Relationship of Internet addiction with self-esteem and depression in university students

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Key words

Summary

Background. *The aim of the study was to investigate the relationship of self-esteem and depression with Internet addiction in university students.*

Methods. *The present descriptive-analytic correlation study involved 408 students (150 female and 258 male) who had been selected by means of a cluster sampling method from among all the students studying in Birjand Islamic Azad University. Students were evaluated through the Beck Depression Inventory (BDI), Cooper Smith Self-Esteem Inventory (CSEI) and Internet Addiction Test (IAT).*

Results. *The results indicated that 40.7% of the students had Internet addiction. A significant correlation emerged between depression, self-esteem and internet addiction. Regression analysis indicated that depression and self-esteem were able to predict the variance of Internet addiction to some extent.*

Conclusions. *It may be important to evaluate self-esteem and depression in people with Internet addiction. These variables should be targeted for effective cognitive behavioral therapy in people with Internet addiction.*

Introduction

Using modern technologies is a common feature of today's world. As one of the most widely used of these technologies in the modern world, the Internet is playing an increasingly significant role in revolutionizing peoples' lives [1]. Indeed, it is frequently used for on-line purchasing, data collection, chatting, communicating with others and so on. Internet use has increased enormously in the last 50 years and now it seems that every aspect of people's lives has been affected by the "Global Village". Although the Internet offers many advantages in the era of global communication, its improper or excessive use can produce many negative consequences [2].

Excessive Internet use, which is also called uncontrolled use of the Internet, pathological Internet use, net addiction or Internet addiction, causes problems at work and in social life [3, 4]. Internet addiction is generally defined as an uncontrollable desire to use the Internet, the devaluation of time spent without connecting to the Internet, intense nervousness and aggression in the event of deprivation, and progressive deterioration of social and family life [5]. The growing number of studies conducted on Internet addiction reveals that Internet Addiction Disorder is a psychosocial disorder, the features of which include lack of patience, symptoms of isolation and emotional disorders and interruption of social relations [6].

Recent research has placed increasing emphasis on Internet misuse and its consequences, both psychological and behavioral, among young people [7-10]. Such consequences include the emergence of possible behavioral alterations, loss of control, school failure, social isolation and an increase in family conflict [6, 11]. Several studies have reported correlations between Internet Addiction Disorder (IAD) and depression [12-17].

The relationship between Internet addiction and self-esteem has been investigated in several studies. These studies have revealed that personality traits, self-esteem and psychiatric disorders are associated with Internet addiction [18]. Young (1998) reported that the vast majority of Internet addicts have a history of depression and anxiety. Low self-esteem has also been reported [19]. In some other studies, self-esteem has emerged as a factor associated with Internet use and problematic Internet use. In addition, research on self-esteem and use of the Internet includes studies examining adolescents' use of some social networking sites and its association with their self-esteem. These studies have shown that adolescents with low self-esteem tend to spend more time on social networking sites than those with higher self-esteem [20-22].

In the present study, our objective was to determine the prevalence of Internet addiction and its relationship with depression and self-esteem among students. To this end, we investigated depression and self-esteem and their relationship with the Internet addiction among students.

Methods

The statistical population of the present study comprised all the male and female students studying at the Islamic Azad University of Birjand. To select the statistical sample of the study, we applied a cluster sampling method, through which 408 students were chosen from among all the students at Birjand Azad University.

Young's Internet Addiction Test (IAT)

The IAT has 20 items associated with Internet use, including psychological dependence, compulsive use, withdrawal symptoms and related problems of school, sleep, family and time management. For each item, a graded response can be selected (1 = "not at all" to 5 = "always"). The minimum score is 20, while the maximum is 100; the higher the score, the greater the level of Internet addiction. As suggested by Young, cut-off scores for the IAT were used to classify Internet users on the basis of the severity of their addictive behavior (Young, 1998b). In the present study, the same cut-off scores were used: Minimal users (scores 20 to 39) – average online users who have complete control over their Internet use, Moderate users (scores 40 to 69) – those experiencing occasional or frequent problems due to Internet use, Excessive users (scores 70 to 100) – those who have significant problems caused by Internet use. IAT is the most famous measurement in the Internet addiction field and has been used by many researchers [23-25]. This instrument has exhibited good psychometric properties in previous studies. For example, in Yang et al.'s study, the internal consistency (Cronbach's alpha) of IAT was found to be 0.92, and its test-retest reliability proved satisfactory [25]. Moreover, Widyanto and McMurran (2004) reported that "the IAT has high face validity"[24].

Cooper Smith Self-Esteem Scale (CSEC)

The Cooper Smith Self-Esteem Scale has 58 items, 8 of which – numbers 6, 13, 20, 27, 34, 41, 48, 55 – are lie detectors. The remaining 50 items are divided into four subscales: general self-esteem, social self-esteem (peers), family self-esteem (parents) and educational self-esteem (school). Items are scored zero or one. Con-

sequently, the minimum total score possible is zero and the maximum is 50. If the respondent scores more than 4 out of the 8 "lie detector" items, it means that the validity of the test is low, and that the subject has tried to portray himself to be better than he is. Bahrampour ascertained that the reliability of this questionnaire was 0.90 and 0.92 for male and female students, respectively [26].

Beck Depression Inventory

The Beck Depression Inventory was used to assess depression in the study group. This scale was developed in 1961 by Beck and colleagues. The scale consists of 21 Likert-type questions. Each question contains four options, which are scored from 0 (none) to 3 (severe). The total score ranges from 0 to 63 points. Students with scores of 17 points or more are suspected of having depression. The validity and reliability of the Farsi version of BDI have been demonstrated in Iran [27].

Results

Of the students enrolled, 36.8% were female and 63.2% male. Six students (2.2%) had severe levels of Internet addiction, 38.5% had medium Internet addiction, and (59.3%) had no Internet addiction. On comparing Internet addiction between male (16.41 ± 23.44) and female (18 ± 29.76) students, the average difference was 3.54 and the mean Internet addiction score was significantly lower in females than in males ($p \leq 0.01$). Multivariate regression analysis revealed that depression and self-esteem scores could significantly predict Internet addiction scores (Tabs. I, II).

According to the above table, the correlation coefficient of Internet addiction and depression score was 0.31, and the depression score was able to predict about 10% of the Internet addiction score. In addition, the depression score could significantly predict the Internet addiction score.

On adding the self-esteem variable to the regression equation, the determination coefficient is 11%. This means that the self-esteem variable increases the predictive power of the Internet addiction score by 1%, and the correlation of these variables is 0.33 with the Internet addiction score. On the basis of the above table, it can be

Tab. I. Regression model, variance analysis and regression statistical characteristics (depression).

Model	Sum of Squares	Df	Mean Square	F	Sig	R	R Square	Adjusted R Square	Std. Error of theEstimate
Regression	12377.56	1	12377.56	43.72	0.001	0.31	0.09	0.098	16.82
Residual	114936.51	406	283.09						
Total	127314.08	407							

Tab. II. Regression model, variance analysis and regression statistical characteristics (depression self-esteem)

Model	Sum of Squares	Df	Mean Square	F	Sig	R	R Square	Adjusted R Square	Std. Error of the Estimate
Regression	13936.98	2	6968.49	24.89	0.001	0.33	0.118	0.115	16.73
Residual	113377.09	405	279.94						
Total	127314.08	407							

Tab. III. Results of Multiple Regression Analysis Predicting Internet Addiction

Predictor Variables	B	Std. Error	T	Sig.
depression	0.31	0.12	6.61	0.001
self-esteem	0.45	0.91	-2.36	0.001

concluded that the ratio of regression variance to error variance is significant, which means that the self-esteem variable is significantly involved in the regression line. The Table above shows that the calculated t is significant at a level of $p < 0.001$. Thus, it can be concluded that the ratio of the slope, which is determined by the depression factor, to the standard error is significant. In addition, it can be concluded that the ratio of the slope, which is determined by the self-esteem factor, to the standard error is significant, while the Internet addiction score has an inverse relationship with self-esteem.

Discussion

The results indicated that 40.7% of the students had Internet addiction. Of these, 2.2% had severe addiction and 38.5% had moderate Internet addiction. Globally, an average ratio of 2-5 million Internet addicts per 50 million regular users has been estimated. In other words, about 5 to 10 per cent of Internet users have IA [28] In a study on Turkish college students, 9.7% of respondents were Internet addicted [29]. The same result was reported in an Iranian study [30]. Another study in Iran also reported that 10.8% of medical students were Internet addicted, 2.8% and 8% of whom had severe and moderate IA, respectively [31]. The statistics yielded by different studies are very similar and slight differences may be attributed to differences in sample size and instruments. The present study showed that the rate of IA was significantly higher in male than in female students. Although a few studies have reported higher rates in female students [32], the results of the present study are consistent with those of most of the previous studies, suggesting that male gender is a predictor of IA [33-35]; indeed, in one study, the risk of IA was 3.5 times higher among male students than female students [31]. In a review of IA, Chou et al. concluded that male internet users were more at risk of IA owing to a stereotyped use of sexual contents; however, female users may be asymptomatic or may present limited symptoms [32]. It also seems that male students are more likely to become Internet dependent because they are more experienced in using the Internet, receive less parental supervision and use the Internet for entertainment purposes more than females do [36] The results of the present study revealed that self-esteem was significantly and negatively correlated with Internet addiction among students. Furthermore, self-esteem was found to be a significant predictor of Internet addiction. In the literature, many studies have examined the association between self-esteem and pathological Internet use [37-39]. Based on the results of these studies, we can conclude that a negative relationship exists between these two variables. Griffith's studies provide important

findings in disclosing this relationship. He states that the participants' use of Internet is highly associated with its perception as a coping style and a way of compensating some deficiencies, such as low self-esteem. According to him, it makes users feel better, as it allows them to assume a different personality and social identity. In other words, these users derive great satisfaction from Internet use. As can be seen, when individuals have low self-esteem, they may perceive the Internet as a way of making up for these shortcomings; increased Internet use may, however, turn into a dependent relationship. As expected, depression positively predicted Internet addiction. Recent studies on Internet addiction showed that Internet addiction was related positively to a decrease in social interactions, depression, loneliness and lower self-esteem [40, 41]. Thus, it can be said that this finding is consistent with those of other studies that have found a positive relationship between depression and internet addiction [41-44]. In addition, supportive data can be found in the studies of depressed individuals, who are more likely to engage in Internet use. Therefore, it appears that if individuals can reduce their internet addiction, they may reduce their depression level [45]. The present study also has limitations. First, because it was conducted at the University of Birjand, its results cannot be generalized to other regions and universities without further research. Second, because some students manifested fatigue and impatience in answering the large number of questions in the questionnaire, their answers might have been false or distorted.

Conclusion

The present study investigated the prevalence of Internet addiction and its relationship with depression and self-esteem among students. It may be important to evaluate self-esteem and depression in people with Internet addiction. These variables should be targeted for effective cognitive behavioral therapy in people with Internet addiction.

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