet use for the purposes of entertainment and social support. They also concluded that the Internet provided a common ground for people with similar interests, which eventually enhanced social support and solidarity. Odaci and Kalkan (2010) similarly reported a positive meaningful correlation between PIU and loneliness, communication anxiety and dating anxiety. Caplan (2007) argued that social anxiety was a significant variable in the correlation between preference for online social interaction and loneliness. In a study, loneliness was found as the most important predictive variable of PIU (Ceyhan and Ceyhan 2008). Keser and Buzlu (2005) noted a positive correlation between PIU and depression and loneliness and a negative correlation between PIU and social support. Orsal et al. (2013) noted a positive correlation between Internet Addiction Scale and Depression Scale in university students. Davis (2001) claimed that lonely and depressive individuals were inclined to use online interaction rather than face-to-face communication, which consequently experienced difficulties in managing the time they spent online due to long hours of online communication. Kim et al. (2009) inquired whether loneliness was a cause or a result of PIU and found that individuals with inadequate social skills or complaints of loneliness were more prone to PIU instead of confronting their own problems, which created a vicious circle enhancing their loneli-

ness. It was further maintained that earlier histories of psychopathologies like loneliness may possibly result in developing behavioral disorders and misconceptions in relation with their Internet use. Nevertheless, whether or not loneliness can be defined as a symptom of excessive Internet use or vice versa still remains uncertain. Higher levels of perceived social support and lower levels of depression with increasing PIU might be considered to illustrate a more intense use of online communication in the social life of individuals.

As displayed in Table 4, loneliness, depression and perceived social support were all important predictors of PIU behavior. These three variables explained 25% of the total variance related to PIU. The variable of loneliness explained 11% of the total variance alone and appeared to be the most important predictor as a variable. Ceyhan and Ceyhan (2008) stated that loneliness, depression and computer self-sufficiency explained PIU with a 27.9% variance and that loneliness was the leading predictor, which complied with the results of our study. The Internet provided an ideal social atmosphere for lonely people to communicate with other people (Morahan and Schumacher 2003). Virtual identities without bodies and taking refuge in the anonymity of virtual identities facilitate individuals in choosing with whom to communicate. Thus, Internet use can be regarded as an escape mechanism that mitigates or partly relieves the stress of loneliness.

There are certain limitations of this study. It evidently focuses on PIU, loneliness, social support and depression. As far as the methodology of the study is concerned, the major limitation appeared to be its design as a descriptive study and its failure to identify causal linkages. That the study was carried out only at two universities disregarding the socioeconomic status was noted to be another limitation of the study. Thus, it is strongly suggested that quantitative and qualitative studies be conducted with larger and more heterogeneous samples. This particular study was principally designed to present a factual report that would certainly motivate further studies to conduct a thorough investigation of the causes of PIU.

CONCLUSION

The results of study detected that there was a positive significant correlation between the PIU and MSPSS and the UCLA Loneliness Scale and a negative significant correlation between

the PIUS and Beck Depression Scale (BDS). Female students had higher than male students total PIUS scores. The results also illustrated that there was a statistically significant difference in total PIUS scores according to having a social network account. The study results are considered to inspire further research and clinical practices to map out risk groups and to develop preventive interventions and treatment strategies.

RECOMMENDATIONS

Communication skills, for instance, can be improved through social skill training programs, which will certainly reduce loneliness and, eventually prove to be effective in preventing and treating internet dependency. The cognitive behavioral therapy can potentially help the students with higher levels of problematic Internet use when moderated by psychological consultants in counselling and guidance centres. Further, deteriorating results of problematic Internet use can be discussed and elicited in seminars, conferences and various meetings. Finally, the results of the current study suggested additional directions for future researches; they further illustrate the need for more detailed, parsimonious, and predictive theories of psychosocial well being and PIU.

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