Internet Addiction and Depression, Anxiety and Stress

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Abstract

The purpose of this study is to examine the relationships between internet addiction and depression, anxiety, and stress. Participants were 300 university students who were enrolled in mid-size state University, in Turkey. In this study, the Online Cognition Scale and the Depression Anxiety Stress Scale were used. In correlation analysis, internet addiction was found positively related to depression, anxiety, and stress. According to path analysis results, depression, anxiety, and stress were predicted positively by internet addiction. This research shows that internet addiction has a direct impact on depression, anxiety, and stress.

Introduction

The internet is a new tool that is evolving into an essential part of everyday life all over the world (Nalwa & Anand, 2003) and its use increases especially among young people. In spite of the widely perceived merits of this tool, psychologists and educators have been aware of the negative impacts of its use, especially the over or misuse and the related physical and psychological problems (Greenfield, 2000). One of the most common of these problems is internet addiction (Murali & George, 2007; Shapira, Lessig, Goldsmith et al., 2003; Young, 1998). This problem is a raising phenomenon affecting people with varying frequency around the world and has produced negative impacts on the academic, relationship, financial, and occupational aspects of many lives (Chou & Hsiao, 2000; Griffiths, 2000; Young, 1998). Internet addiction is typically characterized by psychomotor agitation, anxiety, craving (Ferraro, Caci, D'Amico et al., 2007), depression, hostility, substance experience (Ko, Yen, Chen et al., 2006; Yen, Ko, Yen et al., 2007), preoccupation, loss of control, withdrawal, impairment of function, reduced decision-making ability (Ko,

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Yen, Chen et al., 2005), and constant online surfing despite negative effects on social and psychological welfare (Shaw & Black, 2008; Tao et al., 2010).

More recently, the importance of research on internet addiction has grown. Studies have utilized various methods to identify, internet addicts, and have used numerous terms such as internet dependents, problematic internet users, or pathological internet users (Davis, 2001; Lin & Tsai, 2002). Research on internet addiction demonstrated that the greater use of the internet is associated with some social and psychological variables such as, declines in the size of social circle, depression, loneliness (Kraut et al., 1998), lower self-esteem and life satisfaction (Ko, Yen, Chen et al., 2005), sensation seeking (Lin & Tsai, 2002), poor mental health (Yang, 2001;Young & Rogers, 1998), and low family function (Armstrong, Phillips, & Saling, 2000).

Internet Addiction and Affect

The excessive growth of the internet has had a huge influence on psychological research in understanding its role in emotional states and there has been increased interest in the addictive potential of the internet (Griffiths, 1998). The authors report that there are a number of emotional factors which may be related to college students' internet addiction (Kandell, 1998). Among these factors the most remarkable are depression, anxiety, and stress. Research on internet addiction and depression demonstrated that the overuse of the internet, which results in a disruption of the normal lives of an individual and the people around him, was associated with an increase in the frequency of depression (Kraut et al., 1998, 2002; McKenna & Bargh, 2000; Nie, Hillygus, & Erbring, 2002). Because, excessive internet use can displace valuable time that people spend with family and friends, which leads to smaller social circles and higher levels of loneliness and stress (Nie et al., 2002). Other conclusions of excessive usage have been documented as neglect of academic, work, and domestic responsibilities, disruption of relationships, social isolation, and financial problems (Griffiths, 2000; McKenna & Bargh, 2000).

Internet addiction also may contribute to anxiety and stress (Egger & Rauterberg, 1996; Yu, 2001). Those who suffer from anxiety and stress often have a great deal of trouble

communicating and interacting with others in a healthy, positive, and meaningful way. These human characteristics are viewed as important determinants of internet addiction.

The Present Study

Although the relationships of internet addiction with social, educational, and physical variables have received extensive scholarly attention, documenting its strong associations with emotional variables such as depression, anxiety, and stress have received less attention. Thus, the aim of the present research is to examine the relationships between internet addiction and depression, anxiety, and stress. In this study depression is operationalized as an abnormal state of the organism manifested by signs and symptoms such as low subjective mood, pessimistic and nihilistic attitudes, loss of spontaneity and specific vegetative signs, anxiety is operationalized as an emotional state of subjective worry, along with heightened arousal of the autonomic nervous system, and stress is operationalized as an emotional state of bodily or mental tension resulting from factors that tend to alter an existent equilibrium . We hypothesized that internet addiction would be associated positively with depression, anxiety, and stress.

Method

Participants

Participants were 300 university students enrolled in various undergraduate programs at the Sakarya University, Turkey. Of the participants, 65 were first-year students, 41 were second-year students, 56 were third-year students, and 138 were fourth-year students. 96 of the participants (32%) were males and 204 (68%) were females. A large majority of the students (91%) were between 17 and 24 years of age (mean; 21.24, sd; 1.49).

Measures

The online cognition scale (OCS). Internet addiction was measured using OCS. This scale contains 36 items on a 7-point Likert-type scale. It was developed by Davis, Flett, and Besser (2002) to assess internet addiction and it has four sub-dimensions:

Loneliness/depression, diminished impulse control, distraction, and social comfort. The internal consistency coefficient of Turkish form was .93 and the test–retest reliability coefficient was .87. Turkish adaptation of this scale had been done by Ozcan (2004). The internal consistency coefficient of Turkish form was .93 and the test–retest reliability coefficient was .90.

The depression anxiety stress scale (DASS). Depression, anxiety, and stress were measured by using a Turkish version of the DASS (Lovibond & Lovibond, 1995). Turkish adaptation of the DASS had been done by Akın and Çetin (2007). The DASS is a 42-item self-report inventory that provides scores on three subscales: Depression (14-items), anxiety (14-items), and stress (14-items). Each item was rated on a 5-point scale. The language validity findings indicated that correlation between Turkish and English forms was .96. Factor loadings of the subscales ranged from .39 to .88. The internal consistency alpha coefficients were found for depression, anxiety, and stress .90, .92, and .92 respectively. The test-retest reliability scores after three weeks were found .98 for three subscales. Related with the criterion-related validity of the scale, correlation coefficients between the DASS and the Beck Depression Inventory (Beck, Steer, & Brown, 1996), and the Beck Anxiety Inventory (Beck, Steer, & Garbin, 1988) were computed as .87 and .84, respectively.

Procedure

Permission for participation of students was obtained from related chief departments and students voluntarily participated in the research. Completion of the questionnaires was anonymous and there was a guarantee of confidentiality. Measurement items were administered to the students in groups in the classrooms. The measures were counterbalanced in administration. Prior to administration of measures, all participants were told about purposes of the study. In this research, Pearson correlation coefficient and structural equation modeling was utilized to determine the relationships between internet addiction and depression, anxiety, and stress. These analyses were carried out via LISREL 8.54 (Joreskog & Sorbom, 1996) and SPSS 13.0.

Findings

Descriptive Data and Inter-correlations

Table 1 shows the means, standard deviations, inter-correlations, and internal consistency coefficients of the variables used.

Table 1. Descriptive Statistics, Alphas, and Inter-correlations of the Variables

Variables	Internet Addiction	Depression	Anxiety	Stress
Internet Addiction	1.00			
Depression	.672**	1.00		
Anxiety	.629**	.806**	1.00	
Stress	.627**	.810**	.826**	1.00
Mean	85,15	10,48	11,83	15,07
Standard deviation	41,01	9,01	8,90	9,60
Alpha	.95	.91	.88	.90

**p<.01

When Table 1 is examined, it is seen that there are significant correlations between internet addiction and depression, anxiety, and stress. Internet addiction related positively to depression (r=.67, p<.01), anxiety (r=.63, p<.01), and stress (r=.63, p<.01).

Structural Equation Modeling

Hypothesized model was examined via structural equation modeling (SEM). Figure 1 presents the results of SEM analysis, using maximum likelihood estimations. The model fitted well ($\chi2$ = 1.23, df = 1, p = .26745, GFI = 1.00, AGFI = .98, CFI = 1.00, NFI = 1.00, RFI = .99, IFI = 1.00, and RMSEA = .028) and also accounted for 45% of the depression, 40% of the anxiety, and 40% of the stress variances.
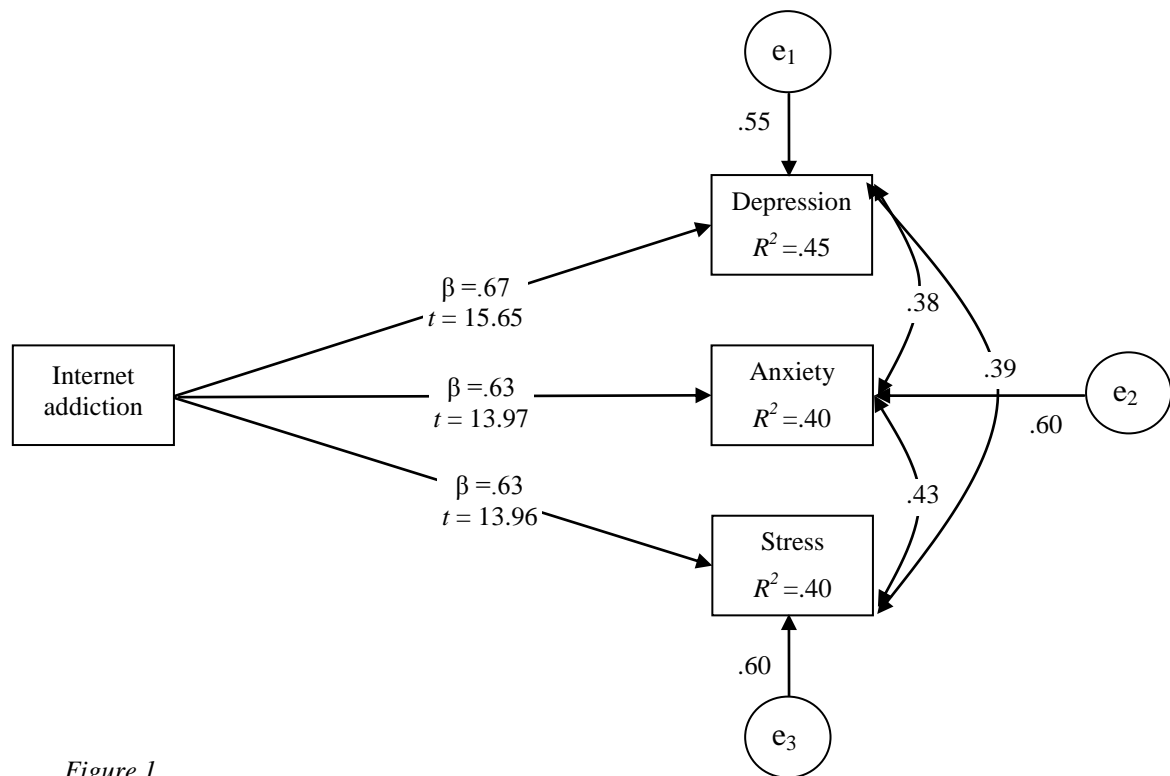
Figure 1

Path Analysis between Internet Addiction, Depression, Anxiety, and Stress

The standardized coefficients in Figure 1 clearly showed that depression (β=.67), anxiety (β=.63), and stress (β=.63) were predicted positively by internet addiction.

Discussion

The aim of this study was to investigate the relationships between internet addiction and depression, anxiety, and stress. Findings have demonstrated that there are significant relationships among these variables. Also the goodness of fit indexes of the path model indicated that the model was acceptable and that correlations among measures were explained by the model (Hu & Bentler, 1999).

As expected, depression, anxiety, and stress were predicted positively internet addiction. Recent studies on internet addiction demonstrated that internet addiction related positively to decrease in social interactions, depression, loneliness, and lower self-esteem (Ko, Yen, Chen et al., 2005; Kraut et al., 1998). So, it can be said that this finding is consistent with other studies that have found a positive relationship between depression and internet addiction (Kraut et al., 1998, 2002; McKenna & Bargh, 2000; Nie et al., 2002; Young & Rogers, 1998). Also, supportive data can be found in the studies of depressed

individuals who are more likely to engage in internet use (Caplan, 2003; Kubey, Lavin, & Barrows, 2001; Young & Rogers, 1998). Therefore, it appears that if individuals can decrease their internet addiction, they may decrease their depression level.

In terms of the relationship between internet addiction, anxiety, and stress, there is no research evidence to demonstrate this relationship. However, since the greater use of the internet is associated with some social and psychological maladaptive variables such as, declines in the size of social circle, loneliness (Yang, 2001), lower self-esteem and life satisfaction (Ko, Yen, Chen et al., 2005), sensation seeking (Lin & Tsai, 2002), poor mental health (Yang, 2001;Young & Rogers, 1998), and low family function (Armstrong et al., 2000), the internet addiction may enhance anxiety and stress. Consistent with this suggestion in our study internet addiction was linked positively to anxiety and stress. These results indicate that the more addictive to the internet a student is, the more stress and anxiety he/she has.

However, several limitations of the study should be noted, to provide direction for future research. First, the analyses reported here should be regarded as exploratory because they concentrate upon model building rather than testing. As such, these findings could be subject to sampling error and cannot be regarded as definitive until replicated with a fresh sample. Second, participants were university students and replication of this study for targeting other student populations should be made in order to generate a more solid relationship among constructs examined in this study, because generalization of the results is somewhat limited. Third, as correlational statistics were utilized, no definitive statements can be made about causality.

In conclusion, this investigation reports that internet addiction affects depression, anxiety, and stress directly. Students high in internet addiction are more likely to vulnerability to depression, anxiety, and stress. So, the current findings increase our understanding of the relationships between internet addiction and depression, anxiety, and stress.

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