



THE RELATIONSHIP BETWEEN INTERNET ADDICTION AND PSYCHOLOGICAL SYMPTOMS

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ABSTRACT

The aim of this study is to reveal the relationship between internet addiction and psychological symptoms among university students. The research was conducted among university students in North Cyprus. The sample for the research consists of 36.5% (n=46) female, 63.5% (n=80) male, 126 university students who were selected according to the criterion sampling method. "Brief Symptom Inventory (BSI)" adapted by Şahin and Durak (1994), the Cronbach's alpha reliability coefficient of .96, "Internet Addiction Scale (IAS)" adapted by Bayraktar (2001) with a Cronbach alpha reliability coefficient of .90 and Biographic-Demographic Information Form were used for collecting data. Percentage documentation average, ANOVA and Pearson Moment's correlation tests were used in data analysis. The statistical significance level was accepted as .05 in the study. The results of this study show that there is a significant correlation between internet addiction and psychological symptoms as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism.

Keywords: Internet, internet addiction, psychological symptoms.

INTRODUCTION

Internet is a tool that has socio-economic, cultural and political dimensions in information society. Computer and internet usage has the potential to develop and change the existing social structure of society (Demir, 2006). In our country the internet has become an integral part of daily life as it is all over the world.

The internet evolved from the ARPANET, which was developed in 1969 by the Advanced Research Projects Agency (ARPA) of the U.S. Department of Defense. The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve billions of users worldwide. The internet is a network of networks that consists of millions of private, public, academic, government networks and business. It represents a global platform that permits digital information to be shared and distributed at very little cost to users. The Internet provides a wide range of information interaction functions, including: communication (i.e., sending e-mails, chatting, transmitting data, social networking, etc.), accessing information (i.e., searching databases, reading electronic books, etc.), and supplying information (i.e., transferring files, graphics, etc.) (Stallings, 2004).

Computers and internet tools are providing unlimited and developmentally appropriate environment of the children and adolescents. But sometimes children and adolescents with negative sexual information through computer and internet also violent behavior, alcohol, smoking habits, gambling and unhealthy eating problems can acquire undesirable habits (ref. Arnas, 2005). Although the basic purpose of the emergence of the internet attain information easy, cheap, fast and secure access to become facilitate the communication and rapid spread of the internet usage reveal that pathological over-estimated and a new type of dependency can be classed as internet addiction (Arısoy, 2009).



Researchers argued that extremely use of the internet compares the other addictions and play excessive computer-internet games develop that formed a kind of addiction to the internet users. Internet addiction defined as the problem that connected internet to the excessive spending time at a computer. In addition, the internet likes gambling addiction may be obtained as depressive tendencies, cause health problems and a lack of sleep (ref. Kelleci *et.al.*, 2009).

The term “Internet addiction” explained that pathological compulsive internet usage was proposed by Dr. Ivan Goldberg. This term has been used to describe problematic, excessive, or mal-adaptive use of the internet. Internet addiction known as pathological internet usage, is a type of impulse control disorder similar to other addictions. People use the Internet to avoid problems in their lives or because they lack social skills (ref. Aslanbay, 2006).

The Young was first introduced the term of internet addiction in 1996. The Internet addiction symptoms are described by Cengizhan and Young as;

- Excessive mental effort on internet
- Spending hours even though being intended to spend couple of minutes
- Exposure to health problems due to spending hours in front of the screen each time
- Continuously waiting for the next connection time
- Feeling more comfortable contacting people over internet than talking face-to-face
- Feeling a continuous desire for checking e-mails whether there is something new
- Decrease in meals, lessons or work efficiency due to using internet or staying connected
- Trying to give or spread the mail address, chat room names etc. to everybody
- Continuously feeling sleepless and tired because of staying connected to the internet until late
- Having failure in attempts to decrease the internet usage
- Withdrawal syndrome due to decrease in the internet usage
- Telling lies to family members, therapist or others to be able to stay connected to the internet
- Having affection changes in the duration of internet connection (Young, 1999; ref. Öztürk *et. al.*2007; ref. Balta, Horzum, 2008).

Addiction has extended into the psychiatric explanation to identify problematic internet use associated with significant social, psychological and occupational impairment. Symptoms of excessive internet usage, increased anxiety when off-line, hiding or lying about the extent of on-line use, impairment to real-life functioning and also directly lead to social isolation, increased depression, familial discord, divorce, academic failure, financial debt and loss of job (Young *et. al.* 2000).

The need to spend increasing amounts of time on computer activities such as playing games, arranging files or participating in online discussion groups are indicated by psychological tolerance. Computer users are aware of this problematic behavior but they continue to use the computer compulsively. When a person is unable to access a computer they showed that withdrawal symptoms are indicated by an increase in irritability and anxiety (ref. Orzack, 1998; ref. Kim, Haridakis, 2009).

Somatization is psychological distress arising from perception of bodily dysfunction such as cardiovascular, gastrointestinal, respiratory other systems with strong autonomic mediation and aches, pains, discomfort localized in the gross musculature are signs. Obsessive-compulsive is thoughts and behaviors that are experienced as unremitting and irresistible by the patient. Interpersonal sensitivity is focuses on feelings of personal inadequacy and inferiority (Derogatis, Melisaratos, 1983). People are isolating medium leading to loneliness, less social



interaction with family members and friends and clinical depression arguing that some potential negative effects of the internet (ref. Kim, Haridakis, 2009).

Depression is symptoms of dysphoric affect and mood, loss of interest in life activities and feeling of hopelessness (Derogatis, Melisaratos, 1983). Internet addict adolescents have been reported that depression, lower self-esteem and lower life satisfaction. Clinical depression associated with increased levels of internet usage (Young, Rodgers, 1998; Yen *et. al.*, 2008).

Anxiety reflects restlessness, nervousness and tension as experiences reflecting free-floating anxiety and panic. Hostility is organized that three categories: thoughts, feelings and behaviors. It reflects feelings of irritability, urges to break things and uncontrollable outburst of temper. Phobic anxiety reflects phobic fears that towards travel, open spaces, public spaces etc. Paranoid ideation refers that mode of thinking as projection, hostility, suspiciousness, centrality and fear of loss of control are primary symptoms. Psychoticism reflects symptoms of a schizoid and progressing from a mildly alien life style at one extreme to psychotic status (Derogatis, Melisaratos, 1983).

Internet addiction, which is defined as a new type of addiction, became an important study area that attracts the interest of different disciplines including psychology, sociology and communication (Balçı, Gülnar, 2009). Adolescents are more close to technology so their relation with internet is the interest of researchers from many fields. Therefore in the field of education for take fully benefit from computers, research is needed multi-faceted and at each level in many areas.

The Aim of the Study

It was aim to reveal the relation between internet addiction and psychological symptoms among university students.

The Problem Statements of the Study

The main problem statement of the study is stated as follows: “Is there any statistical meaningful correlation between internet addiction tendency and psychological symptoms in university students?”

Sub Problems

The study aims to answer the following sub problem questions.

1. Is there any statistical meaningful correlation between internet addiction and psychological symptoms?
2. Is there any statistical difference between internet addiction and duration of daily internet usage?
3. Is there any statistical difference between psychological symptoms and duration of daily internet usage?

RESEARCH METHODOLOGY

Research Design

The descriptive type of research was carried out via the descriptive type and is in accordance with the associational research model. This type of research aims to evaluate the degree and the variation between two or more variables (Karasar, 2009).



The Universe and Sample of the Study

The universe of the study consists of the students at the universities in North Cyprus. The sample consists of 36.5 % (n=46) female, % 63.5 (n=80) male, 126 university students who were selected according to purposive sampling techniques of criterion sampling method. According to modify sample of study students have own personal computer set as a criteria.

Instruments

In the collection of data in this study Brief Symptom Inventory (BSI), Internet Addiction Scale (IAS) and Biographic-Demographic Information Form are used.

Biographic and Demographic Information Form is prepared by the researchers and it is arranged according to the suitability with the aims of the study. It is formed of 14 questions. This form people are subjected to demographic features related questions (sex, which school and class he/she attends etc.) and computer-internet usage related questions as well.

Brief Symptom Inventory (BSI) was developed by Derogatis (1992) and adapted by Şahin and Durak (1994) in Turkish language. The Cronbach's alpha reliability coefficient of .96 and the subscales reliability which was varied between .55 and .86 is a measure that psychological symptoms. The measure is formed 53 items covering 9 psychological symptom dimensions as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. BSI has three global indices measure current or past level of symptomatology, intensity of symptoms and number of reported psychological symptoms (Şahin, Savaşır, 1997).

Internet Addiction Scale (IAS) was developed by Young (1996) and adapted by Bayraktar (2001) in Turkish. The Cronbach's alpha reliability coefficient is .90. The measure is formed of 20 items and it aims to measure internet addiction symptomatology (Kurtaran, 2008).

Data Analysis

In the statistical evaluation of the research all analyses are performed by using SPSS 15.0 for windows. Considering purposes of the study percentage documentation average, ANOVA, Pearson moment's correlation were figured out in data analysis. The significance level was taken as .05 in this study.

RESULTS

In this study, the following results were found according to the problem statement and sub-questions of the study. The first sub-questions of the research were expressed as "Is there any statistical meaningful correlation between internet addiction and psychological symptoms?"



Table 1. Correlation of BSI test scores with IAS test scores

Scales	BSI Somatization	BSI Obsessive-Compulsive	BSI Interpersonal Sensitivity	BSI Depression	BSI Anxiety	BSI Hostility	BSI Phobic Anxiety	BSI Paranoid Ideation	BSI Psychoticism
IAS	.360**	.455**	.499**	.496**	.471**	.392**	.512**	.505**	.431**
n	126	126	126	126	126	126	126	126	126
p	.000	.000	.000	.000	.000	.000	.000	.000	.000

** p<.001 statistically meaningful correlation

Pearson Moment’s Correlation Test was applied in order to determine whether there is a statistically meaningful correlation between Brief Symptom Inventory and Internet Addiction Scale scores of the students.

The analysis of the data implies that there was a statistically meaningful moderate positive correlation between internet addiction score and Phobic Anxiety (r=.512) and Paranoid Ideation (r=.505) subscales of Brief Symptom Inventory. Statistically meaningful mild positive correlation between internet addiction score and Somatization (r=.360), Hostility (r=.392), Psychoticism (r=.431), Obsessive-Compulsive (r=.455), Anxiety (r=.471), Depression (r=.496) and Interpersonal Sensitivity (r=.499) subscales of BSI.

The second and third sub-question of the research were expressed as “Is there any statistical difference between internet addiction and duration of daily internet usage?” and “Is there any statistical difference between psychological symptoms and duration of daily internet usage?”

Table 2. Comparing student’s duration of Internet usage with BSI scores and IAS scores

Internet Usage Duration		n	\bar{x}	sd	df	F	p
IAS	No daily usage	22	22.63	17.36	4	3.902	.005*
	1-3 hours	46	19.47	16.63	121		
	4-5 hours	31	27.09	16.10			
	6-8 hours	17	25.35	16.83			
	8 hours and above	10	42.30	23.00			
	Total	126	24.50	17.99			
BSI Somatization	No daily usage	22	1.65	.75	4	1.449	.222
	1-3 hours	46	1.68	.75	121		
	4-5 hours	31	1.72	.65			
	6-8 hours	17	1.49	.70			
	8 hours and above	10	2.18	.89			
	Total	126	1.70	.74			
BSI Obsessive-Compulsive	No daily usage	22	2.06	.80	4	2.093	.086
	1-3 hours	46	1.85	.85	121		
	4-5 hours	31	1.97	.65			
	6-8 hours	17	1.71	.56			
	8 hours and above	10	2.51	.88			
	Total	126	1.95	.77			
BSI Interpersonal Sensitivity	No daily usage	22	1.57	.50	4	1.106	.357
	1-3 hours	46	1.62	.88	121		
	4-5 hours	31	1.73	.69			
	6-8 hours	17	1.67	.68			
	8 hours and above	10	2.15	1.03			
	Total	126	1.69	.77			
BSI Depression	No daily usage	22	1.68	.79	4	2.347	.058
	1-3 hours	46	1.63	.83	121		
	4-5 hours	31	1.82	.71			
	6-8 hours	17	1.60	.63			



	8 hours and above	10	2.46	1.26			
	Total	126	1.75	.83	125		
BSI Anxiety	No daily usage	22	1.61	.70	4	1.162	.331
	1-3 hours	46	1.56	.81			
	4-5 hours	31	1.55	.50	121		
	6-8 hours	17	1.54	.63			
	8 hours and above	10	2.06	.85			
	Total	126	1.60	.71	125		
BSI Hostility	No daily usage	22	2.03	.97	4	2.602	.039*
	1-3 hours	46	1.67	.77			
	4-5 hours	31	1.78	.77	121		
	6-8 hours	17	2.02	1.06			
	8 hours and above	10	2.60	1.19			
	Total	126	1.88	.91	125		
BSI Phobic Anxiety	No daily usage	22	1.40	.62	4	.961	.432
	1-3 hours	46	1.42	.67			
	4-5 hours	31	1.30	.37	121		
	6-8 hours	17	1.47	.61			
	8 hours and above	10	1.72	.58			
	Total	126	1.42	.58	125		
BSI Paranoid Ideation	No daily usage	22	1.87	.72	4	1.908	.113
	1-3 hours	46	1.78	.83			
	4-5 hours	31	1.84	.87	121		
	6-8 hours	17	1.61	.68			
	8 hours and above	10	2.48	.98			
	Total	126	1.84	.83	125		
BSI Psychoticism	No daily usage	22	1.60	.76	4	1.683	.158
	1-3 hours	46	1.58	.69			
	4-5 hours	31	1.43	.46	121		
	6-8 hours	17	1.50	.71			
	8 hours and above	10	2.06	.86			
	Total	126	1.57	.68	125		

* p<.05 statistically difference

One-Way ANOVA analyze was applied in order to determine whether there is statistically meaningful difference to the daily internet usage duration according to Brief Symptom Inventory's sub-scales and Internet Addiction Scale scores of students.

The results showed that there was statistically significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=22.63 \pm 17.36$), 1-3 hours ($\bar{x}=19.47 \pm 16.63$), 4-5 hours ($\bar{x}=27.09 \pm 16.10$), 6-8 hours ($\bar{x}=25.35 \pm 16.83$), 8 hours and above ($\bar{x}=42.30 \pm 23.00$) and Internet Addiction Scale score ($p=.005$).

There was statistically significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=2.03 \pm .97$), 1-3 hours ($\bar{x}=1.67 \pm .77$), 4-5 hours ($\bar{x}=1.78 \pm .77$), 6-8 hours ($\bar{x}=2.02 \pm 1.06$), 8 hours and above ($\bar{x}=2.60 \pm 1.19$) and BSI Hostility subscale score ($p=.039$).

There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.65 \pm .75$), 1-3 hours ($\bar{x}=1.68 \pm .75$), 4-5 hours ($\bar{x}=1.72 \pm .65$), 6-8 hours ($\bar{x}=1.49 \pm .70$), 8 hours and above ($\bar{x}=2.18 \pm .89$) and BSI Somatization subscale score ($p=.222$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=2.06 \pm .80$), 1-3 hours ($\bar{x}=1.85 \pm .85$), 4-5 hours ($\bar{x}=1.97 \pm .65$), 6-8 hours ($\bar{x}=1.71 \pm .56$), 8 hours and above ($\bar{x}=2.51 \pm .88$) and BSI Obsessive-Compulsive subscale score ($p=.086$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.57 \pm .50$), 1-3 hours ($\bar{x}=1.62 \pm .88$), 4-5 hours ($\bar{x}=1.73 \pm .69$), 6-8 hours ($\bar{x}=1.67 \pm .68$), 8 hours and above ($\bar{x}=2.15 \pm 1.03$) and BSI Interpersonal Sensitivity subscale score ($p=.357$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.68 \pm .79$), 1-3 hours ($\bar{x}=1.63 \pm .83$), 4-5 hours ($\bar{x}=1.82 \pm .71$), 6-8 hours ($\bar{x}=1.60 \pm$



.63), 8 hours and above ($\bar{x}=2.46 \pm 1.26$) and BSI Depression subscale score ($p=.058$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.61 \pm .70$), 1-3 hours ($\bar{x}=1.56 \pm .81$), 4-5 hours ($\bar{x}=1.55 \pm .50$), 6-8 hours ($\bar{x}=1.54 \pm .63$), 8 hours and above ($\bar{x}=2.06 \pm .85$) and BSI Anxiety subscale score ($p=.331$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.40 \pm .62$), 1-3 hours ($\bar{x}=1.42 \pm .67$), 4-5 hours ($\bar{x}=1.30 \pm .37$), 6-8 hours ($\bar{x}=1.47 \pm .61$), 8 hours and above ($\bar{x}=1.72 \pm .58$) and BSI Phobic Anxiety subscale score ($p=.432$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.87 \pm .72$), 1-3 hours ($\bar{x}=1.78 \pm .83$), 4-5 hours ($\bar{x}=1.84 \pm .87$), 6-8 hours ($\bar{x}=1.61 \pm .68$), 8 hours and above ($\bar{x}=2.48 \pm .98$) and BSI Paranoid Ideation subscale score ($p=.113$). There was no significant difference to the internet usage duration during a day to the no daily usage ($\bar{x}=1.60 \pm .76$), 1-3 hours ($\bar{x}=1.58 \pm .69$), 4-5 hours ($\bar{x}=1.43 \pm .46$), 6-8 hours ($\bar{x}=1.50 \pm .71$), 8 hours and above ($\bar{x}=2.06 \pm .86$) and BSI Psychoticism subscale score ($p=.158$).

DISCUSSION

In this study the main aim is to reveal the relationship between internet addiction and psychological symptoms in a group of university students who have personal computers. The analysis showed that somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism related with internet addiction.

According to Balcı and Gülnar's research 23.2 % of the university students participating in the study are internet addicts and 28.4% are risky internet users. In other words a very important part of a 51.6 % of the students can be characterized as "problematic internet users". The results has been shown that internet addicts clearly spent more time online and felt more confidence to the internet (Balcı, Gülnar, 2009). The study average of South Korean students spending 23 hours during a week for gaming and another 1.2 million are probably believed to be at risk for addiction. Therapists worry about the increasing number of student's low school success, dropping out from school to spend time on computers. Internet addiction is resistant to treatment and high relapse risks regrettably (Block, 2008). In this study it was determined that most of the students used 1-3 hours internet during a day. So it is a cause of personal, familial and social problems and shows us probably most of university students to be at risk for internet addiction.

Kelleci *et.al.* studied the relationship between gender, psychiatric symptoms and internet usage duration and findings show that there was statistically significant correlation between internet usage duration and psychiatric symptoms (Kelleci *et.al.*, 2009). Also in this study, the results support the Kelleci *et. al.*'s findings.

In addition to these, Koç's findings showed that the student who use six hours internet report that more psychiatric symptoms such as depression, obsession, compulsion, interpersonal sensitivity, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism (Koç, 2011). Also in this study, statistically meaningful correlation was found between internet usage and psychological symptoms as a somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism.

CONCLUSION AND SUGGESTIONS

The present study indicates that internet addiction tendency is related with psychological symptoms such as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism among university students. Also denote that the students daily internet usage affect the internet addiction tendency and psychological symptoms of hostility.



In this study, it was focused on the university students that use their own personal computer, internet addiction and psychological symptoms. As related with findings enables us to aware of the effects of internet usage on internet addiction tendency and psychological symptoms. It should be give importance to the education of students about internet usage habits and psychologists must be aware of this newly emerging disorder as a internet addiction and they should be able to apply the appropriate therapeutic interventions were suggested.

Only adolescents who attend university with higher socio-economical status and education participated to the study. Low socio-economical status, low education may be some other factors related with internet usage and psychological symptoms, a sample having wide range of these characteristics should be formed. Having a large sample of students with different backgrounds may enable to generalize the results to the community.

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